Y 4.AP 6/1:IN 8/9/2000/PT.7

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 2000

DEPOSITORY
SUPERINTENDENT
OF DOCUMENTS
0393A

JUL 15 1999

ST. JOHN'S LAW LIBRARY

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTH CONGRESS

FIRST SESSION

SUBCOMMITTEE ON THE DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES

RALPH REGULA, Ohio, *Chairman*

JIM KOLBE, Arizona
JOE SKEEN, New Mexico
CHARLES H. TAYLOR, North Carolina
GEORGE R. NETHERCUTT, JR., Washington
ZACH WAMP, Tennessee
JACK KINGSTON, Georgia
JOHN E. PETERSON, Pennsylvania

NORMAN D. DICKS, Washington
JOHN P. MURTHA, Pennsylvania
JAMES P. MORAN, Virginia
ROBERT E. "BUD" CRAMER, JR., Alabama
MAURICE D. HINCHEY, New York

NOTE: Under Committee Rules, Mr. Young, as Chairman of the Full Committee, and Mr. Obey, as Ranking Minority Member of the Full Committee, are authorized to sit as Members of all Subcommittees.

DEBORAH WEATHERLY, LORETTA BEAUMONT, JOEL KAPLAN, and CHRISTOPHER TOPIK, *Staff Assistants*

PART 9

	Page
Secretary of Agriculture	1
U.S. Forest Service	65
Secretary of Energy	201
Office of Fossil Energy	277
Energy Conservation	403
Energy Information Administration	535

Printed for the use of the Committee on Appropriations

AUTHENTICATED
U.S. GOVERNMENT
INFORMATION
GPO

ST. JOHN'S LAW LIBRARY
3 5952 01222 7584

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 2000

HEARINGS

BEFORE A

SUBCOMMITTEE OF THE

COMMITTEE ON APPROPRIATIONS

HOUSE OF REPRESENTATIVES

ONE HUNDRED SIXTH CONGRESS

FIRST SESSION

SUBCOMMITTEE ON THE DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES

RALPH REGULA, Ohio, *Chairman*

JIM KOLBE, Arizona
JOE SKEEN, New Mexico
CHARLES H. TAYLOR, North Carolina
GEORGE R. NETHERCUTT, JR., Washington
ZACH WAMP, Tennessee
JACK KINGSTON, Georgia
JOHN E. PETERSON, Pennsylvania

NORMAN D. DICKS, Washington
JOHN P. MURTHA, Pennsylvania
JAMES P. MORAN, Virginia
ROBERT E. "BUD" CRAMER, JR., Alabama
MAURICE D. HINCHEY, New York

NOTE: Under Committee Rules, Mr. Young, as Chairman of the Full Committee, and Mr. Obey, as Ranking Minority Member of the Full Committee, are authorized to sit as Members of all Subcommittees.

DEBORAH WEATHERLY, LORETTA BEAUMONT, JOEL KAPLAN, and CHRISTOPHER TOPIK, *Staff Assistants*

PART 9

	Page
Secretary of Agriculture	**1**
U.S. Forest Service	**65**
Secretary of Energy	**201**
Office of Fossil Energy	**277**
Energy Conservation	**403**
Energy Information Administration	**535**



Printed for the use of the Committee on Appropriations

U.S. GOVERNMENT PRINTING OFFICE

57-173 WASHINGTON : 1999

For sale by the U.S. Government Printing Office
Superintendent of Documents, Congressional Sales Office, Washington, DC 20402
ISBN 0-16-058608-9

COMMITTEE ON APPROPRIATIONS

C. W. BILL YOUNG, Florida, *Chairman*

RALPH REGULA, Ohio
JERRY LEWIS, California
JOHN EDWARD PORTER, Illinois
HAROLD ROGERS, Kentucky
JOE SKEEN, New Mexico
FRANK R. WOLF, Virginia
TOM DELAY, Texas
JIM KOLBE, Arizona
RON PACKARD, California
SONNY CALLAHAN, Alabama
JAMES T. WALSH, New York
CHARLES H. TAYLOR, North Carolina
DAVID L. HOBSON, Ohio
ERNEST J. ISTOOK, JR., Oklahoma
HENRY BONILLA, Texas
JOE KNOLLENBERG, Michigan
DAN MILLER, Florida
JAY DICKEY, Arkansas
JACK KINGSTON, Georgia
RODNEY P. FRELINGHUYSEN, New Jersey
ROGER F. WICKER, Mississippi
MICHAEL P. FORBES, New York
GEORGE R. NETHERCUTT, JR., Washington
RANDY "DUKE" CUNNINGHAM, California
TODD TIAHRT, Kansas
ZACH WAMP, Tennessee
TOM LATHAM, Iowa
ANNE M. NORTHUP, Kentucky
ROBERT B. ADERHOLT, Alabama
JO ANN EMERSON, Missouri
JOHN E. SUNUNU, New Hampshire
KAY GRANGER, Texas
JOHN E. PETERSON, Pennsylvania

DAVID R. OBEY, Wisconsin
JOHN P. MURTHA, Pennsylvania
NORMAN D. DICKS, Washington
MARTIN OLAV SABO, Minnesota
JULIAN C. DIXON, California
STENY H. HOYER, Maryland
ALAN B. MOLLOHAN, West Virginia
MARCY KAPTUR, Ohio
NANCY PELOSI, California
PETER J. VISCLOSKY, Indiana
NITA M. LOWEY, New York
JOSÉ E. SERRANO, New York
ROSA L. DELAURO, Connecticut
JAMES P. MORAN, Virginia
JOHN W. OLVER, Massachusetts
ED PASTOR, Arizona
CARRIE P. MEEK, Florida
DAVID E. PRICE, North Carolina
CHET EDWARDS, Texas
ROBERT E. "BUD" CRAMER, JR., Alabama
JAMES E. CLYBURN, South Carolina
MAURICE D. HINCHEY, New York
LUCILLE ROYBAL-ALLARD, California
SAM FARR, California
JESSE L. JACKSON, JR., Illinois
CAROLYN C. KILPATRICK, Michigan
ALLEN BOYD, Florida

JAMES W. DYER, *Clerk and Staff Director*

DEPARTMENT OF THE INTERIOR AND RELATED AGENCIES APPROPRIATIONS FOR 2000

WEDNESDAY, MARCH 10, 1999.

U.S. DEPARTMENT OF AGRICULTURE

WITNESSES

HON. DAN GLICKMAN, SECRETARY OF THE DEPARTMENT OF AGRICULTURE

HON. JIM LYONS, UNDER SECRETARY OF AGRICULTURE FOR NATURAL RESOURCES AND THE ENVIRONMENT

OPENING REMARKS

Mr. REGULA. We will get the committee started. We are happy to welcome you, Mr. Secretary, and your team from the Forest Service.

I just have a few comments. I hope that in the course of this hearing you will address the problem of backlog maintenance. I think the matter of campgrounds, bridges and many other facilities is perhaps somewhat neglected.

And the second concern I have is forest health. I believe that we need to focus more on that. Thirdly, the wildfire prevention and suppression program is of concern. You are down to 67 percent of the most efficient level. I would be interested in an explanation. And you slashed the Forest Management Program which goes to the question of forest health.

Lastly, recreation. Obviously, recreation is a much expanding activity in the Forest Service; it does not appear that you have addressed that. Also, I have some concerns about the state purchases of easements. It seems to me that before we get into buying more land or in another form, in easements, we need to take care of the existing challenges that I just mentioned.

As you know we have a National Academy of Public Administration study on your budget structures and procedures so we will wait until we get that to get into it more seriously. Mr. Dicks, would you like to make any comments here?

Mr. DICKS. No, Mr. Chairman. I would just like to welcome the Secretary and say how much we want to work with them on these Forest Service issues.

Hopefully the roads problem that we have had over the last couple of years is now behind us and we can focus in on the backlog on roads. Secretary Lyons and I tried to do something in ISTEA or TEA–21 to see if that funding could not help us address that backlog and I want to continue those efforts.

I understand that Fish and Wildlife Service and some of the Interior Department Agencies, did not get some transportation help. I thing our committee needs to work with the Transportation Committee on backlog road issues which I still think is one of the most serious ones that we face.

And out in our area, roads are a major contributing factor to the salmon problem. If they wash out the sediment gets down into the rivers and streams, and has a negative impact on fish. Even the money that we secured on watershed restoration issues and habitat improvements is mostly spent dealing with road issues, because it is the most serious environmental problem we face out there.

So trying to help the Forest Service deal with this road issue and do a better job on maintenance is hopefully something that we will be unified on rather than having the kind of conflict that we have had over the last several years regarding subsidy and other issues. I just want to welcome both Secretarys and Mike Dombeck, who are all trying to do a good job and we appreciate what has happened out in the northwest.

And I also wish to thank them for the fact that we are able to sustain the assistance to the northwest through the Year 2000.

Mr. REGULA. Thank you. I am struck by the fact that they have over 400,000 miles of roads and of course that means probably thousands of bridges. So that is an enormous challenge to begin a maintenance program.

Mr. DICKS. The other thing, Mr. Chairman, culverts—the way the river goes underneath the road—and the maintenance of those culverts are absolutely crucial. The backlog there is also significant.

Mr. REGULA. Well, Mr. Secretary, now that we have outlined the problem, we will turn to you for the answers. Your full statement will be made a part of the record and you can summarize as you choose.

[The statement of Mr. Glickman follows:]

Statement of
DAN GLICKMAN
SECRETARY
UNITED STATES DEPARTMENT OF AGRICULTURE
Before the
Subcommittee on the Department of the Interior and Related Agencies
Committee on Appropriations
United States House of Representatives
March 10, 1999

Mr. Chairman, Congressman Dicks, and members of the Subommittee, thank you for inviting me here today to discuss the fiscal year 2000 (FY 00) budget for the Forest Service.

Last year when I appeared before you, I noted that forest policy involved controversial issues, and that the vigorous public debate over how we manage our national forests signified Americans' deep care and concern about their forests and natural resources. Well, a vigorous debate over these issues certainly took place last year, especially during development and enactment of our FY 99 Appropriation Bill, and after all of that I want to thank you for your efforts in getting the bill passed.

About one and a half years ago, I gave Mike Dombeck the assignment: Develop a natural resources agenda for the 21st Century. Last year he announced that agenda, emphasizing four areas: watershed health and restoration, sustainable forest management, recreation, and forest roads. The Administration followed up on the agenda asking for funding in the FY 99 budget, a legislative proposal stabilizing payments to states, and proposals dealing with short and long-term management of forest roads. For FY 00, we again are using the agenda to establish spending, legislative, and management priorities.

Overall, we are requesting $2.8 billion for Forest Service discretionary spending in FY 00. This is a 6.5 percent increase over this year's appropriation.

I. Watershed Health and Restoration

Water has always played a prominent role in the management of our national forests. The Organic Act of 1897 designated "securing favorable conditions of water flows" as one of the primary purposes for establishing the national forests. Besides the wildlife dependent on clean water, communities, especially in the West, depend on healthy forested watersheds for their clean sources of drinking water.

More than 50 percent of the water in our Nation originates from and flows through forested lands, underscoring why the Department of Agriculture (USDA) and its programs are so critical in cleaning our Nation's water. From the forested headwaters to the cities, the Forest Service, the Natural Resources Conservation Service (NRCS), and the Farm Service Agency (FSA) have an impressive array of programs to protect and improve our waters.

The Forest Service budget increases the President's Clean Water Action Plan funding $89 million over the FY 99 appropriated level. In FY 99, the agency is restoring 1,837 miles of streams, and anticipates restoring 2,800 additional miles with this funiding. During FY 99, the Forest Service is obliterating, closing or decommissioning 3,000 miles of roads; in 2000, the Forest Service plans to decommission an additional 3,300 miles. The Forest Service is handling the characterization or cleanup of 71 hazardous substance sites in FY 99 and will do 79 more in FY 00. All these accomplishments will mean less pollutants ruining streams and more clean water for us, wildlife, and the forests.

II. Sustainable Forest Management

The Administration continues to promote sustainable management of our national forests with important help from the Congress. For example, the FY 99 appropriation included significant increases in the range and soil, water, and air programs, and we are proposing increases in those programs again this year. We also are proposing a new $15 million pilot forest health stewardship program to test new techniques to restore and improve the health, diversity, and productivity of the land.

To improve forest planning, I appointed a Committee of Scientists to advise the Department on how best to revise the land management planning regulations to give land managers more flexibility, to reduce costs and best protect the resources. Revision of these regulations is long overdue. I expect to receive the Committee's recommendations shortly. Then the proposed planning regulations will be available for public review and comment. For FY 00, I am confident we finally can provide regulations that will lead to land management planning based on the best science, the most comprehensive public comment, and that will leave the land in better condition for future generations. We will then get on with the job of bringing our forests' land management plans up to date in a manner that meets the public's expectations and includes the best science to ensure long-term sustainability of the land.

Last year, the budget proposed to revise the payments to states program to bring stability to local governments' funding for county roads and schools. Under the receipt-sharing formula, these payments have been declining for most of the last decade. The special legislation enacted for the spotted owl forests also provides for annually decreasing payments which currently end after 2003. It is time to set a new policy: Communities near forests should not suffer cutbacks for schools and roads due to declines in timber harvest levels on Federal lands.

In his State of the Union address, the President stated that "all our communities face a preservation challenge as they grow, and green space shrinks." To help meet this challenge, his Lands Legacy Initiative continues the Administration's vigorous efforts to save America's natural treasures.

There is a real "land crunch" affecting many parts of the Nation. This includes some entire states, most municipalities, and even many small communities. These areas are in real jeopardy of losing much of their open space and fertile land to suburban sprawl. Working lands are being converted to suburban sprawl daily. By the time the owner of the last farm, forest, or ranch finds himself or herself surrounded by suburban or second home development,

it is too late to maintain a viable working land base and infrastructure of suppliers, processing facilities and cooperating networks of neighboring producers. States and localities need to be able to act on their citizens' concerns about the reduced availability of open space. We need to provide options for dealing with this growing problem tailored to the specific needs of each local area. Providing States and localities with an array of tools to utilize will make their job easier in gaining the cooperation of landowners.

In some cases Federal ownership patterns are a factor in the preservation of open space. There are times when we need to purchase critical parcels on a willing-seller basis. Land acquisition money is necessary for purchasing our Nation's last treasures and for buying important inholdings in wilderness areas, wild and scenic river corridors, national recreation areas and other places specially designated by the President or the Congress. Often the opportunity to purchase a critical site may occur only once every couple of generations, and we need the flexibility to take advantage of such opportunities.

The initiative proposes significant new resources to states and local communities to help preserve irreplaceable pieces of our natural legacy, keeping them within easy reach of every citizen. The budget proposes Forest Service land acquisition at the FY 99 level of $118 million, a critical parrt of the President's initiative. In addition, the budget proposes $62 million from the Land and Water Conservation Fund in increases for the Forest Legacy and Urban and Community Forestry Programs as well as for a new Smart Growth Partnership to promote land stewardship and community development. Finally, the budget of the Natural Resources Conservation Service, pending before the Agriculture Subcommittee, requests $50 million for Farmland Protection.

The El Nino and La Nina patterns in recent years and their influence on wildfires and insect and disease outbreaks underscore our need to understand the effects of climate patterns on the health and productivity of our Nation's forests. The Climate Change Technology Initiative will develop methods to increase the carbon sequestration and the fiber production capacity of our forests, while contributing to reducing greenhouse gas emissions. The Global

Change Initiative will improve our ability to monitor and manage effects of climate changes on carbon release, carbon storage, and forest health and production. This research is critical to understanding how forests contribute to ameliorating climate change as well as how damaging climate change can be to our forests.

III. Recreation

The American public's demand for quality outdoor recreation experiences on the national forests continues to grow, at a time when we have difficulty providing adequate funding to pick up the garbage and do routine maintenance, let alone make long-needed investments to reduce the backlog of deferred maintenance and reconstruction needs. Nonetheless we have managed to avoid reducing most recreation programs, and have provided a 24 percent increase in funding for wilderness management.

The Forest Service is looking at alternative funding mechanisms for recreation and will work with you and others on this in the coming year. For example, one source of increased revenues is the recreation fee demonstration program. While the FY 99 appropriation extended the pilot program through FY 01, the FY 00 budget proposes to make the program permanent. The Administration is also proposing legislation to permit the Forest Service to retain fees charged for commercial filming, and concession reform measures to help supplement the funding of our recreation programs.

IV. Roads

Last year the Department announced a major initiative in the management of Forest Service roads. We recognize the road system is an integral part of the transportation network in many rural areas — crucial to recreation and essential for the operation of our timber and minerals programs. However, we simply have more roads than we can afford or need on the national forests. We badly need to restore degraded roads to maintain and improve watershed health and public safety. The FY 00 budget proposes an increase of 23 percent in funding for

road maintenance and decommissioning, while funding road construction and reconstruction at about the FY 99 level.

However, with an estimated backlog of more than $8 billion of road maintenance and reconstruction needs, we cannot solve our road problems by trying to increase funding under current budget constraints. That is one of the reasons I strongly support Chief Dombeck's recent decision to impose an eighteen-month moratorium on road building in certain roadless areas while the agency develops a long-term roads strategy. The moratorium will take what are often the most expensive and most controversial road construction projects off the table while the agency analyzes its road inventory and future needs and engages in a public dialogue on the long term strategy which we expect to publish later this year. 383,000 miles of roads, enough to circle the globe many times over, is a tragic legacy when many of the roads cannot be maintained properly and cause environmental damage. This is something we should begin fixing, and I believe that we are on the right path.

V. Accountability

I strongly believe that undergirding these four agenda items is the need for more agency accountability, particularly financial accountability. It goes part and parcel with managing public lands. Chief Dombeck has kept his promise to me to establish an experienced financial management team to develop a strategy for fixing the problems that exist. We now have that team and strategy in place. I look forward to working with you on accountability issues over the next year.

VI. Civil Rights

I also would like to mention my on-going efforts to address civil rights concerns. As Secretary of Agriculture, I am committed to ensuring the civil rights of USDA's customers and employees. Every customer and every employee must be treated fairly and equitably, with dignity and respect. There are no exceptions. The Department has had serious problems

in this area in the past. The class action settlement with African American farmers that was proposed in January will close a painful chapter in USDA's history but does not complete our civil rights initiative. We still have more to do. The Forest Service is the largest employer in the Department and its employees deal with a large and diverse constituency. I fully expect the Forest Service, no less than any other agency, to devote the time, staff and resources necessary to achieve these objectives, and I am happy to report that the Forest Service is doing so. The agency has made much progress in this area, but it still faces many challenges in certain regions that we will be working to overcome.

Conclusion

Chief Dombeck has put the Forest Service on the right track with a natural resource agenda that places the health of the land as a top priority, while being sensitive to the needs of local communities. The Administration has proposed the funding necessary to support this agenda. However, neither the Administration nor the Congress can adequately fund the Forest Service under the existing spending restrictions without looking at possible offsetting adjustments. To partially defray the cost of Forest Service programs, a diverse array of legislative proposals and administrative measures are being developed which will offset some of the increases in funding proposed for Forest Service activities. These include a timber user fee proposal and measures which will permit the agency to retain some of its receipts for resource program uses. The legislative proposals will be sent to the Congress soon for consideration.

Once again, thank you for asking me to be here. I will be glad to answer any questions you may have.

Dan Glickman
Secretary of Agriculture
Biographical Sketch

Dan Glickman was sworn in as the 26th U.S. Secretary of Agriculture on March 30, 1995. Prior to his confirmation, Glickman served in the United States House of Representatives for 18 years, representing Kansas' 4th Congressional District.

Widely recognized as a leading spokesman for American agriculture, Glickman brought to his Cabinet post the experience gained from nearly two decades on the House Agriculture Committee, including six years as chairman of the Subcommittee on General Farm Commodities and its predecessor, the Subcommittee on Wheat, Soybeans, and Feed Grains. In addition to his work on farm bills in 1977, 1981, 1985, and 1990, he led the way in such areas as expanding trade in agriculture goods and food safety.

Glickman was the original author of the House legislation to reorganize the USDA, and after becoming Secretary, helped to downsize and streamline the Department as part of the Clinton Administration's Reinventing Government/National Performance Review. By 1999, under the leadership of the President and Glickman, USDA's reorganization will save $4.1 billion, reduce staff by more than 13,000, cut the number of agencies from 43 to 30, and create convenient one-stop service centers.

As Secretary, Glickman has focused on such areas as food safety, expanding export opportunities, rural development, protecting our natural resources, and maintaining a nutritional safety net for those in need. Under Glickman's leadership:

USDA is dramatically improving food safety for all Americans through the most sweeping overhaul of meat and poultry inspection in ninety years--the Pathogen Reduction and Hazard Analysis of Critical Control Points (HACCP) Final Rule.
Farm income has increased and commodity prices for U.S. agricultural products rose to record levels.

- U.S. agricultural exports are expected to reach a record $60 billion for FY 96; in addition, the number of agricultural jobs is increasing, forecast to reach nearly 200,000 by the year 2005.
- USDA launched actions to improve competition in livestock markets through new price reporting initiatives, which assure that timely information--vital to a fair and competitive marketplace--is available on a level playing field.
- USDA supports education and increased employment for farmers and other rural Americans through Clinton Administration-designated rural enterprise communities and rural empowerment zones. These areas receive special consideration for various federal programs and other assistance, including job creation, business development, and job training.
- The national school lunch and breakfast programs had the first major reform in fifty years. School meals that now meet federally established Dietary Guidelines for Americans will improve the long-term health of our children and save taxpayers between $4.4 billion and $26.5 billion over 20 years.

Rural Americans are raising their standard of living through Clinton Administration initiatives to improve housing, upgrade education, assure access to running water and health care, and rebuild the infrastructure in small towns, and provide access to advanced information technology.

- USDA is helping to pioneer new uses of technology to boost the economies of rural communities.
- USDA is leading national food recovery efforts to help feed the hungry by saving and providing food that would otherwise be wasted.

Glickman also is a strong supporter of preserving our national heritage--our natural resources--through policies that balance economic growth and environmental protection. USDA-managed national forests will generate more than $130 billion for America's economy by the year 2000.

Glickman's career in the House also encompassed a two-year term as Chairman of the House Permanent Select Committee on Intelligence, making him the first full committee chairman from Kansas in 40 years. As chairman, he pursued policies to "de-mystify" the intelligence community by holding open hearings, pushing the intelligence community to publicly explain its functions in the post-Cold War era, and reducing the number of classified documents. In addition, Glickman launched a major committee investigation into the Aldrich Ames spy case. Glickman also worked to make reasonable reforms in general aviation product liability laws, strengthen lobbying disclosure laws, and develop effective ways to combat crime. He was also the author of legislation increasing penalties for the destruction of religious property.

Prior to being elected to Congress in 1976, Glickman served as President of the Wichita, Kansas, School Board; was a partner in the law firm of Sargent, Klenda and Glickman; and served as a trial attorney for the U.S. Securities and Exchange Commission. Glickman received his B.A. in history from the University of Michigan and his law degree from The George Washington University. He married Rhoda Yura of Detroit in 1966. They have two children, Jon, 27, and Amy, 24.

#

STATEMENT SUMMARY

Mr. GLICKMAN. Thank you. Well, first of all, Mr. Chairman, Mr. Dicks, thank you for your leadership. We also appreciate your participation in the honor to Mr. Yates that we had. I thought that was one of the nicest events we have had in the Department for some time. Mr. Dombeck is here. I think that he has done an outstanding job as Chief, and he will be here to answer a lot of the specific questions you have on Forest Service management.

I think that we have a natural resources agenda that is multifunctional, multi-use, and related to all the different purposes of the forest from recreation to habitat protection to sustainable timbering. We do have some money problems, and over the past several years I think that we have not had the financial accountability that we needed to have. I think that that is now changing under Mr. Dombeck's leadership.

Without repeating my statement, I would say there are five major priorities that we have for the Forest Service which are reflected in this budget and are also reflected in our operations. One is watershed health. In terms of the resources that we are putting into money, we have an increase of $50 million for watershed health. Many if not most of the rivers in this country begin in our national forest lands so the health of the Nation's watersheds is a number one priority.

Mr. REGULA. Do you see that as connected with forest health?

Mr. GLICKMAN. Yes, it is. Forest health is somewhat related to that issue. The second priority issue is roads and road maintenance. You talked about the fact that we have more miles of roads than we have in the interstate highway system. We have put some additional funds in the budget for road maintenance. That also relates to the fact that the Chief has announced a policy on roadless areas as well.

The truth of the matter is, that we have a huge quantity of roads under serious repair problems and the question is how many new roads should we be building under those circumstances? What existing roads ought to be closed? It does relate to forest management as well, but it is a much bigger issue than that. A lot of folks use our roads. Some of these roads should not be used. There is a safety problem associated with that as well. Road construction, road reconstruction and road maintenance are clearly a big part of this issue.

The third priority is Lands Legacy. In this budget, we are talking about, $268 million that is being proposed for pass through programs to the states. This includes for example, the Forest Legacy Program and Urban and Community Forestry and national forest land acquisition. As you know, the President feels that states, municipalities and many small communities are in real jeopardy of losing much of their open space to suburban sprawl. We need to provide options for dealing with the problems tailored to the specific needs of local areas.

In some cases conservation easements on private lands or better management of urban forests are called for. In other areas where federal ownership patterns are a factor in the preservation of open

space, we need the flexibility to take advantage of these opportunities. Lands Legacy is a priority.

The fourth priority is research. We especially need to get the proper science foundation for management of our forests and working with you I think we have made some improvements in this area. But this remains a big issue.

The fifth priority is accountability, particularly financial accountability which I mentioned before. It goes part and parcel with managing public land. The Chief has kept his promise to me to bring on an experienced financial management team. We have a new Chief Financial Officer who previously was Chief Financial Officer of the Customs Service.

The Chief has a strategy for implementing this financial management improvement plan. I know that the 2000 budget could have been more generous in providing money to fund it, but with some priority setting I think we can make significant progress. We look forward to working with you in all of these areas. Jim is going to not give a statement so we can answer some of the questions.

You have posed some questions that I think need to be responded to and perhaps Jim might want to talk about some of these, including wildfire preparedness and infrastructure. Some of the other questions that you raised I think we need to respond to.

[The statement of Mr. Lyons follows:]

STATEMENT OF THE
HON. JAMES R. LYONS
UNDER SECRETARY
NATURAL RESOURCES AND ENVIRONMENT
U.S. DEPARTMENT OF AGRICULTURE

Before the
HOUSE OF REPRESENTATIVES
COMMITTEE ON APPROPRIATIONS
Interior and Related Agencies Subcommittee

USDA FOREST SERVICE
FISCAL YEAR 2000 BUDGET

March 10, 1999

Chairman Regula, Representative Dicks, and Members of the Committee, thank you for the opportunity to appear before you today to discuss the Forest Service's proposed budget for Fiscal Year 2000.

I would like to present a brief overview of our budget request and highlight some of the priorities we've identified in terms of three broad areas. Chief Dombeck will address these and other areas in greater detail. The three areas I want to highlight are; 1) the priorities of the President and the Department of Agriculture in managing the rich natural resources of this nation's forest and range lands; 2) these priorities and their tie to the Forest Service's Natural Resource Agenda; and 3) the emphasis being placed on the Forest Service to be accountable to Congress and the American people for its performance and use of federal funds.

Last year when I testified before several committees, including this one, I stated that despite the contentious debates on several Forest Service management issues, Congress and the Administration agree more than we disagree. Despite the differences regarding budget priorities and several environmental riders which were part of the fiscal year 1999 appropriations debate, we worked together to develop a bill which moved the Forest Service forward towards improved forest and ecological health and sustainability. I continue to believe we have common interests and greater agreement than disagreement, although I'm sure we'll be involved in tough debate again over this year's budget.

First, a brief overview. This budget proposes an overall increase in discretionary appropriations of 6.5 percent compared to the fiscal year 1999 Appropriation. The budget includes a healthy emphasis on the basic programs necessary for managing the agency's 192 million acres, which contains a $30 billion infrastructure, 383,000 miles of road, 74,000 authorized land uses, 23,000 developed recreation sites, and uncounted dispersed recreation sites. In addition, the budget proposes a substantial increase of $37.2 million to enhance the agency's leading role in Forest and Rangeland Research. Finally, the budget also proposes major increases in State and Private Forestry programs, which are key elements of the President's initiatives.

President and Department Priorities

The President has proposed several initiatives in the fiscal year 2000 budget, including continuation of the Clean water Action Plan, first initiated as part of the fiscal year 1999 budget. Principally, the President's goal in fiscal year 2000 is to develop Forest Service programs which assure that all the nation's lands, not just National Forest lands, provide clean water, healthy habitat, open spaces, and expanded recreation opportunities as well as the sustained products, goods and services that the public demands of our forested lands.

The President's FY 2000 budget includes the Lands Legacy Initiative, the largest one-year investment ever made in the preservation of America's lands, and the continuation of the Clean Water Action Plan to continue to focus on

priority watersheds where protection and improvement programs are so desperately needed.

The Lands Legacy Initiative is a $1 billion federal program, and includes $217.6 million in Forest Service funding. The Initiative focuses on working with states, tribes, local governments, and willing private partners to protect great places, conserve open space for recreation and wildlife, and to preserve forests, farmlands, and coastal areas.

Currently, 30 million people live within an hour's drive of National Forest land. As the President noted in his State of the Union address, 7,000 acres of farmland and open space are lost every day to development. The number of tracts of forestland of 50 acres or less doubled from 1978 to 1994 as our landscape was carved into smaller pieces. Access to, and the health of these lands are diminishing as a result of this fragmentation. To address these serious concerns, the President's budget proposes to significantly increase funding of the agency's State and Private Forestry programs, with an increase of $80 million, or 48 percent, over fiscal year 1999.

Just over one year ago, the President and the Vice President announced the Administration's Clean Water Action Plan. The Plan seeks to protect public health and to restore water quality by setting strong goals and providing the Federal land management agencies, the states, tribes, communities and landowners with the tools and resources to meet them. It charts a new course, emphasizing collaborative strategies built around watersheds and the communities they sustain.

Last year, the Congress provided additional resources to support the restoration of key watersheds and investments in fish'and wildlife habitat -- elements contained in the President's Clean Water Action Plan. I want to thsnk you, Mr. Chairman, for your efforts to promote these important investments.

Water resources have always played a prominent role in the management of our National Forests. The Organic Act of 1897 designated "securing favorable conditions of water flows" as one of the primary purposes for establishing the National Forests. Many communities, especially in the West, depend on healthy forested watersheds for their sources of clean drinking water. More than 50 percent of the water in our nation originates from and flows through forested lands on its way to suburbs and cities. Wildlife, particularly fish and other aquatic species, must have an adequate quantity and quality of water to survive.

Looking over the landscape, it is clear that the Lands Legacy Initiative and the Clean Water Action Plan, as partially implemented through the Forest Service, are critical in meeting healthy watershed and clean water objectives.

The Forest Service budget increases Clean Water Action Plan funding by $89 million from the 1999 appropriation and $131 million over 1998. The Results Act annual performance plan for 2000 provides for some solid increases in outputs that, over time, will make a significant qualitative improvement in conditions on the ground.

The Forest Service is the leading provider of outdoor recreation on public lands. The Lands Legacy Initiative, through increased land acquisition, will improve recreational access as well as promote healthy watersheds and open space.

The fiscal year 2000 budget contains additional initiatives. As was proposed last year, the Administration again intends to forward legislation to stabilize payments to states. I believe it is essential to provide these payments through a process that does not link the output of forest products to the education of our rural school children or the quality of the roads used by their parents. If enacted, the legislation will result in long-term predictability of payments needed by the states and counties of America.

Natural Resource Agenda

The President's budget strongly supports the Forest Service's Natural Resource Agenda. Wildlife, grazing, fire, fisheries, and other programs increase by $48.6 million to support watershed health and restoration. Increased funding contained in this budget is essential for restoring and protecting watershed health.

Proposed budget increases of $113.2 million in programs such as Forest and Rangeland Research, in addition to the State and Private Forestry programs I've already mentioned will promote long term land health.

Management of the National Forest road system is a third component of the Natural Resource Agenda. With a funding increase of $22.6 million, this road system, which is expansive enough to circle the globe more than 15 times, will receive critically needed funds for maintenance.

Lastly, as part of the Natural Resource Agenda, the President's budget continues to provide strong emphasis on recreation. The Forest Service is the leading provider of outdoor recreation on public lands in the United States. We are pleased with the emphasis Congress has shown in promoting recreation. The Recreation Fee Demonstration Program is one such example, and a resounding success. Through this program, we have improved facilities and visitors experiences at fee sites. However, I want to emphasize that 95 percent of recreational experiences on the National Forests involve use of non-fee dispersed sites. The President's budget continues to emphasize this type of recreational use through appropriated funds. I strongly encourage your continued support of these programs in order to maintain quality experiences for those who use the forests for highly dispersed activities, but who are unable to pay for use of these sites, are not close to fee sites, or who desire to recreate in the undeveloped non-fee areas of the National Forests.

Forest Service Accountability

The success of the Natural Resource Agenda and the initiatives proposed by the President are critical to the long-term health and conservation of the National Forests and the nation's state, local, and non-industrial private lands. Effective Forest Service leadership is what will facilitate these long-term successes. However, leadership will not be successful if the Forest Service does not aggressively address what can only be described as severe lapses in its financial management and overall performance accountability. As you know, the agency's financial health, decision-making, and overall accountability has been scrutinized and extensively criticized in more than 20 studies initiated by Congress, the Department, and internally.

Let me say, I have no doubt the Forest Service has gotten the message! Through reorganization and placement of professionals in top leadership positions, the agency has placed the financial management role in a position that assures attention and oversight in equal stature and priority to its Natural Resource Agenda. While I believe it is important for Congress to actively perform its oversight of the agency's financial condition, I believe it is also important to ask for some degree of patience. The agency's books and records took a decade or more to turn sour. It will take at least the rest of fiscal year 1999 to implement a new General Ledger, and at least through fiscal year 2000 to receive a clean financial opinion.

Meanwhile, the Forest Service is taking action to improve. This includes paying detailed attention to management of indirect costs, restructuring the process for charging overhead to permanent and trust funds, and actively working on implementing performance measures consistent with the Results Act, which should ultimately lead to proposals for a revised budget structure to reflect the integrated nature of work it accomplishes on the ground.

Summary

Mr. Chairman, I am confident that with your support we can work together to build a Forest Service program that accomplishes long-term land health objectives, delivers clean water, provides quality access, assures diverse recreational opportunities for greater numbers of Americans, and continues providing strong livelihoods for communities for generations to come.

Thank you for the opportunity to address you today. I would be pleased to answer any questions you may have.

JIM LYONS
BIOGRAPHICAL SKETCH

Jim Lyons, Under Secretary of Agriculture for Natural Resources and Environment

James R. Lyons, sworn in as Assistant Secretary of agriculture for natural resources and environment on May 12, 1993. He was nominated by President Bill Clinton on March 9 and confirmed by the Senate on May 11. His primary responsibilities are to direct the policies and supervise the activities and programs of the U.S. Department of Agriculture's Forest Service and the Natural Resources Conservation Service (formerly the Soil Conservation Service).

On October 20, 1994 as part of the USDA reorganization, Lyons' position was elevated to that of under secretary for natural resources and environment.

The Forest Service administers programs for applying sound conservation and utilization practices to the national forests and national grasslands, for promoting these practices on all forest lands and for carrying out extensive forest and range research. The Natural Resources Conservation Service has the responsibility for developing and carrying out a national conservation program in cooperation with landowners, community planning agencies and regional resource groups, and with other federal, state and local government agencies.

Before being appointed to his present position, James Lyons served from 1987 - 1993 as a staff assistant with the House Committee on Agriculture, where he was responsible for the policy and legislative activities of the committee affecting forestry and natural resources, conservation, environmental issues, pesticides, and food safety. Within that period, from 1989 through 1991, he was also the agricultural advisor to [then] Congressman Leon Panetta (D-Calif.). From March through December 1986 he was the staff director for the Subcommittee on Forests, Family Farms, and Energy, Committee on Agriculture. From April 1982 through March 1986 he served as director of Resource Policy for the Society of American Foresters in Bethesda, MD. He was program analysts with the U.S. Fish and Wildlife Service, U.S. Department of the Interior, 1979-82.

He received a B.S. degree in forest and wildlife management with high honors from Cook College, Rutgers University, in 1977, and a Master of Forestry degree from Yale University in 1979.

INFRASTRUCTURE

Mr. LYONS. Thank you, Mr. Chairman, and Mr. Dicks. I will be brief because I know the time that we have with you this morning is short. As you know, we agree completely on the infrastructure issue. You and I have talked about this many times. And we are trying to tackle that issue. It is a huge issue for us. This includes not only the infrastructure as we traditionally think of it, such as buildings and facilities associated with the National Forests, but it also includes road maintenance issues which you have already mentioned.

Infrastructure is the investment in the roads, buildings, and facilities that provide access to the public for recreation opportunities and which support the entire range of Forest Service activities. We have a tremendous backlog, and that has been well recognized. In roads alone, it is eight billion dollars. In facilities, we also have a mult-billion dollar backlog. In fact, we only have enough money in our budget, and this budget only requests a slight increase, to maintain about 25 percent of the road system that is the most heavily used road system.

There are 80,000 miles of roads which provide primary access routes. So this is a tremendous problem for us. It is one of the reasons Mike initiated the roads policy. As he likes to say, when you are in a hole, the first thing you ought to do is stop digging. We have stopped building new roads in roadless areas to reassess the inventory. In the case of forest health and fuel treatment which are issues we have discussed over the years, we are attempting to make investments to deal with the needs that you mentioned.

WATERSHEDS

I think these do fall under the larger umbrella of watershed health concerns. Most of the watersheds in the major metropolitan areas in the western United States are on National Forests. And their health and the quality of that water, which impacts everything from potable water to salmon habitat, are critically linked to how well we invest in thinning and salvage work.

Mr. REGULA. I have a question on the watershed. What percentage of it is forested and what percentage would be open land?

Mr. LYONS. Well, I think generally the way the watersheds are set up, and maybe Mike can amplify this, is that most of the headwaters, the upper reaches, are on National Forest System land. Often those waterways flow through private land, a portion of which we are involved in helping to manage through the State and Private Forestry Programs and working cooperatively with the State Foresters.

My other side, Mr. Skeen's area of jurisdiction, the National Resources Conservation Service is involved in working on farms and ranches that usually are lower down in those watersheds. But forested lands are a substantial part of those areas as well. I do not know if you want to amplify that Mike.

Mr. DOMBECK. Yes, out of the 192 million acres of National Forest System Lands, less than 40 million are rangelands and the rest of it is forested lands. And in fact it is interesting that about 80

percent of the streams in the United States begin on National Forests, even here in the east with the Potomac and the watersheds.

So water is an issue that is incredibly important in both the east and the west. In addition to managing the forest, foresters deserve a lot of credit for what they do for maintaining water quality and watersheds.

The fact is the cleanest water in the United States is coming off of forested lands. And we need to keep it that way.

Mr. LYONS. But let me just say, with regard to that investment, we are attempting to put more money into programs like timber stand improvement, brush disposal and the like. We appreciated the flexibility you have provided us with to shift some resources around so as to make additional investments. This is particularly important for reducing fuels so as to prevent devastating wildfires in the long run.

Roads are a key to improving watershed health, as I mentioned. As Congressman Dicks indicated, we had an unfortunately failed attempt to secure funds in TEA–21 to help begin to address that backlog, and I am afraid, Mr. Chairman, that an infusion of funds of that nature is going to be necessary to really start to get on top of this critical issue.

RECREATION

But I think we are moving in a direction that is consistent with a lot of the dialogue we have had. You mentioned recreation. That too is a priority. I would express disappointment in the marks we got for recreation and a lot of other priorities. We were not able to make the investment there, though you have been most helpful in providing authorization for recreation fee demonstration, which is a program that is going to help us in the recreation area.

We have also proposed some concession reforms. Did you know the Park Service got concession reform legislation last year? We think we can help ourselves there, but again, I think in recreation we are going to need some additional resources to get the job done.

WILDFIRE

Mr. GLICKMAN. Do you want to address wildfire issues? I think we need to address that very quickly for you because of the money.

Mr. LYONS. Why do you not let Mike run down the details.

Mr. DOMBECK. From the standpoint of hazardous fuel reduction we have ratcheted up that program significantly from the mid-1990's. This is really part of watershed restoration because of the damage from catastrophic fires or stand replacing fires rather than a cool burn as the forests would have had in a historical regime.

We were doing about 750,000 acres of fuel treatment per year. The 2000 budget proposes to do 1.3 million acres through a hazardous fuels reduction program. Then if we look at some of the other programs that contribute to that effort, we will be treating about 2.2 million acres. The track that we are on is to have the backlog of high-risk lands dealt with by about 2015, so we have ratcheted that program up significantly as well.

FUNDING STATE PROGRAMS

Mr. REGULA. Let me tell the committee members the Secretary has to leave by 11:00, so we will have our questions for him first and then we will go to Mr. Dombeck at about 11:00. First of all, Mr. Secretary, you talk about state and private forestry programs, and I see you have an $80 million increase there.

I find that questionable given the fact that we have all these backlog maintenance needs that are unmet; given the fact that we are not doing nearly as much as we should in recreation programs, to say nothing of wildfire and so on. And yet I read in the Wall Street Journal this morning that the states' revenues are up. I just had a chart, I do not have it with me, but every state, with the exception of one, has surpluses.

Alaska could shut down their revenues for three years and still function. They have three years' worth of revenues in the kitty. So I think we are talking about a pass-through to the states. They should be passing through to us, because in terms of financial situations, they are better off than we are. Do you want to comment on that?

Mr. GLICKMAN. Well, I would say that largely this is part of the Lands Legacy Initiative.

Mr. REGULA. Well, I understand that.

Mr. GLICKMAN. But I am just explaining it from, conceptually where it comes from. It is money that is proposed to keep land from going into suburban sprawl, and a lot of other conservation related measures where we are finding more and more that we need to cooperate with states and work jointly on these programs.

About $40 million has been budgeted in this particular area. I understand the point that you are raising. It also relates to the fact that more and more we are finding that the efficacy of these programs is based upon whether local conservation districts and states go along with this and work with this.

Mr. REGULA. Well they can cooperate, but they can just use their own money to cooperate. We have a community of about 30,000 people near where I live, and they built a golf course. They built it with their own money. It is so successful, they are adding another nine or 18 holes, and they have not gotten a penny of Federal money. And yet some of your pass-through funding would go for that kind of thing.

Mr. GLICKMAN. Well, I would hope that we would not be building golf courses.

Mr. REGULA. Well, you do not have control once it gets out of your hands.

Mr. GLICKMAN. One consideration is that a lot of these watersheds are multi-state and so we are working with many different units of government, and in many cases, they do put money into these projects as well.

Mr. LYONS. Mr. Chairman, I am aware of your concerns with programs like UPAR in the past and this is not a UPAR Program. But for example in Forest Legacy, we have been able to use conservation easements to protect millions of acres of land, both in the northeast and in the west.

And I think what is important——

Mr. REGULA. Federal lands? They are now Federal?

Mr. LYONS. No, the lands are administered either by the states or the states can transfer management responsibility to non-profits who can assume responsibility for those lands. For example, we have done projects in New England. I know there has been a lot of attention paid to New England lately because of the large amount of private forestland that suddenly is coming up for sale.

Working with the Governors of New Hampshire, Vermont, New York and Maine, we have used the Legacy Program to protect many millions of acres that would face development. The key is that for the minimal investment we make, the states do put in additional resources, and often leverage private resources, so it really multiplies our investment manyfold. That is the benefit of those investments.

Mr. REGULA. Does your program propose that anything that comes by way of Federal money has to be matched at least fifty-fifty?

Mr. LYONS. Yes. We have a match. I am not sure what the exact match is, but we do have a matching requirement for Forest Legacy.

UNCONTROLLABLE EXPENSES

Mr. REGULA. Another dimension of this proposal, in addition to not doing backlog, is the fact that your uncontrollables are $72 million. Yet you eat up the growth for these other programs. Are you going to put a freeze on your uncontrollables?

Mr. LYONS. Well, do you want to address that?

Mr. REGULA. Operations and some funds for pay raises, that type of thing?

Mr. DOMBECK. Obviously we do not have control over the pay raises. In fact for 2000 we are looking at something in the neighborhood of $50 million——

Mr. REGULA. But it adds money to your budget, and yet you do not have the money budgeted for that. It adds cost.

Mr. DOMBECK. Yes, it does add the cost.

Mr. REGULA. How are you going to pay these, if you are going to spend all this money on all these other things?

Mr. DOMBECK. Well, again, it is a matter of balancing priorities——

Mr. REGULA. I understand that, but you have not done that. You have balanced in favor of buying more land and doing a whole host of things, but not in favor of something that looks to me like it is almost a must. And that is your operations.

Mr. DOMBECK. Well, managing the operations and balancing the needs are incredible jobs. But another point is with the State and Private Forestry programs, we have got about 9.9 million private woodland owners. The quality of management, the technical expertise available to those landowners, is important to all the aspects of what forests do for us.

Mr. REGULA. No, I am not quarreling with that. But when I look at your numbers here, you do not have the money, you have not budgeted the money to fully cover fixed costs. Now something has got to give. You cannot have all these programs and still meet your fixed costs. Then I hear this morning that we are going to not raise

the budget caps. That seems to be a bipartisan agreement which is going to affect your budget in many different ways.

So we are going to be faced with some pretty tough priority choices in this committee.

Mr. GLICKMAN. The fact is that this is not just true of the Forest Service; our USDA budgets do not absorb COLA increases as well. And so unless we find the money someplace else, those dollars will have to be absorbed within the operations of the Department as a whole.

Mr. REGULA. I know. So we may have to come back to you to reassess your priorities when we get down to doing our markup, recognizing that we have got to do the fixed costs.

Mr. GLICKMAN. I agree with that.

Mr. REGULA. Where do you think it should come from?

Mr. GLICKMAN. Well, I do not know.

Mr. REGULA. Not at this juncture, but I am talking about prospectively.

Mr. GLICKMAN. I think we have to generally reflect our priorities in whatever decisions that we make. That is the best I can tell you. But we have to pay our people as well.

RECREATION

Mr. REGULA. Yes, I think that is number one, at least the audience would agree. Mr. Lyons, your budget request calls for level funding, effectively a decrease to the recreation management activity and yet I hear you saying that recreation has a high priority. How do you square that?

Mr. LYONS. Well the honest answer, Mr. Chairman, is that in the priority setting debate, recreation did not come out as well as some other programs. We initially made a request for a significant increase in recreation, knowing that recreation use is skyrocketing. But in the order of priorities, we were not able to sustain that request.

Mr. REGULA. It is OMB's priorities that are reflected here?

Mr. LYONS. Well, let us just say higher authorities thought that priorities ought to be set in a little different way. Now let me say this, that I think part of their philosophy is that we are developing new tools to help cover the funds for investment in infrastructure, et cetera, and to some degree that is true.

I would candidly say that I think an additional investment in recreation programs is important because of the recreation impacts on the National Forest System and on wilderness areas. These impacts are becoming a significant concern. Mike and I are constantly challenged with trying to deal with those issues.

Mr. REGULA. It seems to me too, that you are using the rec fee money to replace appropriations. And we have made a commitment not to do that.

Mr. LYONS. That would be illegal, Mr. Chairman.

Mr. REGULA. So you are saying that you are not going to use——

Mr. LYONS. We are not going to do that.

Mr. REGULA [continuing]. Rec fees for what we should be doing by standard appropriations.

Mr. GLICKMAN. That is correct that we will not do that.

Mr. REGULA. All right. Mr. Dicks.

Mr. DICKS. I thought that you were close to $50 million below last year, is not that the number? Where was that number on trails? It's my understanding that the trail construction budget is down 50 percent. That looks to me like you are going to then take the rec demo money and use it for that purpose. Is that not a way of using this money to replace appropriated funds? Use of the ten-percent timber receipts?

Mr. LYONS. Well as you just heard, what happened was we had to shift some funds around from the ten-percent fund to cover some additional costs in the recreation area. So trail construction maintenance, for example, is down and that is an area where we would have liked to have maintained an investment.

It is not an offset to rec fee demo, I want to be clear about that. And we have fought that, whenever that issue has come up in other circles, I want to assure you. But in fact, we have had to commit the ten-percent funds to another area and not invest it in trails, which is what accounts for the trail funding being below what it was last year.

DEFERRED MAINTENANCE

Mr. DICKS. Is it true that on this one, deferred maintenance on roads and bridges, is $4,000,020,000? And what you need for annual maintenance is $442 million, but you only have $100 million in the budget. Is that basically right?

Mr. DOMBECK. Yes, I believe so.

Mr. DICKS. Are we basically going to fall further and further behind?

Mr. DOMBECK. That is right. What we have to do is to really face the problem that we have had with roads. Now we need to work to move forward by looking for funding, and adjusting our priorities and we are doing that. In fact, the request for the roads budget would bring us up from having the funding to maintain 18 percent of our roads to the environmental and safety standards for which they were designed, to about 22 or 23 percent. We just need to continue to keep on ratcheting that up.

Mr. DICKS. Now at the same time you are doing some road decommissioning or road deconstruction, is that correct?

Mr. DOMBECK. Yes.

Mr. DICKS. But I am told that is very expensive. Is that also correct?

Mr. DOMBECK. It can be depending upon the situation. When we asked the question about what do we do with the roads that perhaps we do not need, some of them are turned into hunter trails, hiking trails, or biking trails. Some may be gated.

Mr. DICKS. Is that less expensive than decommissioning roads? Is that a better investment?

Mr. DOMBECK. Yes.

Mr. DICKS. How much is that roughly per mile, say in the northwest?

Mr. DOMBECK. Let me see if we can get you the breakdown of the costs in the various parts of the country.

[The information follows:]

FY 98 ROAD DECOMMISSIONING										
	Total	R-1	R-2	R-3	R-4	R-5	R-6	R-8	R-9	R-10
MILES										
System Miles	1,465.4	365.6	7.3	146.9	93.6	49.6	690.1	102.6	7.7	2.0
Unclassified Miles	633.1	110.2	110.7	15.0	177.6	33.6	13.0	81.6	56.4	35.0
Total Miles	2,098.5	475.8	118.0	161.9	271.2	83.2	703.1	184.2	64.1	37.0
COSTS (M$)										
System	6,529	1,639	10	134	225	329	4,029	117	7	39
Unclassified	2,545	537	94	7	268	76	72	157	34	1,300
Total	9,074	2,176	104	141	493	405	4,101	274	41	1,339
UNIT COSTS (M$/Mile)										
System	4,455	4,483	1,370	912	2,404	6,633	5,838	1,140	909	19,500
Unclassified	4,020	4,873	849	467	1,509	2,262	5,538	1,924	603	37,143
Total	4,324	4,573	881	871	1,818	4,868	5,833	1,488	640	36,189

Mr. DICKS. I would just like to know what the difference is in cost. I've been told there is a desire on the Administration's part to decommission some of these roads, but it is very expensive. Could we take that money and use it to more properly maintain a greater percentage than 23 percent of these roads? Is that a better investment?

TRANSPORTATION FUNDING

But obviously we need to, you know, we need to take another look at TEA–21. And Mr. Secretary, I think that is going to require your help here, you know, with the Department of Transportation and with the Congressional people up here. Because somehow we have got to get this into the TEA–21 thing or we are never going to get this under control.

Mr. GLICKMAN. We made an attempt before.

Mr. DICKS. A little late though.

Mr. GLICKMAN. Yes, that is correct. Obviously there were a lot of other priorities competing in that process. I have talked to Secretary Slater about this and this issue just has to have higher priority.

Mr. DICKS. Apparently there is a technical corrections Bill coming up right now.

Mr. GLICKMAN. For that?

Mr. DICKS. For TEA–21. And I am told that this Bill may be expanded beyond just technical corrections.

Mr. GLICKMAN. If anybody knows, you would know. [Laughter.]

Mr. DICKS. I have heard rumors to that effect. So I just wanted to alert you that you might want to look there. Because I do not see how we are ever going to get this straightened out unless we get some help from the Highway Trust Fund.

Mr. DOMBECK. In fact, I think 1999 was the first year that we have received $750,000 from the Federal Highway Administration for planning and inventory work to prioritize and begin to move forward. We expect some help from the Federal Highway Administration in future years as well.

Mr. REGULA. I think you mentioned paved roads. I do not think of forest roads as paved roads. Is the implication of that that you have roads going through the forest that serve more than just forest purposes? This would fit in with what Mr. Dicks is saying ought to be in TEA–21.

Mr. LYONS. Well that is precisely the case, Mr. Chairman. We have an extensive road system, but about 75,000 or almost 80,000 acres are for primary access, so they are paved or gravel roads. They really are the primary transportation routes in many rural parts of America.

Mr. GLICKMAN. He means miles, not acres.

Mr. LYONS. Oh, did I say acres?

Mr. GLICKMAN. Yes.

Mr. LYONS. Oh, miles, 78,000 miles of road. And we can provide the committee with a breakdown of those and it may be even better to give you some examples of what they look like. For example, if you were to travel to ski at Vail, Colorado in the White River National Forest, some of those paved roads are National Forest System roads maintained either by the National Forest or in coopera-

tion with the counties. Those are obviously expensive to maintain. They get millions of visitors every year and that is where our costs start to escalate.

[The information follows:]

There are 61,000 miles of Forest Service primary access roads we call arterial and collector roads. The arterial roads provide access to large land areas and are operated for long-term land and resource management purposes. The arterial roads usually are integrated with State and county roads to link rural and urban communities with the national forests and often provide through access from one community to another. The collector road system serves a somewhat smaller land area and "collect" traffic from the local roads and feed the traffic into the arterial road system.

The standards of the arterial and collector roads range from single-lane with gravel surfacing to double-lane with paved surfacing, depending on the types of traffic and the traffic volume.

The Forest Service has approximately 9,000 miles of paved roads as part of its arterial and collector road system.

Mr. DOMBECK. I want to just add that I grew up on Forest Road 164 in Sawyer County on the Chequamegon in Wisconsin and today that road serves as a bus route and it also is a mail route. It is paved and gets all sorts of tourist traffic and a few logging trucks still roll down that road as well. But with the arterial and collector roads that Jim spoke of we are actually reducing the miles of those roads on which a family on vacation could travel in their station wagon because of our inability to maintain those roads. An investment in the roads infrastructure is also an investment in the recreation and access as well.

TIMBER USER FEES

Mr. DICKS. I need a little bit more explanation about how charging a timber sale purchaser a user fee will result in more money for the Treasury. How is that going to work?

Mr. LYONS. Everyone looked at me. Well, Mr. Chairman, and Mr. Dicks, as you know the budget includes some offsets that assume some revenue generated from various sources. Well, user fees for timber purchasers is one of the ideas that has been floated. I would say that we would love to work with the committee to figure out a way to generate revenues, and I must be candid and tell you that we have not quite figured out the particulars on how we might actually charge a fee.

Mr. DICKS. I think they would have to take that fee into account when they bid for the timber.

Mr. LYONS. Yes, and I think ultimately that is going to mean that you will get a reduced offer. That is an issue which we discussed as the Congress dealt with the purchaser credit issue last year. We anticipated that reductions would occur. My straightforward answer is that this is something we need to work on.

COUNTY PAYMENTS

Mr. DICKS. And then finally, county payments stabilization. You want to decouple from receipts. What do you think the prospects for that are?

Mr. LYONS. Well, you may know better than I do. But we think it is a critical component in the program. And as you know, roads and schools in rural counties across the United States are depend-

ent upon timber sale receipts. Receipts have declined and it creates an atmosphere where counties have no certainty and do not know how to budget in future years for critical things like education.

We believe a stabilization of payments based on a historical average would be more beneficial to the counties, would provide greater stabilization and would allow us to put together a Forest Management Program that is responsive to resource conditions and not driven by a desire to generate additional receipts.

Receipts are important, but it really makes the children in these school systems pawns in this debate over Timber Sale Program levels year in and year out. I think it is an inappropriate way to put together the program. So we would like to see this decoupling and a stabilization of payments so that the counties know what they are going to get year in and year out for schools and roads.

Mr. DICKS. Would that become an entitlement? We have done that actually in the northwest, I believe under the northwest forest plan.

Mr. LYONS. Yes, this was similar to, in fact this was modeled after, the program that you helped us to put in place in the northwest. I think it has been very successful.

Mr. DICKS. I do too. But money has to come from somewhere. In that case, there was something in the tax code that we gave up that allowed corporations certain deductions which we eliminated. It saved us enough money to fund the program for ten years.

Mr. LYONS. And we have built into the budget sufficient funds to cover this new proposal as well.

Mr. DICKS. So you have the resources to do this?

Mr. LYONS. Yes. Now we are dealing with some technical issues related to the potential for absorbing inflation costs, et cetera, which may result in some minor increase in cost and we are looking at that issue right now.

Mr. DICKS. Well, for the record, if you can show us where this is, we would love to hear from you?

[The information follows:]

The 1999 budget for the Department of Agriculture proposes a number of changes in programs that are considered "direct spending" under current budget legislation. For the most part, these proposals would require changes in permanent statute and would be under the jurisdiction of the Congressional legislative authorizing committees rather than the Appropriations Committees. This is the case with the proposed change in the Forest Service Payments to States program. Changes that result in increased direct spending require offsetting reductions in other direct spending programs or, alternatively, increased revenues such as user fees. This is generally referred to as the PAY-AS-YOU-GO or PAYGO requirement. The requirement applies to direct spending as a whole. Offsets do not have to come from programs within the same agency or even the same cabinet department. In other words, to stay within the limits for direct spending, the Administration's proposed spending increases, taken as a whole, are offset by the proposed decreases and increased user fees, again taken as a whole.

The PAYGO proposals in the President's 2000 budget are identified on pages 369–371 of the BUDGET OF THE UNITED STATES GOVERNMENT: Fiscal Year 2000. While, the estimated increase in direct spending resulting from the Administration's Payments to States stabilization proposal ($27 million in 2000) is offset within the overall budget, only $17 million in reductions or increased receipts are shown for the Forest Service in the entry for "Change fair market value for timber/Forest Service." This does not mean that the remaining $10 million is not offset. It merely means that it is not possible to relate to any one specific increase in receipts or reduction in other direct spending activities among the many shown for the entire government.

Mr. LYONS. Thank you.

Mr. GLICKMAN. I would also say that many people would think that we would end the Timber Program without the 25-percent fund. We are not going to do that.

Mr. DICKS. Okay.

Mr. GLICKMAN. I want to make that clear.

Mr. REGULA. Mr. Peterson.

RURAL PRIORITIES

Mr. PETERSON. Yes, good morning. I appreciate the opportunity to visit with you this morning. I have been listening to the conversation and I guess I want to preface my questions with a few comments. I come from the most rural district east of the Mississippi so I am rural. About 20 percent of Pennsylvania is rural.

I spent 19 years in state government and the issues are the same. I was one of a handful that was concerned about the state forest budget and the state parks budget. And most urban members did not really worry about whether they got cut or flat funded year after year and so forth.

But I guess as I listen here this morning, it seems to me, in the 21 years I have been in government, 22nd year now, rural America, and you are a vital part of rural America. You are a huge player in rural America. There is never the money to do the things that are going to help the economy and the overall quality of life in rural America.

And here we are today talking about an $80 million program that deals with urban sprawl. Now this is my personal reaction. Urban sprawl is a problem. But it is caused by the richest of America. It is the richest part of America that is creating urban sprawl. It is the most wealthy people that are moving out of the cities into the suburbs and then continue to sprawl out as they want to live in more open spaces than they currently have.

And some people have moved a couple times in a lifetime to get back out. I struggle a little bit that that should come out of the neck of rural America's budget. And here we have flat funding for recreational management. Underfunded, and you know that, I mean you know to really utilize the land we own in America, to allow people to really go out there and enjoy, and it is urban people too, it is all kinds of folks, but it is part of our rural economy.

It was the same with the state, it was always next year. There was never money for our backlog of roads and bridges on Forest Service land this year. It was always next year. But there was always an urban issue that seemed to take up the money. And here we are, I guess I would like to have you respond to that. How do we prioritize $80 million, to help deal where the richest live and flat funding for where the poor, rural people live?

Mr. GLICKMAN. Well, I appreciate your question, since we are Rural Department, we not only have the Forest Service but also the programs that deal with rural American farm communities. I would like to say that local communities in rural America also want to keep their open spaces in order to avoid becoming overpopulated. It goes both ways.

As you may know we are seeing this particularly in the south. I think you raised a good point. The only thing I can tell you is,

that we have seen a lot of urban spread. As people want to move out of urban areas, we have a growing urban/wildland interface that is causing real watershed degradation and fire problems.

We particularly see this in the Rocky Mountain area around Denver and all of the areas along the Front Range. So you can see, there are legitimate problems we must deal with in protecting forestlands. The other thing that you probably faced in the State Legislature, and one of our challenges as always, is how do we get an increasingly urban America and an increasingly urban electorate to support funds for rural America. This is a problem for the forests as well as the farms.

We have tried to develop a series of programs that all people can support because they can see the relevance to their lives. You know, I think you have to look at the Lands Legacy Initiative in that context. It does reinforce the fact that everybody has a stake in our forests.

I have thought about this many times before. How do I convince people in the country that do not live anywhere near our national forests and our national wilderness areas that these are critically important for their future? The watersheds of most of our rivers are located on our forestlands. Fire is an international type of problem. The forests are the most visited area in the United States. All those kinds of things need to be considered.

More people visit our forests than visit our parks. I understand your question and I hope that you understand that we have a funding crisis in the protection of your forests.

Mr. PETERSON. But we expect you to be our advocate. We expect you to be fighting for rural America. I mean, you know, here we are veering off on urban problems.

Mr. GLICKMAN. No, no, no, no. First of all, most of the budget that we have got here is the operational budget.

Mr. PETERSON. But the new money goes to where your priorities are.

Mr. GLICKMAN. Let me just say again, those programs protect the rural areas as well. In addition to the wildfire problems in the urban/wildland interface, they also help to support an overall coalition of Americans who support our forests. Nothing gets done without that.

Mr. REGULA. Let us suspend, and what we will do is go to vote. Then when Mr. Kingston gets back, he can ask his questions. Then we will come back to you.

Mr. PETERSON. Okay.

Mr. REGULA. So we can get you out by 11:00, Mr. Secretary.

[Recess.]

LANDS LEGACY INITIATIVE

Mr. KINGSTON [presiding]. The committee will come to order. And let me reiterate the words of my colleagues welcoming Mr. Secretary, you and your panel and Mr. Lyons and Miss Kennedy. She is here? Okay. All right. A question about the land and water conservation fund. The budget requests $62 million from the land and water conservation funds that are in unauthorized projects in the Forest Service State and Private Forestry Program.

And it also includes a $10 million transfer to the USDA Rural Business Cooperative Service to support loans. And that last part, Mr. Secretary, I certainly have some curiosity in serving on that committee and wonder if it should not be in another committee, in the Ag Approps Committee. But generally my question is, with unauthorized activities as you know, we always get accused of things. And so just what is your view on that?

Mr. GLICKMAN. I would ask Mr. Dombeck to respond because he can answer your question more specifically.

Mr. DOMBECK. Well our proposed budget includes the language that would be required for anything that is new. The fact is that we are very, very firm about staying within the authorities that we have and we will continue to do that.

Mr. GLICKMAN. Okay, but can you get more specific as to his question, the $10 million issue.

Mr. LYONS. I think I might be able to address that, Congressman. We are looking at how those funds would be transferred to the field and be used by rural residents. So we are evaluating possible disbursement mechanisms. And it may be that instead of going through rural development, we could just develop a cooperative arrangement through the states and have that money dispersed directly to the field.

Mr. KINGSTON. What kind of loans are those? What is included in rural development?

Mr. LYONS. I will let Anne address that, she has been working on this issue.

Ms. KENNEDY. I always get the really tough issues. We are working with OMB to evaluate various administrative processes. For example, we are considering a mechanism for providing the stewardship money to landowners. We are looking at the possibility of changing the proposal to just provide the funds through the state foresters for stewardship activities.

The idea would be to have a revolving loan program with loans to be repaid over a 30-year period for certain stewardship practices such as replanting of trees and that kind of thing. We are developing the idea now and we can get back to you on that.

Mr. KINGSTON. Okay.

Mr. GLICKMAN. Let me just ask. Would this require a legislative change in language to do this or appropriations language?

Mr. KINGSTON. Or a budget amendment?

Ms. KENNEDY. We do not think so at this point. But we are still looking at that matter and we will get back to you and the committee.

PROGRAM PRIORITIES

Mr. KINGSTON. Okay. Now you have, and this question may have been asked. In terms of the backlog for roads and restoring habitat because of insect and disease and because of recreational demand, there is a great need to increase forest management to reduce fire danger. Now given the shortage, how would you prioritize your request for rural planning loans and purchasing private land easements compared to the fundamental responsibilities of taking care of the public lands administered by the Forest Service?

Mr. DOMBECK. Well, from the standpoint of priorities, we have a risk map. Let me ask State and Private Forestry people if they have a copy of it, that I could show you. This identifies for the first time where the high-risk areas are on a nationwide basis. It projects within those high-risk areas what activities would be prioritized. We are working with State Foresters, private landowners, as appropriate, as well as the National Forest System lands.

Mr. LYONS. If I could add to that, Congressman, let me just make one point because you commented about the primary focus on public lands. I just want to emphasize that the Forest Service has multi-dimensional roles, not solely focused on management of the 191 million acres of public land. We play a huge role in working with the Sstate Foresters on private lands through the State and Private Forestry program. That involves everything from insect and disease control to wildfire prevention.

Our budget really attempts to provide additional investment in that element of the program as well. We want to work cooperatively with the state agencies. As you know from your district, private lands are really the key to commodity production, recreation access, and watershed health.

We are trying to make an investment as a partner to work with the State Foresters to try to improve the private landowners, ability to manage their lands as they would like. That is really where those funds are headed.

Mr. DOMBECK. We talked about the Stewardship Incentives Program just briefly on an earlier question. We have 9.9 million private woodland owners in the United States and yet less than 20 percent of those landowners have professional, scientifically-based plans for their activities. We view providing that technical assistance, such as the information on this map, as very important to helping private landowners.

Mr. KINGSTON. But you are not forcing your agenda on them. If they have a specific agenda that might not be politically correct in terms of somebody somewhere, they——

Mr. GLICKMAN. It is totally voluntary.

ASIAN LONGHORNED BEETLE

Mr. KINGSTON. Okay. Let me ask you this. The Asian Longhorned Beetle, which I know APHIS is doing things on and the Department of the Interior is also. Does that attack living trees?

Mr. GLICKMAN. Yes.

Mr. KINGSTON. It does? And in this area, are you aggressively looking at that? Because I know there has been a change in the way that fumigation has been done. A question came up on the Asian Longhorned Beetle. I believe there was a regulatory change in December. Is it mostly lumber that is being imported from China that is being fumigated now in China rather than state-side because we did not want to have the methyl bromide used? Are they still using it?

I am just wondering if it ties into——

Mr. GLICKMAN. As you know, that regulatory change restricted shipments from China using wood packing materials unless they

are treated or the shipments are packed in some alternative material. We told the Chinese that we would no longer allow untreated packing materials to come into this country. There have been two outbreaks of Asian Longhorned Beetle that have required our attention. One in the Chicago area and one in the New York/Long Island area.

Both of these infestations are somewhat related in their proximity to airports. I thought this was going to become a major problem in getting the Chinese to comply. But there seems to be reasonable compliance so far. We have limited ability to monitor because of the numbers of people required to do the oversight, but we are finding reasonable compliance.

Now I am not exactly sure how they are treating this wood. I do not recall specifically whether methyl bromide or other insecticides were used to actually treat the wood.

Mr. KINGSTON. I am just wondering if they are as thorough as American pest control people would be on it. If that might be leading to the problems in Chicago and New York.

Mr. GLICKMAN. There is no question that untreated Chinese wood packaging material led to the problems. That is the uniform view of APHIS and the Forest Service.

Mr. KINGSTON. It makes me wonder, you know, a Communist country certifying wood, how reliable it really is, as opposed to our own inspection. I have the same fear when we import food from Mexico and some of our NAFTA and GATT partners when we bring in food, do they have the same food safety standards in their Inspectors that we do in America.

Mr. GLICKMAN. The only thing I can tell you is we have stopped some products from entering this country through the inspection process. As you know, these are our rules, not theirs. It is up to us to enforce them, and I hope we have the resources to do that.

Mr. LYONS. And the Secretary did provide additional resources to increase inspections in China. We are in a trust-but-verify mode I would say, Congressman, in that we have stepped up inspections. And where we have outbreaks, because the Asian Longhorned Beetle does attack live trees, particularly Maple trees as one of its preferred hosts, we have been aggressive in eliminating those trees. This requires us to basically burn them, because there is no other way to go.

Mr. KINGSTON. Yes, I remember, did you not say you cut down 1,300 trees or something like that? I do not know why that stuck in——

Mr. LYONS. I believe the first outbreak in New York involved an effort of that magnitude. We have had additional removals now in Chicago.

INVASIVE SPECIEIS

Mr. DOMBECK. If I could, Mr. Chairman I would like to add to that. We are making additional investments in research in this area. Exotics, both plant and animal, are one of the most significant natural resource issues we face in the country today. Whether it is weeds out west or the Gypsy Moth or Asian Longhorned Beetle, we are requesting increases for investments in research.

This is another example where the investments we make in research are important both to private lands as well as national forests. Another area that I have to mention is the importance of an international program. When we are looking for biological controls to deal with some of these exotics, it is better that we learn as much as we can about them before they are on our shores.

Mr. KINGSTON. What about inter-domestic migration, things like the armadillo and living on I–95, all RV's go down to Florida and bring all the love bugs back north. Is that a problem?

Mr. DOMBECK. Transport of exotics by vehicles is a problem. For example, out west we require outfitters and guides to use certified weed-free hay for horses. We certainly encourage inspection of vehicles, cleaning, and that kind of thing. That is important.

ROAD MAINTENANCE

Mr. KINGSTON. All right, in January of '98, there was a moratorium on building new roads. And I do not think it was implemented until recently. How long is that going to be, what is going to be the status of that?

Mr. DOMBECK. The rule appeared in the Federal Register on the 15th of February and it will be in place for 18 months. During that timeframe we are developing a long-term roads policy. The situation that we faced which we discussed somewhat earlier, before you arrived, is that we have 380,000 miles of roads in the National Forest System.

We have a backlog of over $8 billion in reconstruction and maintenance for the road system. This has been a tough problem for the Forest Service for at least 20 years, and the objective of a long-term policy, which is that we use the most up-to-date science and technology to underpin our roads programs.

A lot of the roads that are in the National Forest were built in the '20's, '30's, '40's and '50's for logging purposes. Today we have about 1.7 million vehicles a day on National Forest System roads associated with tourism and recreation. We also have a tremendous backlog in the maintenance of 7,700 bridges.

Mr. KINGSTON. We get complaints that there was not enough local input and public input in general before a decision is made on closing a road. What is the process? Is it, is it opened enough? And also, the 18 months, when does that start and when does that stop?

Mr. DOMBECK. I believe it started about March 1st.

Mr. KINGSTON. This year?

Mr. DOMBECK. Yes. So it has just been in effect now for one or two weeks. In the process we used in developing the temporary suspension of road-building, we received well over 50,000 comments. In fact, we had hoped to have the rule completed earlier than we did.

Mr. KINGSTON. Do you get input from local, say a Chamber of Commerce, a Trade Union, how it is affecting their jobs and the ability to get work?

Mr. DOMBECK. In each Region we hold a variety of sessions, hearings, and focus groups to encourage individuals to understand the issue and to help us gather input. In fact, I view the rule-making process as one of the more fair processes in this democracy, be-

cause it puts everyone on an equal footing whether you are a local logger, an industry or whether you live in an urban area. Everybody had an equal opportunity to comment.

Mr. KINGSTON. Okay, but the moratorium was announced January, '98, but it did not go into affect until March of this year. Were roads built during that period? Because, you know, are we, even though it is for 18 months, did we really back it into a longer period of time?

Mr. DOMBECK. The proposal was made in January 1998 and put out on the street. The rule did not go into affect until quite recently.

Mr. KINGSTON. So roads were being built, there was not——

Mr. DOMBECK. There was not a formal halt, that is correct.

Mr. GLICKMAN. I think it is, however, in order to be completely clear with you, I think that there was not an active road-building campaign during that time period. Those roadless areas, we are talking about a moratorium in roadless areas.

Mr. DOMBECK. The fact is in many of our National Forests, the Forest Supervisors on their own had not been building roads in roadless areas for a number of years. This is because of the level of controversy associated with building roads and roadless areas.

Mr. GLICKMAN. And this again affects a very small part of the forest. These are roadless areas. So we are not talking, Jim says less than one percent of the total forest. There was other road construction going on in the forest.

REVENUE GENERATION

Mr. KINGSTON. Okay. All right, now, I think you touched on this and I think you were talking to Mr. Dicks when I walked into the room about the activities which you may be able to charge for recreational cabins and telecommunications sites, hydroelectricity facilities, ski areas. There are a number of areas where the Forest Service is, you know, has the ability to charge for things but is lagging in terms of making a defined program.

And this is how we are going to get our fair market value and so forth. Are you working right now on that and are you willing to continue to work with Congress to see that we can help you?

Mr. DOMBECK. Yes, we are actively working on updating the fees for homeowner permits, communication sites, rights-of-ways and those kinds of things. In fact we are working cooperatively with other agencies like the Bureau of Land Management, so that we have a consistent policy. One customer may have to deal with two different agencies and we think it is important that customer service and consistency be there.

I believe we are on track to do the reappraisals as required for our recreational residences. We are now about halfway through in the five-year process.

Mr. KINGSTON. And you are willing to work with this committee and this committee's staff and make sure that we are walking down this road together and everybody understands where everybody is?

Mr. DOMBECK. What we can do is promise to keep the staff informed on a regular basis as to our progress on revenue generation.

Mr. KINGSTON. All right, let us see. I guess this is my last question. In terms of your budget, the importance of recreation, the request for recreation funding is level and yet there is a lot of discussion about having more recreation. What are we doing here, why is that?

Mr. GLICKMAN. Jim? [Laughter.]

Mr. LYONS. I guess the short answer on that——

Mr. KINGSTON. You are the one who is talking about it, as a matter of fact.

Mr. LYONS. We will take whatever you can give us for recreation. We requested additional resources and in the balancing of priorities we did not secure them. We think recreation is having a larger impact on forest resources and is increasingly more valuable for rural communities. It is a critical component of the agenda that Forest Service is following.

We certainly see the need for additional investment in recreation. We did not secure the additional resources.

Mr. KINGSTON. Well let me ask you this and you might not want to answer it immediately. But is it, you wanted it plussed up, but in order to plus it up with the knowledge that we will have to reduce funding in another department. And then when we reduced funding in one department, often some of the folks in the Administration criticize this Congress for lots of things and that might be an area wherever we get the money to increase it in recreation, where you know we mutually want it higher, but then we are going to get, take the PR hit for this other area.

Is that what is going on, or not? I do not know what really happens in a budget meeting.

Mr. LYONS. Well, I cannot speak to all that myself, either. But I will be so bold as to say that any more money you want to give USDA we are fine with. [Laughter.]

Mr. GLICKMAN. When I opened my statement I talked about our budget priorities this year. Recreation happens to be one of our priorities. However, there were other priorities competing for resources. Watershed health was a priority. Road maintenance was a priority. Land Legacy, research, and accountability were priorities as well. I talked about them all.

We have done the best that we could within a total aggregate limited budget. I understand the caps are going to be even more difficult and onerous than we ever believed they would be. We will just have to work with you. It is clear that more and more people are using our forests. They are the most popular place for personal recreation in the country. We need more resources for them, but we also have a lot of other problems.

Mr. KINGSTON. Well, I know a trend, for example, with the National Park Service it is always more fun to buy new land than it is to take care of what you have already. And you know, you do have to maintain but then you talk about watershed health and okay, we pull a little money out of that and suddenly we are accused of putting salmonella in water that children swim in.

Mr. LYONS. Well, I am not going to touch that, but I think the point is, Congressman——

Mr. KINGSTON. To take a swim or you mean topically. [Laughter.]

Mr. LYONS. Salmonella is another story. But you know, as the Secretary said, we are seeking to establish a balance here. I think the reason that we received less in base funding for recreation is that we are developing new tools to provide alternative sources of recreation funding. You know, as a result of the commitment we have made as a nation to a balanced budget and the tough spending caps that go with it, we have had to be creative in coming up with new sources of revenue. We certainly appreciate the rec fee demo that this committee has been very helpful with.

We are looking at concession reform. We have even proposed some unique ideas, like charging timber purchasers for timber sale preparation costs. I do not know if the ideas are realistic or not. So we have been forced to be creative because our costs are escalating. And I think that probably was the rationale for not increasing funding in recreation. There may be some other ways.

Mr. KINGSTON. I think that is why it is important that as we look at our structure for charging for telecommunication sites and hydroelectricity and ski resorts and so forth, that we keep in mind that we want that money to go back into recreational things. Well, those are all the questions that I have. Mr. Peterson, if you have more questions, you can——

Mr. PETERSON. I have a couple dozen.

Mr. KINGSTON. Do you want to take the Chair?

Mr. PETERSON. Do you have to vote?

Mr. KINGSTON. I have to vote, but I had one other question for the Secretary, off the record. No, it has to do with another committee and it is something totally unrelated to this committee. So if we could recess for one minute and then maybe you could take the Chair? Did you have something to say?

Mr. GLICKMAN. No, I was just going to respond further to his question.

Mr. KINGSTON. Okay.

Mr. PETERSON. I will pretend that there is somebody there, I can just sit here. Ralph is on his way back.

Mr. KINGSTON. Okay, on his way, like on the tram right now?

Mr. PETERSON. Well, he was on the elevator with me and suddenly thought of something he forgot to do and he said he would be right back.

Mr. KINGSTON. Okay, why do not we adjourn for two minutes or until Mr. Regula comes back, whichever is first.

Mr. PETERSON. Okay.

[Recess.]

PROTECTING OPEN SPACES

Mr. REGULA [presiding]. Okay. You are back on, Mr. Peterson, as soon as the Secretary gets ready.

Mr. PETERSON. Okay. You were going to respond further.

Mr. GLICKMAN. I think you raised a very good question but let me tell you, one of the biggest issues that I find in rural America is the desire to protect open spaces, farmland and natural resource areas from encroachment. For example, I was at the Farm Bureau annual meeting and one of their biggest issues was farmland protection. We can provide ways to protect farmland by putting ease-

ments on the land or taking other actions to protect it against development.

And a lot of the work in the Lands Legacy program is, for example, buying easements along stream banks for watershed protection. This can ensure that people will not have to sell their land due to increased urbanization. What I am saying is that it works both ways. Lands Legacy is not only an urban initiative, but also a rural initiative to keep the areas pristine, clean and in many cases, undeveloped.

That is why we are trying to get more money in farmland protection.

Mr. PETERSON. But you are reaching into suburban areas to do that. Let me just give you another reaction to that, something we do not talk about. I shared it with the Director of the Fish and Wildlife Service yesterday. Something that is happening in my district, I think it is happening over rural America. We are not farming nearly as much land as we used to. I hunted this fall on a piece of land I hunted on when I was a youngster and it was open meadows.

And now it is a six- to eight- to nine-inch pole woods, it is timber. And what I find happening in rural America is an awful lot of farmland that was cleared when people came here to farm, is going back, and I call it the rural habitat expansion. Nobody talks about that. But in rural America, there is a whole lot more wildlife habitat than there was a few years ago.

Millions of acres. In Pennsylvania alone, I have been working on these issues for 20 years. We had 14 million acres of commercial forest in Pennsylvania 20 years ago, today we have 16 million. So in rural America, much of our farmland, much more than is going into urban sprawl, is going back to brush and to woods, eventually. You know it starts with brush and in time, it becomes a very good forest. In other areas, it is not as good. You know, it depends on what species seeded there, what is locally grown and somewhat on the soils too.

So we have a lot of our farmland that is, 10 or 12 years of no activity, nobody going in and cutting, it starts to return to woods. And so I do not think anybody is talking about that. The statement that prompted me to say that yesterday was we are not gaining any habitat. We are gaining a lot of habitat in America for wildlife, because a lot of our farmland, when you are farming land extensively, wildlife can use it but they do not really live there, you know what I mean?

But it is going back to wildlife habitat. And so there is a huge change out there of farmland going back to timber that I do not think anybody is talking about, and to brushland.

Mr. GLICKMAN. Well, as you know, we have a very large program called the Conservation Reserve Program where we have up to 36 million acres in this country on which we let farmers retire land. The program is funded by Mr. Skeen's subcommittee. We do have an extensive increase in habitat, so I think what you are talking about is true.

We must also be mindful, however, that there are many areas in this country where, because of the changing nature of the population patterns, there is interface between urban and rural Amer-

ica. Often in such situations we find that the forests are directly threatened. One of our goals is to try to preserve the integrity of these forested areas so we do not get massive fires and so the watersheds are protected.

LOCAL FIRE DEPARTMENTS

Mr. PETERSON. Yeah, but I think you also ought to inventory the acres of commercial forests in America today and I think you will see it increasing every year. And nobody is talking about that. The issue I want to talk to you about, again, is very important to rural. I find that my, oh, I cannot think of the name of, the lands owned by the Fish and Wildlife Service, the refuge areas, yeah.

They have contracts with the local Fire Departments to provide service. I met last fall with the eight or ten Fire Departments that service the Allegheny National Forest and they have serious concerns that they can continue to provide emergency services. They not only provide for fire, but they also provide emergency services to all our visitors and our recreational people.

And sometimes, way back in, sometimes in the winter on the reservoir when somebody gets hurt or lost, they are out there searching for a day or two to find people that are lost. I do not think, personally, we are appropriately helping them for the services they are providing. I see you have a million dollars in the budget for Fire Departments. But that is not very much when you look at the size of the property that you have to manage.

Mr. GLICKMAN. Maybe Mr. Dombeck would comment on that.

Mr. DOMBECK. Well, this is like the other areas that we have been talking about such as recreation. There is not any program area that I feel is adequately funded. I think most organizations are like that. The programs to provide surplus equipment to Volunteer Fire Departments, training and those kinds of things are important. There are also a lot of jurisdictions where we have reciprocal agreements.

One of the most important concerns we have is ensuring that everybody is adequately trained because structural firefighting is very, very different from wildland firefighting and requires special training.

Mr. GLICKMAN. This budget does provide more money in state fire assistance, an increase from $21 million to $31 million.

Mr. PETERSON. That would be for states to fight forest fires?

Mr. GLICKMAN. That is correct.

Mr. PETERSON. But I am talking about the Fire Departments that provide fire service and emergency services on our land. And I think we are very inadequate there.

Mr. LYONS. As a former Volunteer Fireman, I would say that critical additional investments are warranted. We do have mutual agreements with many of the rural fire companies. We do have a Rural Fire Assistance Program. We support providing additional resources in that program, so we are continuing to work to improve the situation.

Mr. PETERSON. How about EMS?

Mr. LYONS. Well, we do not directly fund Emergency Medical Servcies. In many respects we provide mutual support. In fact, the

rural fire companies do work with us on emergencies on National Forest System lands.

Mr. PETERSON. But my Fire Departments feel very inadequate. In fact, some of them have huge acreages and have a township population base of 200 people and they are maintaining this Fire Department. Basically they are maintaining it for us, I mean for the forest.

Mr. LYONS. You are correct. In many respects they are an initial attack force on wildland fires, and that is why we provide training and equipment and such. We are trying to help.

Mr. PETERSON. I think we need to ask if we are adequately helping them. I do not think we are, personally. Is my five minutes up or do I have another shot here?

Mr. SKEEN. If you have got something else then shoot.

Mr. PETERSON. One more issue, okay. I have one more good one for you.

Mr. GLICKMAN. The only thing I have to tell you is that I was supposed to leave at 11:00 and I know Mr. Skeen has a question and Mr. Dombeck is going to stay here.

Mr. PETERSON. Okay. Well, then I will let Mr. Skeen go ahead. I will always bow to the senior member.

ENDANGERED SPECIES

Mr. SKEEN [presiding]. That is the first time you have ever said that and I do appreciate that. And Mr. Secretary I appreciate you being here. Really, I dropped in to make sure that they treated you fairly well because they are not accustomed to giving you the kind of money that we offer you over there. [Laughter.]

So I do not want you leaving us and using this as a——

Mr. GLICKMAN. You do not have to worry about that.

Mr. SKEEN. I would like to ask you a question on an endangered species issue. And that is the proposed listing of the mountain plover. It is a small bird that winters in southern California and spends the rest of the year on the east side of the Rocky Mountains and the high plains states. And according to the information that I received that the Conservation Reserve Program appears to work to the detriment of this bird. Is this——

Mr. LYONS. I know, we will have to check this out for you. What is it, the mountain?

[The information follows:]

The western great plains—found in western Kansas, western Nebraska, eastern New Mexico, eastern Montana, eastern Colorado, the Texas panhandle, eastern Wyoming, and western Oklahoma—historically supported shortgrass prairies. The mountain plover nests primarly in shortgrass prairie, in particular that which has been grazed even shorter by bison, prairie dogs or cattle. As it is currently being implemented, the Conservation Reserve Program (CRP) involves the planting of non-native species such as alfalfa, sweet clover, and other tall-statured grasses and forbs which are much taller than the native shortgrass prairie species. This, combined with the grazing restrictions associated with the CRP, does have negative effects on the suitability of these lands as habitat for the mountain plover. Tall vegetation is a barrier to this plover, which depends upon vision to detect predators.

BACA ACQUISITION

Mr. SKEEN. Mountain plover. One other question. Is anything happening on the proposed acquisition of the Baca location ranch in northern New Mexico?

Mr. GLICKMAN. Do you want to talk about the Baca?

Mr. SKEEN. I understand that the owner said no to the purchase.

Mr. LYONS. That is correct, Mr. Chairman. And we are still talking to the family about this issue. We certainly would like to be able to acquire that property. We think it is a national treasure. But we have not made any recent progress on that to my knowledge.

Mr. SKEEN. So it is sort of suspended?

Mr. LYONS. Yes, sir.

Mr. SKEEN. I do not have anything further. Well sir, they say that we have done all the damage we can do for one day.

Mr. GLICKMAN. Mr.—if you have one more——

Mr. PETERSON. Just one, okay.

Mr. SKEEN. If my colleague has another question, he is certainly——

[Laughter.]

COUNTY PAYMENTS

Mr. PETERSON. Thank you, Mr. Secretary. The decoupling issue, 25 percent. I guess, I am going to say prove to me that we will get it. I was amazed when I came here. At the state level I was one who got our local payment in lieu of tax doubled from 60 cents to a $1.20 an acre, which I think is appropriate. Just a flat fee per acre, game commission land, Forest Service land in Pennsylvania, we pay $1.20.

PILT, Payment In Lieu of Taxes for rural America, it never goes up in authorization and we never even 50-percent fund it. Now how do we justify not funding the pittance of PILT. I call it pittance. How do we justify that we take all this out of the tax base locally and we do not even fund the authorized amount? I am going to share with you that in the military side we have a very handsome payment.

I think military bases bring a much bigger bang to the buck to the local economy, in fact, I am not so sure they would need a PILT payment. But it is more urban/suburban. Out in rural America, we cannot get a couple pennies an acre. It has been about 40 percent funded and it is not your fault, it has been prior to you. It has gone on forever.

I was amazed. They have never fully funded PILT and it does not have any escalation clause. So if you give us 25 percent for timber now, are we going to get it, or are we going to get 40 percent of it like we do for PILT? Is there ever going to be inflation increases, probably not. I mean it is like accepting the beginning of the end.

Mr. GLICKMAN. I think it is a fair question. I would say there is a history of making the payments and when the northwest forest plan was put together, we went down this road and we have honored our full commitment under that plan to make those payments. I believe that is correct.

Mr. LYONS. That is correct and in fact this proposal for decoupling is based on the experience with the northwest forest plan where we worked with the delegations to try to come up with a formula that assured a sustainable level of funding. We have based this proposal on that experience. And I think we have a very good track record in making 25-percent payments throughout the history of the organization.

Mr. PETERSON. But see my experience is PILT. And it is pretty bad. I think that is a legitimate concern.

Mr. LYONS. I know you brought that up with the Department of Interior when they appeared before you because that is their legacy, not ours.

Mr. GLICKMAN. We hear you. As I said, it is our intention to fulfill our commitment as we have done in the northwest forest plan.

Mr. PETERSON. Okay.

Mr. SKEEN. Mr. Secretary, we are going to adjourn so you can take your leave.

Mr. GLICKMAN. Thank you very much.

Mr. SKEEN. And we appreciate you being here and thank you once again, the check is in the mail.

[Additional questions for the record follow:]

FY 2000 BUDGET REQUEST FOR U.S. FOREST SERVICE HEARING QUESTIONS for SECRETARY GLICKMAN

Welcome Mr. Secretary. We are always glad to see you again. We also welcome your under-Secretary, and, I'd like to give a first time welcome to your new Deputy under-Secretary, Ann Kennedy. This year, as in the past, controversy seems to be following your management of the Forest Service. I understand that the Forest Service has over one third of all USDA employees, so this is a very important part of your job.

Overall Budget Priorities

Question 1 We are a bit confused about the priorities that your budget shows. Your overall request for the Forest Service is up $172 million. Of this large increase, fully $80 million is for increases to state and private forestry pass-through funding to states or communities. The rest of the increase is largely accounted for by increases of $35 million for research programs, $25 million more for road programs, and $23 million more for fish and wildlife. You also include $118 million for new land acquisition. These increases eat-up just about all of your requested budget increases, yet the budget justification says that the overall uncontrollable fixed cost changes for the agency is $72 million. This suggests that many Forest Service programs will suffer declines from their current services level, with the few exceptions noted above. Given this background, with the requested funding, which programs will not have sufficient resources to fully cover fixed cost increases?

Answer: The Forest Service fiscal year 2000 budget request included within the President's budget contains many important priorities, including emphasis on existing programs and new initiatives. It will be important in fiscal year 2000 for the Forest Service to emphasize continued protection and restoration of land health through implementation of the Agency's Natural Resource Agenda which contains proposed increases of $188.9 million. The Natural Resource Agenda, through emphasis on the health of the land, supports improvement in the management of Forest Service infrastructure, specifically forest road maintenance. It is also important to emphasize the Agency's important role in supporting State and Private activities. Improving relationships with State and non-industrial private land owners is essential to long term efforts to provide clean water and preserve open space. Priority attention to the Lands and Livability Initiative will promote this objective. The Forest Service fiscal year 2000 budget proposes programs in Forest Research and Development, Wildland Fire Management, Public Asset Protection, National Forest Systems, and Land Acquisition which actively support these priorities. The Natural Resource Agenda reflects an integrated approach to addressing Agency priorities in these programs and is accordingly a top priority for funding in the President's budget.

Question 2 Aren't recreation, wildfire, facilities maintenance and forest management priorities to you?

Answer: Recreation, Fire Use along with Fire Protection, Facilities Maintenance, and forest management are indeed important priorities for the Forest Service. But, at this point in time there is a need for increased emphasis on certain program areas where great public benefits can be achieved. Our budget priorities are based on these needs which include: appropriate management of the Forest Service Road System, which is larger than can be maintained with current or anticipated funding,

conservation of Threatened and Endangered species, and taking advantage of opportunities for land adjustments which promise great benefits for the public.

Recreation funding decreases

Question 3 Mr. Lyons has gone around the country talking about the importance of Forest Service recreation. Yet, the budget request calls for level funding, effectively a decrease, to the recreation management activity. Do you share Mr. Lyon's interest in recreation, and if so, why does your budget request not give this any priority?

Answer: Yes, I believe that recreation is of great importance to the public. However, Recreation is just one of many programs funded by the Forest Service budget. As I have stated before, there are five major priorities for the Forest Service: watershed health; roads; lands legacy; research; and accountability.

Question 4 The trail construction budget request is down over 50%. Why should the hiking public be targeted for such drastic cuts in order to support your other initiatives?

Answer: The Trail Construction funding proposed for FY 2000 is $13,054,000 from Appropriated funds, which is $16,500,000 less than the FY 1999 level of $29,554,000. However, we will supplement this with $10,000,000 from the 10% Road and Trail Fund, bringing the total available to $23,054,000.

Question 5 Your statement suggests that you will be relying on the recreation fee demonstration to help run your declining recreation programs. As you know, part of the success of the recreation fee demo has been the commitment by the Congress to use the fees at the site of collection, to use the fees to tackle deferred problems or directly enhance the visitor experience, and not to use the fees to off-set normal appropriations for operations. Why does it appear that you have used the recreation fee demo to supplant basic recreation appropriations?

Answer: The Recreation Fee Demonstration program is an important funding tool but it is only one of the tools needed to provide quality recreation services. Appropriations, volunteers, concessions and partnerships are also important tools. Declining appropriated budgets at some field units may give the appearance that the Forest Service is offsetting appropriated funds with fee demonstration dollars but that is not the case. Regional budget allocation processes can and do shift appropriated recreation funds from field unit to field unit to address recreation management priorities. In some cases these shifts can result in declining appropriated budgets at some local units and some of those units may have fee demonstration sites. The Forest Service has made it clear that field units are not to offset appropriated funds with user fees. The Forest Service has also guarded against offsets at the National level.

Question 6 Can you commit to the Committee that it is not your policy to use the recreation fee demonstration fees to replace appropriations?

Answer: The Forest Service has assured me that they have been adamant in their direction to Regional Officers that there be no offset to regular appropriations due to fee demonstration revenues.

Question - 7 Last year both the House and the Senate told the administration not to use the 10% road and trails receipts fund to back-fill appropriations needed for basic trail reconstruction and construction. It appears that your new request has ignored this direction from the Congress. Why are you persisting with this policy despite clear Congressional intent opposed to it?

Answer: The 10-Percent Fund has produced hundreds of valuable ecosystem restoration projects in FY 1998 with the approximately $50 million available from the 10-Percent Fund (this represents 2 years worth of receipts). Several trail projects benefited from this initiative on top of the basic trail work done with the appropriated funds.

The language in the conference report was taken seriously as a strong policy recommendation of the Congress. However, it is not a statutory provision. Given the tight constraints on discretionary domestic spending, the Administration chose to exercise its prerogative under the Constitution to make a different recommendation to the Congress that part of the trail program be funded from the 10 percent fund.

Wildfire funding priority

Question 8 We have heard from many constituents as well as from the administration about the importance of the wildfire program. In many areas we are engaged in a very real race against time to treat lands before catastrophic wildfires damage lands, property, and people. Yet, the budget request for wildfire preparedness calls for the lowest level ever: only 67% of the most efficient level. Isn't wildfire preparedness a basic and fundamental requirement that the public expects the Forest Service to accomplish?

Answer: The public should expect the Forest Service to field a firefighting organization prepared to prevent and suppress wildland fires, especially in areas with high resource and property values. The President's Budget proposes funding for Fire Preparedness at the same level as enacted in FY 1999. The budget will allow the Forest Service to field an effective initial attack suppression force.

The President's Budget does provide additional funding in other accounts to help reduce fire risk and reduce the needs associated with fire preparedness. For example, the Administration has proposed $10 million for a new wildland/urban interface activity as part of the S&PF Cooperative Fire Protection program. These funds would help support and encourage active participation from communities in reducing vulnerability and fire-fighting risk in the interface areas.

Question 9 Isn't this more important than some of the things that you have requested large increases for?

Answer: The President's Budget balances many important priorities.

Question 10 Doesn't a low preparedness result in longer delays at first attack when wildfire emergencies occur, causing much larger financial, personal, and property costs?

Answer: Having fewer initial attack resources available may result in more escaped fires, higher suppression costs, and damage to resources. However, initial attack resources will not necessarily be delayed in response. There may be fewer initial attack resources available, but they will not be delayed in their action. Much of this depends on the overall severity of the fire season.

Question 11 During recent days we have also been given new information regarding the incidence of insects and disease and wildfire risk around the nation. It seems that treatments for forest health and wildfire fuels are needed more than ever, yet the budget request calls for nearly level funding. Why is this kind of treatment not a priority of your administration?

Answer: Treatments for forest health and wildland fuels continue to be priority programs, and the President's budget balances these with many priorities. While the President's budget maintains funding for Hazardous Fuel Reduction at $65 million, it provides for a 13% increase for forest insect and disease prevention and suppression work.

The Administration did propose additional opportunities for hazardous fuels reductions. For example, the Administration has proposed that funds from the KV program can be made available for hazardous fuels reductions according to the locations of greatest need.

Question 12 Isn't the wildfire fuels situation on the national forest system in need of sustained, large treatment?

Answer: Yes, and we are committed to a long range program to reduce forest fuels. Our goal continues to be the treatment of 3 million acres of forest fuel annually, by FY 2005.

Question 13 Isn't this work more important and more fundamental to the Forest Service mission than giving rural communities planning money or purchasing various stray land easements?

Answer: Forest health issues cross ownership boundaries. The President's budget is structured to assure sustainable management across all the nation's forests.

Question 14 Shouldn't we take care of the forest land already under federal jurisdiction before we go out and spend another $118 million to buy new forest land?

Answer: We should take care of the lands we currently administer while acquiring the priority lands that will help the Forest Service meet it mission and provide for future public recreation demands. The Forest Service land acquisition program provides lands critical for wildlife habitat, watershed protection, outdoor recreation opportunities and improved management efficiency of adjacent National Forests.

The National Forest System has acquired lands for the maximization of the Nation's natural resource demands, keeping in mind short range and long range economically responsibility in management opportunities.

Question 15 What steps are you taking to complete a thorough, integrated wildfire plan in association with the Department of the Interior which will indicate what actions are needed, when and where?

Answer: I am informed that the two Departments have recently formed a Federal Wildland Fire Planning Team. This team will assist agency fire directors with long range interagency planning, budget, and organization issues. The National Park Service and Forest Service share a fire planning position to help resolve problems with interagency wildland fire suppression analysis.

Our cooperation is exemplified by the Columbia River Basin project and the Sierra Nevada Mountains project. Here, the Forest service and five Department of Interior agencies are working cooperatively to implement economically effective and efficient fuel treatment programs.

Financial Problems and Agency Cooperation with the Committee

Question 16 Why does it seem to be so difficult for you and the Forest Service to get your financial books in order?

Answer: I have given this a very high priority and have assigned a senior member of my immediate staff to help coordinate the work of the several agencies involved. I have asked the Forest Service to provide a brief overview of the current situation. (The Information Follows.)

The United States Department of Agriculture, Office of Chief Financial Officer (OCFO) and the USDA Office of Inspector General (OIG), in cooperation with the Forest Service, have made great strides in identifying and working toward resolving financial management problems within the Agency. In addition, the Forest Service has previously executed a contract with a private accounting firm, the Price Waterhouse Coopers Lybrand Company, to conduct a thorough review of Forest Service financial management. Through cooperative efforts such as these, a sound course of action has been developed to improve Forest Service financial management. A key activity identified is the complete replacement of the Agency's existing accounting system. The accounting system used by the Forest Service as well as many other USDA Agencies, i.e., the Central Accounting System (CAS) located at the USDA National Finance Center, New Orleans, Louisiana, was designed and placed into service over twenty years ago. As currently designed, the CAS system does not meet requirements for Federal accounting as required by recent legislation such as the Chief Financial Officers Act of 1990 and the Federal Financial Management Improvement Act of 1996. At this time, the Forest Service is in the process of implementing the USDA Foundation Financial Information System (FFIS). This system will be implemented Agency-wide by October 1, 1999. FFIS is an off the shelf accounting software system which fully meets current requirements for Federal accounting. In addition, great strides have been made to strengthen oversight for Forest Service financial management. This added oversight has been gained by the formation of a Forest Service Office of

Finance Deputy Chief area and the subsequent hiring of a Chief Financial Officer to serve as the first Chief of this Deputy area.

We understand that substantial efforts are underway to remedy your financial management problems. We need to be kept informed and involved in the costs of these efforts if they have not been requested in previous budget justifications. At our request, the National Academy of Public Administration (NAPA) has just started a study to review your financial management efforts, as well as review your budget and planning processes.

Question 17 Can you, Mr. Secretary, please give us your commitment that your staff will make every effort to work directly with the NAPA team, as well as with the Committee, on these efforts?

Answer: Yes, I can assure you that the Department will cooperate fully.

Question 18 Will you encourage your staff to work directly with the Committee to develop new and better budget structures which will allow better evaluation of agency performance and encourage integrated forest management?

Answer: Yes, I will continue to encourage my staff to work with the Committee on budget structure reform. I am informed that Forest Service staff have already met with key staff from both the House and Senate prior to finalizing the proposal that was included in the Budget Reform section of the Forest Service's FY 2000 Budget Justification. I expect further discussions to occur prior to House mark-up of the FY 2000 budget.

General Administration and Indirect Costs

Question 19 I have to tell you that I am very concerned about some of the unusual things in your budget request as well as some of the things that have been left out. I'd like to spend a few minutes going over some of these items. First, let's talk about the general issue of controlling and managing administrative and indirect costs. What efforts are you engaged in to see that more funds get to the field to do on-the-ground work and provide public service?

Answer: The Chief has assured me that he will make every effort to ensure that administrative and indirect costs will be as low as possible while still providing the necessary administrative and management infrastructure to support of field efforts

As part of last year's negotiations with the Senate and the Administration, a compromise agreement was established which gave the Forest Service another year to reformulate the way that administrative costs are requested and allocated. You were given instructions to get rid of the general administration activity (GA) as previously defined and present your budget in a new way, at your discretion. Now we see that the budget request before us still has general administration presented in the same old way, even though the President's budget appendix requests that we delete the legislative language authorizing the use of the GA for all agency needs.

Question 20 Can you please tell us why the administration has neglected to complete the compromise agreed to last year?

Answer: Just like the pressure the Committee faced, it was not possible in the timeframe remaining after the Omnibus Appropriation passed to the time when the Administration had to submit its budget to develop a new budget structure and work with the Congress to achieve a mutually satisfactory result. As such, a proposal was included in the Congressional justifications.

Question 21 How are we to use the appropriations process to clearly display, and control, administrative costs of running the Forest Service?

Answer: The Congress can continue to require that indirect administrative costs be displayed in budget justifications. Congress may also work with the Forest Service to look for ways to decrease administrative requirements to lower costs. Changes in the budget structure, for example, would lower costs and could add more visibility. Tracking fewer types of costs and fewer budget line items would decrease administrative expenses.

KV trust fund and indirect costs

The Committee remains concerned that too much overhead was being charged to the trust funds related to the timber program, and therefore last year's bill limited indirect charges to 20%. Now we are a bit confused about the administration position. Last year the administration fought and won a lawsuit and also strongly opposed legislating limitations on charging indirect expenses to these trust funds. The lawsuit clarified, as the Committee certainly expected, that it is proper to use the KV reforestation trust fund, salvage sale fund, and brush disposal funds to cover the indirect costs associated with these management activities. During the past year the Forest Service has conducted a detailed analysis to establish standardized definitions and try to manage its indirect expenses.

Question 22 Do you support the government's position in the lawsuit?

Answer: Yes. The lawsuit challenged the Forest Service's legal authority to appropriately charge KV for these activities. Since the legal authorities, and appropriate interpretation of those authorities were in dispute, our position was, and is, that we have managed KV appropriately. This should be distinguished from other managerial imperatives that can be developed to improve productivity or reduce costs by virtue of administrative actions.

Question 23 Do you think that 20% is a reasonable and attainable goal for indirect costs associated with these activities?

Answer: A 20% limitation is attainable, and more or less reasonable.

Question 24 Is your staff able to manage these funds to see that they are used for essential and cost effective reforestation and habitat enhancing activities?

Answer: The Chief has assured me that he will make every effort to ensure that these funds are used for the purposes for which they were intended.

Language in the President's budget appendix suggests that you will hold back $59 million in fiscal year 1999 funds and use this carry-over to cover the indirect costs associated with these off-budget trust funds.

Question 25 Can you commit to the Committee that you will not hold back fiscal year 1999 funds for the purpose of supporting these trust funds?

Answer: While the Forest Service will not hold back in budget allocations, they will need to watch expenditures to ensure that they have sufficient funds to pay the indirect expenses of the permanent appropriations and trust funds.

Question 26 Do you think that it might be premature to impose limitations to using the trust funds to support their own required indirect expenses?

Answer: No, we do not believe it is premature to consider limitations.

Funding Priority for Administrative functions of the Forest Service

Question 27 The Forest Service continues to be under the gun for fiscal problems, yet we note that you and the agency are taking aggressive actions to try to get the books in order. This is important, before we can have program and performance accountability, we must have decent accounting. However, your budget request calls for level funding, effectively a decrease, for general administration.

Answer: Your observation is correct.

Question 28 How are you going to get the financial business in order without resources to do so?

Answer: The financial situation is among our highest priorities. We may need to de-emphasize other indirect requirements.

Question 29 If you are planning to put substantial resources into centralized accounting efforts, which field-level accounting and administrative activities will you be giving up in order to shift funds to headquarters?

Answer: Each unit will need to analyze local priorities to determine which activities to de-emphasize.

Question 30 Since the Forest Service is so large, so spread out, so decentralized, and involved in so many different kinds of activities, how will you get accounting implemented effectively without more resources and training for the field units?

Answer: I am not familiar with the specifics and have asked the Forest Service to respond. [Information follows.]

The Forest Service will be providing training on all subsystems within the Foundation Financial Information System (FFIS). We will leverage technology and offer training will in a variety of ways, including video with workbooks, interactive intranet augmented with on-line exercises, CD-ROM, and regular classroom style for the more difficult subsystems. With the varying level of needs for users, training will be adapted to fit the needs of the user.

Question 31 If you end up needing to shift funds, will you commit to keeping the Committee informed and involved in any funding decisions that will result in changes from the program as outlined in the budget request?

Answer: The Department is fully committed to implementing the intent of Congress as contained in any appropriations act. The Subcommittee can be assured that when changes in funded programs are contemplated the Department will report them in accordance with the reprogramming guidelines. We will of course strive to maintain a dialogue with Congress as appropriate when the need for such changes may be indicated.

Question 32 We understand that the Forest Service is serving as the pilot unit for the entire USDA as it undergoes financial system modernization. Since the Forest Service effort is so important to the entire department, what department financial and fiscal resources are being used to help support the Forest Service and the funding provided in the Interior bill?

Answer: Implementing the Foundation Financial Information System (FFIS) is a United States Department of Agriculture (USDA) effort. Therefore, all USDA agencies will share the costs of implementing this new accounting system. I have asked the Forest Service to provide more specifics. [The information follows.]

Total FFIS costs are allocated annually to USDA agencies through the Department's Working Capital Fund. The attached chart displays the fiscal year 1999 FFIS Working Capital Fund allocation of costs among all USDA agencies. Similar distributions of costs associated with implementing FFIS among all USDA agencies will be completed in future years.

Question 33 We also understand that the Forest Service is hoping to switch over to a new financial management computer system and program on October 1 even though the new computer program has never been pilot tested in any entire field unit. Is this prudent?

Answer: Yes, the scheduled implementation of FFIS Agency-wide on October 1, 1999 is considered a prudent course of action. I have asked the Forest Service to provide additional information on the testing issue. [The information follows.]

While pilot testing is one of many approaches that may be used in testing computer system applications, other testing means are also appropriate. The Forest Service testing approach is twofold. First, FFIS was piloted and has been operational since October 1, 1997, in two Forest Service regions and one Forest Service research station. The knowledge gained and lessons learned from these pilot efforts will be captured and incorporated within the Agency's overall testing and implementation strategy. Second, complete end-to-end and user acceptance testing will be conducted prior to moving FFIS to a production environment Agency-wide on October 1, 1999.

Question 34 We have also heard that the new financial management computer system that the Forest Service hopes to install is not the latest and most current version of the program that the vendor is selling. Is this so? If this is not the latest and greatest, why are we buying it? What level of program support can we expect to get from the vendor if we are buying an out-of-date program?

Answer: I have asked the Forest Service to respond. [The information follows.]

Yes, the version of the Federal Financial System (FFS) software currently being used by the Forest Service, i.e., version 5.3e, is not the latest and most current version of the program that the vendor is selling. However, the FFS version 5.3e currently used by the Forest Service is fully functional, meets requirements for Federal accounting, and is fully year two thousand (Y2K) compliant. Updated versions of this software will be acquired and placed into service as needed to assure compliance with any new Federal accounting requirements.

American Management Systems (AMS), the vendor supplying the core accounting software incorporated within the USDA FFIS project, is committed to supporting their product. This commitment has been demonstrated repeatedly as the Forest Service has worked with the USDA FFIS project office and AMS to pilot test FFIS within two Forest Service regions and a Forest Service research station since October 1, 1997.

Other Legislative Proposals outlined in the request

Question 35 Besides the supposed $59 million in savings associated with using carry-over to support the trust funds, the request includes another $52 million in savings from legislative proposals that have yet to be sent to the Hill, for a grand total of $111 million in smoke and mirrors offsets in this request.

Answer: This is not a question. No response required.

Question 36 Can you tell us when exactly in the budget formulation process each of these initiatives were started?

Answer: The Forest Service submitted its program proposals to the Department in accordance with normal schedules. The timing of agency involvement in the legislative proposals which contribute to

the estimated savings of $111 million varied with the specific proposals. As the Subcommittee is aware proposals concerning special forest products and concession reform have been in the development stage for more than a year. Other proposals contributing to the $111 estimated savings have been in development for a shorter period of time. The Forest Service provided specialized expertise to the development of these proposals and the development of estimates of revenue or other savings. This dialogue has been ongoing as part of the routine budget development process.

Question - 37 When can we expect to see them outlined in detail?

Answer: The legislative proposals will be submitted in a few weeks.

Timber sales user fees - legislative proposal

Question - 38 We need a bit more explanation about how charging a timber sale purchaser a user fee will result in more money for the treasury. It seems to me that the only way this will work is in those cases where timber sales are not being sold for fair market value through competitive measures.

Answer: The user fee proposal is based on the premise that timber purchasers should be required to bear the costs of preparing the timber sale for auction. Increased returns to the treasury will occur through proper timing of all collections and where highly competitive offerings mandate increased purchaser efficiency assumption in preparing bids.

Question 39 Are you not currently required to sell timber through competitive methods that should assure fair market value?

Answer: Yes, the Forest Service appraises timber at fair market value and sell sales on a competitive basis.

Question 40 Won't the timber bidders have to take this new fee into account when they bid for the timber?

Answer: Yes, that would be our expectation.

Question 41 Why haven't your field managers already taken action to be sure that timber sale bids reflect the best price the government can get for them?

Answer: Field managers continually look for ways to improve the economics of the program given the legal mandates that must be met to protect the environment.

Question 42 The timber sales process already charges for KV reforestation and habitat enhancement and brush disposal as well as various road usage fees. Why are you suggesting yet another charge against the timber sale?

Answer: The Administration has proposed this as a way to collect additional timber sale receipts that can be used to support the timber sale program. The present charges are reflected in the final value for stumpage that the government receives for the sale of timber products. We expect the proposed user fee to be reflected in final values the same way.

Question 43 Aren't timber sales designed for a variety of public goals, not just to provide wood for mills?

Answer: That is correct. Timber sales meet multiple objectives related to forest health, fuels reduction, age class distribution and stand composition, while providing a variety of goods and services. Timber sales can be grouped into three categories, timber commodity, forest stewardship, and personal use. The primary purpose of the timber commodity component is to help meet the nation's demand for wood, both for today and the future. The reason for harvesting timber under the forest stewardship component is to achieve forest plan objectives that require vegetative manipulation where a timber sale is usually the least net cost method. The personal use component provides firewood and other miscellaneous products to individuals for their own consumption. The majority of our sales today are for forest stewardship purposes. This new fee would not be applied to that type of sale.

Question 44 If so, why should the purchaser alone have to pay for the implementation of the project?

Answer: The cost of this work would be reflected in the purchasers' bids, thus the purchaser would not be burdened by the collection of this fee. In addition, this approach would only be applied to sales where the purpose is timber commodity production.

Question 45 It seems to me that if the purchaser has to pay for the sale design, then they should be able to propose where and when they can buy the timber. Are you suggesting that timber purchasers become project proponents similar to the manner whereby various utility line companies can suggest the specifics of what they want to use the national forest lands for?

Answer: As we explained previously, the purchasers would not really have to pay because they would factor the fee into their bids. Purchasers, as well as other groups or individuals, may recommend areas for harvest. However, the Forest Service is responsible for designating which areas and trees are to be harvested. This is done primarily through the forest land management planning process, where areas suitable for timber management are identified. Each timber sale must be designed in accordance with the approved plan and all other applicable laws, including NEPA, as well as the results of public involvement.

County Payment stabilization -- decoupling from receipts-
legislative proposal

We understand that at some point the administration will suggest legislation to provide mandatory payments to those counties that previously received substantial funds from their 25% cut of all Forest

Service receipts. As you know, the land management agencies and the native American funding agencies supported by this Committee have a huge backlog in deferred maintenance and basic infrastructure needs.

Question 46 Will you be proposing that this Committee also take on the burden of supporting those counties that are fortunate enough to have substantial Forest Service holdings in their jurisdiction?

Answer: The proposal will increase funding to States and counties above what they would otherwise have received. Over 5 years, States and counties will receive an additional $259 million above the amounts assumed under current law.

Question 47 How much would this cost?

Answer: We estimate the Administration's proposal to result in outlays of approximately $269,095,070 annually, which would be $27 million more than estimated payments under current legislation and $259 million over 5 years.

Question 48 Given the likelihood of a level funding allocation this year, what programs in your budget would you suggest we eliminate in order to pay these counties?

Answer: The proposal will not involve any discretionary spending. The cost of this initiative is fully offset through savings in other mandatory programs in the President's budget.

Question - 49 If this is going to be done with other off-budget mandatory savings, please let us know what off-sets you are proposing to cover this initiative.

Answer: The 1999 budget for the Department of Agriculture proposes a number of changes in programs that are considered "direct spending" under current budget legislation. For the most part, these proposals would require changes in permanent statute and would be under the jurisdiction of the Congressional legislative authorizing committees rather than the Appropriations Committees. This is the case with the proposed change in the Forest Service Payments to States program. Changes that result in increased direct spending require offsetting reductions in other direct spending programs or, alternatively, increased revenues such as user fees. This is generally referred to as the PAY-AS-YOU-GO or PAYGO requirement. The requirement applies to direct spending as a whole. Offsets do not have to come from programs within the same agency or even the same cabinet department. In other words, to stay within the limits for direct spending, the Administration's proposed spending increases, taken as a whole, are offset by the proposed decreases and increased user fees, again taken as a whole.

The PAYGO proposals in the President's 2000 budget are identified on pages 369-371 of the BUDGET OF THE UNITED STATES GOVERNMENT: Fiscal Year 2000. While, the estimated increase in direct spending resulting from the Administration's Payments to States stabilization proposal (+$27 million in 2000) is offset within the overall budget, only $17 million in reductions or

increased receipts are shown for the Forest Service in the entry for "Charge fair market value for timber/Forest Service." This does not mean that the remaining $10 million is not offset. It merely means that it is not possible to relate it to any one specific increase in receipts or reduction in other direct spending activities among the many shown for the entire government.

Use of LWCF for Agriculture activities – legislative proposal

Your budget proposal includes the use of $62 million from the Land and Water Conservation Fund (LWCF) for unauthorized activities in the Forest Service State and Private Forestry program and also a $10 million transfer to the USDA Rural Business Cooperative Service to support loans.

Question 50 Can you explain why you are requesting funds for the Rural Business Cooperative Service in the Interior bill and not the agriculture appropriations bill where it belongs?

Answer: It is not unusual for different agencies of the Department of Agriculture to cooperate on program delivery, even when funds are appropriated to a single one of the cooperating agencies. The Forest Service would provide program guidance and technical direction for program implementation, and contract with Rural Business Service to deliver loan funds through its existing program infrastructure. This is more effective than seeking to replicate the same infrastructure.

Question 51 Can you explain why you want to make this unauthorized raid on the LWCF to support state and private forestry?

Answer: The LWCF statutory purpose is broadly drawn to support the conservation of lands and waters. The Lands Legacy initiative proposes to apply the fund to support farmland protection, forest legacy, urban parks and community forestry, and other important efforts consistent with the LWCF statutory purposes.

Question 52 I'm sure you agree that you have a huge backlog for roads, for restoring habitats damaged by insects and disease, for recreational demand, and a great need to increase forest thinning to reduce fire danger. Given our shortage of funds, how would you prioritize your requests for rural planning loans and purchasing private land easements compared to the fundamental responsibilities of taking care of the public lands administered by the Forest Service?

Answer: Our mission is to do both: to care for federal lands and to assist private landowners who manage private lands, in a voluntary and non-regulatory manner. We accomplish our mission across the landscape through programs that address both federal and non-federal lands.

Question 53 Don't you think that you should get your own house in order before you start requesting funds to tell the rest of the country how they should manage their lands?

Answer: Support for the management, protection and better use of non-federal forest lands helps to advance watershed health and restoration and sustainable forest management across all the nation's forests.

USDA Centrally Managed Programs – "Greenbook"

We are pleased to see that your budget justification provides detailed information concerning the centrally managed programs, but we are concerned about the huge amount of money involved. It appears that the Forest Service will be responsible for $84 million in central cost distribution programs, including $38 million for GSA space, $19 million for unemployment, and $25 million for workers compensation. In addition, the Forest Service will be responsible for $55.5 million for the working capital fund, including $45 million for the National Finance Center.

Question 54 Why are these costs so high?

Answer: The above costs are not disproportionate to the service the Forest Service received. All USDA agencies are billed on the same basis, a fee for the agency's share of the total cost of the service. Because of the size (number of employees) and nature of the work, the Forest Service usually incurs the largest share of these costs within USDA. The Forest Service is actively working with the Department and other USDA agencies to find ways to reduce these costs.

Question 55 Why does the Forest Service get charged such an inordinately high amount ($45 million) for the department's chief financial officer programs?

Answer: All USDA agencies are billed on the same basis, a fee for the agency's share of the total cost of the service. The above costs are not disproportionate to the service the Forest Service received. The Forest Service is the largest user of the National Finance Center's payment processes in USDA. The Forest Service is actively working with the Department and other USDA agencies to find ways to reduce these costs

Question 56 Even if the Committee commits $45 million for the Forest Service contribution to the national finance center, how much in addition will the Forest Service need to spend on their own centralized financial management activities?

Answer: The Forest Service estimates it will need to spend an additional $70 million on it's central financial management activities to provide a sound financial system which supports resource decisions with timely, accurate information and financial expertise.

Question 57 What can you do to help the Committee get a handle on these escalating charges and provide effective Congressional cost oversight so we are not forced to micro-manage or limit your funds for these basic administrative activities?

Answer: The Forest Service is actively working with the Department and other USDA agencies to find ways to reduce costs of centralized services. The Forest Service Director of Financial Management is a member of a working group which is responsible for reviewing budgets and recommending funding levels for centralized costs in the Departments Working Capital Fund (WCF) to the USDA WCF Executive Committee of which the Forest Service is a member. A number of cost reductions have been recommended and approved via these review processes.

Forest Planning -- Committee of Scientists

Last year when you were here you had great hopes for your Committee of Scientists whom you had charged with suggesting improved ways of implementing the forest planning required by the National Forest Management Act of 1976. Last year you indicated that you expected to see their report by June, 1998. Well, the scientist's report is not yet completed.

Question 58 Why has it taken so long for the Committee of Scientists to complete their work? When, if ever, do you anticipate getting a final report?

Answer: The Committee of Scientists has completed their report and presented it on March 15, 1999. They were able to complete their work over a 15 month period. The Committee elected to hear from people in each region of the country and conduct a series of open, public conference call. The location of each committee member and the need to hear from a wide variety of people led to the time required to complete their work

Question 59 Are you satisfied that the Committee of Scientists has stuck to the charter that you gave them?

Answer: Yes. The Committee of Scientists stayed within the charter given to them.

Question 60 Many critics suggest that the Committee of Scientists have basically written a textbook on forestry and forest planning, but have not contributed discrete recommendations which relate to writing regulations to implement the existing law. Seeing as how the law has not changed, how do you use the general discussion of the scientists to rewrite regulations?

Answer: The Committee of Scientists has provided a generalized framework for national forest and grassland planning and management that we will be able to use to craft regulations. Based on the Committee's recommendations, technical review, public comments, and several years of experience in plan development and implementation, we will be able to develop improvements to our current planning regulations.

Question 61 Don't you think that the Committee of Scientists is actually proposing a useful background paper for writing new legislation, not for implementing existing law?

Answer: No. The Committee's recommendations can be implemented within the legislative framework provided by current law.

Question 62 Once a report by the scientists is finalized, how long will it take the Forest Service to get new planning regulations implemented? What are the steps and timeline for re-doing the regulations?

Answer: The Forest Service is proposing to have a set of proposed planning regulations available for public review this summer. After an appropriate public review and comment, the agency would rework the proposed regulations and issue as a final regulation by next spring.

Question 63 Which national forests and grasslands would be required to plan under new regulations and which would stick to the old?

Answer: In brief, the process for establishing the regulations includes development of draft regulations, publishing the draft for public comment, analysis and consideration of comments, and development, publication, and implementation of final regulations. Because the regulations are only draft at this time, it is difficult to say what the final wording will be. Therefore, it would be premature to say which forests and grasslands would be affected by the new regulations or how they might be affected.

Roadless Area road building moratorium

Question 64 Please explain the recently announced moratorium on building new roads, including the impacts to both direct employment and indirect job impacts from associated job losses.

Answer: The Department recognizes that resource uses on the national Forests have shifted substantially in the last decade and that it is time to consider changes in public opinion, public demand, and public use of roads with the National Forest. The interim rule is one of three parts needed in the development of a long-term transportation policy. The interim rule is intended as a short term measure needed to safeguard important ecological values of roadless areas. Economic and social factors were considered closely during the development of the final interim rule. Existing community assistance programs will be used for work with local communities to reduce effects in hard hit local areas.

Question 65 This moratorium was originally announced in January 1998 and just recently took effect. You are now stating that there will be an 18 month review of road policies. Given your recent performance at predicting policy outputs (e.g., delayed forest planning regulations), is it unreasonable to assume that this proposed road moratorium will actually last 3 years?

Answer: The interim rule expressly states that it will be in effect for 18 months. A long-term transportation system rule is expected to be in place by that time. The interim rule will expire in 18 months unless a long-term policy is developed sooner.

Question 66 What do you expect to accomplish with this moratorium?

Answer: The intended purpose is to safeguard the significant ecological values of roadless areas from potentially adverse effects associated with road construction, while new and approved analytic tools are developed and a long-term transportation policy is decided. Specific goals are to accomplish the following: (1) more carefully consider what new roads to build; (2) assess which roads are no longer needed; and (3) selectively upgrade significant public access roads.

Question 67 Shouldn't the road maintenance, building and closure decisions be made locally, along with a fully involved and informed public?

Answer: Yes, Forest Service road construction, reconstruction, and maintenance decisions are being made locally with public involvement. The interim rule only suspends about 3 percent of the road construction and reconstruction likely to occur during the 18 month interim period of the rule. Additionally, the interim rule has no effect on road closures, which will all be decided at local levels.

Question 68 Why do we keep on hearing complaints from constituents that the Forest Service is closing roads without proper public notice?

Answer: Most decisions on road closures do provide for public input, including scoping and environmental analysis. Some road closures are done for short-term resource protection or to protect public health and safety that do not provide a full involvement by the public, but these are relatively few. Decisions to close, obliterate or decommission roads are not affected by the interim rule.

Question 69 Don't road closures impact the environment and the public, and therefore require some type of NEPA analysis which includes public scoping and disclosure?

Answer: Yes, in most cases road closures involve scoping, public involvement and disclosure of environmental effects. Some exceptions as noted in answer to Question 68 do occur but they are for short term protection or involve public health and safety.

Fair Market Value and Cost Recovery from NFS lands

Exactly one month ago this Committee held a very interesting and informative hearing on national forest system revenue and cost recovery from land uses. This included examination of a wide variety of activities, such as recreational cabins, telecommunications sites, hydro-electric generating facilities, ski areas and more. It appears that there are a number of areas where the Forest Service is lagging at defining and charging fair market value for various commercial uses of public lands.

Question 70 Will you and your staff work with the Committee and the Congress to address management shortfalls?

Answer: Yes, I understand that the Forest Service staff have been in contact with the Committee staff since the February 10, 1999 hearing, further communicating special use administration and fee revenue generation matters raised in the agency's testimony. The Department will keep the Committee apprised as news releases and/or publish drafts of proposed revisions and initiatives are issued.

Question 71 Will you and your staff work with us to see if legislative or funding remedies are needed to implement fair market returns?

Answer: Yes, I have asked the Forest Service staff to be responsive to any Committee requests for information and/or drafting services concerning remedies that it suggests are needed to implement fair market returns.

Question 72 Will you and staff increase your efforts to assure proper cost recovery from various project proponents?

Answer: Yes, I understand that the Forest Service is working diligently at drafting a set of proposed Cost Recovery regulations published in FY 1999, for public review and comment.

Overall Forest Service Staffing

Question 73 The budget request does not cover fixed costs for many programs, and it indicates that the FTEs needed for the trust funds and the cooperative work will be down by 775 FTEs. How many national forest system employees, and in which regions of the country, will need to be let go?

Answer: Overall, there is an increase from FY 1999 in the number of FTEs needed in the President's FY 2000 budget. In the President's budget the reduction of FTEs in the permanent and trust funds have been assigned to other program areas.

Question 74 Have you done any work-load analysis based on national forest level employment needs?

Answer: I understand that there has not been a nationwide study, and I have asked the Forest Service to respond. [The information follows.]

The Forest Service has not conducted a nationwide analysis of national forest employment needs. As you know, with emphasis on protection and restoration of land health, there has been significant restructuring of forest level workforces over the past five to seven years which includes an overall agency workforce reduction of 6,959 permanent employees since 1992. Each region of the Forest Service has had the responsibility for workforce analysis consistent with program projections in order to implement new budget priorities. Although there are changes in agency funded levels, every effort is made to accommodate employee skills within the new priorities. In most cases this can be done with very little impact on the agency and employee personal lives.

Question 75 What does this analysis show with respect to the various skills mix and locations for the needed employees?

Answer: As noted in Question 74, there has not been a nationwide study.

Question 76 Given the need to reduce several programs, what kinds of skills will be lost to the agency?

Answer: Agency skill loss is a concern. However where possible employees skills are enhanced as they work in new program areas. Every effort is made to retain permanent employees and provide necessary training to accomplish work needed in other areas. In the long run this effort will result in increased skill levels.

Question 77 Is it a good thing to be asking for such a large land acquisition appropriation ($118 million) and for so much new money for States and community payments ($80 million in increases) when you will be unable to support some basic programs, such as recreation and wildfire, and be unable to make any dent on your huge backlog of maintenance problems?

Answer: Yes, it is a good thing to request the funding associated with the Lands Legacy Initiative. This initiative renews the commitment made by the Land and Water Conservation Fund Act of 1965 which provides funding to preserve land and open space for future generations. The initiative expands the Department's commitments to State and local communities to help them ensure a high quality of life while sustaining economic growth. This is an exciting initiative. There is no better time than now to move forward with this program.

USDA FFIS Working Capital Fund Allocations

FY 1999 FFIS Agency		Current FFIS Cost Distribution	Allocation of Increase	Revised 1-21-99 FFIS Cost Distribution
01	OSEC	59,191	10,909	70,100
02	AMS	950,679	175,214	1,125,893
03	ARS	860,304	158,558	1,018,862
07	RHS	670,071	123,497	793,568
08	RMA	71,016	13,089	84,105
10	FAS	123,013	22,672	145,685
11	FS	8,546,834	4,681,612	13,228,446
13	OC	36,133	6,659	42,792
14	OGC	50,015	9,218	59,233
15	RUS	51,683	9,525	61,208
16	NRCS	2,345,364	432,260	2,777,624
18	ERS	82,957	15,289	98,246
20	NASS	144,357	26,606	170,963
22	CSREES	65,827	12,132	77,959
23	OIG	106,858	19,695	126,553
30	FNS	228,862	42,180	271,042
32	RBCS	25,336	4,670	30,006
34	APHIS	839,759	154,771	994,530
36	GIPSA	145,776	26,867	172,643
37	FSIS	941,968	173,609	1,115,577
38	OCE	16,625	3,064	19,689
42	OBPA	12,642	2,330	14,972
90	OCFO	8,821	1,626	10,447
92	OALJ	6,765	1,247	8,012
94	OCR	0	0	0
96	OHRM	0	0	0
98	OO	112,994	20,825	133,819
AW	AARC	7,732	1,425	9,157
CA	BCA	2,242	413	2,655
DB	OSDBU	2,402	443	2,845
ES	OES	6,745	1,243	7,988
FA	FSA	590,800	108,887	699,687
IT	OCIO	61,913	11,411	73,324
NA	NAD	26,770	4,934	31,704
OA	DAM	36,443	6,717	43,160
PP	PACC	54,067	9,965	64,032
SC	NSIIC	2,467	455	2,922
	SUBTOTAL	17,295,431	6,294,017	23,589,448
	GS	0	0	0
	OTHER	135,569	24,983	160,552
	GR TOTAL	17,431,000	6,319,000	23,750,000

April 1, 1999 11:52:55 AM

WEDNESDAY, MARCH 10, 1999.

FOREST SERVICE

WITNESS

MIKE DOMECK, CHIEF, FOREST SERVICE

Mr. SKEEN. We now have Mike Dombeck, Chief of the Forest Service.

CHIEF'S OPENING REMARKS

Mr. DOMBECK. That is correct, Mr. Chairman. Thank you. In fact, I have the Deputy Chiefs here with me. And if need be, we can have people come up to the chairs, because what we want to do is provide——

Mr. SKEEN. Do you have your statement?

Mr. DOMBECK. Yes, what I would like to do, Mr. Chairman, is ask that my full statement be entered in the record and I would just like to make a couple of points. I have been in this job now about two years and it is a real experience being part of the evolution and the controversies of public land management and the national forest system.

Mr. SKEEN. You do not look like you are worn out.

Mr. DOMBECK. Well, I have got a few more gray hairs.

Mr. SKEEN. You have been holding yourself together pretty well.

Mr. DOMBECK. I am hanging in there.

Mr. SKEEN. We are glad to have you this morning.

Mr. DOMBECK. Well, thank you.

In fact, the Secretary mentioned the elements of the Natural Resource Agenda deal with roads, recreation, sustainable forest and grassland ecosystem management, and watersheds.

So I will save that dialogue for the questions and answers, but the issue I would like to mention is accountability. As you know, I think I have probably been subjected to more hearings on the issue of financial management accountability and so on than probably any other Chief of the Forest Service and we have got the message.

What we are doing is we are working very, very hard to put the infrastructure in place to move forward on this. In fact, Vincette Goerl is here with me as our Chief Financial Officer. She was successful in getting the Customs Service a clean financial audit. In my years at the Bureau of Land Management—in fact, in 1995—we got our first clean financial audit at BLM. Of course, the Forest Service is a significantly more complex organization, a much larger organization.

I have made management of our fiscal resources accountability a top priority within the agency. We ask your continued support and interest of this Committee in doing that. With that said my

hope is that we can deal with natural resource issues; that there is a significant debate around some of these issues; and that we not lose sight of the importance of the business side and the financial management of the Forest Service. Because it does not matter what our philosophy is on resource management—I think everybody wants to see a smooth running operation of the Forest Service that is efficient, effective and that can respond quickly. We intend to do that and place a very high priority on that.

In fact, we have signed a contract with the National Academy of Public Administrators at the request of the subcommittee; they will be assisting us to make sure that our budget structure, the infrastructure that we put in place, the accounting procedures are what they are and we look forward to continuing to work with the Committee on this respect. With that, I would say that, as has been said before, the National Forests' 191 million acres are the lands that are of increasing value to the American public from the standpoint of the forest, the recreation opportunities, the water, the fish and wildlife habitats, the forage, all those kinds of things.

We have a world-class research organization. Probably the premiere research and development organization in the world, plus the state and private forestry program that provides assistance to private landowners, transfer technology, things like the fire programs that we talked about earlier are very, very important.

As I work through the controversies, I continually remind myself that we have got the best wildland firefighters. We have got some of the best foresters, the best resource managers, biologists in this agency and in this country and we really need to be proud of that. We appreciate your continued support and good morning, Mr. Nethercutt. We would be happy to answer any questions you have.

As I said for the sake of efficiency to get the most accurate information down quickly, we have got the Deputy Chiefs here and some of them may be rotating, depending on the interest of the Committee.

[The statements of Mr. Regula and Mr. Dombeck follow:]

House Interior Appropriations
U.S. Forest Service Hearing 3-10-99
Opening statement by Chairman Regula:

Welcome Mr. Dombeck. We all have a number of issues that we will want to discuss with you today. Before we hear from the Committee members, I'd like to discuss the priorities that form the basis of your budget request and then focus on your accountability and accounting problems.

It seems to me that you have an odd budget request in which the basic needs of maintenance and safety of the national forest system are being neglected, but large increases are being requested for various State and local pass-through programs, new land acquisition, and research.

Your agency has been the focus of tremendous Congressional attention. You certainly are a popular target! This is because of the priceless resources under your stewardship, a remarkable heritage of scenery, habitat and natural resources for all of America. It is clear from all of this attention that most people agree that there is lots of work to be done:

- You have a tremendous backlog in deferred maintenance. Between the 400,000 miles of roads and thousands of bridges and campgrounds, and numerous other facilities, there is a need for billions of dollars. Yet the request has only small increases for these needs.

- Your natural infrastructure is also at risk. We hear that about 40 million acres are at risk from insects and disease, and 50 million acres are at risk from wildfire. There is a huge need for on-the-ground action to treat these forests, but your budget asks for level funding for fuels treatments.

- The service you provide for wildfire prevention and suppression is tops and is something that America still relies on you for. Yet, your request for wildfire preparedness is down to 67% of the most efficient level. Your sister agencies at the Department of the Interior have requested funding to support 85% of the most efficient level: why is your budget lagging so far behind? How will you work together in a true interdepartmental manner when funding levels are so different? Won't this low preparedness result in larger wildfires, with larger losses of life, property and habitat?

- Your budget request also slashes the forestland management program, asking for a reduction of $30 million, about 15%. Isn't it prudent to use careful, environmentally sound timber sales as a tool to help thin those forests that are over-stocked from decades of over-zealous fire prevention?

- The recreational demand on national forest system lands continues to grow, and the backlog in both unmet needs and deferred maintenance also grow. This administration says that it wants to emphasize recreation, but the budget request calls for level funding the recreation management activity within the national forest system account. And, even more striking and harder to explain, the trail construction request is down more than 50%.

Let's look for a moment where you have put your resources in this budget request. Certainly it is not timid, it has an overall increase of $172 million over the enacted level. Of this large increase, $53 million is for State purchases of easements and USDA rural business loans. The rest of the increase is largely accounted for by increases of $35 million for research programs, $25 million more for road programs, and $23 million more for fish and wildlife habitat. You are also asking for $118 million for outright land purchases. These increases eat-up just about all of your requested budget increases, yet the budget justification says that the overall uncontrollable fixed cost changes for the agency are $72 million. This suggests that many Forest Service programs will suffer declines from their current services level, with the few exceptions noted above.

The joint hearing we held last year on your fiscal problems and performance was indeed disturbing. We see that you're making aggressive efforts to get your house in order, and we support that. We will support prudent measures, but we are not so keen on getting a clean accounting finding as to turn all employees into accountants or turn all budgeting into simple-minded systems that are easy to balance but make no sense for the resource or give up all Congressional control. We welcome and expect to have a fruitful dialogue with you and staff to reform budget structures. I'm sure that you'll agree that much more needs to be done. This is why I requested the National Academy of Public Administration study on your fiscal and budget structures and procedures.

The budget request before us asks for level funding for administrative needs, even though your statement indicates that more resources and time are needed to fix the accounting and accountability of the agency. Clear accounting should start with a clear budget request.

The budget request also includes reference to $111 in savings that are said to come from several legislative proposals that will be delivered to the Congress later, once you staff them out. We certainly support realistic savings, and the Committee has investigated various revenue generating and cost recovery activities in our February 10 hearing. Yet, we are quite nervous that your KV trust fund, salvage trust fund, and brush disposal trust fund administrative cost savings will come merely by holding back FY 1999 funds and using the carry-over next year. This is unacceptable. We will work with you to clarify definitions for overhead and indirect costs, and to limit these administrative needs to reasonable levels but we expect FY 1999 funds to be used as appropriated and signed into law by the President.

It seems to me that with this budget request you are neglecting your basic mission of taking care of the land and serving people. You should first take care of the national forest system before you try to tell all forest owners what to do and how to manage their properties. You should take care of basic public service, habitat and wildfire needs before you try to buy large additional tracts or help the States purchase conservation easements. You should put some of your scarce resources into maintenance of your extensive facilities and forestlands. We will work with you and staff to provide a bill, within the limited resources that may be available, to take care of real priorities and provide real service to the taxpayers. The national forests and grasslands are far too valuable to be neglected due to arguments on style or short-term political gain.

STATEMENT OF
MIKE DOMBECK
CHIEF
USDA FOREST SERVICE

Before the
HOUSE OF REPRESENTATIVES
COMMITTEE ON APPROPRIATIONS
Interior and Related Agencies

FOREST SERVICE
FISCAL YEAR 2000 BUDGET

March 10, 1999

Chairman Regula, Representative Dicks, and members of the Committee, thank you for the opportunity to appear before you this afternoon to discuss the Forest Service's proposed budget for fiscal year 2000.

Last month, I addressed our employees in Missoula, Montana about the state of the Forest Service. I would like to review some of those remarks today as I discuss the proposed budget for the Forest Service.

I am honored to have served as Chief of the Forest Service for over two years. During this time, I have had the pleasure to be a part of the continuing evolution in the direction of the Forest Service. I have come to appreciate that many of the conflicts we face today over management of natural resources are very similar to the conflicts faced by the agency's first Chief, Gifford Pinchot. What made the Forest Service unique under his leadership was a set of conservation values that were not always popular, but which reflected the long term interest of land health. Mr. Chairman, as in the days of Gifford Pinchot, the values put forth in the President's fiscal year 2000 budget emphasize long term health of the land.

In my testimony today I want to concentrate on the values of healthy land by elaborating on some key areas: 1) the major changes reflected in the President's budget that set a new leadership direction for the Forest Service; 2) how the Forest Service Natural Resource Agenda reflects these values; and 3) how we are addressing important accountability issues. Let me first address some overall perspectives about where the Forest Service has been and where the Secretary and I want to take it in the future.

Over the last decade there has been a significant change in how society views conservation values. Many people have ceased viewing publicly owned resources as a warehouse of outputs to be brought to market and instead have begun assigning greater value to the positive outcomes of forest management.

The result of such change is that we often find ourselves caught in the middle between competing interests. Some look to you, the Congress to "fix" the legislation that they perceive has negatively

affected their interests. Others push to limit the number of appeals, so the agency can get on with producing timber or stopping timber production, as the case may be. Still others ask courts to resolve land use policies through litigation.

Too often we find ourselves waiting for someone else to resolve our issues for us. I think that must end. The budget we are going to talk about today sets the framework for the Congress, the Administration, the States, local governments, and private parties to begin working together in a new way to collaboratively resolve conservation conflicts. The central premise of our approach is that by restoring and maintaining a healthy land base on public and private lands alike, we can ensure that our children, and their children's children enjoy the benefits of land and water.

Mr. Chairman, with healthy watersheds as a foundation, there is room for a reasonable flow of outputs; timber and livestock specifically, but many other products also. There is and will be the ability to produce cleaner water. There is a land base which will allow us to set aside additional places untrammeled by human beings, and there is an ability and a necessity to preserve now and for generations to come, additional open spaces before such spaces are fragmented or degraded due to private land development, urban sprawl, and other such issues.

For those who advocate a return to timber outputs of 10 years ago, or those who advocate a "zero cut" philosophy, I say it is time to inject realism into the debate. The President's budget provides funding for outputs which are consistent with land health. I can not visualize a circumstance when such outputs will ever be at the level of 10 years ago, but I say to the other side of the spectrum, timber harvest will, and should continue. The President's budget contains innovations that recognize the ability of people to restore ecosystems from those already degraded, using modern science and technology, where people have either contributed to poor land health by over using the land, built roads in unstable or overly steep terrain, or prevented natural processes such as fire. We can improve the health of these areas, and do so by not only allowing the removal of forest products but by demonstrating in some cases such activities can contribute to forest health. The more timber harvest contributes to ecological sustainability, the more predictable timber outputs will be. This budget presents a solid balance that if enacted will help accomplish these goals.

The Forest Service serves many people. With our 192 million acres, 383,000 miles of roads, $30 billion infrastructure, 74,000 authorized land uses, 23,000 developed recreation sites, tens of thousands of dispersed recreation sites, and 35 million acres of wilderness, the national forests are many things to many people. The Forest Service has the premier Forest and Rangeland Research organization in the world which is involved in research to improve land health and to improve the experiences enjoyed on the land by Americans.

Specifics of the President's Budget

The President's budget creates a new focus on State and Private Forestry programs. Over time, our leadership capacity to assist those who manage the more than 500 million acres of forests outside of the national forest system has diminished. One of our greatest contributions to society will be our ability to bring people together to provide technical assistance and scientific information to states, private landowners, and other nations of the world. The fiscal year 2000 proposed budget contains an increase of $80 million in State and Private Forestry, and $37 million in Forest and Rangeland Research to increase our involvement in this critical collaborative role. Consider that we have been spending about $2 billion annually to manage the 192 million acres of national forest land, yet spend less than $200 million in support of the 500 million acres of state managed and privately owned lands.

With this budget, support to state and locally managed lands and non-industrial private lands dramatically increases. The budget proposes $218 million for the Lands Legacy Initiative, which will make new tools available to work with states, tribes, local governments, and private partners to protect great places, to conserve open space for recreation, and wildlife habitat; and to preserve forest, farmlands, and coastal areas. This $218 million is part of the President's bold government wide initiative to provide $1 billion for the Lands Legacy Initiative.

The President's budget also continues support for key programs initiated with the fiscal year 1999 budget by targeting an increase of $89.4 million for the Clean Water Action Plan to maintain priority attention to the health of watersheds on federal, state, and private lands. The budget also proposes $6 million to support the Climate Change Technology Initiative and an increase of $6 million for the Global Change Initiative, both of which are aimed at improving the long term health of the climate that supports life on this planet.

Forest and Rangeland Research programs are an important aspect of emphasis in the President's budget. In addition to funds to support global climate issues, an additional $14 million is proposed for the Integrated Science for Ecosystem Challenges project which addresses science and technology needs related to ecological systems.

The President is also proposing as part of this budget several new legislative initiatives. Most notably, a proposal similar to one put forward last year, to stabilize payments to states and counties by separating payments to counties from a reliance on receipts generated by commodity production. At the beginning of my testimony, I noted the need to manage outputs from the national forests in a manner consistent with land health. In doing so, emphasis for producing those outputs has changed. For example, today a significant number of timber sales are sold for stewardship purposes rather than pure commodity objectives. There is an increase in the sale of dead or dying timber. In these cases receipts are less than were experienced several years ago. I expect this trend to continue particularly in the west. What we are asking is, why should the richest country in

the nation finance the education of rural schoolchildren on the back of a controversial federal timber program? The Forest Service has a stewardship responsibility to collaborate with citizens to promote land health. Collaborative stewardship implies an obligation to help provide communities with economic diversity and resiliency so they are not dependent on the results of litigation, the whims of nature or unrelated social values to educate their children and pave their roads. We need to work together so states and counties can anticipate predictable payments on which to base education and road management decisions.

Several other legislative proposals are also soon to be submitted including proposals to transfer timber sale preparation costs to timber purchasers through user fees, a proposal to reform concession management, increased emphasis on obtaining fair market value for land uses and timber, and establishing a fund to manage the sale of special forest products.

Natural Resource Agenda

The President's budget contains many important initiatives. It also contains a broad program of funding for management of national forest lands. Just one year ago I announced the Natural Resource Agenda, which is a comprehensive science based agenda that will lead management of the agency into the 21st century. As an integral partner with the Government Performance and Results Act, this agenda focus on four areas; 1) watershed health and restoration, 2) sustainable forest and grassland ecosystem management, 3) the national forest road system, and 4) recreation.

I want to highlight briefly our emphasis in each of these areas. A retired Forest Service employee offered me some advice a while back. He said, "if you just take care of soil and water, everything else will be OK." Multiple use does not mean we should do everything on every acre simply because we can. We must protect the last best places and restore the rest. Forest Service lands are truly the headwaters of America, supplying river systems and recharging aquifers. They contain riparian, wetland, and coastal areas that are essential for the nation's water supply and prosperity. The President's budget provides an increase of $48.6 million included in programs such as wildlife habitat management, watershed improvements, fisheries habitat management, rangeland vegetation management, threatened and endangered species habitat management, and state and private forest health programs. These increases will allow the Forest Service to make important watershed restoration and protection efforts.

Restoration and maintenance of watershed health is contingent on quality land management planning. As you know, the Committee of Scientists will issue their final recommendations on forest planning soon. I expect they will suggest that we focus planning efforts on long-term sustainability, more effectively link forest planning to budget and funding priorities, practice collaborative stewardship through use of diverse and balanced advisory groups, and allow for adaptive management through monitoring. I look forward to issuance of the Committee of Scientists Report from which revised forest

planning regulations will be developed in late Spring. I believe new planning regulations will be invaluable in breaking the forest planning gridlock that is hampering national forest management in so many areas.

A second area of the Natural Resource Agenda is sustainable forest and grassland management. The President is proposing a billion dollar initiative to protect open space, benefit urban forests, and improve the quality of life for the 80% of Americans living in urban and suburban areas. Through sustainable forest and grassland management, the Forest Service will play an essential role in accomplishment of this initiative. The President's budget provides an increase of $113 million in State and Private and Research programs which are integral to protecting and restoring the lands and waters that sustain us. We will collaborate with state fish and wildlife agencies, state foresters, tribes, and others to develop conservation and stewardship plans for an additional 740,000 acres of non-industrial private forestland. We will help states protect an estimated 135,000 additional acres of forestland through acquisitions and conservation easements. We will acquire environmentally sensitive lands through the Land and Water Conservation Fund, and we will include nearly 800 more communities in efforts to conserve urban and community forests. In addition, 300,000 more hours of conservation training will be provided to local communities.

Mr. Chairman, I am truly excited about budgetary emphasis in sustainable forest and grassland management through cooperation and collaboration. This emphasis will carry into many programs including fire management where we will employ fire as a tool to meet integrated resource and societal objectives across landscapes. We will give priority to high-risk wildland/urban interface areas where people, homes and personal property are at risk. We will employ fire as a tool to aid threatened and endangered species conservation and recovery, to reduce accumulated fuels within and adjacent to wilderness and reduce fuels to help lower long term costs of suppressing wildfires.

Now I would like to turn to one of the more challenging aspects of the Natural Resource Agenda. That involves management of the National Forest Road System. As you know, on February 11, I announced an interim suspension of road construction in most roadless areas of the national forest system. We offer this time-out to reduce the controversy of roadless area entries in order to reduce damage to a road system which is already in disrepair.

A personal source of frustration is that few people or interest groups are focused on the issue of our existing road system as opposed to the roadless area issue. Yet if we care about restoring the ecological fabric of the landscape and the health of our watersheds, we must concentrate on areas that are roaded in addition to those that are not.

The President's budget proposes a $22.6 million increase in the road budget, primarily for maintenance. The agency has an estimated road maintenance backlog of over $8 billion. Meanwhile we are only maintaining 18 percent of our roads to the safety and environmental

standards to which they were built. With the proposed funding level in the fiscal year 2000 budget, we will increase by 50% from 1998, the miles of road to be decommissioned or stabilized. We will increase the percentage of forest roads maintained to standard from 18 percent to 24 percent.

With roads that could encircle the globe many times, our road system is largely complete. Our challenge is to shrink the system to a size we can afford to maintain while still providing for efficient and safe public access in a manner that protects land health.

Over the next 18 months, we will develop a long term road policy with three primary objectives: 1) develop new analytical tools to help managers determine where, when or if to build new roads, 2) decommission old, unneeded, unauthorized, and other roads that degrade the environment, and 3) selectively upgrade certain roads to help meet changing use patterns on forests and grasslands.

Management of roads is very important to local communities that rely heavily on these roads for livelihoods and rural transportation. I expect decisions about local roads to be made by local managers working with local people and others who use or care about our road system. We will obviously continue to provide access to and through forests. However, it is clear that we simply cannot afford our existing road system.

The fourth element of the Natural Resource Agenda involves recreation. The President's budget provides strong support to the recreation program. With appropriated funds totalling $288 million, and additional funds provided from the recreation fee demonstration project receipts and the ten percent road and trail fund, this program will continue to provide strong support to the 800 million annual visitors which we expect to increase to 1.2 billion over the next 50 years.

The Forest Service recreation strategy focuses on providing customer service and opportunities for all people. The successful recreation fee demonstration program has served many people at the sites operated under the program through improved visitor experiences and repair and upgrade facilities which were badly in need of attention. I strongly support continuation of this program. I do want to pass on one caution lest this program is viewed as an answer for reducing future recreation discretionary funds. The recreation fee demonstration program serves many people in a limited number of recreation sites. The Forest Service recreation program is highly dispersed. It is the place for a family drive or hike on a Sunday afternoon, a weekend camping trip, or a week long grueling hike in the rugged backcountry. Many of these experiences do not lend themselves to a recreation fee demonstration type program. In fact, less than 10 percent of forest recreation visits occur at fee demonstration sites. As the backyard playground for many Americans, it is essential we maintain a recreation program that allows enjoyment of the national forests without charge in addition to fee programs in limited areas.

A key part of enhancing this dispersed recreation is through our wilderness management program. The President's budget includes an

increase of $7 million for protection and restoration of natural conditions in wilderness and to mitigate the impacts of high use areas adjacent to large population centers. The wilderness legacy is a crown jewel. I am committed to increasing the Forest Service commitment to the Wilderness Act and intend to give more emphasis through increased land management planning and re-establishment of a national wilderness field advisory group.

Each of the four emphasis areas of the Natural Resource Agenda links directly to one or more of the goals of the Results Act Strategic Plan. I am pleased that the President's budget supports this plan for moving forward.

Forest Service Accountability

Successful implementation of the President's initiatives and the Natural Resource Agenda is dependent on having the trust of Congress and the American people. To be trusted, we have to be accountable for our performance. We have to be able to identify where our funds are being spent, and what America is receiving in return. We have to do this as efficiently as possible in order to assure that a maximum amount of funds are spent on the ground for intended purposes without being diverted for unnecessary overhead.

Mr. Chairman, as you know, the Forest Service has had problems with accountability in the past. We have been the subject of more than 20 oversight reports and internal studies. We have been resoundingly criticized for having poor decision making, either bloated or inaccurate overhead costs, and non-responsive accounting systems. While some of this may be exaggerated, I fully acknowledge that some is true. We've got the message. We will improve dramatically. Let me highlight several initiatives that are now underway.

First and most importantly, I have made it clear through organization changes and personal statements that the business and financial management functions of this agency are equally as important as attention to managing the resources. I have placed business management professionals in operations and financial management positions. We have established a Chief Operating Officer at the Associate Chief level which reports directly to me, thus placing our business management functions on an operating level equal to that of our natural resource functions. We have brought in a new Chief Financial Officer at the Deputy Chief level to implement the Foundation Financial Information System. This is her top priority, with a goal of achieving a clean financial opinion from the General Accounting Office as soon as possible.

It is also time to reform our budget structure. I want to work with the Congress and the Administration to design a budget structure that reflects the work we do and the Results Act Strategic Plan on which the Natural Resource Agenda is based. The current budget structure does not support the integrated work necessary to restore and maintain land health while promoting ecological sustainability. In order to ensure accountability while implementing a new budget structure, we will employ land health performance measures to

demonstrate that we can have a simplified budget and improve water quality, protect and restore more habitat, and improve forest ecosystem health.

An important aspect of improving our financial management accountability is to assure we are employing the proper methods and resources to implementing reforms. Mr. Chairman, as requested by this Subcommittee, we have contracted with the National Academy of Public Administration (NAPA)to review the agency's efforts to improve accountability. We look forward to working with NAPA as this assessment is conducted, and are confident that the findings will be valuable as we strive to improve our financial management.

In fiscal year 2000 we will begin to implement reforms to our trust funds. We will examine alternatives for trust fund management in the future to avoid unintended incentives to pursue forest management activities that are not consistent with land health objectives.

For the first time, at the direction of Congress, we have developed and implemented standard definitions for indirect costs which are in full compliance with the Federal Accounting Standards Advisory Board. These definitions have been reviewed by several oversight groups. Based on these definitions, for the first time we have accurately determined indirect expenses for the agency, which during fiscal year 2000 we project to be 18.9 percent.

As you know, the issue of indirect costs, often referred to as overhead, received extensive attention during the 105th Congress, as did the poor quality of our financial system and records. I want to make a specific request as your Committee examines our budget in the coming year. I ask for your patience and support in rectifying much of our accountability problems. The Forest Service's financial management and reporting of overhead took a decade or more to fall into disrepair. It will take more than a year to fix the problem. Let me emphasize that we are devoting extensive resources to implementing new financial systems, improving our audit processes, and improving decision making. The resources we devote to make these fixes involves expenditures of an overhead type nature. As we concentrate on cleaning up our problems, we need to have flexibility without legislated limitations which could prevent us from being successful.

In my testimony today, I have reviewed the President's initiatives, discussed the Natural Resource Agenda, and described our intent to improve agency accountability. In conclusion, I want to say that a Forest Service that meets the needs of the American people and restores and preserves the health of the nations forests and rangelands, is a goal we all strive for. I'll leave you with some thoughts based on Aldo Leopold's Sand County Almanac; the same words I left with our employees in Missoula during my state of the Forest Service speech.

Let us recommit ourselves to an invigorated nation and land ethic. An ethic that recognized that we cannot meet the needs of people without first securing the health, diversity, and productivity

of our lands and waters. An ethic that understands the need to reconnect our communities -both urban and rural- to the lands and waters that sustain them. An ethic that respects that the choices we make today influence the legacy that we bequeath to our children and their children's children.

That concludes my remarks. I would be pleased to answer any questions you may have.

PROFILE
MICHAEL P. DOMBECK

***Dr. Michael P. Dombeck*, 48, became the 14th Chief of the Forest Service on January 6, 1997.**

He was born on September 21, 1948, in Stevens Point, Wisconsin. It was here in northern Wisconsin's lake country that his appreciation for natural resource was cultivated. Dombeck worked as a fishing guide in the region for 11 summers. He earned undergraduate and graduate degrees in biological sciences and education from the University of Wisconsin-Stevens Point and the University of Minnesota. He earned his doctorate in fisheries biology from Iowa State University and is noted for research contributions on muskies and lake habitat management. In addition, Dr. Dombeck has authored numerous scholarly publications and made frequent national as well as international scientific presentations.

Dr. Dombeck taught biology, chemistry, science, zoology, and fisheries management at public schools and universities. He spent 12 years with the Forest Service primarily in the Midwest and West. In his last Forest Service post as National Fisheries Program Manager in Washington, D.C., he was recognized for outstanding leadership in developing and implementing fisheries programs and forging partnerships. He also spent a year as a Legislative Fellow working in the United States Senate with responsibility for natural resource and Interior appropriations issues.

Dr. Dombeck was named Acting Director of the Bureau of Land Management (BLM) in February 1994. He has focused on two major objectives: creating a long-term BLM vision to improve the health of the land and reinventing the agency to reduce red tape, streamline functions and improve customer service.

As Acting Director, Dr. Dombeck has overseen BLM's management of 270 million acres of surface land and over 570 million acres of mineral estate. He also has managed a budget of more than $1 billion and a work force of about 10,000.

He resides with his wife and daughter in Northern Virginia.

Career Summary:

2/3/94 to 1/97 - Acting Director, USDI Bureau of Land Management

9/93-2/94 - Chief to Staff to Assistant Secretary for Land and Minerals Management, U.S. Department of the Interior, Washington, DC

1/93-9/93 - Acting Assistant Secretary/Deputy Assistant Secretary, Land and Minerals Management, USDI, Washington, DC

1989 - 1992 Science Advisor and Special Assistant to Director, Bureau of Land Management, Washington, DC

1987 - 1989 National Fisheries Program Manager, Forest Service, Washington, DC

1985 - 1987 Regional Fisheries Program Mgr., pacific Southwest Region, USDA Forest Service, CA

1978 - 1985 Fisheries Biologist, USDA Forest Service, Michigan and Wisconsin

1971 - 1973 Instructor of Zoology, University of Wisconsin Stevens Point

1966 - 1977 Fishing guide, Hayward, Wisconsin

Professional Affiliations:

American Fisheries Society (Certified Fisheries Scientist) Society of American Foresters American Institute of Fishery Research Biologist Gamma Sigma Delta, Honorary Society (Agriculture) Signa Xi, Scientific Research Society Board of Governors Freshwater Fishing Hall of Fame

Education:

Ph.D., Fisheries Biology, Iowa State University

M.S., Zoology, University of Minnesota

M.S.T., Biology & Education; B.S., Biology & General Science University of WI Stevens Point

Personal Interest:

Born and raised 25 miles from a town of 1,500 people, he remains a very outdoorsman. He regularly spends time hunting, fishing, boating, and camping.

Mr. SKEEN. Your choice, any time you want to have those persons come forward, would be fine.

FIRE SEASON PREPARATIONS

Could you tell us about how the Forest Service is doing the preparation for this fire season that we keep talking about, particularly in the southwest? We are very interested because we have had a sustained drought going on and it is a very—to use a euphemism, a combustible situation.

Mr. DOMBECK. Well, in fact, one of our executives, Phil Janik, our Chief Operating Officer, stayed back from this hearing so he could participate in the Drought Commission Meeting for me this afternoon and that——

Mr. SKEEN. Where is he?

Mr. DOMBECK. Pardon me?

Mr. SKEEN. Where is he holding that?

Mr. DOMBECK. I believe the meeting is in the Department of Agriculture. But a Commission has been set up to deal with the issue, to take a look at what opportunities there are for us to increase efficiency, provide information and deal with the whole issue of drought. But I have got to say that the southwest, particularly right now, is a literal tinderbox and all of the safety meetings, all of the pre-fire season efforts are going on right now, so we will be fully ready to respond as needed.

HISPANIC EMPLOYEES

Mr. SKEEN. I appreciate that. One other question that I would like to broach with you. Hispanic groups in my district, we have a large Hispanic population, continue to complain about the treatment of Hispanic employees by the Forest Service in the Southwest Region. First, can you explain what the complaints are and what you are doing about them and then could you provide for the record some statistics, say back to 1990, as to the number of Hispanic employees in the different Regions and by grade?

[The information follows:]

Equal Employment Opportunity (EEO) Cases filed by Hispanics in the Southwestern Region

Since October 1990, there have been 43 EEO complaints of employment discrimination filed by Hispanics. Information prior to FY 1991 is unavailable as the National Finance Center data base only retains data from FY 1991 to the present. Primarily the basis of all the complaints is race (Hispanic).

The Southwest Region has taken steps to resolve its backlog of formal EEO complaints. The Regional Forester directed a team, comprised of Forest Supervisors and Directors to facilitate discussions with the complainants, focusing on resolution. The majority of complaints were successfully resolved either through a settlement agreement or dismissed through a finding of no discrimination in the U.S. Department of Agriculture adjudication process.

Although much remains to be done, significant progress has been made in the area of civil rights. The Southwestern Region has instituted an Alternative Disputes Resolution program called the "Early Intervention Program." The program provides professional mediation skills to employees and managers to assist them in quickly resolving workplace conflicts at the lowest level before they become serious complaints. This "Early Intervention Program" is proving to be an effective tool to reduce the number of number of EEO complaints and other grievances in the region.

Nationally, the Forest Service has taken the following actions:

-- Developed and implemented a Civil Rights Performance Plan, with key goals and indicators;

-- Directed that Equal Opportunity and Civil Rights be a critical performance element for all supervisors. This critical element links directly to the Agency's Civil Rights Performance Plan, for which the Chief is held accountable to the Secretary of Agriculture;

-- Implemented the Early Intervention Program agencywide;

-- Directed that all managers and supervisors be a member of the Chief's team to help resolve EEO complaints at the lowest level and help to improve the Agency's accountability for addressing complaints; and

-- All managers, supervisors and employees are required to take civil rights training annually.

FOREST SERVICE PERMANENT HISPANIC WORKFORCE (BY REGION AND GRADE)

	A	B	C	D	E	F	G	H	I	J
1	REGION/GRADE	FY 1991	FY 1992	FY 1993	FY 1994	FY 1995	FY 1996	FY1997	FY 1998	FY 1999
2	NORTHERN REGION									
3	GS 1-4	5	5	4	4	1	2	2	2	2
4	GS 5-10	43	41	41	39	39	39	38	31	29
5	GS 11-13	24	21	16	17	17	15	15	16	16
6	GS 14 +	0	0	0	0	1	2	2	2	3
7	*SUBTOTAL*	*72*	*67*	*61*	*60*	*58*	*58*	*57*	*51*	*50*
8	ROCKY MOUNTAIN REGION									
9	GS 1-4	25	22	16	14	10	7	6	8	7
10	GS 5-10	80	90	101	88	84	82	89	88	88
11	GS 11-13	36	40	43	42	42	43	42	41	39
12	GS 14 +	1	1	1	1	1	1	2	1	1
13	*SUBTOTAL*	*142*	*153*	*161*	*145*	*137*	*133*	*139*	*138*	*135*
14	SOUTHWESTERN REGION									
15	GS 1-4	61	52	48	38	60	51	47	42	36
16	GS 5-10	347	353	348	311	329	333	323	329	328
17	GS 11-13	80	91	97	95	94	96	105	113	115
18	GS 14 +	2	4	6	4	5	5	6	7	10
19	*SUBTOTAL*	*490*	*500*	*499*	*448*	*488*	*485*	*481*	*491*	*489*
20	INTERMOUNTAIN REGION									
21	GS 1-4	11	11	7	6	4	2	2	0	0
22	GS 5-10	47	47	56	50	51	56	59	59	57
23	GS 11-13	16	20	23	26	27	31	30	32	29
24	GS 14 +	3	3	3	3	1	0	0	0	1
25	*SUBTOTAL*	*77*	*81*	*89*	*85*	*83*	*91*	*91*	*91*	*87*
26	PACIFIC SOUTHWEST REGION									
27	GS 1-4	61	53	26	20	22	22	14	8	8
28	GS 5-10	269	271	288	272	259	253	265	264	259
29	GS 11-13	82	83	83	69	70	76	72	76	76
30	GS 14 +	3	3	5	4	6	5	7	8	8
31	*SUBTOTAL*	*415*	*410*	*402*	*365*	*357*	*356*	*358*	*356*	*351*
32	PACIFIC NORTHWEST REGION									
33	GS 1-4	29	28	23	14	14	11	9	7	5
34	GS 5-10	225	224	199	173	152	153	153	144	146
35	GS 10-13	65	73	74	72	71	71	70	73	68
36	GS 14 +	3	5	5	2	2	3	3	3	4
37	*SUBTOTAL*	*322*	*330*	*301*	*261*	*239*	*238*	*235*	*227*	*223*
38	SOUTHERN REGION									
39	GS 1-4	18	22	17	17	14	13	13	11	11
40	GS 5-10	57	60	53	49	44	46	41	40	42
41	GS 11-13	30	39	36	29	27	27	28	28	30
42	GS 14 +	1	1	1	2	1	1	1	1	1
43	*SUBTOTAL*	*106*	*122*	*107*	*97*	*86*	*87*	*83*	*80*	*84*
44	EASTERN REGION									
45	GS 1-4	5	4	5	0	0	0	0	0	0
46	GS 5-10	14	27	30	33	30	27	24	23	21
47	GS 11-13	8	12	15	18	14	17	15	15	18
48	GS 14 +	1	1	1	1	1	0	1	1	1
49	*SUBTOTAL*	*28*	*44*	*51*	*52*	*45*	*44*	*40*	*39*	*40*
50	ALASKA REGION									
51	GS 1-4	0	0	0	0	2	1	1	1	0
52	GS 5-10	7	10	9	6	5	6	6	4	4
53	GS 11-13	7	8	11	7	7	7	8	8	8
54	GS 14 +	0	0	0	0	0	0	0	0	1
55	*SUBTOTAL*	*14*	*18*	*20*	*13*	*14*	*14*	*15*	*13*	*13*
56	ROCKY MOUNTAIN RESEARCH STATION									
57	GS 1-4	2	3	2	2	1	1	2	1	1
58	GS 5-10	18	18	14	14	12	12	10	9	9
59	GS 11-13	5	7	11	12	13	10	10	10	10
60	GS 14 +	0	0	0	0	0	0	0	0	0
61	*SUBTOTAL*	*25*	*28*	*27*	*28*	*26*	*23*	*22*	*20*	*20*

FOREST SERVICE PERMANENT HISPANIC WORKFORCE (BY REGION AND GRADE)

	A	B	C	D	E	F	G	H	I	J
1	**REGION/GRADE**	**FY 1991**	**FY 1992**	**FY 1993**	**FY 1994**	**FY 1995**	**FY 1996**	**FY 1997**	**FY 1998**	**FY 1999**
2	**NORTH CENTRAL EXPERIMENT STATION**									
3	GS 1-4	2	1	1	1	1	1	1	1	1
4	GS 5-10	4	4	5	5	5	4	3	3	3
5	GS 10-13	0	0	0	0	0	0	0	0	0
6	GS 14 +	0	0	0	0	0	0	0	0	0
7	***SUBTOTAL***	**6**	**5**	**6**	**6**	**6**	**5**	**4**	**4**	**4**
8	**NORTHEASTERN EXPERIMENT STATION**									
9	GS 1-4	0	0	0	0	0	0	0	0	0
10	GS 5-10	2	3	2	2	2	1	1	1	1
11	GS 10-13	0	0	2	1	1	1	1	2	2
12	GS 14 +	0	0	0	0	0	0	0	1	1
13	***SUBTOTAL***	**2**	**3**	**4**	**3**	**3**	**2**	**2**	**4**	**4**
14	**PACIFIC NORTHWEST RESEARCH STATION**									
15	GS 1-4	1	0	0	0	0	0	0	0	0
16	GS 5-10	3	3	4	7	4	3	2	2	2
17	GS 11-13	2	2	1	2	4	1	0	0	0
18	GS 14 +	1	1	1	1	1	2	2	2	2
19	***SUBTOTAL***	**7**	**6**	**6**	**10**	**9**	**6**	**4**	**4**	**4**
20	**PACIFIC SOUTHWEST RESEARCH STATION**									
21	GS 1-4	0	0	0	0	0	1	0	0	0
22	GS 5-10	6	3	3	3	3	2	4	4	4
23	GS 11-13	3	5	5	5	3	3	3	3	3
24	GS 14 +	0	0	0	0	0	0	0	0	0
25	***SUBTOTAL***	**9**	**8**	**8**	**8**	**6**	**6**	**7**	**7**	**7**
26	**FOREST PRODUCTS LABORTORY**									
27	GS 1-4	0	0	1	1	0	0	0	0	0
28	GS 5-10	3	2	2	2	3	3	2	2	2
29	GS 11-13	1	1	1	1	1	2	3	2	2
30	GS 14 +	0	0	0	0	0	0	0	0	0
31	***SUBTOTAL***	**4**	**3**	**4**	**4**	**4**	**5**	**5**	**4**	**4**
32	**SOUTHERN RESEARCH STATION**									
33	GS 1-4	3	2	0	0	0	0	1	0	0
34	GS 5-10	17	21	6	6	6	3	2	4	6
35	GS 11-13	4	3	2	2	1	1	1	2	1
36	GS 14 +	1	1	1	0	0	0	0	0	0
37	***SUBTOTAL***	**25**	**27**	**9**	**8**	**7**	**4**	**4**	**6**	**7**
38	**INTERNATIONAL FORESTRY**									
39	GS 1-4	0	0	7	12	10	8	8	7	8
40	GS 5-10	0	0	26	28	30	30	29	30	30
41	GS 11-13	0	0	4	4	6	7	7	8	8
42	GS 14+	0	0	0	1	1	1	2	2	2
43	***SUBTOTAL***	**0**	**0**	**37**	**45**	**47**	**46**	**46**	**47**	**48**
44	**WASHINGTON OFFICE**									
45	GS 1-4	1	2	2	2	0	0	1	0	0
46	GS 5-10	15	13	13	16	63	53	53	56	56
47	GS 11-13	14	15	15	22	28	34	35	33	33
48	GS 14 +	8	9	9	14	11	13	15	17	17
49	***SUBTOTAL***	**38**	**39**	**39**	**54**	**102**	**100**	**104**	**106**	**106**
50										
51	**TOTAL**	**1780**	**1844**	**1831**	**1692**	**1717**	**1703**	**1697**	**1688**	**1678**

Mr. DOMBECK. Yes. We would be happy to provide the information that we have. In response to that I want to add, though, at the direction of the Secretary, civil rights issues have been very high on the radar screen of all of USDA and in fact, in the Forest Service we have moved forward in implementing procedures to—in fact, we set up five centers in the Agency to deal with the issues of complaints.

All of the senior executives in the Forest Service have been part of negotiations, resolution of cases to move forward, but the thing we are dealing with is, I think, we are dealing with some of the problems and now we have got to turn and deal with, not the symptoms, but the real problems. We are making significant investments in civil rights. In training, we have got a continuous improvement process, and an employee survey has been done now for several years to become aware of specifically what the problems are and then what we need to do to address those problems.

Mr. SKEEN. It sounds like you have got a very large program or very good initiative going.

Mr. DOMBECK. Well, we are, again, we are very much aware of the problem. I do want to let you know though that we have got a ways to go in resolving it. It is not something that——

Mr. SKEEN. We appreciate the effort. That is what we really want to get at.

Mr. Nethercutt.

Mr. NETHERCUTT. I would defer to my colleagues who came in ahead of me.

Mr. SKEEN. I am sorry. Whoever is up next. Mr. Cramer.

Mr. CRAMER. I am next?

Mr. SKEEN. You won the doily.

Mr. CRAMER. All right. I will reach and grab it.

Mr. SKEEN. Yes sir.

Mr. CRAMER. I want to say on behalf of my district, and I did not get the chance to say this to Secretary Glickman as he left here, we appreciate our working relationship, especially on my farmers' behalf that we have with DOA.

AGREEMENTS WITH STATES

On the Forest Service side, I want to talk to you. I have got a close working relationship with Alabama's cooperative extensive system. They are in Alabama and on forestry issues, I have heard them express some frustration at the way that they move through the system. The State Cooperative Extensive System, the State Forestry Commission, the U.S. Forest Service, representatives in my state, they all have a close working relationship and they come to agreements and as they move up the ladder though, it seems that things sit still for an awful long period of time and that in fact we get feedback that there are turf battles within USDA over some of their recommendations and they do not get passed on.

Are you aware of any problems like that? Is my state unique or would you know? And if you do not know, could you get back with me?

Mr. DOMBECK. I would say your state is not unique and one of the things that we have made significant progress on, but need to continue to make more progress, is interagency coordination. For

example, in parts of the country, we are focusing on customer service and one-stop shopping. I think specifically in Alabama, in fact, Deputy Chief Clyde Thompson, who is here, was part of a workshop, I believe, that was held in—it was Alabama, was not it, Clyde?

That was to provide landowners, particularly small farmers, with information, and just knowing where to go to get the information you need is very important.

Mr. CRAMER. When was that conference? I assume it was a success. December? So this past December.

Mr. DOMBECK. In fact, we are real proud of that. I am proud of the work of the state and private forestry staff of the Forest Service who have developed the model for the agreements for this to move forward. We will be expanding this kind of effort in other parts of the country to make sure that the needs of under-served individuals are met—and this would apply to the Hispanic community in the Southwest as well, Mr. Skeen, because program delivery is an important aspect of what we do. Making those programs available to all sectors of our constituencies in the communities is very important.

Mr. SKEEN. I appreciate that.

RECREATION FEE DEMONSTRATION PROGRAM

Mr. CRAMER. I have one other question. You are proud of the success that you have made with the recreation fee demonstration program and what, if any, changes would you recommend about the program in future legislation?

Mr. DOMBECK. What I would do is—we are pleased with it—one of the things with the demonstration pilot is, having now more experience under our belt, we are learning about what works where and why it works and what things we need to change. I think what I would do is I would ask Ron Stewart to give you some more details on that.

Mr. STEWART. One of the proposals the Administration has brought forward is to make it permanent. That is one of the issues now, since it does have a sunset on it and it really allows only up to 100 projects. It is difficult to do long-range planning, particularly since one of the big benefits that we are seeing is the money goes back to the local unit to improve facilities.

And some projects require significant investment. And so the thought that they may have the project in before they have accumulated sufficient resources to make the final completion of whatever the improvements are going to be has been an issue. So permanent authority and expansion of it would be very helpful.

As part of the demonstration though, we have identified a number of issues and they really—some of them did not become evident until the agencies involved in it, Interior and Forest Service, began expanding the program towards the hundred max that each has. That is, where you have units close to each other from different agencies, we have different fees, a different fee structure, and charge for different kinds of things. It has been very confusing to the public.

Again, having permanent authority and expansion of authority will help lead to some solutions of those kinds of problems. So I

think the biggest thing is, we would like to see that authority become permanent and expanded, and to continue to learn from it. As I said, we have made some mistakes when we first started. It was intended to be a demonstration and as it expands we discover new things. And one of the big issues is this idea of the potential for proliferating fees and for fees charged by different agencies. We really do need to work together on that.

It was not an issue when there were only a few units because so few of them were close together. Now that we have got more of them in the program, they are oftentimes right next to each other.

Mr. CRAMER. Well, thank you for that information. It would seem to me as a new Member of the Committee that the demonstration programs were intended to allow you a certain degree of trial and error with what works and what does not work and would encourage you to be flexible to see that, if you continue to improve and make yourself more user friendly, that you in fact do so.

Mr. DOMBECK. In fact, one of the important things is customer service, because particularly, in parts of the country where you have BLM, National Parks, National Forests, to make it simple and convenient for users to—so they do not have to be dealing with a bunch of different agencies—I think is very, very important. The people just want good service.

Mr. CRAMER. Thank you, Mr. Chairman.

Mr. SKEEN. Thank you, and I apologize for not recognizing you right off the bat.

Mr. Nethercutt.

ROADS MORATORIUM

Mr. NETHERCUTT. Thank you, Mr. Chairman. Welcome, Mr. Dombeck, ladies and gentlemen. I want to talk with you, if I may, briefly about the roads moratorium that has been placed. I am sorry I missed your testimony earlier, Mike, to the extent you may have commented on that today.

I am aware of the facts that comprise the roads moratorium decision, March 1, moratorium went into effect, February 11th was the proposed rule or the interim rule was announced. You got an 18-month time period where you want to do some analysis as I understand it.

When you testified before the House Resources Subcommittee on Forests and Forest Health in March, just a week or so ago, I am informed that you stated three key steps that outline the Administration's policy on road-building.

The current rule to temporarily suspend road-building is designed to allow you to develop a permanent policy to develop a road analysis procedure and then look to revise current regulations.

I am wondering if you could, for the Committee, elaborate on what type of road analysis procedure you intend to develop, what current regulations do you intend to revise?

Mr. DOMBECK. The team has been working for some time now on the long-term policy, because that is what is really important, and with the premise that we base our decisions on the best science and technologies because many of the roads have greater recreation use. They are used for different things than they were. But we hope to have the proposed long-term rule on the street for public

review by early summer. We will at that time be very judicious about public involvement, the opportunity for people to know exactly what we are proposing and so on and we will—now, there was another couple of parts to your question.

ROAD ANALYSIS PROCEDURES

Mr. NETHERCUTT. Yes. I am wondering what the road analysis procedure will be. In other words, what are you going to look for in terms of standards for whether to allow or not allow road construction or maintenance of existing roads? What factors are you looking at?

Mr. DOMBECK. What I will do is, I will—and it should be available in a couple of weeks, the science analysis of that—look at things from the geology, the soil stability, all the factors. And another important point that I want to make is that the decisions for roads will be made by local managers working with local communities and interest groups in this area. This is not an issue that is going to be dealt with at the national level. I know there has been some concern about that. But the important thing is that the transportation infrastructure of the national forests meshes with the needs of the local communities, the adjacent landowners and stuff.

Ron, in fact, just participated in the House Roads Hearing.

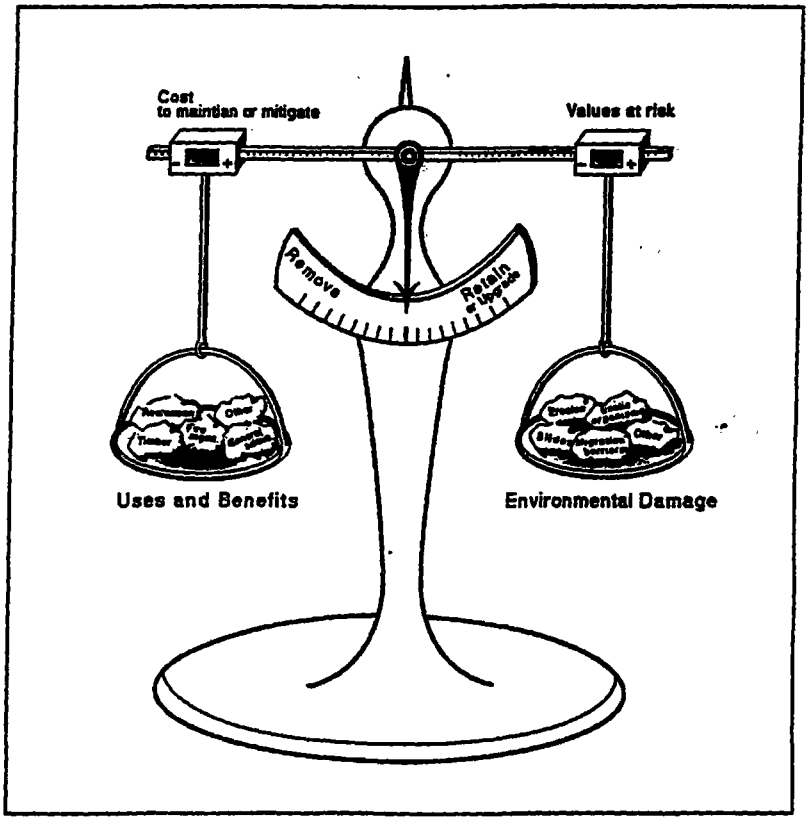
Mr. STEWART. Yes, in fact, with Mr. Peterson.What I was going to offer is, the analysis procedure is being field-tested on six national forests and undergoing scientific review, so my guess is there will be some changes. But there is a handbook associated with that that describes the procedure. We would be glad to provide that to the Committee or to anyone who would like to have it. It is a process, as I said, that is undergoing some reviews so it could have some changes in it, but it does reflect what is being tried right now.

Mr. NETHERCUTT. That would be helpful and I would appreciate that and request it.

[The information follows:]

Roads Analysis

A Procedure for Informing Decisions
About Managing the
National Forest Transportation System



Roads Analysis Team
Review Draft

February 28, 1999

Summary

The Need for Roads Analysis

An optimum road system supports land management objectives; for the Forest Service, those objectives have markedly changed in recent years. How roads are managed must be reassessed in light of those changes. Expanding road networks have created many opportunities for new uses and activities in National Forests, but they have also dramatically altered the character of the landscape. The Forest Service must find an appropriate balance between the benefits of access to the Forests and the costs of road-associated effects to ecosystem values. Providing road systems that are safe to the public, responsive to public needs, environmentally sound, affordable, and efficient to manage is among the agency's top priorities. Completing an assessment of road systems for all National Forests is a key step to meeting this objective.

Characteristics of the Process

Roads Analysis is an integrated ecological, social, and economic approach to transportation planning, addressing both existing and future roads—including those planned in unroaded areas. Roads analysis is intended to be based on science. Analysts should locate, correctly interpret, and use all relevant existing scientific literature in the analysis, disclose any assumptions made during the analysis, and reveal the limitations of the information on which the analysis is based. Finally, the analysis report should be subjected to critical technical review.

The Analysis is designed to be flexible and driven by road-related issues important to the public and to managers. It uses a multi-scale approach to assure that these issues are examined in context. And it provides a set of analytical questions to be used in fitting analysis techniques to individual situations. Roads Analysis is intended to complement and integrate existing laws, policy, guidance, and practice into the analysis and management of roads on the National Forests.

The detail of the analyses must be appropriate to the intensity of the issues addressed. Where ecosystem analyses or assessments are completed, Roads Analysis will use that information rather than duplicating these efforts. Roads Analysis may be integrated as a component of watershed analyses, landscape assessments, and other analyses supporting existing decision processes.

Roads Analysis neither makes decisions nor allocates lands for specific purposes. Line officers, with public participation, make decisions. Technical analysts conduct technical analyses that inform the decisionmaking role about effects, consequences, options, priorities, and so on. Roads Analysis provides information for decisionmaking by examining important ecological, social, and economic issues. Roads Analysis helps implement Forest Plans by identifying management opportunities that can lead to site-specific projects. It can also identify needed changes in Forest Plans to be addressed in Plan amendments or revisions.

By completing Roads Analysis, National Forests will generate maps and narratives that display and describe management opportunities for changing current road systems to better address future

needs, budgets, and environmental concerns. A report from each Analysis will provide details of potential changes and other information relevant to managing Forest programs and projects.

The Six Steps

Roads Analysis comprises six steps aimed at producing needed information and maps. Line-office participation is essential to the process. Although the Analysis consists of six sequential steps, the process may require feedback and iteration among steps over time as the Analysis matures. The amount of time and effort spent on each step will differ, based on specific situations and available information. The process provides a set of possible road-related issues and analysis questions, the answers to which can inform the choices made about future road systems. Line officers and interdisciplinary teams can determine the relevance of each question, incorporating public participation as deemed necessary by line officers.

Step 1 — Setting up the Analysis. The Analysis must be designed to produce an overview of the road system. Line officers will establish appropriate interdisciplinary teams and identify the proper analytic scales. The interdisciplinary team will develop a process plan for conducting the Analysis. The output from this step will include assignment of interdisciplinary team members, a list of information needs, and a plan for the Analysis.

Step 2 — Describing the situation. The interdisciplinary team will describe the existing road system in relation to current Forest Plan direction. Products from this step include a map of the existing road system, descriptions of access needs, and information about physical, biological, social, cultural, economic, and political conditions associated with the road system.

Step 3 — Identifying issues. The interdisciplinary team, in conjunction with line officers and the public, will identify important road-related issues and the information needed to address these concerns. The interdisciplinary team will also determine data needs associated with analyzing the road system in the context of the important issues, for both existing and future roads. The output from this step includes a summary of key road-related issues, a list of screening questions to evaluate them, a description of status of relevant available data, and what additional data will be needed to conduct the Analysis.

Step 4 — Assessing benefits, problems, and risks. After identifying the important issues and associated analytical questions, the interdisciplinary team will systematically examine the major uses and effects of the road system including the environmental, social, and economic effects of the existing road system, and the values and sensitivities associated with unroaded areas. The output from this step is a synthesis of the benefits, problems, and risks of the current road system and the risks and benefits of building roads into unroaded areas.

Step 5 — Describing opportunities and setting priorities. The interdisciplinary team and line officers will identify management opportunities, establish priorities, and formulate technical recommendations that respond to the issues and effects. The output from this step includes a map and descriptive ranking of management options and technical recommendations.

Step 6 — Reporting. The interdisciplinary team will produce a report and maps that portray management opportunities and supporting information important for making decisions about the future characteristics of the road system. This information sets the context for developing proposed actions to improve the road system and for future amendments and revisions of Forest Plans.

Contents

SUMMARY 2

THE ROADS ANALYSIS 5

The Objectives of Roads Analysis5
How Will Roads Analysis Achieve These Objectives? 6
Technical and Policy Roles Within the Interdisciplinary Team 7
Responsibilities Of Line Officers 7
Roads Analysis In Relation to Existing Planning, Analyses, and Decisions 9
Terminology Used in the Analysis and Management of Roads 11
How Roads Analysis is Related to Management Decisions 13
Definitions 14
Road Classifications in Current Use 14
The Products of the Roads Analysis 15
Adaptive Management 15

THE ROADS ANALYSIS PROCEDURE 17

Step 1. Setting up the Analysis 19
Purpose *19*
Products *19*
Questions *19*
Step 2. Describing the Situation 23
Purpose *23*
Products *23*
Questions *23*
Step 3. Identifying issues 24
Purpose *24*
Products *25*
Questions *25*
Step 4. Assessing Benefits, Problems, and Risks 25
Purpose *25*
Products *26*
Questions *29*
Step 5. Describing opportunities and setting priorities 32
Purpose *32*
Products *32*
Questions *32*
Step 6. Reporting 34
Purpose *34*
Products *34*
Questions *34*
Record keeping 36
References 36

APPENDICES

Appendix 1. Ecological, Social, and Economic Considerations
Appendix 2. Indicators for analysis of water/road interactions
Appendix 3. National Forest Prototypes
Appendix 4. Some road hydrologic risk-assessment methods
Appendix 5. The Roads Analysis Team with contact information

ECONOMIC IMPACTS ANALYSIS

You have commented about local managers, Mr. Dombeck. I agree with you that that is advisable and I am wondering if you will be looking as you look at the local decision-making capability, looking at the economic impacts on these communities. Is that a factor in determination of providing this kind of road analysis that you are going to be doing?

Mr. DOMBECK. Yes. In fact, again, if you look at the backlog of our construction and our backlog of reconstruction and maintenance and replacement of bridges and this sort of thing, with an over $8 billion backlog—these are tremendous opportunities for contractors on local jobs. The way that the work is done varies from forest to forest where, you know, in some cases we have our own work force, but in most cases we have cooperative agreements with the townships, with counties or contract out to local contractors. But part of the problem we have is, we have more roads than we can afford to maintain. So then what do we do with those roads, the ones that we cannot afford? That again is the decision at the local level. Do you turn them into hunter/walking trails, hiking trails, biking trails? Do you gate them? Are they causing enough environmental problems, sedimentation, that they need to be decommissioned, obliterated? Those decisions need to be made at the local level. But then the commitment that we need from the local communities is, we need a support base to maintain the roads that everybody wants.

Mr. NETHERCUTT. No, I understand that and that is part of the economic analysis that probably will have to be undertaken as well and at least out my way in eastern Washington there, a lot of people say to me, I would be willing as a citizen, they say, to try to go in and assist the Forest Service in the maintenance efforts. But what they do not want to do is have a gate be put up and say well, geez, I have been walking this trail forever and ever and now suddenly I cannot. I do not perceive that I am doing any harm to the process. I am not in logging or whatever else I might use the forest to do. So I think you will find support, at least in my part of the country, community support for the effort that needs to be taken, under the management practices that you have.

REGULATORY FLEXIBILITY ANALYSIS

I just ask one final question, Mr. Chairman. Along that line with regard to small communities, there is federal law, my staff informs me and thank goodness for them, that requires a final regulatory flexibility analysis to be done when a final rule is published. They cite 5 U.S.C. Section 604. And it requires that this regulatory flexibility analysis must include a statement of the need and objective for the rule, a summary of the significant issues that are involved, record-keeping requirements and what steps the Agency, Forest Service in this case, has taken to minimize the impact on small communities.

And I am wondering if you are planning to do that regulatory flexibility, final regulatory flexibility analysis as required by law, at least as our staff sees it?

Mr. DOMBECK. Well, if it is required by the law, we are going to do it.

Mr. NETHERCUTT. I understand. Just maybe you could respond for the record what steps you intend to undertake to comply with that requirement?

Mr. DOMBECK. We will do that. Unlike you, I have several attorneys that are looking at that and that keep me advised and we will provide that information for you.

[The information follows:]

The Forest Service considered the direction of Executive Order 12866, the Unfunded Mandates Reform Act of 1995, and the Regulatory Flexibility Act in determining the appropriate economic analysis. Executive Order 12866 provides guidance on the requirements for undertaking an economic analysis to inform policy decisions. The Unfunded Mandates Reform Act includes direction to assess regulatory impacts if annual expenditures are $100 million or more. The Regulatory Flexibility Act required federal agencies to give special consideration to the impact of regulation on small businesses. Although the annual effects of the proposed interim roads policy are estimated to be less than $100 million, an economic analysis was undertaken and is included in the Environmental Assessment as Appendix H.

Mr. NETHERCUTT. Thank you. I will stop for a moment and then come back with another round, if I may, Mr. Chairman.

Mr. REGULA. Okay. You have some more questions you would like to ask and Mr. Peterson. Okay. We will go forward with you, Mr. Peterson.

Mr. PETERSON. Thank you, Mr. Chairman. I was kind of perusing the budget here and listening as we have been answering questions.

PROGRAM BUDGET PRIORITIES

As you look at the $172 million request of additional money for your budget this year over last, and then I look at the facility maintenance budget where you claim you need $255 million per year, since you asked for $55 million, on the road maintenance budget you claim you need $431 million a year and you ask for $122 million; 50-percent cut in the trail construction budget; a $6 million cut in the reconstruction of facilities. I guess those who oppose the resource use on our public land whether it is timber, oil or gas, or other resources are saying we are going to make it back in recreation, we are going to get this, but everything that will fuel recreation has not been adequately funded.

How do we get to where recreation becomes the aid to rural America when all of the things that will equal additional recreation, more access to the forest, more use of the forest are being so under-funded?

Why are those not getting on the priority list, yet we have $172 million of new dollars in the budget.

Mr. DOMBECK. Well, as Jim Lyons mentioned in his earlier answer, there is never enough money for the needs. One area is road maintenance, which is important. We will, with the proposed budget, increase maintenance from being able to maintain 18 percent of our roads to standard, up to 22 to 24 percent. What we are doing on our arterial and collector roads is, over the course of the last four or five years, we have lost in excess of 10,000 miles of those roads that somebody could drive down in a station wagon with a family because of washouts, bridge load limit problems, because of

safety standards and that kind of thing. But just from a philosophical standpoint, I think a good discussion for us to have, and to continue in the future—and I know the Chairman is very interested in this—is the Forest Service is in transition from the standpoint of how do we deal with this tremendously growing recreational work load. I mean, it affects law enforcement. It affects our ability to maintain our infrastructure. More people mean more wear and tear, more cars, more wear and tear on the roads and this sort of thing. And I believe the agency has been in this transition for some years, but you know, we are trying different things and appreciate things like the fee demo program. It is very, very important that that not be a replacement for other programs and those dollars go specifically into those sites where they were generated. But that is that, as a community of people responsible for the national forests, we need to continue to work very diligently.

Mr. PETERSON. I would caution you because when I dealt with budget secretaries at the state level under two Administrations, under both parties, they both gave me the same answer. We gave Pennsylvania their fees and that is to take care of their maintenance, but they flat-funded them thereafter. It was like, oh, they get fees now. We do not have to fund them. Do not let that happen to you because you will lose in the end. They did.

FOREST ROAD SYSTEM DEBATE

The road issue. How many miles of roads do we have in the Forest Service?

Mr. DOMBECK. About 383,000 miles.

Mr. PETERSON. People talk like this is an immense amount of roads, but you know I have counties in my district that have 3,000 to 4,000 miles of road in them and they are rural farm counties. So when you take the 200 million acres we have, it is a pretty sparse road system really. What I would like to ask you is do you have it prioritized? It seems to me a portion of your road system is providing local service. Do you know how many miles do that?

Mr. DOMBECK. Of the road, the breakdown of the road system and if someone has, I am not sure staff has the breakdown of the miles, but we have somewhat of—about in the neighborhood of about 90,000 miles that are arterial and collector roads and these would be, some of them could be hard-surfaced. You know, as I mentioned earlier, one of the roads that I grew up on is now hard-surfaced. It is blacktopped and a school route and a mail route. And also, then, a large portion of the roads, the largest portion, would have been for timber access and forest management and those kinds of things.

Mr. PETERSON. Some of the next level would also be for recreational access too, would it not?

Mr. DOMBECK. Yes.

Mr. PETERSON. It seems to me it is vital to you to break that down and get past this argument, because we have those who do not want resources taken off of the forest but also seem to oppose roads because they equate that to resources. If a fourth or a third of your road system is actually part of the local community, we ought to identify that and we ought to do our best to get it into

the highway funding scheme that funds the rest of the roads in America. And I would be one glad to help you do that.

But we need those figures and then we can argue about the rest of the roads. But personally, I think we are just losing the road argument on and on and on because everybody is tagging it to resource use and saying well, the way to stop resource use is to not fund the roads. But then they also argue that we are going to expand recreation. Well, you are not going to expand recreational opportunities without roads. Some roads should be for very limited use, for four-wheel-drive vehicles and so forth that are not for regular vehicles. Other ones maybe should become trails, but you can still get in in emergencies. Because I think we also have to think as people go deep into the forest, we have to have the ability to get them out when they have a heart attack or a stroke or have an accident. We have to think about that. And you have to have a road and there will be some kind of vehicle that can get in there and so some of our roads need to be very basic. Then some need to be a little bit improved and some need to be part of our local community system because they are mail routes and bus routes. I think we need to get much more sophisticated in how we deal with that and then we have got to get roads on the priority issue or recreation is just not going to grow.

Mr. DOMBECK. I would like to respond on three or four of your points and first, thank you for your offer to support us in the Highway Trust Fund. In fact, this year, in 1999 was the first year that we received $750,000 for inventory and planning to prioritize those needs.

The second point I want to make is that about 90 percent of the roads are used for recreation purposes and that will only continue to increase because we have got 10 times the recreation use of forest roads today than we had in 1950. And the other thing I want to mention is: We were all part of a fairly tough debate last year with the roads proposal, but I want to point out that this past fiscal year was really the first year in probably 20 years where there was not an acrimonious debate on either the floor or the House or the Senate over the Forest Service roads program. We had a time period where we were within one vote in the Senate of losing the program and just within a handful of votes in the House. I think what we did was, we were beginning to redefine the program to where it was viewed as the program that was totally associated with timber harvest and therefore I am against it, if that is your philosophy. The fact is, understand that these roads are important for recreation, for local uses, school buses that drive down some of them. And we need to look at the road situation more broadly and move the debate out of this narrow spectrum of road-building and roadless areas which is where the bulk of the organizational energy was spent. And really, the reason that I made the decision I did knowing that it would be a challenging debate—but I think we are making progress in redefining it. Now if we can take it to the next step of getting the funds to deal with the arterial and collector roads, the bridges and so on, from the appropriate sources, I think we are on the right track.

Mr. PETERSON. The timber-ton-mile tax that loggers pay, where does that go? Does that stay on that forest or does that go into a

national fund? They pay a per-mile tax if they haul logs on your route or something?

Mr. DOMBECK. It stays within the state that it is collected.

Mr. PETERSON. The state.

Mr. DOMBECK. Yes.

Mr. PETERSON. So it stays on the forest?

Mr. DOMBECK. Yes. It is generated in the state, and in the case of Pennsylvania, it would stay within the Allegheny.

Mr. PETERSON. So then it is used for what?

Mr. STEWART. I think the tax you are talking about would be used by the state to maintain their portions of the roads. We are able to collect fees from the timber sale in order to do road maintenance and road reconstruction and so forth. We pay for it through a different way, now through appropriated funds. It used to be through purchaser credits which we, of course, do not use now. But basically, the road system was maintained through collections from the timber sale.

Mr. PETERSON. Okay, thank you.

Mr. STEWART. And that does stay locally.

Mr. PETERSON. The Chairman has a question and I think George has another question. I will suspend.

Mr. REGULA. Well, Mr. Nethercutt.

TIMBER SALVAGE SALES

Mr. NETHERCUTT. Thank you, Chairman and thanks, John. Mr. Dombeck, my understanding is there is some proposed forest health salvage sales for the Colville Forest and also the Panhandle of Idaho. I am wondering if you are committed to going forward with those sales?

Mr. DOMBECK. Yes. In fact, in the case of the Panhandle, Dave Wright, the forest supervisor, has been in and briefed interested members of the delegations as well as our staff, and we will move forward with those.

I am not familiar with the details of the Colville.

Mr. NETHERCUTT. I understand.

Mr. DOMBECK. But if there is any information you would like, we would be happy to provide that.

Mr. NETHERCUTT. That is great and I will have some other questions for the record if I may, Mr. Chairman, I will submit to you for answers as fast as possible and I thank you.

Mr. REGULA. Thank you. Well, I have a statement, more than a question, and that is as I have looked at your budget, you are proposing a lot of money pass-throughs, while at the same time you do not have money for your fixed costs. You do not have adequate funding for accounting, for the accounting programs that you know are absolutely important and that is one of the reasons we have asked for the NAPA study.

You do not have adequate money for recreation, and it seems to me that you have to rethink your priorities. In all of this, you have requested $172 million in new funds and just this morning, there seems to be an agreement that we are not going to break the caps which, of course, means that we are going to be restricted on what is available.

BUDGET ALLOCATION PRIORITIES

I guess the sum and substance of what I am saying is that you need to rethink some of your priorities. As we get an allocation and we know what we will have to work with, we want to come back to you to say in light of all this, do you have some additional priorities or changes that you might make, recognizing I think, that fixed costs have to be done. I think recreation is extremely important. Obviously, the fee program is designed to enhance the visitors' experience and should be used for that. We had some indication that those rec fees may get moved into other priorities that the Department might have and I would not want that to happen. Certainly I want the fees to stay where they are collected.

That is the contract we have with the American public which is paying for these things. So we will be back in touch with you once we know what we are going to have and we are interested in working with you in terms of what your priorities are, but I think some of what you have requested probably reflects OMB priorities. Fire is another problem. And we will have to have some additional discussion in an effort to get a bill that is good policy for our national forests. I do not know if you want to comment.

FINANCIAL ACCOUNTABILITY

Mr. DOMBECK. Well, I would like to say while you had to go vote I did reaffirm our commitment to the study by the National Academy of Public Administrators to assist us in both the budget structure issues and the various things that have been said with regard to accountability. The one thing that we want to be very judicious about is the efficiency of the organization. The fact is no matter what our resource philosophy is, everyone wants a smoothly running, efficient organization where our books balance and we get a clean financial audit. That is very, very important to me. I am pleased to have somebody of Vincette's stature here. In fact, Vincette is president-elect of the D.C. Chapter of the Association of Government Accountants. We have a pro here and she has a good staff working with her. We hope you continue to encourage us to achieve a goal of accountability.

Mr. REGULA. Looking at your budget, I hope she knows the secret of that fishes and loaves story from the Bible.

Ms. MCDOUGLE. Mr. Chair, I would like to add something on this very quickly. Thank you for the opportunity. We in state and private forestry believe that it is not either/or. It is both. We cannot get forest health conditions improved by looking at the green lines alone. We have to look inwardly. We have to look outside. And an example is in the South. Forest removals now exceed the growth for the first time in 30 years. Also in the South, the Forest Service owns the red-cockaded woodpecker because of that. As fragmentation and other things occur on private lands, the critters come to us. We are the corner. And so what that does, in turn, is reduce our decision space.

So we think that there are opportunities outside the green lines that the Forest Service should also pay attention to for sustainable forestry.

Mr. REGULA. You are talking in terms of the pass-through to the states and our local communities. That is appealing, except the states are flush, and we are not. I have a hard time reconciling that when 30 percent of the United States is presently public lands, and we have many deficiencies in this budget in recreation, et cetera, et cetera, that we should be passing through to buy more lands.

I understand it would be nice. It is like farmers. All they want to own is the land they have and what is next to it. But you reach a point where you have to make priority judgments, and I think we need to encourage the states to cooperate with the national forests. But they have to take some responsibility.

Ms. MCDOUGLE. And they do. They do. We leverage our dollars with theirs, half and half. And so they do.

Mr. REGULA. Well, if we have to choose and we may very well have to do that between doing the primary responsibilities of the Forest Service and passing through money. That is when it gets tough, and that could be the decision depending on what we have available.

Ms. MCDOUGLE. These programs are wildly popular with our line officers in the field and the communities.

Mr. REGULA. I understand. We are going to be back to you.

FOREST HEALTH MAP

Mr. DOMBECK. Well, I would just like to give you—while you were voting, I passed out the forestland risk map that actually includes red dots in all of your districts and that pertains to all lands.

Mr. REGULA. This is probably a forest health issue and one that we need to emphasize in the assignment of our resources.

Well, thank you. I have to leave, but Mr. Peterson is going to have some more questions. Then he will adjourn the hearing, but we will be back in additional conversations.

RAINBOW FAMILY GATHERING

Mr. PETERSON [presiding]. Thank you. I will not keep you long. I can tell you are getting hungry. This is sort of an individual question. I try to stay in the broader perspective, but on the ANF I see that the Rainbow group is coming back this year. They come back periodically, the 1960s group. I know it takes a lot of police work because they bring a lot of problems with them. And does that come out of the ANF budget or is that a special allocation? How do you handle that?

Mr. DOMBECK. We have—just starting a couple of years ago, in fact, how many years has it been, Ron?

Mr. STEWART. Last year was the first year.

Mr. DOMBECK. Since then we set up nationally, basically, an incident command team-type structure with law enforcement so the appropriate services are there. I personally toured the Rainbow gathering in Arizona last year and it is an amazing thing to see.

Mr. PETERSON. That is what I am told.

Mr. DOMBECK. But we do have a strategy that Ron is much more familiar with, the details of it, if you would like to discuss it. I do know that our—I have asked our staffs to keep your office informed

because this is—there is potential for issues. I am not very comfortable with it with in the Forest Service because I think a lot of risk is associated with safety, those kinds of things. Over the long haul, we need to get a better handle on it than we have now.

Mr. PETERSON. Yes. Someone you may want to talk to, in that county, Warren County, there was a state trooper who was barracks commander for almost a decade or two decades and he reminded me of the day of the efforts that it cost the local state police and the efforts and what goes on there. It is interesting.

Mr. DOMBECK. In fact, I would say it takes a large proportion of the energy of the National Forest or the District that it is on for a month or more.

Mr. PETERSON. Yes. But I just wondered, is there a national pot of money that can help a forest deal with that?

Mr. DOMBECK. Yes.

Mr. PETERSON. Because it is not a normal situation.

Mr. STEWART. Just because of the way these events have been going, and they often draw 30,000 or more people, there is no way that a local forest or a local Region could handle that. So a decision of several years ago was made jointly by the regional foresters and the Washington Office to pool the money for large group gatherings, those defined to be 10,000 or more. And so there is, as the Chief said, an incident command team that is put together that moves with these large groups so they have the experience built from dealing with them. They know what to expect. They know how to work with the local communities. They use the local resources who usually have the local cooperators like the Sheriff's Department and so forth. And then the money is available for the management, for the additional resources, and for cooperative law enforcement for clean-up afterwards. That has always been an issue. We always try to get them to do the best we can.

There have been attempts in the past. Often communities would rather they not have them. The courts have ruled that they have a right to assemble and we have to honor that right. So our general philosophy is, if you will, to contain and control. It would be difficult to go in, no matter how many law enforcement officers you have, to control 30,000 people, if you decide to go in and try to arrest a lot of people. But they do make arrests, when appropriate. They do work very closely with local communities.

I do not know whether, in the briefing of your staff, they have provided the internal document to sort of lay out some of the background and the role of the incident command team, but I would be glad to leave this with you.

Mr. PETERSON. I had a staff person attend Monday, but I do not know what she received.

Mr. STEWART. Why do not I just leave this with you and give you a chance to look at it in advance of that meeting.

Mr. PETERSON. You can set it right there. I appreciate that. I know the law enforcement people have a difficulty too because in warm weather they do not wear clothes. They do not have identification. When they try to arrest, it is hard to figure out who they are because they are from all over the country and some of them are very prominent citizens, heads of corporations and leadership in cities, but they come without identification.

Mr. STEWART. One characteristic of the Rainbow Family is there are no leaders.

FOREST HEALTH MAP

Mr. PETERSON. That is right. As I was looking at this Forest Health Map now, the red I take it is lands at risk from insect and disease. Is there a figure put to this of what it is going to take to deal with this?

Mr. DOMBECK. Let me ask state and private forestry to give us some details on that. Janice? Janice McDougle is from state and private forestry.

Ms. MCDOUGLE. What we have done for the field is to identify those areas that probably will need further analysis on the ground as to what treatments would be the most effective.

I think that represents about 38 million acres and—58 million acres. And all of those acres will not be treated. Sometimes you just have to do different things to reduce the risk.

Mr. PETERSON. Are we focusing our resources to the really red areas? I mean there are some areas that are almost solid.

Ms. MCDOUGLE. Yes.

Mr. PETERSON. Is that where we are focusing our attention?

Ms. MCDOUGLE. Yes.

Mr. PETERSON. Is most of this disease or insect related?

Ms. MCDOUGLE. Both.

Mr. PETERSON. But there is no actual budget figure to deal with this?

Ms. MCDOUGLE. Yes, it is. It is in our forest health protection budget to deal with that. Some is in our timber budget to deal with that. So it is in a number of different places to do that. This is just another tool for the field to look at their priorities and what needs to be dealt with to affect forest conditions.

BELOW-COST TIMBER SALES

Mr. PETERSON. Another issue I just want to mention is, I do not think it has been discussed here today. There is a lot of publicity every year of you losing money on your timber sales, but is not a fairly large portion of your timber sales really not timber sales as far as going out and selling timber? It is where you are removing dead and waste and diseased trees and fire? It seems to me you have got everything categorized as a timber sale when it should not be. I just think when you are treating forestland to remove diseased timber, to remove the dead wood that causes your fire hazards and so forth and so on, to categorize that as a timber sale and then allow people to say that you are losing all this money on selling timber, when you are really selling something that is of very low value, but you need to get it out of there if you are going to preserve the rest. Should there not be some change in how you do business?

Mr. DOMBECK. Yes, in fact—the accounting procedures associated with that—my personal philosophy is that we should not even be talking about below-cost timber sales. We ought to be talking about the condition that we want the forest in, the condition we want the watershed in, and how do we get there. Because there has been a significant transition. For example, I believe about 80 percent of

the timber sales provide ecological watershed treatments that are beyond the objective of getting the commercial timber out. And all those things need to be taken into consideration. The TSPIRS issue and so on are things that we need to take a close look at.

Mr. PETERSON. But should not you name them something different? I mean should you be calling them timber sales when you are——

Mr. DOMBECK. Well, my view is that in a lot of the debate with regard to timber harvest, we need to change the lexicon. We need to talk about the condition we want the forest in. How do we get it there? How do we apply the science, technology, and management treatments to get it there? The lexicon we are moving away from is the fact that if you look at a watershed and you say well, I can get *X* million board feet out of there, there is going to be a debate. There are going to be issues associated with it.

If we look at it from the standpoint of applying the science and technology; getting the resources out that we can; accruing the economic benefits from those resources—it is important because the common ground that I think we all have is that if we take care of the land, we can produce fiber, we can take care of our water quality, our wildlife and fish habitats, and those kinds of things. By the way, I was going to ask you how you did on your hunting on the tract of land that you were at this past year versus when you were a kid.

FOREST SUCCESSION

Mr. PETERSON. Well, it is not as good as deer hunting. Well, I hunted on it when it was open fields. I hunted on it when it was brush. And that is when I shot some bucks there. But it was little open spots and part of it grown up. And now it is pole woods and there is deer around, but it is not he same kind of hunting. It is a woods now. The deer are on the edges and in the thickets. That used to be a thicket. I remember when it turned from a field into a thicket you could not walk through. It has been interesting to watch it happen, but I do not think we are aware of how much that is happening.

Mr. DOMBECK. You know, that story points out an important fact about long-term objectives. Species require, certain species require early seral stages—rough grouse, you need edge effect and all these kinds of things. If you think about emulating what goes on in nature, you have got blowdown. You have fires. The evolution of land, habitats, plants and animals has been a constant over time. If the objective is to focus on the mosaic of different ecological seral stages, different habitats that you need out there, that is the place the dialogue needs to go, I believe.

STORM DAMAGE, 1985

Mr. PETERSON. Well, as far as hunting and wildlife, when there has been forestry practiced, two or three years later it is much better hunting. Blackberries and some of the spots have been opened more. But something I might suggest and I had not thought of this when I had discussions with you is in 1985, we had the blowdowns with the series of tornados and some of them went through the ANF. I do not know whether your research people there at the lab,

but it seems to me, it may be a little late, but I do not think it is still too late. We are just 14 years in. But what has happened is there were areas a mile wide where every tree was torn down. Everything with any size at all was twisted to the ground. I mean it was one of the most powerful storms I have ever seen. It has been interesting to watch what has come back there, the kind of wildlife that has come back there. The thickness of the habitat and how fast and how tall it is today. It is 25 to 30 feet tall today. And I do not know whether you have done any research on that, but it would be interesting to me what has happened, what kind of critters came there, what kind of species are there today. It would be interesting.

Mr. DOMBECK. Dr. Robert Lewis is head of our research and development program. He is the Deputy Chief for that area.

Mr. LEWIS. Right, and I know that area extremely well. And good morning, by the way.

Mr. PETERSON. Good morning.

Mr. LEWIS. I was former director at the Northeastern Experiment Station and I flew over those spots, those sites in 1986, and I remember when it happened in 1985. And Susan Stout, the project leader up there, and David Marquis, who was in the position before she came, implemented studies on disturbance ecology. They were right on the site, right on the spot, actually, right after the storm occurred. And so we have good research data on that.

Mr. PETERSON. Has anybody determined what kind of habitat? I know I have been told that songbirds that were not normally seen were prevalent, because it was really a thick wilderness that came back in many areas where there was a lot of seed stock. It just exploded into life and it is so thick a few years ago you could not walk through it. I have not tried recently, but for a while you could not walk through it.

Mr. LEWIS. They have been working on the regeneration of those sites. As you know, oak regeneration is a major problem up there.

Mr. PETERSON. Cherry does better.

Mr. LEWIS. And cherry as well. Big problem with hyacinth fern which was very thick as well. They have collected data, but we still have a major problem with a large deer population. And I know some of the hunters do not think that we have too many.

Mr. PETERSON. See, that is the problem back to the road issue. If you do not have roads, hunters are not going in there. The average hunter today is not the average hunter of 20 years ago. They will not go more than a mile or two from the car. So if you want the hunters to shoot the deer, you have got to have a trail for them to get in and not walk too far.

Mr. LEWIS. Right. They are not willing to walk a long way.

Mr. PETERSON. Well, I want to thank you very much and I guess we appreciate your willingness. I would love any information you have on those blowdown areas because it is an interesting forest coming there. With that, I guess this hearing is adjourned.

[Additional committee questions follow:]

HOUSE INTERIOR APPROPRIATIONS SUBCOMMITTEE
FY 2000 HEARING QUESTIONS

FY 1999 Discretionary Appropriations.....$2,649,853,000
FY 2000 Discretionary Request (without legislative proposals)....2,822,556,000
FY 2000 legislative proposals.....-111,000,000
Difference from enacted (minus legislative proposals).....+172,703,000

FY 1999 FTE's.....34,984
FY 2000 FTE's.....35,614
Difference.....+630

Before we talk about current issues and controversies, as well as your status as a high risk agency for fiscal problems, let's talk about the priorities for Forest Service work and the priorities that are displayed in your budget. It seems to me that the highest priorities for you are to take care of the forests and rivers, provide recreational opportunities for the public, and assist communities.

Question 1 What are your top two priorities in this budget request?

Answer: The President's budget contains many important priorities including emphasis on existing programs and new initiatives. It will be important in fiscal year 2000 to emphasize continued protection and restoration of watershed health through proposed budget increases of $188.9 million to implement the Natural Resource Agenda. The Natural Resource Agenda through emphasis on health of the land supports improvement in the management of the agency's infrastructure, specifically forest road maintenance. It is also important to emphasize the agency's important role in supporting State and Private activities. Improving relationships with State and non-industrial private land owners is essential to long term efforts to provide clean water and preserve open space. Priority attention to the Lands and Livability Initiative will promote this objective. The proposed fiscal year 2000 budget proposes programs in Forest Research and Development, Wildland Fire Management, Public Asset Protection, National Forest Systems, and Land Acquisition which actively support these priorities. The Natural Resource Agenda incorporates these integrated approaches to improving watershed health on state, private, and National Forest System lands.

Question 2 As you know, the budget caps negotiated by the administration and the Congress will result in a decreased allocation for this subcommittee. Yet, you are asking for $172 million in new funds, and you are not covering fixed cost increases for many programs. If we have to freeze your budget at the FY 1999 levels, what programs would you suggest we decrease, and by how much?

Answer: The Administration is aware of the funding challenges faced by the Subcommittee. The President's budget provides a balance of initiatives supporting broad nationwide goals as well as emphasis on protecting and restoring the health of National Forest forests and rangelands. As discussed in Question 1, we believe the funding emphasis contained in the President's budget is important for America and will compete well as the Subcommittee and Congress deliberate the fiscal year 2000 funding bill.

Question 3 For the record; please provide a table which lists programs getting real increases (above the fixed cost increases) and the programs which are having program decreases (accounting for the fixed cost increases).

QUESTION 3

USDA Forest Service
FY 2000 President's Budget
Changes in Uncontrollable
and Program Costs
and Changes from
FY 1999 Enacted
($ in Thousands)

C:\BPSDATA\FY2000\3PRESBGT\UncontProgChngsCompans 03/08/99 1215 **PROGRAMS**	FY 1999 Budget Authority Enacted to Date	FY 2000 Changes in Uncontrollable Costs	Changes in Program Costs	FY 2000 President's Budget	FY 2000 President's Budget Changes from FY 1999
DISCRETIONARY APPROPRIATIONS					
FOREST and RANGELAND RESEARCH	197,444	6,529	30,671	234,644	37,200
STATE and PRIVATE FORESTRY					
Forest Health Management					
Federal Lands	37,325	1,218	1,782	40,325	3,000
Cooperative Lands	17,200	65	4,135	21,400	4,200
Subtotal--Forest Health Management	54,525	1,283	5,917	61,725	7,200
Cooperative Fire Protection					
State Fire Assistance	21,510	79	9,920	31,509	9,999
Volunteer Fire Assistance	2,000	0	1	2,001	1
Subtotal--Cooperative Fire Protection	23,510	79	9,921	33,510	10,000
Cooperative Forestry					
Forest Stewardship	28,830	227	(227)	28,830	0
Stewardship Incentives Program	0	11	14,989	15,000	15,000
Forest Legacy Program	7,012	28	42,972	50,012	43,000
Urban and Community Forestry	30,540	94	9,406	40,040	9,500
Economic Action Programs	17,305	119	(1,119)	16,305	(1,000)
Pacific Northwest Assistance Programs	9,000	57	(2,057)	7,000	(2,000)
Subtotal--Cooperative Forestry	92,687	536	63,964	157,187	64,500
TOTAL--STATE and PRIVATE FORESTRY	170,722	1,898	79,802	252,422	81,700
INTERNATIONAL FORESTRY	(3,500)	(0)	(0)	(3,500)	(0)
NATIONAL FOREST SYSTEM					
Land Management Planning	40,000	1,324	8,676	50,000	10,000
Inventory and Monitoring	80,714	2,095	5,305	88,114	7,400
Recreation Use					
Recreation Management	144,953	4,109	(4,109)	144,953	0
Wilderness Management	29,584	1,167	5,823	36,574	6,990
Heritage Resources	13,050	334	(334)	13,050	0
Subtotal--Recreation Use	187,587	5,610	1,380	194,577	6,990

USDA Forest Service
FY 2000 President's Budget
Changes in Uncontrollable
and Program Costs
and Changes from
FY 1999 Enacted
($ in Thousands)

C:\BPSDATA\FY2000\3PRESBGT\UncontProgChngsComparis 03/08/99 1215 **PROGRAMS**	FY 1999 Budget Authority Enacted to Date	FY 2000 Changes in Uncontrollable Costs	Changes in Program Costs	FY 2000 President's Budget	FY 2000 President's Budget Changes from FY 1999
Wildlife and Fisheries Habitat Management					
Wildlife Habitat Management	32,097	964	4,036	37,097	5,000
Inland Fisheries Habitat Management	19,017	674	6,326	26,017	7,000
Anadromous Fisheries Habitat Management	22,714	727	5,673	29,114	6,400
TE&S Species Habitat Management	26,548	784	4,216	31,548	5,000
Subtotal--Wildlife and Fisheries Habitat Management	100,376	3,149	20,251	123,776	23,400
Rangeland Management					
Grazing Management	28,517	865	(865)	28,517	0
Rangeland Vegetation Management	26,533	978	7,022	36,533	8,000
Subtotal--Rangeland Management	57,050	1,843	6,157	65,050	8,000
Forestland Management					
Timber Sales Management	226,900	6,485	(36,500)	196,885	(30,015)
Forestland Vegetation Management	58,300	1,789	(1,789)	58,300	0
Forest Ecosystem Restoration and Improvement	0	0	15,000	15,000	15,000
Subtotal--Forestland Management	285,200	8,274	(23,289)	270,185	(15,015)
Soil, Water, and Air Management					
Soil, Water, and Air Operations	25,932	661	339	26,932	1,000
Watershed Improvements	30,165	816	9,184	40,165	10,000
Subtotal--Soil, Water, and Air Management	56,097	1,477	9,523	67,097	11,000
Minerals and Geology Management	37,050	950	(1,950)	36,050	(1,000)
Landownership Management					
Real Estate Management	46,133	1,235	686	48,054	1,921
Land Line Location	15,006	402	510	15,918	912
Subtotal--Landownership Management	61,139	1,637	1,196	63,972	2,833
Infrastructure Management 1/					
Facility Maintenance/Non-Recreation	0	0	0	0	0
Facility Maintenance/Recreation	0	0	0	0	0
Trail Maintenance	0	0	0	0	0
Subtotal--Infrastructure Management	0	0	0	0	0

USDA Forest Service
FY 2000 President's Budget
Changes in Uncontrollable
and Program Costs
and Changes from
FY 1999 Enacted
($ in Thousands)

C:\BPSDATA\FY2000\3PRESBGT\UncontProgChngsCompar 03/08/99 1215 **PROGRAMS**	FY 1999 Budget Authority Enacted to Date	FY 2000 Changes in Uncontrollable Costs	Changes in Program Costs	FY 2000 President's Budget	FY 2000 President's Budget Changes from FY 1999
Law Enforcement Operations	66,288	1,438	(1,438)	66,288	0
General Administration	256,400	5,719	(5,719)	256,400	0
TOTAL--NATIONAL FOREST SYSTEM	1,227,901	33,516	20,092	1,281,509	53,608
WILDLAND FIRE MANAGEMENT					
Preparedness	324,876	6,388	(6,388)	324,876	0
Fire Operations	235,300	3,139	(2,585)	235,854	554
FY 1999 and 2000 Fire Contingencies	(102,000)	(0)	(0)	(90,000)	(-12,000)
TOTAL--WILDLAND FIRE MANAGEMENT	560,176	9,527	(8,973)	560,730	554
RECONSTRUCTION and CONSTRUCTION					
Facilities					
Research	12,010	26	(12,036)	0	(12,010)
Fire, Administrative, and Other	24,946	91	(25,037)	0	(24,946)
Recreation	32,949	295	(33,244)	0	(32,949)
Subtotal--Facilities	69,905	412	(70,317)	0	(69,905)
Roads and Trails					
Roads Reconstruction and Construction	98,009	1,981	(99,990)	0	(98,009)
Roads Maintenance and Decommissioning	99,884	2,954	(102,838)	0	(99,884)
Trails Reconstruction and Construction	29,554	282	(29,836)	0	(29,554)
Subtotal--Roads and Trails	227,447	5,217	(232,664)	0	(227,447)
TOTAL--RECONSTRUCTION and CONSTRUCTION	297,352	5,629	(302,981)	0	(297,352)
PUBLIC ASSET PROTECTION and MANAGEMENT 2/					
Reconstruction and Construction					
Facilities	69,905	412	(6,912)	63,405	(6,500)
Roads	98,009	1,981	(3,522)	96,468	(1,541)
Trails	29,554	282	(16,782)	13,054	(16,500)
Subtotal--Reconstruction and Construction	197,468	2,675	(27,216)	172,927	(24,541)

USDA Forest Service
FY 2000 President's Budget
Changes in Uncontrollable
and Program Costs
and Changes from
FY 1999 Enacted
($ in Thousands)

C:\BPSDATA\FY2000\3PRESBGT\UncontProgChngsCompans 03/08/99 1215 **PROGRAMS**	FY 1999 Budget Authority Enacted to Date	FY 2000 Changes in Uncontrollable Costs	Changes in Program Costs	FY 2000 President's Budget	FY 2000 President's Budget Changes from FY 1999
Maintenance					
Facilities	52,224	1,392	1,197	54,813	2,589
Roads	99,884	2,954	19,648	122,484	22,600
Trails	18,445	622	1,378	20,445	2,000
Subtotal--Maintenance	170,553	4,968	22,221	197,742	27,189
TOTAL--PUBLIC ASSET PROTECTION and MANAGEMENT	368,021	7,643	(4,995)	370,669	2,648
LAND ACQUISITION--L&WCF					
Acquisition Management	8,000	412	(367)	8,045	45
Land Purchase	109,918	0	37	109,955	37
TOTAL--LAND ACQUISITION	117,918	412	(330)	118,000	82
OTHER APPROPRIATIONS					
Acquisition of Lands for National Forests, Special Acts	1,069	0	0	1,069	0
Acquisition of Lands to Complete Land Exchanges	210	0	0	210	0
Range Betterment Fund	3,300	50	(50)	3,300	0
Gifts, Donations, and Bequests--Forest Research	92	0	0	92	0
TOTAL--OTHER APPROPRIATIONS	4,671	50	(50)	4,671	0
Management of Federal Lands for Subsistance Uses					
Subsistence Management--Forest Service	3,000	0	(3,000)	0	(3,000)
SUBTOTAL--DISCRETIONARY APPROPRIATIONS	2,947,205	65,204	(189,764)	2,822,645	(124,560)
LEGISLATIVE PROPOSALS					
Timber Program User Fee Proposal	0	0	(20,000)	(20,000)	(20,000)
KV--Indirect Cost Savings	0	0	(34,000)	(34,000)	(34,000)
Timber Salvage Sales Indirect Cost Savings	0	0	(18,000)	(18,000)	(18,000)
Timber Salvage Sales User Fee Proposal	0	0	(9,000)	(9,000)	(9,000)
Concession Reform	0	0	(11,000)	(11,000)	(11,000)
Special Forerst Products Reform	0	0	(12,000)	(12,000)	(12,000)
Brush Disposal Indirect Cost Savings	0	0	(7,000)	(7,000)	(7,000)
SUBTOTAL--LEGISLATIVE PROPOSALS	0	0	(111,000)	(111,000)	(111,000)
TOTAL--DISCRETIONARY APPROPRIATIONS	2,947,205	65,204	(300,764)	2,711,645	(235,560)

USDA Forest Service
FY 2000 President's Budget
Changes in Uncontrollable
and Program Costs
and Changes from
FY 1999 Enacted
($ in Thousands)

C:\BPSDATA\FY2000\3PRESBGT\UncontProgChngsCompans 03/08/99 1215 **PROGRAMS**	FY 1999 Budget Authority Enacted to Date	FY 2000 Changes in Uncontrollable Costs	Changes in Program Costs	FY 2000 President's Budget	FY 2000 President's Budget Changes from FY 1999
MANDATORY APPROPRIATIONS					
PERMANENT APPROPRIATIONS					
Working Funds					
Brush Disposal	22,885	426	(247)	23,064	179
Indirect Costs Reduction	0	0	(7,000)	(7,000)	(7,000)
Subtotal--Brush Disposal	22,885	426	(7,247)	16,064	(6,821)
Licensee Programs	121	0	0	121	0
Restoration of Northern Forestlands and Improvements	2,839	2	(660)	2,181	(658)
Recreation Fee Collection Costs	1,475	79	(454)	1,100	(375)
Recreation Fee Demonstration Program	33,713	611	(8,324)	26,000	(7,713)
Timber Roads--Purchaser Election Program	5,945	23	(23)	5,945	0
Timber Salvage Sales	142,977	4,724	(20,203)	127,498	(15,479)
Indirect Costs Reduction	0	0	(18,000)	(18,000)	(18,000)
Subtotal--Timber Salvage Sales	142,977	4,724	(38,203)	109,498	(33,479)
Timber Sales Pipeline Restoration Fund	6,000	0	0	6,000	0
Roads and Trails for States--National Forest Fund	28,342	240	6,187	34,769	6,427
Midewin National Tallgrass Prairie Rental Fees	600	0	500	1,100	500
Operation and Maintenance of Quarters	8,669	217	(1,452)	7,434	(1,235)
Subtotal--Working Funds	253,566	6,322	(49,676)	210,212	(43,354)
Payment Funds					
Payment to Minnesota	1,267	0	0	1,267	0
Payments to Counties--National Grasslands Funds	5,754	0	262	6,016	262
Payments to States--N Spotted Owl Guarantee	119,639	0	(5,127)	114,512	(5,127)
Payments to States--National Forest Fund	122,823	0	(6,683)	114,140	(6,683)
Subtotal--Payment Funds	249,483	0	(13,548)	235,935	(13,548)
TOTAL--PERMANENT APPROPRIATIONS	503,049	6,322	(63,224)	446,147	(56,902)

USDA Forest Service
FY 2000 President's Budget
Changes in Uncontrollable
and Program Costs
and Changes from
FY 1999 Enacted
($ in Thousands)

C:\BPSDATA\FY2000\3PRESBGT\UncontProgChngsComparis 03/08/99 1215 **PROGRAMS**	FY 1999 Budget Authority Enacted to Date	FY 2000 Changes in Uncontrollable Costs	Changes in Program Costs	FY 2000 President's Budget	FY 2000 President's Budget Changes from FY 1999
COOPERATIVE WORK--TRUST FUNDS					
Knutson-Vanderberg (K-V) Act	180,018	4,896	(7,782)	177,132	(2,886)
K-V Indirect Costs Reduction	0	0	(34,000)	(34,000)	(34,000)
Subtotal--Knutson-Vandenberg Act	180,018	4,896	(41,782)	143,132	(36,886)
Cooperative Work--Other	40,028	801	(15)	40,814	786
TOTAL--COOPERATIVE WORK--TRUST FUNDS	220,046	5,697	(41,797)	183,946	(36,100)
REFORESTATION TRUST FUND	30,000	429	(429)	30,000	0
TOTAL--MANDATORY APPROPRIATIONS	753,095	12,448	(105,450)	660,093	(93,002)
GRAND TOTAL--FOREST SERVICE	3,700,300	77,652	(406,214)	3,371,738	(328,562)

1/ FY 1999 Appropriations Act funded Infrastructure Management at $70,669,000; this table displays absorption of Infrastructure Management into proposed FY 2000 appropriation account, "Public Asset Protection and Management," and is shown for comparison only

2/ Proposed budget structure change for FY 2000; FY 1999 figures are absorbed from Infrastructure Management in National Forest System appropriation and displayed here for comparison only.

Answer: A spreadsheet displaying the requested information will be provided to the Subcommittee staff.

Wildfire and fuels a priority?

Question 4 The public understands that Forest Service wildfire work is of utmost importance. Can you explain why you are requesting level funding for wildfire preparedness, which supports only 67% of the most efficient level, the lowest ever?

Answer: Funding for Fire Preparedness is proposed at $325 million in FY 2000, the same level as enacted in FY 1999. While the absolute dollar amount is constant, the percentage of the Most Efficient Level (MEL) represented by this amount has decreased. The change in MEL can be attributed to several factors, including reanalysis on National Forests, reclassification of positions in the fire organization, and increases in program leadership and fixed costs.

The President's Budget does provide additional funding in other accounts to help reduce fire risk and reduce the needs associated with fire preparedness. For example, the Administration has proposed $10 million for a new wildland/urban interface activity as part of the S&PF Cooperative Fire Protection program. These funds would help support and encourage active participation from communities in reducing vulnerability and fire-fighting risk in the interface areas.

Question 5 What difference does it make to the public if your wildfire preparedness is at 67% or at 85% like in the Department of the Interior request?

Answer: Financing a higher percent of MEL should manifest itself as more available initial attack fire-fighters. Depending upon the severity of the fire season, the size of fire-fighting organization available for initial attack purposes that is funded by a lower percent of MEL in fire preparedness could result in more escaped fires, increased costs of fire suppression, and greater changes to resource values.

Question 6 How will the departments work together smoothly if they have such different wildfire funding levels?

Answer: The Interior and Agriculture Departments have an effective working relationship, which has not been affected in prior years by different funding levels, and should not be affected in FY 2000.

Question 7 The past 2 years you have been emphasizing a ramping-up of the wildfire fuels treatment program, hoping to attain treatments of 3 million acres per year. The Congress has been most generous and has increased the fuels funding dramatically. The FY 2000 request calls for level funding, which means an effective reduction to the fuels program. Why is this no longer a top priority for the Forest Service?

Answer: The Hazardous Fuels Reduction program continues to be a top priority for the Forest Service. We have increased the level of fuel treatment from 385,000 acres in FY 1994 to 1.4 million acres in FY 1998. We are still committed to a target of 3 million acres of fuels treatment in

FY 2005. The President's budget balances many important priorities, of which the Hazardous Fuels Reduction program is one.

The Administration did propose additional opportunities for hazardous fuels reductions in addition to this specific program. For example, the Administration has proposed that funds from the KV program can be made available for hazardous fuels reductions according to the locations of greatest need.

Recreation a priority?

Question 8 Another key area of Forest Service activity is to provide for recreation. You claim in all of your propaganda that you are the largest provider of outdoor recreation. The Chief's natural resource agenda identifies recreation as one of the top four priorities. Your budget request calls for level funding for recreation management. When coupled with the $4 million increase in fixed costs, you are asking for a sizable recreation program decrease. Why is recreation no longer a priority for the Forest Service?

Answer: Recreation is just one of many programs funded by the Forest Service budget. It is one of the emphasis areas in the Forest Service Natural Resource Agenda. The other emphasis areas are: roads, watershed health and restoration, and sustainable forest management. Other agency priorities identified by Secretary Glickman and Under Secretary Lyons in the hearing before the House Interior Appropriations Subcommittee on March 10, 1999, are lands legacy; research; and accountability.

The Administration has also proposed a series of legislative proposal that should help provide for long-term funding stability for much of the recreational program's activities (e.g. concession reform legislation).

Question 9 Are you planning to revise your natural resources agenda to coincide with administration priorities as demonstrated in your budget request?

Answer: There are no plans to revise the Natural Resource Agenda. We believe the budget request addresses the four emphasis areas in the Natural Resource Agenda.

Question 10 What good is the natural resources agenda, or any other statement by the Chief, if they are not supported by a budget request?

Answer: The Agency remains committed to providing quality recreation settings, experiences, and public service. The Recreation Strategy, which tiers from the Forest Service Natural Resource Agenda, will focus on four areas: Settings and Experiences; Service and Satisfaction; Community Connections; and Relationships. We will look to our State and Private Forestry and Research components to indirectly assist with community connections, research which benefits the delivery of recreation opportunities and determines customer use and satisfaction, and external partnerships and relationships to assist with the delivery of recreational goods, services, and experiences

Question 11 As you know, the Committee has been pleased with the Forest Service approach to conducting the recreational fee demonstration. The Congress has pledged not to use the new fees to

off-set appropriations, yet it appears that your budget request is doing just that. Can you comment please why your recreation service is decreasing and how it relates to the recreation fee demo?

Answer: We appreciate the Subcommittee's continued support for the Recreation Fee Demonstration Project. The Forest Service has also been adamant in our direction to Regional Officers that there be no offset to regular appropriations due to fee demonstration revenues.

Much of Recreation reflects the basic operation of a national forest. While fixed costs have increased, the Forest Service is also pursing significant streamlining and efficiency measure that will offset that change.

Question 12 I have also been very concerned about the status of trails on the vast national forest system lands and have supported trails with substantial appropriations. Why is your request asking for a reduction of over 50% to the trails construction budget?

Answer: The Trail Construction funding proposed for FY 2000 is $13,054,000 from Appropriated funds, which is $16,500,000 less than the FY 1999 level of $29,554,000. However, we will supplement this with $10,000,000 from the 10-Percent Road and Trail Fund, bringing the total available to $23,054,000. The amount available for Trail Construction is based on its ability to compete with other Agency priorities, as indicated above.

Question 13 The Committees asked that the 10% receipts fund be used to attack the huge back-log of road, trail, and forest health related work and not be used to replace basic appropriations. Why were you unable to understand and follow this direction from the Committee?

Answer: The 10-Percent Fund has produced hundreds of valuable ecosystem restoration projects in FY 1998 with the approximately $50 million available from the 10-Percent Fund (this represents 2 years worth of receipts). Several trail projects benefited from this initiative on top of the basic trail work done with the appropriated funds.

The language in the conference report was taken seriously as a strong policy recommendation of the Congress. However, it is not a statutory provision. Given the tight constraints on discretionary domestic spending, the Administration chose to exercise its prerogative under the Constitution to make a different recommendation to the Congress that part of the trail program be funded from the 10 percent fund.

Question 14 Do you think that it is a good thing for basic trail reconstruction funding to be so dependent on the timber sales program (this is where the 10% receipts fund comes from) as you are suggesting in your budget?

Answer: The agency is exploring several areas of trust fund reform in order to eliminate the real and perceived reliance on timber receipts to finance other agency functions.

Question 15 If you do not mind funding the trail reconstruction budget with timber receipts, why do you object to funding some reforestation and habitat enhancement work (the KV fund) with portions of the timber sales revenues?

Answer: We do not object to using the Knutson-Vandenberg (K-V) fund for reforestation and wildlife enhancement as outlined in the Cooperative Work section of our budget request. We are exploring options to bring greater oversight and accountability to trust funds.

Backlog Maintenance a priority?

Question 16 We are pleased to see that you are improving your estimates for annual and deferred maintenance for various categories of assets. Let's turn to page 357 of the budget justification for a moment. Please briefly tell us what data form the basis for these estimates, especially for roads, recreation facilities and other buildings.

Answer: The estimates for recreation facilities and trails are based upon a combination of current condition assessment surveys and cost tables from the Forest Service's Meaningful Measures Recreation Costing Database.

Question 17 Even if we quibble about the details, it is clear that you have a multi-billion dollar backlog in important, deferred maintenance. If we fund your budget request for maintenance and construction, will your backlog increase or decrease?

Answer: The Forest Service submitted current estimates of annual maintenance needs as part of the FY 2000 budget justification. Any funding level below those annual maintenance needs identified will result in a backlog increase. However, we will use some of the funding to address backlog maintenance as well as addressing current year maintenance needs.

If Congress funds our budget request for road maintenance, these funds would target our "critical" annual maintenance activities. However, we are unable to address all of our critical annual maintenance activities, which is approximately 35 percent of our total annual maintenance needs, within the requested budget. We estimate that most of the shortfall in funding will result in annual maintenance work not being dealt with when needed, thereby adding to the backlog.

Question 18 Your data suggest a need for about $225 million per year for facilities maintenance but your request is for $55 million. What is the impact of this shortfall?

Answer: The shortfall created by unfunded facilities maintenance needs dictates that facilities will continue to deteriorate. The deferred maintenance backlog will increase proportionately due to unfunded annual maintenance.

Question 19 Similarly, you show a deferred backlog for maintenance for facilities of $1.66 billion but your budget request for facilities reconstruction and construction is only $63 million, a $6 million decrease from the FY 1999 enacted. What is the impact of continuing this shortfall in basic facility reconstruction?

Answer: Forest Service employees and the public will continue to work in and visit facilities with safety deficiencies, that are non-accessible by people with disabilities, and that are functionally obsolete. The unfunded need for facilities reconstruction and construction will increase the deferred maintenance and capital improvement needs

Question 20 Why isn't taking care of your existing facilities more of a priority to you?

Answer: Facilities maintenance is a high priority for the Forest Service. We want to provide healthy and safe facilities for the public and our employees. The majority of capital improvement projects are to replace existing obsolete facilities or to construct new facilities that meet organizational consolidation needs to effectively manage National Forest System resources.

The Forest service is developing a strategic plan, similar to the strategic plan submitted by the National Park Service to identify the long-term maintenance and construction goals for facilities. This effort will be significantly informed by the data collected and available through the INFRA project. In addition, the legislative proposals by GSA to reform the Property Act to permit agencies to retain proceeds from the sale of facilities should greatly add in this effort.

Question 21 How will we ever get on top of your road and facility maintenance problems?

Answer: Many options need to be explored to deal with this problem including reducing roads and facilities, pursuing other funding options such as the highway trust fund, implementing a sound long-term strategic plan for facilities and road management, and improving cooperative involvement.

Question 22 We understand that the sorry condition of the bridges in the national forest system roadways is a real health and safety problem. What is the status of your bridge program?

Answer: There are 7,285 bridges on forest development roads. Of these, approximately 1,000 are classified as deficient, about 10 percent are posted for less than legal load, and almost 100 bridges are currently closed to traffic. We requested and received additional road maintenance and road reconstruction funding in FY 1999 to repair deficient bridges. We plan to continue this program to address health and safety deficiencies.

Improving bridge conditions and performing inspections on schedule are annual GPRA performance measures. This assures that even if repair work cannot be performed immediately, bridges are rated and posted or closed as needed, and a repair and replacement schedule is developed.

Question 23 Is rural transportation at risk in some locales due to bridge closures or limitations?

Answer: Yes there is some risk to rural transportation due to bridge deficiencies and/or closures. Forest Service roads are used as primary routes by many rural communities. There have been many cases where bridges on these routes have been posted for less than highway loads or closed to traffic. About 10 percent of the bridges on Forest Service roads are posted for load limits and almost 100 bridges are currently closed to traffic. The bridge inspection program has been successful in identifying structural problems in a timely manner and avoiding failures which could affect and/or harm the public.

Question 24 How much facilities maintenance and reconstruction funding would be needed just to keep up with the current rates of deterioration so the backlog would not continue to increase?

Answer: The data collected from the field indicates that we need $112. 5 million for annual maintenance and $183 million, based on a 10-year average, for deferred maintenance and improvements of administrative facilities only. The Forest Service will continue to identify obsolete facilities and look for opportunities to consolidate administrative units to reduce the deferred maintenance backlog.

Forestry a priority?

Question 25 Much of the national dialogue on the Forest Service concerns discussions about the condition of the national forests and the need for forest treatments. Can you tell us a bit about the condition of the national forest system forest, including the amount of forest that is in need of thinning to reduce fire danger, reduce insect and disease risk, or improve stand vigor or composition.

Answer: Our timber stand improvement (TSI) needs provide one indicator of forest condition. Both the current level of these needs as well as the trend line for TSI needs over the past decade suggest a steady increase in stand density, fuel accumulation, weed competition, and risk of fire, and insect and disease agents. The TSI needs as of the end of FY 1998 were reported as being 1.88 million acres nationally, the highest level of TSI needs since we began tabulating this information. These TSI needs are largely associated with the National Forest System landbase identified as suitable for timber production and do not provide a complete measure of the situation on unsuitable lands.

Question 26 Your predicted timber sales level continues to decline. What level will you produce next year if you are funded at the request and what would you produce if the timber sales appropriation were held constant at the FY 1999 level?

Answer: The budget justification shows an expected volume of timber offered for sale in fiscal year 2000 of 3.252 billion board feet (BBF) consisting of 2.251 BBF funded with appropriated dollars and 1.001 BBF from the salvage sale fund. The fiscal year 1999 appropriation for timber sales management consisted of several earmarks, some of which did not produce volume offered for sale in fiscal year 1999. If we assume the entire fiscal year 1999 appropriation for timber sales management of $226,900,000 was available in fiscal year 2000 without earmarks, then about 2.68 BBF could be produced for a total program level of 3.68 BBF, including volume prepared with the salvage sale fund. This assumes there would be a commensurate funding of $42,719,000 in engineering road support.

Question 27 What funding level would be needed to maintain timber sales at the FY 1999 level?

Answer: The fiscal year 1999 estimate of timber volume offered for sale with appropriated funds is 2.511 billion board feet (BBF). To achieve this level in fiscal year 2000 would require $214,200,000 in timber sales management, plus $40,025,000 in engineering road support. This would still leave the total volume offered in fiscal year 2000 about 0.1 BBF less than fiscal year

1999 because of a lower volume estimate for sales financed from the salvage sale fund. To make up the shortfall from salvage with appropriated funds would require a program level of $223,100,000 in timber sales management, plus $1,594,000 in engineering road support.

Question 28 Tell us some more about this new fund you are hoping to establish, the Forest ecosystem restoration and improvement (FERI) fund. Why do you insist that this fund not be allowed to use commercial timber sale contracts to accomplish forest improvement?

Answer: This program would fund activities that promote the restoration and improvement of the health, diversity, resiliency, and productivity of NFS lands. A particular focus would be use of the agency's risk mapping work to set funding priorities. This analysis is being used to assess future risk of tree mortality due to insects and diseases and high fire danger. In the future, the agency hopes to link field funding allocations to high-risk priorities identified across several resource areas, including TE&S species and the wildland-urban interface.

A conscious decision has been made to separate this program from other agency vegetation management programs by requiring that this program not be used to accomplish any work that could be accomplished by any form of a timber sale contract. By doing so, we hope to focus some funding on critical forest ecosystem restoration and improvement treatments in areas that do not necessarily have commercially valuable products and where timber sale contracts would not be useful.

Question 29 Last year the Committee suggested that vegetation and habitat management funding from several sources be joined together to treat priority areas. In particular, we suggested that you combine funds from the 10% receipts fund, the reforestation fund, wildfire fuels appropriations, and national forest system appropriations for forestland vegetation management, wildlife, and watershed. Why did you not do this?

Answer: It is not easy to show how we combine funds from programs that Congress requires to be distinct into an overall program that focuses on forest health priorities. We are trying to do this within the limitations of our current fiscal, accounting, and reporting systems. What appear to be distinct expenditures from our Central Accounting System, and distinct accomplishments in our Management Attainment Reporting system from which we report our Government Performance and Results Act accomplishments, actually reflect successful funding combinations and work accomplished by our field units. But we can do more. For FY 2000, we plan to provide even more cross-program integration in our budget descriptions and reports so that it is clearer how we are attempting to address our priority forest health needs.

The Administration is considering different alternatives to reforming the permanent appropriations and trust funds in part to make funds more available for the highest priorities such as forest health and to make budgeting and operations simpler, more visible and efficient with greater accountability. We are trying to incorporate the interest of the Committee into this analysis.

Question 30 Is there an opportunity to take funds from the accounts listed above, or another grouping, to create a funding source for integrated forest landscape operations and restoration assistance?

Answer: The Administration is considering different alternatives to the current arrangement of mandatory and discretionary programs and expects to have a proposal to Congress with the FY 2001 budget.

Question 31 Please discuss several different alternative formulations that could be used to create such as fund.

Answer: At this time we prefer the approach we have taken in proposing the Forest Ecosystem Restoration and Improvement program, which does not target specific programs for reductions under our currently constrained operating budget environment.

Question 32 Last year this Committee initiated a pilot for forest stewardship contracting. Please tell us how this program is going, how many projects are underway, and what is being accomplished.

Answer: Significant progress has been made toward implementing the stewardship pilots authorized by Section 347 of the FY 1999 Omnibus Appropriations Act. Specific accomplishments include the following:

- Preparation of a progress report documenting FY 1998 accomplishments.

- Issuance of guidance to field units on what the agency can and cannot do under the new statutory language. This guidance was developed in conjunction with the USDA Office of General Counsel.

- Issuance of request for Forest Supervisors in Region 1 to nominate potential new pilot projects. At the present time, these nominations have been received; the Regional Office is in the process of setting-up an interdisciplinary team to review them and make recommendations to the Regional Forester.

- Issuance of a request for Regional Foresters outside Region 1 to nominate potential new pilot projects. This request has just recently been issued.

- Development of a proposed framework for multi-party monitoring, evaluation, and reporting. This proposed framework has been developed by a relatively small group of concerned stakeholders representing local community groups, academia, the environmental community, and the forest products industry. The plan is to secure widespread public review and comment before the proposal is finalized.

- FY 1999 funding: Not until enactment of Section 347 did it become clear the agency would have the authority to implement the pilot projects. Because of this fact, the approximately $2.5 million required to implement these projects in FY 1999 had not been included in the agency's

budget request. The needed funding has been identified from various sources. Key was the Chief's decision to provide $1.2 million in Washington Office FY 1998 carryover.

Section 347 stipulates that the agency may enter into up to 28 contracts that utilize one or more of the new authorities described in the legislation. Nine of these contracts are to be in Region 1. At present, the only projects actively underway are the 22 that the agency had previously identified as part of its ongoing vegetative management reinvention initiative. Of these 22 projects, seven (two in Region 1, and five elsewhere), while they will be doing something innovative, will not use any of Section 347's new authorities. This implies the total number of pilots should eventually equal 35, of which 28 are authorized to use one or more of the new authorities, and seven others are not.

Question 33 Please provide a table for the record which lists the projects, their locations, main focus, scheduled activities, and duration.

Answer: The desired table is shown below:

Region	Forest	Project Name	Duration (yrs.)	Management Objectives /1	Tools Being Tested /2
01	Flathead	Flathead Forestry Project	1-2	3,6	5
01	Flathead	Upper Swan-Condon	3	2,3,6	5
01	Lolo	Clearwater TS	2-3	1,3	3,4
02	Arapaho-Roosevelt	Winger Ridge Restoration	6	1,3,4,5,6	1,2,3
02	Arapaho-Roosevelt	Mt. Evans Collaborative Stewardship	5	3,4,5,6	1,6
02	White River	Upper Blue Stewardship	3-5	1,2,3,5	2,3
02	San Juan	SW Ecosystems Stewardship	5	3,6	1,3,4
03	Carson	Picuris Pueblo	3	2,3,6	7
03	Cibola	Red Canyon CCC	1	1,3,6	7
04	Fishlake	Monroe Mountain Restoration	3	2,3,6	1,3
05	Shasta-Trinity	Grassy Flats	3	1,2,3,6	1,2,3
05	Plumas	Maidu Stewardship	10+	1,2,3,6	7
05	Stanislaus	Granite Watershed	3-4	1,2,4,6	1
05	Six Rivers	Pilot Creek	1	3,6	1
05	Modoc	Fourmile Thinning/Juniper Utilization	3	3,4,6	7
05	Sequoia	Deer Creek Restoration	3	2,6	7
06	Wallowa-Whitman	Baker City Watershed	5	1,4,6	1
06	Winema	Antelope Project	3	3,6	1
06	Rogue River	Upper Glade LMSC	6	1,2,3,6	1,3,4
08	NFS in North Carolina	Wayah Contract Logging Services	2	3	2,5
09	Chequamegon/Nicolet	Lake Owen Restoration	10	3,6	7
10	Tongass (Ketchikan)	Kosciusko Commercial Thinning	3	3	7

/1 Management Objectives Coding: 1 = watershed restoration; 2 = riparian restoration; 3 = forest and rangeland ecosystem health; 4 = hazardous fuels reduction; 5 = promoting responsible recreational use; and 6 = promoting collaborative stewardship.

/2 Tools Being Tested Coding: 1 = exchange of goods for services; 2 = retention of receipts; 3 = designation by prescription; 4 = award contract on best value basis; 5 = Forest Service contract logging and sale of cut products; 6 = use of state foresters as federal agents; and 7 = other.

Question 34 What funding in the request is needed to maintain the stewardship contracting pilot?

Answer: Pages 369-373 of the Agency's FY 2000 budget justification provide a discussion of proposed National Commitments. One of these commitments--shown in the table on page 370 and described on page 372--is for $10 million to undertake priority "Natural Resource Agenda Projects." While it is not evident from the discussion, $2 million of this amount is expected to be allocated to the stewardship pilots.

Question 35 Is this pilot fully funded in the request, and if not, what would be needed?

Answer: There are at least three reasons why it is difficult to answer this question with a simple yes or no, and to state precisely what funding will be needed for the pilot effort. These difficulties are highlighted below:

- The agency is still in the process of identifying some pilots. To ensure that it has 28 projects using one or more of the new authorities granted by Congress, the agency may be undertaking as many as 11 new pilots--six in Region 1 and five elsewhere. Until all of these projects have been identified, it is difficult to know precisely what total funding will be required.

- The process for multi-party monitoring, evaluation, and reporting has not been finalized. Section 347 of the Omnibus Appropriations Act explicitly requires multi-party monitoring, evaluation, and reporting for the stewardship pilots. The agency has been working with a team of concerned stakeholders to develop a proposed framework for complying with this mandate, but this proposal needs to be circulated for broad review and comment before being finalized. Until this has happened, it is, again, difficult to know precisely what funding will be needed to comply with this legislative direction.

- The issue of what to fund "off-the-top" remains unsettled. The agency is trying to determine what pilot-related costs it should expect participating field units to cover out of their regular funding allocations. To date, for the 22 pilots that were selected pursuant to its vegetative management reinvention initiative, the agency has been funding essentially all costs off the top--i.e., not requiring field units to cover these costs out of their regular project funds. The $2 million tentatively planned for the pilots in FY 2000 will be more than adequate to cover any extraordinary costs associated with these projects--e.g., the costs of ensuring multi-party monitoring, evaluation, and reporting--but it will not be adequate to cover all implementation costs. The total funding required to cover all costs for all projects is more likely to be on the order of $4-$5 million.

Question 36 Several years ago a timber pipeline restoration fund was established. Please provide for the record a history of the activity of this fund, what has been accomplished, what is planned, and when the fund will be terminated.

Answer: We have been submitting annual reports to Congress on this fund for the past 2 fiscal years. Approximately $10.8 million has been collected from qualifying section 2001(k) sales in FY 1995-1997, and deposited into the Timber Sale Pipeline Restoration Fund. The specific amount available from FY 1998 receipts has yet to be determined. In FY 1999, we made our first field allocation, with $4.5 million going to timber sale pipeline and $1.5 million going to recreation backlog. From the timber allocation, we plan to prepare about 150 million board feet of timber for offer in future years. The recreation funding will go towards backlog recreational facilities work,

including rehabilitation of restrooms as well as water and sewer systems at various facilities in every Region. We plan to make funding allocations at a similar level in future years but do not yet know how much total funding will be available because replacement sales in the Pacific Northwest are still being negotiated.

At the FY 1999 level of funding, the agency will be unable to meet the termination requirement for this Fund. Timber sale pipeline is defined as regular program volume being analyzed and/or prepared for a future fiscal year. It can be characterized as all volume up to the completion of Gate 3 (timber sale preparation completed) of the timber sale process. The law requires the Secretary of Agriculture to make a finding that, when sales sufficient to achieve the total allowable sales quantity (ASQ) of the National Forest System have been prepared, payments to the Agriculture Fund shall be terminated and any unobligated funds paid to the Treasury. The Forest Service would consider this to have occurred when we have sufficient pipeline volume prepared at the end of any fiscal year for the next fiscal year's regular green sales program equal to 80 percent of current ASQ in effect as of the end of that fiscal year.

Current ASQ is about 6 billion board feet, which includes about 1.6 billion board feet of salvage. This ASQ amount will fluctuate as additional forest plans are amended or revised. Eighty percent of the regular program would be about 3.5 billion board feet. Also, as of the end of FY 1998, the Forest Service had 1.54 billion board feet (308.9 MMCF) of pipeline prepared for FY 1999 that is progressing normally and has completed Gate 2 and Gate 3. At current levels of funding, capability, and production, the agency would need to accomplish about 2 billion board feet of additional timber sale pipeline preparation using the Pipeline Fund before we could certify that the timber sales pipeline has been filled and the Fund can be terminated.

Question 37 What specific funding has been allocated to implement the Quincy Library Group legislation in northern California in FY 1999 and what specifically, by EBLI, is included for this work in the FY 2000 request?

Answer: For FY 1999, Region 5 has been allocated $8,000,000 to initiate actions called for in the Quincy Library Group legislation. $5,000,000 of this is in Timber Sale Management and $3,000,000 in Hazardous Fuels Reduction funds. These amounts are above the regular funding level of the three Forests involved in this legislation. $2,000,000 of the $5,000,000 in Timber Sale Management Funds are being used in FY 1999 to prepare the EIS called for in the legislation.

For FY 2000, the table below displays by specific budget line items (EBLIs) what is requested in the President's budget.

EBLI	President's FY 2000 Budget
NFTM	$3,600,000
NFFV	900,000
NFSI	200,000
WFHF	1,500,000
Total	**$6,200,000**

Question 38 The FY 1999 appropriation included a substantial additional funding bonus for timber sale preparation work on the Tongass national forest in Alaska. What has been accomplished with these funds and what additional work is being planned.

Answer: There was $12.5 million appropriated for the Tongass National Forest that was earmarked for preparation of future timber sales to facilitate a reliable federal timber supply and transition to value-added processing for the forest products industry in southeast Alaska. Of these funds, $10.5 million were dedicated to timber sale preparation and $2.0 million for engineering road support. The Tongass NF plans to obligate the majority of these funds this year for contracts for several timber sale environmental analyses. Several NEPA contracts are ready to advertise. Upon completion of these analyses, we expect to provide about 173 MMBF for offer over the next 2 fiscal years. We are also completing the action plan for obligating and tracking these earmarked funds.

Question 39 How does the Tongass national forest timber sales program accomplishment compare with what was promised in the recent Tongass land management plan?

Answer: The TLMP Revision had an annual average allowable sale quantity estimate of 267 MMBF of which 220 MMBF were considered potentially economically viable to harvest. The May 1997 Record of Decision projected that no more than 200 MMBF, or less, would be offered over the next few years, given current market conditions and the transition that both the timber industry and the Forest Service are experiencing. In 1998, the Tongass NF offered 187 MMBF. Our plan for 1999 is to offer 155 MMBF. This is consistent with the plan, funding levels, and our projection of demand as defined in the Tongass Timber Reform Act.

Research build-up??

Question 40 Your budget request has an astonishing increase of $37 million for forest and rangeland research. This includes a $12 million increase for climate change technology and global climate change research. Can you please tell us why it is more important to do this research than take care of basic wildfire preparedness, recreation services, forest thinning and deferred maintenance of the national forest system?

Answer: Under-investment in Research has been a reason that fuels have been building up, catastrophic fires are more likely, and removal of small diameter materials has not been accomplished. Proposed global climate change research will reduce the long-term risk from fires and the cost of fire-fighting. Proposed climate change technology research specifically addresses the problem of thinning of small diameter materials from overstocked forest stands. Proposed global change research will help managers better deal with increased fire hazard associated with climate change. Climate change technology research will immediately help to address the issues of thinning and small diameter removal by developing, demonstrating, and pilot testing cost-effective technologies which the forest industry has requested. Failure to invest in this research will result in an escalation of the problems that you are concerned about in the years ahead.

Question 41 During the past 2 years this Committee has supported large increases to the forest inventory and analysis program. What has been accomplished with these funds? Why isn't this work more important than the other new research initiatives you are suggesting?

Answer: During the past 2 years, the FIA program has used the increase in funds to: (1) implement an annual forest inventory program in 10 states; (2) reduce the average inventory cycle in the remaining states from approximately 13.5 years to approximately 12.5 years; (3) rebuild eroded analytical capability by hiring approximately eight analysts and initiating four cooperative agreements with external partners; and (4) expand coverage of the Forest Health Monitoring component of the inventory program from 23 states covering 52 percent of the nation's forests to 32 states covering 70 percent of the nation's forests. In 1998 alone, the FIA program conducted on-the-ground inventories on nearly 47 million acres of forest in the U.S. and produced 87 reports on the status, condition, and trends in the nation's forested resources. Inventory and monitoring are among the top priorities of the Research program, but are not the only program priorities. The other new research initiatives we are proposing also serve important public needs.

Question 42 How much of the $235 million requested for forest research is directed at work which has a direct impact on national forest system land management or other public land issues?

Answer: Forest Service Research and Development is responsible for generating credible, relevant knowledge and new technologies that can be used to sustain the health, productivity, and diversity of the nation's forest and rangelands, both public and private. Through periodic review processes involving the public--private land owners and managers, natural resource interest groups and consultants, and university professors as well as federal land managers--research priorities are set that focus on the highest priority public issues. Some public issues affect private lands, some affect public lands, and many affect both. The impact of our results in the West is greater on National Forests than in the East because 32 percent of western forestland is National Forest System land compared to only 6 percent of eastern forestland. Because so much of our research is directly applicable to both public and private lands, and because National Forests are a distinct minority of forestland in all regions, we do not track impacts separately by landowner. We concentrate on solving the highest priority issues, no matter who owns or administers the land.

Question 43 The forest inventory and analysis program provides basic services that are very important to the States and to forestry. Partnerships with the States are being increased. Wouldn't it be easier to support the service aspects and partnerships of the FIA program if the program was moved into the State and private forestry program?

Answer: It would not necessarily be easier to support the service aspects and partnerships of the FIA program if the program were moved into the S&PF program. The FIA program serves many customers in addition to State Foresters, including academic institutions, environmental organizations, private industry, consultants, and the media. In the Research and Development Deputy area, the FIA program has maintained a good track record of serving this diverse pool of customers within the limitations imposed by current appropriations. As part of the Research and Development program and culture, a high emphasis is placed on quality assurance and quality control measures, and on obtaining scientific peer review of results. These bring tremendous credibility to the FIA program's results, a characteristic valued highly by our diverse set of stakeholders. It would be much more difficult to sustain this emphasis and retain this credibility if program leadership were shifted to a non-Research entity. That is why most of our customers and partners have expressed a preference for keeping the FIA program under the leadership of the Deputy Chief for Research and Development, and are satisfied with the steps we are taking to improve program service and partnerships with the help of the S&PF organization.

Question 44 Please discuss for the record in detail the advantages and disadvantages of moving all or portions of the FIA program.

Answer: Advantages of moving all of the FIA program from Research and Development (R&D) to S&PF:

- Potential for better working relations with State Foresters, and building on existing strong relations between States and the S&PF program in other areas, like community development.

- The S&PF grant apparatus can efficiently transfer funds to State Foresters to help cover their costs of participating in the FIA program.

Disadvantages of moving all of the FIA program from R&D to S&PF:

- Potential loss in credibility of the program due to the perception that S&PF, being closer to State agencies than R&D, may be less able to maintain scientific independence. S&PF is certainly capable of conducting a science-based program, but the public perception will be one of diminished credibility compared to a program conducted under the direction of the R&D Deputy Chief.

- Potential erosion of the scientific underpinnings of the FIA program due to the lack of strong in-house scientific and research capabilities with S&PF. The R&D Deputy Area's culture stresses the importance of peer review and quality assurance/quality control which are essential to maintain credibility within the scientific community.

- Many FIA employees take great personal pride in being part of a research and development program. Further, their position, grade level, and salary depend on their personal research accomplishments. If the program is transferred to S&PF, a large number of the most highly skilled employees would be expected to leave the Forest Service for positions with other research organizations. This would further diminish the credibility of the FIA program.

Question 45 We are a bit confused about the new research initiative regarding forest planning tool development. The President's budget appendix discusses linear programming tools but the budget justification only mentions advanced spatial methods. Are you asking for a $5 million increase for outdated linear programming tools or are you hoping to do something else with this initiative?

Answer: Our approach will be to work out on the cutting edge, bringing state-of-the-art trade-off analysis capabilities to National Forest System planning and engage the public through a user-friendly computer package. To do so requires incorporating both linear programming and spatial optimization modeling.

Over the past decade, Forest Service Research and Development has pioneered spatial mathematical programming techniques suitable for identifying effective and efficient management alternatives, and for objectively estimating the resource trade-offs involved, taking spatial relationships into account. An emerging concept from this body of research is that, contrary to long-held beliefs, linear programming methods are not only suitable but are, in fact, quite useful for spatial optimization modeling of ecological and natural resource management problems. This research has been published in a monograph and in a number of highly respected journal articles by the scientists serving as technical leaders for this Forest Service initiative. Their linear

programming methods go well beyond the analytical capabilities available at the time when spatial problems were universally believed to be nonlinear, and when linear programming was prematurely labelled "outdated."

Reviews and experiences from the first round of national forest planning made it clear that spatial context must be analyzed and considered for effective management of natural resources. The Forest Service has made large investments in acquiring geographic information system technology, and continues to make investments in acquiring spatially referenced resource data. The initiative in question is aimed at adding advanced spatial analysis capabilities to the tool kit for national forest planners and the public in order to make more effective use of these ongoing investments. The proposed capabilities are based on mathematical programming methods, including linear programming.

Question 46 How would this research be used to improve national forest and grassland planning?

Answer: This research and development effort is aimed at improving public participation in and input to the planning process. It will also give National Forest System an improved tool to explore management alternatives during the planning process. The completed system should bring state-of-the-art trade-off analysis capabilities to National Forest System planning and engage the public through a user-friendly computer package. The system will provide National Forest and Grassland Planners and stakeholder groups with a PC user-friendly interface that will allow them to develop and analyze "what if" scenarios by selecting various alternatives, reviewing the trade-offs, and determining which alternative(s) best meets the needs of the overall planning effort and the stakeholders involved.

For example, a case study applying linear programming to the problem of reestablishing a population of black-footed ferrets in Badlands National Park and the surrounding Buffalo Gap National Grassland was completed a few years ago. Ferrets depend on prairie dogs. An important trade-off was perceived between ferret recovery and the level of prairie dog abundance to be tolerated. Using spatial optimization methods, the Forest Service was able to develop six different but efficient alternatives at various levels of prairie dog abundance. For each alternative, the agency was able to identify the best locations for prairie dog colonies and for captive-bred ferret releases to repopulate the area, and was able to project both short- and long-term ferret recovery levels.

Additional case studies have been conducted to examine spatial management strategies for northern spotted owls and for the western prairie fringed orchid, a rare wildflower. Similar methods have also been investigated for controlling stormflow and stream sediment, for controlling exotic pests, and for modeling timber management alternatives.

Road system repair a priority??

Question 47 Your useful table on annual and deferred maintenance needs and capital improvements needed for worn-out facilities indicates that there is a $6 billion need for roads alone. Your budget request for road reconstruction is down $1.5 million, and including fixed cost increases, this indicates a decreased program of $5 million. Why isn't road repair a priority for the Forest Service?

Answer: While our budget shows a $1.5 million decrease for road reconstruction, it also contains a $23 million increase for road maintenance and decommissioning. Both road maintenance and road reconstruction funds can be used to meet deferred maintenance needs. A specific example in our budget submittal is the proposed use of $10 million of the road maintenance budget increase for critical bridge repair and replacement.

The table on annual and deferred maintenance and capital improvement needs was developed as a result of field condition surveys on a representative sample of roads and then extrapolated to develop the total needs. This resulted in a more accurate representation of our needs to address health and safety, resource, and mission-related needs. Within 5 years, we will have performed condition surveys on our entire road system. The proposed budget for road reconstruction and for road maintenance was submitted prior to us having this information. As you can see, the dollar needs identified in the table do demonstrate the importance of increasing the focus on road maintenance and reconstruction as a priority.

Road repair is a priority for the Forest Service and is not only demonstrated by our efforts to identify our annual and deferred maintenance and capital improvement needs, but also in our efforts to identify opportunities to fund road reconstruction from the Highway Trust Fund. We also are using the "Road and Trail Receipt Funds" (the 10-Percent Fund) to address road reconstruction and maintenance needs emphasizing projects that are adversely affecting watershed conditions.

The Forest road program is one of the four emphasis areas of the Forest Service Natural Resource Agenda. Roads are a large contributor to water quality impacts on the Forests. By identifying our road repair needs and fixing them, we can significantly improve water quality. Recreation cannot reach its potential without fixing the roads. Over 90 percent of current traffic on the roads is recreational; access is being restricted further each year by ongoing deterioration of roads. Finally, we cannot have sustainable vegetation management without fixing the roads. Road systems are necessary to support virtually all forms of vegetation management, from prescribed burning to timber management.

Question 48 You have indicated that annual maintenance costs for the road system are $431 million per year and you are requesting $122 million for road maintenance. What is the impact of this shortfall?

Answer: The $431 million is only the direct cost of full operation and maintenance of the road system. The $122 million includes applicable indirect costs. If indirect costs equivalent to those included in the $122 million request are added to the $431 million figure, the full need becomes $568 million.

Note: Use of the term "indirect costs" does not apply to the standard "indirect costs" definitions. Future computations will reflect these new definitions.

Two key concepts in the reporting are "critical" needs and "operations" needs. In the Forest Service and in the Department of the Interior, a "critical" annual maintenance need is one that, if not met, will result in a "serious threat" to either health and safety, resources, or agency mission. Currently, our critical needs consist of 20 percent health and safety related affecting public safety; 30 percent mission-related affecting operations such as forest fire response; and 50 percent resources protection-related affecting areas such as aquatic and water resources.

Annual maintenance, when not performed, adds to the backlog of deferred maintenance. Thus, most of the difference between our $568 million need and our $122 million request will be added annually to the backlog.

Question 49 How does your road maintenance level compare and contrast with that provided by other federal, State, or local governmental bodies?

Answer: If we receive the FY 2000 requested funding, then our budget level will be about 20 percent compared to State and local government bodies which are funded between 85-95 percent. For example, road maintenance in the State of Utah is funded at approximately 95 percent of their annual maintenance needs.

Question 50 Do you have any suggestions why it is more important to spend $118 million on new land acquisition, $50 million for new land easements, and $10 million for the USDA rural business loans than it is to take care of your extensive road system?

Answer: It is a matter of establishing priorities and attempting to balance the programs that will provide the public with an effective National Forest System in the 21st century. It is a critical to obtain a landownership pattern that will protect existing National Forest System lands, provide adequate habitat for wildlife, protect watersheds for clean water and offer improved outdoor recreation opportunities as the population increases. In short, these are modest proposals that make an investment in open space and public land for future generations.

The budget proposal is a balanced and reasonable attempt to meet the needs of all of the program areas within the Forest Service. This includes addressing the demands for land acquisition and road maintenance funding.

Question 51 Please tell how much road decommissioning, by region, has been accomplished in each of the past 3 years, what is planned for FY 1999, and what would be accomplished if the FY 2000 funding is at the requested level, and what would be expected if the appropriation for this activity is held constant at the FY 1999 level.

Answer: The following chart provides the roads decommissioned by Region for FY 1996-FY 1998 and also displays the estimated targets for FY 1999 and FY 2000. The funds used for decomissioning roads included all types of funds as well as road maintenance funds. If our FY 2000 funding is held to FY 1999 levels, we would estimate that the number of miles of roads decommissioned to be similar to what is targeted for FY 1999.

Roads decommissioned by the Forest Service from 1996 through 2000

Region	1996	1997	1998	1999	2000
	Miles	*Miles*	*Miles*	*Miles Estimated*	*Miles Estimated*
R-1 Northern	262	258	476	335	500
R-2 Rocky Mountain	232	163	118	296	270
R-3 Southwest	200	471	162	465	540
R-4 Intermountain	158	104	271	235	550
R-5 Pacific Southwest	102	32	83	320	260
R-6 Pacific Northwest	330	593	703	743	680
R-8 Southern	102	126	184	260	300
R-9 Eastern	50	38	64	320	180
R-10 Alaska	5	3	37	26	20
Total	1440	1787	2099	3000	3300

Accounting and Accountability

Question 52 Let's take a few minutes to talk about your accounting and accountability. The Forest Service has the dubious distinction of being a high risk agency. What specific actions are you taking now in order alleviate this situation?

Answer: The Forest Service is currently engaged in numerous actions designed to improve financial management accountability within the Agency. These include restructuring the Agency's financial management leadership through the creation of an Office of Finance Deputy Chief staff. This Deputy Chief staff, led by the Agency's Chief Financial Officer, is responsible for oversight and management associated with Forest Service budget, financial management, financial systems, and financial reports and analysis staffs.

Another significant activity is the replacement of the Agency's current accounting system, i.e., the Central Accounting System (CAS), with the United States Department of Agriculture Foundation Financial Information System (FFIS). CAS was implemented by the Agency a number of years ago and unlike FFIS, is not responsive to requirements for Federal accounting as required by the Chief Financial Officers Act of 1990 and the Federal Financial Management Improvement Act of 1996. Supporting the implementation of FFIS, Forest Service accounting procedures, and associated coding structures are being refined to achieve a more effective accounting structure. In addition, definitions, codes and procedures for Agency-wide use in tracking indirect costs have been reviewed and are being formalized in response to Congressional requests.

The Agency is also actively implementing an integrated, performance-based planning and budgeting process designed to meet the requirements of the Government Performance and Results Act (GPRA) of 1993. This effort includes developing new and/or refining existing performance measures to form an integrated resource and financial information structure for use by the Agency in fiscal year 2000 and beyond.

Management of Forest Service general property, plant, and equipment is also being significantly improved through use of state-of-the-art computer technology accompanied with Agency-wide inventories. The Agency is developing an integrated computer application, i.e., Infrastructure or INFRA, to record inventories of real property items such as developed recreation sites (campgrounds), administrative sites (offices, warehouses, barracks) and other constructed features such as forest roads and trails. In addition and to facilitate the use of INFRA, Agency-wide inventories of real property have been completed.

Question 53 Will you need increased resources to complete the aggressive program you have just outlined?

Answer: Increased resources will be necessary to implement planned corrective actions to improve accounting and accountability within the Forest Service. The Agency's need for additional resources was clarified through a special study titled Project Ponderosa, which was conducted to review Forest Service work and develop recommendations for any additional staff. Responding to the recommendations of the Project Ponderosa, the Forest Service is currently evaluating the placement of additional personnel throughout the Agency to determine their most effective and efficient use. The majority of additional personnel recommended by the Project Ponderosa will be added to programs funded by the General Administration (GA) budget line item. Expenses funded by GA include the cost to implement FFIS within the Forest Service.

Question 54 If so, what specific funds in the budget request are going to be used for these financial accountability purposes?

Answer: The General Administration (GA) line item will generally be used to fund improvements in Agency accounting and accountability. In those instances where the improved activity can be traced to directly to a program area, the program area will fund such improvements.

Question 55 Since you have not asked for new or increased funding for the general administration activity, what management activities currently underway during fiscal year 1999 will you forego in fiscal year 2000 in order to provide the resources needed for your accounting workload?

Answer: General Administration (GA) will provide funds for approximately 44 percent of the total Agency indirect costs. Some indirect expenses previously funded from the GA line item, may be charged to other line items if fiscally appropriate and essential to the Agency mission. Once Forest Service units receive allocations from the fiscal year 2000 appropriation, each unit will examine priorities and determine the appropriate level of expenditure for indirect costs and on-the-ground work. In addition, unobligated balances will be used. Specific appropriations language was added to the NFS account to make these funds available to the highest priority need.

Question 56 Will you implement assessments or "national commitments" to cover costs of this work by decreasing the on-the-ground funding available for other programs?

Answer: Programs funded as National Commitments will not be increased due to a reduction in the GA line item. As noted in response to Question 55 listed above, the General Administration line item will fund 44 percent of the total Agency indirect costs. As in prior years, other line items have contributed and will continue to contribute to indirect costs. We will need greater scrutiny of indirect expenses to assure that essential on-the-ground work is not affected by spending opportunities in the GA line item.

FFIS Implementation

Many of the Forest Service's long-standing accounting problems are the result of outdated accounting systems. In order to correct accounting deficiencies, USDA is implementing the Foundation Financial Information System (FFIS) department-wide. The Forest Service is one of the initial agencies within USDA to receive the new system. However, GAO, Agriculture's Inspector General, and an outside consultant hired by USDA have identified serious problems with the FFIS implementation process. Specifically, problems have been encountered transferring data between FFIS and related feeder or subsidiary systems. Additionally, the Inspector General recently reported that substantial problems in processing and reporting accounting transactions arose within FFIS in those units piloting the system in FY 1998. FFIS was unable to produce reports to National Forest level units until September 1998, which gave units little time to correct accounting errors prior to year-end. The Inspector General reported that he was unable to place reliance on amounts generated from FFIS. In addition, the Forest Service and USDA face additional challenges to ensure that FFIS and all feeder systems comply with Year 2000 requirements.

Question 57 For the record, please provide a detailed outline of your current financial management project, including a summary of the overall project, the schedule, key delivery and drop-dead dates, existing and preferred workforce, costs at headquarters and at other levels of the organization, performance measures, and official job positions that are responsible.

Answer: The USDA FFIS implementation project is a financial management project which incorporates the use of a commercial, off-the-shelf, financial management and accounting system, i.e., the American Management Systems' Federal Financial System (FFS). FFIS, when fully implemented, will replace the legacy Central Accounting System (CAS) used by the Forest Service and other USDA agencies. Current FFIS pilot testing by Forest Service units represents the first application of FFIS by a major agency within USDA. Implementation of FFIS throughout the Forest Service will begin on October 1, 1999. A detailed outline, i.e., project work plan, highlighting specific aspects of this financial management project, will be submitted to the House Interior Appropriations Subcommittee under a separate cover.

FFIS will be used in the future to provide executive information related to Forest Service performance and accomplishments through the use of a data warehouse. This data warehouse will focus on information needs related to key Forest Service performance measures, such as those measures recently identified in the Agency's Budget Structure Reform proposal submitted for the President's fiscal year 2000 budget.

The estimated Forest Service FFIS national implementation costs for fiscal year 1999 total approximately $26 million, of which $13 million represents the Working Capital Fund allocation provided to the USDA. The estimated FFIS costs for other levels of the organization and associated telecommunications costs have not yet been determined.

Question 58 Please provide for the record a detailed listing by organizational unit (WO and regions and field) and by staff unit of all of the positions associated with the so-called project ponderosa.

Answer: There are 130 positions associated with the Project Ponderosa. The Human Resources Strategy Team, chartered as a part of the Project Ponderosa, made the following recommendations for the allocation of these positions:

Headquarters (All in Washington Office)	
Chief Financial Officer	1
Information Resources Management	15
Human Resources Management	10
National Forest System	3
Program Development and Budget	7
Financial Management	17
Subtotal	53
Other Positions	
Chief Operating Officer (Reserved)	20
Unallocated 1/	57
Total	130

1/ Since issuance of the BAT report recommendations there have been 4 positions added in Information Resources Management Staff (19); 1 position in the Senior, Youth and Volunteer Program Staff; 5 positions in the Acquisition Management Staff, and 1 position in the Freedom of Information Act/Privacy Act Staff reducing the number of unallocated positions to 46.

The numbers reflected above include new positions in addition to vacant positions that the team felt were a high priority to fill, such as the Financial Management and Budget Director positions. The 20 positions held in reserve for the Chief Operating Officer include 12 positions to serve as Accountability/Quality Assurance specialists and 8 positions to serve as a Strategic Analysis team.

A Strategic Team was also chartered as part of the Project Ponderosa. The Strategic Teams did not include recommendations for direct staff support for the Chief Financial Officer nor were recommendations made for staff to support the implementation of the new accounting system. Proposals for the unallocated positions are currently under review by the Chief, Forest Service, and a detailed accounting on new positions will be provided when final allocations have been determined

Question 59 Given the Inspector General's criticisms of the quality of data being fed into FFIS, how does the Forest Service plan to ensure the accuracy of accounting data generated by FFIS when the system is implemented agency-wide?

Answer: The accuracy of accounting data generated by FFIS will be assured through a combination of methods. FFIS is specifically designed to meet all Government-wide accounting standards while accommodating unique accounting requirements of each Federal agency. This design also incorporates the use of system edits which validate and assure that only accurate information for selected data items are entered into the system. FFIS system validations such as these will ensure the integrity of such data. In addition, FFIS teams are currently developing specific Agency policy and internal control procedures related to accounting data. Such policy and procedures will clearly articulate the type and exact nature of accounting data to be input into FFIS and will be used by Forest Service personnel Agency-wide.

Question 60 Since accurate, timely, and relevant financial information is needed for management decision-making and accountability throughout the year and not just when year-end financial

statements are prepared, how does the agency plan to improve the ability of managers to obtain accurate financial data in a timely manner to support ongoing program management?

Answer: Accurate, timely, and relevant financial information will be made available through FFIS to support management decision-making and accountability in several ways. A data warehouse which is linked to FFIS is being developed. This warehouse will continuously provide an ongoing source of accurate and timely information that can be queried by interested individuals on an as needed basis. In addition, the Forest Service is developing a "starter kit" of financial reports which will be available for managers' use. This "starter kit" will present an initial set of financial reports in a format that is readily understood by program managers and line officers. We anticipate that this starter kit will be expanded and modified as managers use their financial information to support managerial decisions.

Question 61 How will FFIS improve the capability of the Forest Service to report on its performance and accomplishments?

Answer: FFIS will improve the capability of the Forest Service to report on its performance and accomplishments by linking financial and performance information. As currently designed, FFIS will be linked to a data warehouse containing performance information (i.e., both planned and actual levels of performance). This data warehouse will be developed working with an established contractor who specializes in executive information systems, business process engineering, and data warehousing. Preliminary discussions with a contractor to establish a pilot test to link the Agency's financial and performance data have already occurred. The Forest Service performance data warehouse will focus on information needs for key performance measures that were recently identified and documented in the budget structure reform proposal included in the Agency's fiscal year 2000 budget justification. The data warehouse will be structured to readily answer questions related to performance and provide roll-up and disaggregation capabilities within the Agency.

FFIS is designed to comply with all Government-wide accounting standards while accommodating the unique accounting requirements of each Federal agency. FFIS also includes internal controls to ensure the integrity of the financial database and to assist in the administration of the system. Similar processes will be applied to the performance information in the data warehouse to ensure its validity and integrity as well as to provide the link to financial information. The Agency will also be going through a concurrent effort to ensure that all performance measures have clear understandable titles, definitions, units of measure, and protocols for collecting and reporting accomplishments. These efforts will help assure that the Agency has quality performance information.

Question 62 How is the agency ensuring Year 2000 compliance in FFIS and all FFIS feeder systems?

Answer: FFIS and all the feeder sub-systems located at the USDA National Finance Center (NFC), New Orleans, Louisiana, have been tested and are year 2000 (Y2K) compliant.

Question 63 We also understand that the Forest Service is hoping to switch over to the new financial management computer system and program on October 1 even though the new computer program has never been pilot tested in any entire field unit. Is this prudent? Explain.

Answer: The scheduled implementation of FFIS Agency-wide on October 1, 1999, is considered a prudent course of action. While pilot testing is one of many approaches that may be used in testing computer system applications, other testing means are also appropriate. The Forest Service testing approach is twofold. First, FFIS has been operational since October 1, 1997, in pilot testing within two Forest Service regions and one Forest Service research station. The knowledge gained and lessons learned from these pilot efforts will be captured and incorporated within the Agency's overall testing and implementation strategy. Second, complete end-to-end and user acceptance testing of those FFIS system attributes which were not used and tested by pilot units, but will be used during Agency-wide implementation of FFIS, will be conducted prior to moving FFIS to an Agency-wide production environment onOctober 1, 1999.

Question 64 What is the specific difference between conducting pilot tests of actual field units, and the prototype testing you have conducted on portions of your new financial computer system?

Answer: Pilot testing, as conducted within Forest Service regions and a Forest Service Research station, represents the full use of FFIS within an actual day to day working environment. That is, for the pilot units, FFIS was the only accounting system used to conduct day to day business. This pilot testing in a working environment is contrasted however, with prototype testing conducted by the Forest Service which consisted only of testing the workability within FFIS of implementing several new business practices. This prototype testing was designed and conducted to determine the viability of using several existing FFIS subsystems in a manner which the Agency had not previously used. Specifically, the Agency tested the use of the FFIS cost allocation subsystem and testing was also conducted to ascertain the viability for the Agency to use budget object classification codes established by the Office of Management and Budget (OMB) for budgeting purposes within the existing FFIS budget execution subsystem.

Question 65 What problems have you had with your pilot testing of the FFIS system out in the west?

Answer: A number of operational and technical issues were raised during pilot testing of FFIS by Forest Service units. These issues included conversion of accounting data from the legacy USDA Central Accounting System (CAS) to FFIS as well as developing a fully functional FFIS data warehouse. This data warehouse is being used to store FFIS accounting data that in turn is used to generate routine periodic reports for managers. At this time, accounting data from CAS has been successfully converted to FFIS for the pilot units while the Forest Service, in cooperation with the USDA FFIS project team, a private contractor, and the USDA National Finance Center, continue to work cooperatively to refine the operation of the FFIS data warehouse. In some cases, historic Forest Service business practices were also found to impede implementation of FFIS. For example, the Agency has annually generated voluminous management codes during the routine operation of the current accounting system, i.e., CAS. While management codes will not be used within FFIS, a similar FFIS coding mechanism, i.e., job codes, will be used. To facilitate implementing FFIS, Forest Service financial managers have conducted business process re-engineering efforts to review the use of job codes within FFIS. Through business process re-engineering, the Agency has developed policies and standards for the future use of job codes. Implementing a new accounting system within the Forest Service is a complex task, requiring continuous identification and resolution of operational and technical issues. Through cooperative efforts between the Forest Service core group overseeing implementation of FFIS within the Agency, and the USDA FFIS project team, the USDA National Finance Center, and the private contractor providing the baseline accounting software, FFIS implementation issues will be systematically identified and resolved.

Question 66 What is the agency's backup plan for implementing a project of this magnitude without piloting?

Answer: The Forest Service is incorporating several means of testing to facilitate implementation of FFIS. For example, FFIS pilot testing within two Forest Service regions and one Forest Service research station has been operational and ongoing since October 1, 1997. These efforts have provided Agency managers with a wealth of knowledge on the operation and maintenance of FFIS. Knowledge gained and lessons learned from implementation efforts within pilot units will be incorporated into future Forest Service testing and implementation strategies for full, Agency-wide implementation of FFIS. Also, complete end-to-end and user acceptance testing of those FFIS system attributes which were not used and tested by pilot units, but will be used during Agency-wide implementation of FFIS, will be conducted prior to moving FFIS to an Agency-wide production environment on October 1, 1999.

In addition, strong oversight for implementing FFIS within USDA and the Forest Service has been formed and continuously monitors the project's progress. This valuable perspective for the status of the FFIS project is provided cooperatively by a USDA FFIS Executive Oversight Committee, a USDA FFIS Project Director, as well as a Forest Service FFIS Project Director.

Question 67 What is the go or no-go decision for the October first implementation, or are you planning to go ahead no mater what?

Answer: The USDA FFIS Executive Oversight Committee, USDA FFIS Project Director, as well as a Forest Service FFIS Project Director, are continuously monitoring Forest Service progress to implement FFIS. Should unforeseen occurrences jeopardize the October 1, 1999 implementation date, USDA and Forest Service managers will fully examine available options and alternatives and determine how best to proceed. The Forest Service anticipates implementing FFIS within the remainder of the Agency on October 1, 1999. The Agency's assessment at this time indicates that the FFIS implementation project is on target for scheduled implementation.

Question 68 What specific training do you plan on completing before turning the entire agency over to use a new financial management program?

Answer: Specific training will be provided for all FFIS subsystems. With a goal to leverage the efficiencies and flexibility of state-of-the-art technology, FFIS training will be offered in a variety of ways. For example, video tapes, complete with accompanying student workbooks, will be prepared. This training medium will be combined with personal computer based CD-ROM training modules to assist in, and to augment, conventional training within traditional classroom environments. The current Forest Service Intranet will also be used to provide individuals with on-line training exercises. These methods of training will provide the Forest Service with flexibility to provide specific training that can be adapted for individual user needs. FFIS training is currently scheduled to be completed as close to the Agency-wide implementation of FFIS as possible, thereby minimizing the time period between training exercises and when the trainee will be able to use the training material in day to day business activities.

Question 69 How will you avoid problems in beginning this new program when, and if, the wildfire season creates huge demands on staff time and resources right at the end of the fiscal year when the fire season typically is most severe?

Answer: Efficiencies and flexibilities of state-of-the-art technology will assist the Forest Service to train Agency staff in the use and implementation of FFIS. Through the use of technology such as video tapes, personal computer based CD-ROM training modules, and on-line training incorporated within the Forest Service Intranet, employees will be able to individually schedule needed training in whatever degree of specificity and time frame that best meets their individual situations. The Forest Service recognizes the demands a severe fire season may place on the Agency for both staff time and other resources. We are currently exploring options to resolve competing demands between our need to respond aggressively to emergency situations, including wildfires and other Federal Emergency Management Agency (FEMA) emergency situations, and resources needed to implement FFIS Agency-wide. As additional options, such as cross sharing of employees between units impacted by emergency situations and other Forest Service units are identified, they will be communicated to field offices to address these concerns. In addition, the Agency's Fire and Aviation Management Staff and the Incident Business Management coordinator of the CFO's staff, are formulating direction to assure that field units also develop plans to have qualified staff available during the traditional fire season. Part of this direction will provide for staggering staff attendance at traditional classroom FFIS training activities to assure that units are not totally stripped of staff resources at any one time. Toward this end, specific training modules have been tailored to permit employees to only attend those sessions applicable to the specific FFIS tasks they will actually perform in the short term, thus minimizing their time away from home units during this critical time of the year.

Question 70 We have also heard that the new financial management computer system that the Forest Service hopes to install is not the latest and most current version of the program that the vendor is selling. Is this so?

Answer: Yes, the version of the Federal Financial System (FFS) software currently being used by the Forest Service, i.e., version 5.3e, is not the latest and most current version of the program that the vendor is selling. However, the FFS version 5.3e currently used by the Forest Service is fully functional, meets the requirements for Federal accounting, and is fully year two thousand (Y2K) compliant. Updated versions of this software will be acquired and placed into service as needed to assure compliance with any new Federal accounting requirements.

Question 71 If this is not the latest and greatest, why are we buying it?

Answer: The version of FFS currently being used, i.e., FFS version 5.3e, is a year two thousand (Y2K) compliant version of the software purchased for Forest Service pilot efforts which began in 1997. This version is fully functional and meets the requirements for Federal accounting as required by recent legislation such as the Chief Financial Officers Act of 1990 and the Federal Financial Management Improvement Act of 1996. As noted in the previous question other versions of FFS software will be purchased in the future as the Forest Service gains additional experience in the use of this accounting software and to meet the needs of any new Federal accounting requirements.

Question 72 What level of program support can we expect to get from the vendor if we are buying an out-of-date program?

Answer: American Management Systems (AMS), the vendor supplying the core accounting software incorporated within the USDA FFIS project, is committed to supporting their product. This commitment has been demonstrated repeatedly as the Forest Service has worked with the USDA FFIS project office and AMS to pilot test FFIS within two Forest Service regions and a Forest Service research station since October 1, 1997. While the version of AMS accounting software, i.e., version 5.3e, is not the latest version of this software that AMS has developed, version 5.3e is fully functional, meets Federal accounting requirements, and is fully year two thousand (Y2K) compliant.

Legislative Proposals-- $111 million in supposed savings

Question 73 Can you please let us know at what point in the budget formulation process the Forest Service became involved with the genesis of the legislative proposals that together the President's budget claims will generate $111 million?

Answer: The Forest Service submitted it program proposals to the Department in accordance with normal schedules. The timing of agency involvement in the legislative proposals which contribute to the estimated savings of $111 million varied with the specific proposals. As the Subcommittee is aware proposals concerning special forest products and concession reform have been in the development stage for more than a year. Other proposals contributing to the $111 estimated savings have been in development for a shorter period of time. The Forest Service provided specialized expertise to the development of these proposals and the development of estimates of revenue or other savings. This dialog has been ongoing as part of the routine budget development process.

Question 74 We have yet to see anything at all beyond the vague and confusing statements in the President's budget appendix on these measures. When will you deliver these proposals to us?

Answer: We expect final submission to Congress to occur within the next several weeks.

Question 75 Let's first talk about the cost savings for the KV reforestation fund, salvage sales, and brush disposal, which together account for $59 million in savings. On page 171 of the President's budget appendix it states that you will propose to use unobligated balances to support KV fund needs. How will this work?

Answer: The President's budget proposes to eliminate the charging of indirect costs to trust funds, thus generating $59 million in savings. However, the need to fund these indirect costs continues. Although the intent to use unobligated prior year balances is discussed, it would be inappropriate for the agency to take action in advance to assure that such balances are available. It is imperative that the we demonstrate a commitment to bringing greater oversight and accountability to the management of Forest Service trust funds. Action to shift these indirect costs away from trust funds is part of this effort. The use of unobligated prior year balances, if available, is one method of funding these indirect costs. It is important to emphasize that indirect costs fund programs which are normal part of doing business. In the case of the Forest Service, these indirect costs contribute to programs which are essential for improving agency financial accountability.

Question 76 Will you merely be deferring work that was promised in the FY 1999 appropriations law and using those funds to cover FY 2000 obligations associated with administering these funds?

Answer: As discussed in Question 75, the use of unobligated balances could occur only if such funds are available. There is no intent for the agency to take action to curtail prior year programs in order to assure availability of funds.

Question 77 Can you commit to the Committee that you will not encourage your field units or other staffs to hold back work in order to fund this future obligation?

Answer: The agency will not direct any level of the organization to curtail work in order to generate these funds.

Question 78 The President's budget includes a proposal to gain $11 million from concession reform. Please explain in detail how this works? How exactly did you come up with the $11 million figure? How does that compare with revenue you are currently receiving from all such concessions as you plan to reform? What percentage of an increase is this?

Answer: It is anticipated that receipts, in the form of permit fees, will increase if concessionaires are able to increase their revenues through increased size of operations, increased charges to the public for improved services, and/or bidders view the initiative as a more profitable opportunity than in the past and, therefore, respond with higher bids.

The $11 million figure is the Administration's best estimate for gain from concession reform. The estimate is based on the number of projects authorized and the concessionaire's ability to generate revenue as described above. It is estimated that the largest increase in funds would occur for those projects covered under the concession reform in the first few years following enactment of concession reform as facility improvements become operational. Funds would continue to increase through time as opportunities created under concession reform are realized.

Campground concessions, the largest use affected by concession reform, currently generate $2 million in revenue. Revenue data from other concession uses affected by the reform are not currently summarized.

Question 79 Isn't it unlikely that the concession reform would net such a large increase in funds during the same year in which it is implemented?

Answer: It is estimated that the largest increase in funds would occur for those projects covered under concession reform in the first few years following enactment of concession reform as facility improvements become operational. It is unlikely that implementation would occur in the year it is enacted. The 2000 Budget presumes that legislation will be enacted during fiscal year 1999.

Question 80 How long has this specific proposal been discussed by the Forest Service?

Answer: This specific proposal was outlined as part of the development of the Forest Service's FY 2000 budget proposal.

Question 81 Please provide the Committee with some earlier drafts, as well as the current working draft of language you suggest will yield such revenues.

Answer: The current draft is being reviewed by the Administration, and will be released when appropriate review and concurrence are complete.

Question 82 The President's budget appendix suggests amending the legislative language in the FY 1999 Interior bill to include the word "overhead" in front of the limitation on indirect costs. Can you explain this?

Answer: Inserting the word "overhead" was unnecessary. There is no change in the meaning of the limitation.

Question 83 We thought for these purposes the indirect cost limitation would have the same effect as the language on overhead costs. What is specifically gained by including this word and what would be lost if it were not used?

Answer: We recommend omitting the word "overhead". Indirect costs are not synonymous with the concept of "overhead", which is a subjective categorization of costs by activity, purpose, and location. We were directed by Congress to define the meaningful and unambiguous costs categories of direct and indirect as being inclusive of "overhead" expenses.

Question 84 On page 181 of the President's budget appendix, there is a statement that you propose to also collect fair market value for certain land uses and rights-of-way. What is this all about?

Answer: The purpose of this initiative is to emphasize existing statutory and regulatory direction to assess and collect a fair market rental fee for linear rights-of-way special uses of National Forest System lands.

The Forest Service and the Bureau of Land Management (BLM) have engaged in a joint effort to reevaluate the manner in which they manage and authorize linear rights-of-way uses on federal lands managed by both agencies. As a part of that effort, market studies will be conducted to review the currency of the linear right-of-way fee schedule both agencies use to assess and collect land use rental fees for these uses of federal lands. Land use rental fees are pocketbook issues that often generate significant user and public interest and controversy. The administration has included this language primarily to solicit Congressional support of the agency's existing authority to assess and collect a fair market value for special uses of National Forest System lands.

Question 85 Aren't you already required to do this?

Answer: Yes. See answer to Question 84, above.

Question 86 Is this a new proposal to do additional collections?

Answer: No. The Forest Service and the BLM periodically review the rates and methodologies used to assess and collect a fair market rental fee for authorized uses and occupancies of the federal lands that each agency manages. The current linear right-of-way rental fee schedule being used is based on market rental studies that were conducted over 15 years ago. Therefore, the fee schedule rates are probably not current when compared to rentals collected on non-federal lands for similar purposes. The BLM/FS linear right-of-way fee schedule is being reevaluated to fulfill the obligation of both agencies to collect rental fees that are current with fair market value.

Question 87 If so, where and when?

Answer: The Forest Service and the BLM plan to have the linear right-of-way fee schedule and rates revised and made current with fair market value by the year 2001.

Question 88 What legislation is being proposed?

Answer: See answer to Question 84. The passage of this language would emphasize the important responsibility of assessing and collecting a fair market rental value for special uses of National Forest System lands.

FY 2000 budget proposal/special forest botanical products

Question 89 The President's budget also includes a botanical products initiative which you claim will net $12 million in new money. Can you please explain this project in detail?

Answer: This initiative would increase revenue from sales of special forest products by increasing the number of permits and expanding the program. The program would be expanded by the availability of additional revenue to implement and monitor the program. Because limited timber sales management funds currently are used for a limited special forest products sale program, anticipated additional revenues from an expanded program must be made available for expenditure by the Forest Service, so that necessary inventories and monitoring can ensure a sustainable program.

Question 90 How exactly and precisely was the $12 million figure derived?

Answer: It was the Administration's best estimate as to what an expanded program would produce.

Question 91 What revenue has been collected from these activities during each of the past 5 years?

Answer: National records are only available for some special forest products. The following table displays the number of sales and revenue collected from the sale of these products for the past 5 years. A new permit system is being implemented and, with its tracking mechanism, will give us the ability to provide better information in the future.

FY 1998 - 185,890 - $2,977,626
FY 1997 - 171,998 - $3,134,176
FY 1996 - 217,208 - $3,197,124
FY 1995 - 199,739 - $2,802,943
FY 1994 - 221,747 - $3,136,709

Question 92 The President's budget appendix states (page 171): "FS will develop standardized bidding procedures, inventories, and price schedules for specialty products for companies seeking to obtain high value and often rare specialty products from Federal lands." Why would you focus on selling rare species when your natural resource agenda stresses conservation ethics?

Answer: They are rare only in the context that they are not readily available from other than forested lands. No truly rare products will be sold. In fact, any plants protected by the Endangered Species Act or on the Regional Forester's sensitive list will be prohibited from sale.

Question 93 The OMB budget proposal for special forest products also says that during the first year you will only collect fees, and not spend them at all. How will you be able to enforce any kind of reasonable resource use if you are not using the fees to manage the program and protect the resource?

Answer: Using improved information and procedures, the Forest Service will offer contracts for forest products in the first year. Receipts collected from these sales will be available for spending only in future years. Timber sales management funds, as in the past, will be used for special forest products. The resource will be protected through our administration using timber sales management funds as well. However, the revenues would be retained by the Forest Service, where in the past they were returned to the Treasury.

Question 94 For the special forest products legally collected on the Forest Service lands during FY 1998, please estimate the wholesale value of each category or species sold, by region. List the plant species included in each grouping.

Answer: We have no estimate of wholesale value; it would be nearly impossible to do so in any meaningful sense. Part of the legislative proposal is to examine our appraisal procedures; examining wholesale values in the future may be a part of this process. Also, with improved inventory and market information, we will be in a better position to achieve market value.

Question 95 Please provide the Committee a break-down of the revenue that you, or the OMB, project will be generated by each species and category of botanical or special forest product, as well as the region of the country where you expect the revenue to be generated. If the Forest Service does not have this information, please ask the OMB to provide it.

Answer: Neither the Forest Service nor OMB has this information. That is why, in part, funds need to be retained. These funds will be used to collect information on the available inventory and to what extent the program can be expanded.

Question 96 What species of rare or high value plants are you hoping to exploit?

Answer: As noted in the answer to Question 92, the plants are rare only from the standpoint that they are not readily available from other forested lands. No truly rare products will be sold. In fact, any plants protected by the Endangered Species Act or on the Regional Forester's sensitive list will be prohibited from sale.

Question 97 Have you done inventories or sustained yield assessments for each of these species?

Answer: Inventories will be developed as part of the proposal.

Question 98 Provide a list of species you have inventoried, done sustained yield assessments, and completed conservation plans.

Answer: We do not maintain a national level master list of species inventoried. Individual National Forests have information on inventoried species. Each species permitted should be covered by an environmental analysis, which may or may not have evaluated sustained yield. There are also several conservation strategies on selected threatened and endangered plants. This information would be located on the individual Forests or at Regional Offices.

Question 99 Do you have trained staff who can identify these species and who can teach collectors which species are allowed and which should be spared?

Answer: Our records indicate that we have 117 botanists on staff. Because there are so many different types of special products, especially plants, and so many collectors, it would be impractical to educate the collectors from both a time and a cost standpoint

Question 100 What would it cost to provide this management?

Answer: See response to the previous Question.

Question 101 How many botanists do you have on staff in the national forest system?

Answer: We have 117 botanists on staff within NFS.

WO - 1
R1 - 13 (1/RO & 12/NF)
R2 - 2 (1/RO & 1/NF)
R3 - 3 (0/RO & 3/NF)
R4 - 2 (1/RO & 1/NF)
R5 - 25 (1/RO & 24/NF)
R6 - 44 (0/RO & 44/NF)
R8 - 16 (2/RO & 14/NF)
R9 - 10 (1/RO & 9/NF)
R10 - 1 (1/RO & 0/NF)

Question 102 Provide a list of the national forests and national grasslands that have no botanists.

Answer: Region 1

Clearwater National Forest
Custer National Forest
Gallatin National Forest
Helena National Forest
Lewis and Clark National Forest

Region 2

Bighorn National Forest
Black Hills National Forest
Grand Mesa, Uncompahgre & Gunnison National Forest
Medicine Bow/Routt NF & Thunder Basin NG
Nebraska NF (includes Ft. Pierre, Buffalo Gap and Oglala NG's)
San Juan/Rio Grande National Forest
Pike & San Isabel National Forest
Shoshone National Forest
White River National Forest

Region 3

Apache-Sitgreaves National Forest
Carson National Forest
Cibola National Forest
Gila National Forest
Prescott National Forest
Santa Fe National Forest
Tonto National Forest

Region 4

Ashley National Forest
Boise National Forest
Bridger-Teton National Forest
Caribou National Forest
Challis National Forest

Dixie National Forest
Fishlake National Forest
Humboldt National Forest
Manti-La Sal National Forest
Payette National Forest
Salmon National Forest
Sawtooth National Forest
Targhee National Forest
Toiyabe National Forest
Uinta National Forest
Wasatche-Cache National Forest

Region 5

Angeles National Forest
Los Padres National Forest
Lake Tahoe Basin Management Unit

Region 6

All units have botanists.

Region 8

Caribbean National Forest
Cherokee National Forest
Ozark-St. Francis National Forest
National Forests in Mississippi

Region 9

Allegheny National Forest
Chippewa National Forest
Mark Twain National Forest
Monongahela National Forest
Superior National Forest
White Mountain National Forest

Region 10

Chugach National Forest
Tongass National Forest, Chatham Area
Tongass National Forest, Ketchikan Area
Tongass National Forest, Stikine Area

Question 103 On January 24, the Billings (MT) Gazette reported that the State of Montana had agreed to a three-year moratorium on the harvest of echinacea and other wild medicinal plants on state lands. They also report that the Forest Service and the BLM are considering similar bans. Please provide a detailed description of your consideration of such a ban. What do you feel about the action taken by the State of Montana?

Answer: It appears that action taken by Montana and North Dakota are appropriate considering what has been reported by them regarding harvest of echinacea from State lands. We agree with the philosophy that we should not harvest beyond sustainable levels; we should take whatever actions are necessary to ensure sustainability. The Forest Service Regional Office in Montana is considering supporting our field unit bans on harvesting pending the outcome of Montana and North Dakota State legislation. At this time, Montana legislation has not been approved by the legislature. The Montana State Senate has voted to move it forward, but the House vote will not occur until later this Spring. If the Montana moratorium does not pass, our intent would be to issue Regional Office direction supporting field unit bans. If the Montana moratorium does pass, it would most likely include a provision for State and federal agencies to enter into memoranda of understanding (MOUs). The Forest Service would consider being a party to these MOUs which would establish additional direction. The likely result would be a harvesting ban as well. In general, Region 1 would issue no permits until sustainability is better understood. We are unsure of the status of North Dakota legislation.

At the present time, the Custer National Forest in Montana, and the Dakota Prairie National Grasslands in North Dakota and South Dakota, are issuing no permits for either personal or commercial use, thus prohibiting Echinacea harvesting on these NFS lands. The reasons are many, including: 1) lack of good scientific information on sustainable harvest levels; 2) no funding or administrative support to run an effective permit program; and 3) difficulty in actually regulating harvest levels if permits were to be issued (e.g., enforcement limitations).

Meanwhile, the BLM in Montana is permitting Echinacea harvest under all of their available permits (recreational, personal, commercial, and free use). They are establishing a "rotation" system to allow population recovery before harvesting occurs again. If the Montana legislation passes, BLM would probably have to change their current system.

Question 104 The Billings Gazette also reports that some of these plant species have already been wiped out in most of Kansas and Nebraska and that public land managers are seeing tens of thousands of plants being ripped from Montana ground. Given this kind of boom and bust activity, is it wise for you to propose such a massive special forest products program without having any inventory or sustained yield data for these species on NFS lands?

Answer: We do not intend to expand the program beyond a sustainable level. Funding for inventory and monitoring is essential before such a program expansion can occur.

Timber sales user fees – legislative proposal

Question 105 We need a bit more explanation about how charging a timber sale purchaser a user fee will result in more money for the treasury. It seems to me that the only way this will work is in those cases where timber sales are not being sold for fair market value through competitive measures.

Answer: The user fee proposal is based on the premise that timber purchasers should be required to bear the costs of preparing the timber sale for auction. Increased return to the treasury will occur through proper timing of all collections and where highly competitive offerings mandate increased purchaser efficiency assumption in preparing bids.

Question 106 Are you not currently required to sell timber through competitive methods that should assure fair market value?

Answer: Yes, the Forest Service appraises timber at fair market value, less deductions, and conducts sales on a competitive basis. However, roughly 70 percent of sales have only one ore two bidders, which reduces competitive forces.

Question 107 Won't the timber bidders have to take this new fee into account when they bid for the timber?

Answer: Yes, bidders would be prudent to take these costs into account.

Question 108 Why haven't your field managers already taken action to be sure that timber sale bids reflect the best price the government can get for them?

Answer: Field managers continually look for ways to improve the economics of the program given the legal mandates we must meet to protect the environment.

Question 109 The timber sales process already charges for KV reforestation and habitat enhancement and brush disposal as well as various road usage fees. Why are you suggesting yet another charge against the timber sale?

Answer: The Administration has proposed this as a way to collect additional timber sale receipts to support the timber sale program. Funds spent on KV, 10 percent Fund, and Payments to States are how the government has decided to spend the receipts collected from the sale of the timber. They are not charges in addition to the market value of the timber. Present charges are reflected in the final value for stumpage that the government receives for the sale of timber products. We expect the proposed user fee to be reflected in final values the same way.

Question 110 Aren't timber sales designed for a variety of public goals, not just to provide wood for mills?

Answer: That is correct. Timber sales meet multiple objectives related to forest health, fuels reduction, age class distribution, and stand composition while providing a variety of goods and services. Timber sales can be grouped into three categories: timber commodity, forest stewardship, and personal use. The primary purpose of the timber commodity component is to meet the nation's demand for wood, both for today and the future. Harvesting timber under the forest stewardship component achieves forest plan objectives that require vegetative manipulation; a timber sale is usually the least-net-cost method. The personal use component provides firewood and other miscellaneous products to individuals for their own consumption. The majority of our sales today are for forest stewardship purposes and might not be marketable if a timber sales preparation user fee were applied. This new fee would not be imposed for that type of sale.

Question 111 If so, why should the purchaser alone have to pay for the implementation of the project?

Answer: This approach would only be applied to sales where the purpose is timber commodity production. The public goods benefit of this type of timber sale are less than stewardship sales, since the purpose of the sale is to produce timber as an end in itself.

Question 112 It seems to me that if the purchaser has to pay for the sale design, then they should be able to propose where and when they can buy the timber. Are you suggesting that timber purchasers become project proponents similar to the manner whereby various utility line companies can suggest the specifics of what they want to use the national forest lands for?

Answer: Purchasers, as well as any other groups or individuals, may recommend areas for harvest. However, the Forest Service is responsible for designating which areas and trees are to be harvested, primarily through the forest land management planning process where areas suitable for timber management are identified. Each timber sale must be designed in accordance with the approved plan and all other applicable laws, including NEPA as well as the results of public involvement.

County Payment stabilization -- decoupling from receipts- legislative proposal

We understand that at some point the administration will suggest legislation to provide mandatory payments to those counties that previously received substantial funds from their 25% share of all Forest Service receipts. As you know, the land management agencies and the native American funding agencies supported by this Committee have a huge backlog in deferred maintenance and basic infrastructure needs.

Question 113 Will you be proposing that this Committee also take on the burden of supporting those counties that are fortunate enough to have substantial Forest Service holdings in their jurisdiction?

Answer: The proposal will increase funding to States and counties above what they would otherwise have received. Over 5 years, States and counties will receive an additional $259 million above the amounts assumed under current law. We anticipate that this initiative will be considered all the relevant Committees.

Question 114 How much would this cost?

Answer: We estimate the Administration's proposal to result in outlays of approximately $269,095,070 annually, which would be $27 million more than estimated payments under current legislation and $259 million over 5 years.

Question 115 Given the likelihood of a level funding allocation this year, what programs in your budget would you suggest we eliminate in order to pay these counties?

Answer: The proposal will not involve any discretionary spending. The cost of this initiative is fully offset through savings in other mandatory programs in the President's budget.

Question 116 If this is going to be done with other off-budget mandatory savings, please let us know what off-sets you are proposing to cover this initiative.

Answer: The 1999 budget for the Department of Agriculture proposes a number of changes in programs that are considered "direct spending" under current budget legislation. For the most part, these proposals would require changes in permanent statute and would be under the jurisdiction of the Congressional legislative authorizing committees rather than the Appropriations Committees. This is the case with the proposed change in the Forest Service Payments to States program. Changes that result in increased direct spending require offsetting reductions in other direct spending programs or, alternatively, increased revenues such as user fees. This is generally referred to as the PAY-AS-YOU-GO or PAYGO requirement. The requirement applies to direct spending as a whole. Offsets do not have to come from programs within the same agency or even the same cabinet department. In other words, to stay within the limits for direct spending, the Administration's proposed spending increases, taken as a whole, are offset by the proposed decreases and increased user fees, again taken as a whole.

The PAYGO proposals in the President's 2000 budget are identified on pages 369-371 of the BUDGET OF THE UNITED STATES GOVERNMENT: Fiscal Year 2000. While, the estimated increase in direct spending resulting from the Administration's Payments to States stabilization proposal (+$27 million in 2000) is offset within the overall budget, only $17 million in reductions or increased receipts are shown for the Forest Service in the entry for "Charge fair market value for timber/Forest Service." This does not mean that the remaining $10 million is not offset. It merely means that it is not possible to relate it to any one specific increase in receipts or reduction in other direct spending activities among the many shown for the entire government.

Use of LWCF for Agriculture activities -- legislative proposal

Your budget proposal includes the use of $62 million from the Land and Water Conservation Fund (LWCF) for unauthorized activities in the Forest Service State and Private Forestry program and also a $10 million transfer to the USDA Rural Business cooperative Service to support loans.

Question 117 Can you explain why you are requesting funds for the Rural Business Cooperative Service in the Interior bill and not the Agriculture appropriations bill where it belongs?

Answer: It is not unusual for different agencies of the Department of Agriculture to cooperate on program delivery even when funds are appropriated to a single cooperating agency. The Forest Service would provide program guidance and technical direction for program implementation. The program would support Forest Service Goals. We would then contract with the Rural Business-Cooperative Service to deliver loans through its existing program infrastructure. This is more effective than replicating their infrastructure.

Question 118 Can you explain why you want to make this unauthorized raid on the LWCF to support state and private forestry?

Answer: The Land and Water Conservation Fund's (LWCF) statutory purpose is broadly drawn to support conservation of lands and waters. The Lands Legacy Initiative proposes to apply the LWCF funds to support farmland protection, forest legacy, urban parks and community forestry, and other important efforts consistent with LWCF statutory purposes. Appropriate language is contained in the President's proposed budget.

Roadless Area Road Moratorium

Question 119 When you were first announcing the possibility of your road moratorium in early 1998 you indicated that several thousand jobs were likely to be lost. Please let us know what was suggested in early 1998 and what you are now suggesting as employment losses due to this moratorium.

Answer: The Federal Register notice published in February 1998 (63 FR 9980) estimated potential job losses from the proposed interim rule at 500 to 1,400 direct jobs. Environmental Assessments prepared in support of the final rule project a loss of between 270 and 420 jobs (Appendix D, Alternative 6).

Question 120 In which states will most of the impact occur? Please describe in detail.

Answer: States most impacted, based on reductions in planned timber volume indirectly resulting from suspension of road construction and reconstruction, are Idaho, Wyoming, Colorado, Utah, and Montana. These States account for almost 70 percent of projected timber volume that may not be harvested due to suspension of road construction and reconstruction. National Forests most affected are: Idaho, the Boise and Nez Perce; Wyoming, the Medicine Bow; Colorado, the Grand Mesa-Uncompahgre-Gunnison; Utah, the Dixie; and Montana, the Gallatin.

Question 121 Why is it necessary to have a time-out from management activities in this field while you are reformulating policy, but all other management activities proceed as usual during reformulation of other policy initiatives, such as the forest planning process?

Answer: A growing body of scientific information demonstrates that road construction in sensitive areas, such as roadless areas, may cause the introduction of exotic plant species, disrupt wildlife habitat, and otherwise compromise the attributes that make roadless areas ecologically important. These roadless areas often provide critical habitat and migration routes for many wildlife species, such as the grizzly bear and wolf, that can be especially disrupted by roads. Unlike many other activities, the effects of road construction may persist for decades.

Question 122 In your announcements on the road moratorium you have emphasized a science-based road program. What exactly do you mean by this?

Answer: Much has been learned over the last decade concerning the impacts and risks associated with construction and reconstruction of roads, especially analysis techniques leading to better planning of road location, design, and construction. This science has not been consistently used in planning and analysis. A science-based approach will integrate analysis processes and lessons learned from this recent science into planning road construction and reconstruction. This integration will be accomplished through handbooks, and technical watershed and transportation system analysis guides.

Question 123 Are you proposing hypothesis testing and refutation, the hallmark of the scientific process, or are you suggesting that scientists should design roads rather than engineers?

Answer: We suggest that the tools developed and used for better transportation system decision-making be supported by peer reviewed scientific processes; and that the planning process integrate these tools into field level planning. We do not suggest that scientists be engaged in day-to-day transportation system decision-making.

Question 124 How exactly does a "science-based" road program differ from the existing program?

Answer: The existing program does use science-based analysis tools but many of these tools are outdated, used improperly, or have not undergone the scientific review that we now desire.

Question 125 Why is it necessary to have a time-out from management activities in this field while you are reformulating policy, but all other management activities proceed as usual during reformulation of other policy initiatives, such as the forest planning process?

Answer: See answer to Question 121.

Question 126 In your announcements on the road moratorium you have emphasized a science-based road program. What exactly do you mean by this?

Answer: See answer to Question 122.

Question 127 Are you proposing hypothesis testing and refutation, the hallmark of the scientific process, or are you suggesting that scientists should design roads rather than engineers?

Answer: See answer to Question 123.

Question 128 How exactly does a "science-based" road program differ from the existing program?

Answer: See answer to Question 124

Budget Allocation Criteria

GAO has reported that the Forest Service's budget allocation criteria are often not linked to the agency's strategic goals and objectives. Moreover, the criteria that the agency uses to allocate funds to its regional offices often do not relate to the needs or priorities of the regional offices and their national forests.

Question 129 Has the Forest Service improved its budget allocation criteria for distributing funds to its regional offices, and if so, how?

Answer: The Forest Service has made improvements to the criteria used to allocate funds for specific programs. The responsibility of reviewing and refining criteria rests with headquarters staffs who have been given direction that all changes are to be developed cooperatively with, and agreed to by, resource program staff directors at the Regional level. Regional Foresters are also asked to give their approval to proposed changes. The Deputy Chief reviews proposed changes and any unresolved issues surfaced by the field or WO staff, and subsequently decides whether the proposed changes will be implemented.

One of the more significant changes that was incorporated into the allocation of FY 1999 Final Appropriations and the FY 2000 President's Budget, was splitting the criteria for Ecosystem Planning, Inventory, and Monitoring into separate criteria for Land Management Planning and Inventory and Monitoring, to correspond to Congressional action on that part of the budget structure. The Ecosystem Management staff also incorporated some new criteria coinciding with specific performance indicators used in the Agency's Government Performance and Results Act Performance Plan. Some of the weights used with the criteria for the Fish & Wildlife programs were also adjusted to better reflect Agency priorities within these programs.

Question 130 To what extent, and how, are budget allocation criteria linked to the agency's strategic goals and objectives?

Answer: The current strategic goals and objectives of the Agency are worded to reflect existing quantitative performance measures associated with individual programs. These measures tend to be items that can be measured on an annual basis and are not necessarily the end-result or outcome anticipated from the program, particularly for objectives related to improving the health of the land. Allocation criteria were developed for the purpose of allocating funds received in individual budget line items. These criteria vary by program and include a number of factors related to workload, capability, and complexity. Most programs have at least one Government Performance and Results Act performance indicator which is used as either a workload (tied to past performance levels) or capability (tied to expressed needs) criteria.

Question 131 How do the criteria relate to the needs and priorities in the regions and national forests?

Answer: National level criteria are used to allocate funds to the Regions. Each Region has its own process for allocating funds to National Forests. Many are now using criteria similar to those used at the national level. Regional funding needs and priorities are identified in the budget formulation process within the context of addressing key national priorities. Regions also validate tentative performance levels associated with funding allocations. A strong relationship between needs and funds exist where Regional needs and priorities are reflected through performance information for specific indicators that are also used in allocation criteria. The same situation would exist for addressing National Forest needs and priorities through Regional level criteria.

Performance Measures

The Forest Service's current performance measures are often resource or program specific and do not adequately reflect accomplishments or progress toward integrated management of public lands or achieving the agency's strategic goals and objectives. Accurate, meaningful performance measures are critical for assessing effectiveness, efficiency, and public credibility of a broad range of agency activities and overall mission fulfillment. The Chief pledged to develop and implement new land health performance measures. The FY 2000 budget submission includes proposed outcome-based land health performance measures that are linked back to the agency's strategic goals and objectives.

Question 132 What specific steps are necessary to fully implement the proposed performance measures Agency-wide?

Answer: A series of steps are necessary to fully implement these measures Agency-wide. As explained in our FY 2000 Budget Justification, we are in the process of establishing an inter-disciplinary team of specialists from all levels of the agency to ensure implementation of these measures. This team will develop an implementation plan, assign responsibility for completing tasks, and have coordination and oversight responsibilities. A number of specific implementation tasks may be worked on by that team. Tasks will include defining performance measures, identifying units of measure, developing protocols and standards for measuring and collecting, evaluating and reporting information. The agency also intends to work with an outside contractor to ensure that information system needs for implementing these performance measures are in place and compatible with other systems, including our new financial management system, FFIS.

The agency's leadership is identifying the key long-term measures that will be focused on in FY 1999. It is expected that these measures will be implemented as appropriate in FY 2000. During FY 2000, another set of measures will be worked on for implementation in FY 2001.

Question 133 What role will the field offices have in this effort?

Answer: Field offices will be asked to provide representatives to the Inter-Deputy team being formed to ensure implementation of our new performance measures. Field units will also be expected to review the results of the work on definitions, units of measure, protocols and standards for collecting the data.

Question 134 How long will it take?

Answer: The Forest Service expects to implement the first subset of key long-term measures in FY 2000. It also appears that many of the annual performance measures identified in our Budget Structure Reform proposal can also be implemented with little or no additional work in FY 2000. Additional long-term and annual performance measures will be evaluated during FY 2000 for implementation in FY 2001. However, the agency also feels that our performance measures will continue to evolve over time as specific issues related to integrated resource management arise, new information becomes available, or management objectives are met or change. As part of this effort, the agency intends to establish a process for on-going review and refinement of performance measures and other management information.

Question 135 Does the Forest Service have a firm schedule showing when the specific steps will be completed?

Answer: The Inter-Deputy team, working with a contractor, will take some preliminary scheduling information from the work done on our Budget Structure Reform proposal and develop a detailed schedule of activities and responsibilities for getting these measures implemented.

Question 136 How will the Forest Service report progress in implementing the performance measures to this Subcommittee?

Answer: The Forest Service will report on progress in implementing the performance measures to the Subcommittee at the start of each fiscal year

Question 137 Can these performance measures be implemented without changing the current budget structure, and, if not, why?

Answer: Yes, the performance measures can be implemented without changing the current budget structure. However, without the proposed budget structure changes, it will be significantly more difficult to align performance with budget and accounting information. Our current budget structure does not reflect our mission as portrayed by the goals and objectives in our GPRA strategic and performance plans nor the integrated resource management we practice on the ground. Our ability to be accountable, meet our integrated resource management goals and communicate progress to our customers is severely compromised under the current budget structure.

Question 138 To what extent were the field offices involved in developing the proposed measures?

Answer: The initial work on identifying long-term measures was the result of collaborative and interdisciplinary efforts of Washington Office staffs with review by the field. An interim set of measures was also included in a field review of a proposed modification to the agency's GPRA strategic plan.

Question 139 Will the proposed measures be able to show progress toward meeting the agency's strategic goals and objectives, and if so, how?

Answer: Yes, the proposed measures will show progress towards meeting our strategic goals and objectives. Initially many of the long-term measures related to the health of the land will be used to establish baseline information from which objectives can be re-calibrated or redefined. Periodic measurement of these indicators will then be used to determine if suitable progress has been made towards improving the health of the land. Periodic review and possible refinement of measures will be necessary as we learn more about the relationship between short-term actions and the long-term measures of healthy land conditions.

Question 140 To what extent will the proposed measures show what is being accomplished on the ground with the funds provided?

Answer: The annual performance measures identified in our proposal provide the most direct link to what is accomplished on the ground with the funds provided in a particular year. Over time, the long-term measures will show progress towards achieving the end-results envisioned in our strategic goals based on the cumulative effect of what is accomplished on an annual basis. It will be easier to show both annual accomplishments and progress towards long-term objectives if funds are provided through the proposed budget structure.

Question 141 How will the proposed performance measures be incorporated into the agency's All Resources Reporting system, which the agency has been developing for over a decade to use as a management cost and performance reporting system?

Answer: The All Resources Reporting system reports annual accomplishments linked to functional cost centers and revenues. Many of the annual performance measures in our proposal are linked to specific programs and could be used in All Resources Reporting as it is currently structured. However, it would be difficult to use most of our proposed long-term measures in this reporting system because they reflect an integrated approach to management and can not be easily aligned with the functional accounting structure in this report. Under our new financial management system, we will have expanded capability for reporting on costs, revenues and accomplishments for any unit in the agency. We expect that All Resources Reporting or any new unit-level or agency reports will evolve into a more integrated look at resource and financial information.

Question 142 Can you explain to the subcommittee the difference between strategic goals that are of long-term nature and measure outcomes, and tactical measures that would assist our review of your annual performance?

Answer: The Forest Service has two mission-oriented strategic goals, both of which are related to sustainability and the long-term health of the land. The objectives for our goal of "Ensuring Sustainable Ecosystems" illustrate the issue with their focus on restoring and maintaining land health or healthy land conditions. Measures for determining whether we are accomplishing this outcome tend to be indicators that could or should only be measured and/or evaluated on a multi-year cycle. This is due in part to scale issues, the practicality of measuring some things annually, and that many results from restoration activities are not evident or measurable for a period of time afterward.

Annual performance measures focus directly on what is to be accomplished with funding for a particular year. The challenge for the agency is to ensure that a process for periodic review and refinement of indicators is in place to ensure that the types of work we are doing have a positive effect on achieving desired changes in the long-term measures of land health. When a negative or non-significant relationship between long-term and annual performance measures is found, an adjustment in the work and/or the measures will probably be necessary.

Charging "as Budgeted" and not "as Worked"

Fiscal year 1995 budget reforms restructured the Forest Service's budget so that all funding to carry out a project is consolidated in the program that will benefit the most from that project. Under this "benefiting function" concept, a program that requires support services from other programs to assist in carrying out a project should pay the costs of those services, rather than the programs that provide the support. However, GAO has reported that programs that underestimate the costs of a project or otherwise do not have the funds needed to pay for a project's support services may require other programs that are providing support services to absorb the costs of the services. This charging "as budgeted" and not "as worked" circumvents the requirements established by the Appropriations Committees and the agency to move funds between line items and understates a project's cost. It also precludes the Forest Service from providing the Congress and other interested parties with meaningful, useful, and reliable information on the costs and the accomplishments of the National Forest System's programs.

Question 143 What controls are in place to help assure that the program that benefits the most from a project plans for and funds all the costs of services provided by other programs to implement and complete the project?

Answer: Forest Service management has previously issued Agency-wide direction insuring that fiscal controls are in place to provide for the use of appropriated monies consistent with Congressional intent (Forest Service Handbook 6509.11g, Service-wide Appropriation Use Handbook and Forest Service Handbook 1909.13, Program Development and Budgeting Handbook). Direction in these handbooks indicates that project costs shall be charged to the fund (budget activity) that receives the benefits of the cost incurred. In addition, the definition of benefiting function has been included in the annual Planning and Budget Advice to the field.

Forest Service direction re-iterates the need for the agency to comply with the requirements of specific laws and regulations that affect activities needed to accomplish resource program objectives. The Forest Service line officer approving any given project is responsible for ensuring that necessary coordination and support is planned for and available to complete each project and that such coordination and support is funded by the budget activity benefitting from the project. If funding is insufficient to meet the requirements for completing a project, the line officer can reprogram funds as appropriate, agree to mutually beneficial reallocations with other forests that stay within regional allocations for specific expanded budget line items, or not complete the project until such time as appropriate funds are available.

Question 144 How do you define benefiting function when a project has several programs deeply involved, such as an integrated project involving forest thinning, trail protection, wildlife habitat enhancement and watershed protection?

Answer: Forest Service project costs are charged to the fund (budget activity) that receives the benefits of the cost incurred. Administratively, the Agency commonly combines more than one project into a larger, combined project to achieve efficiencies of scale and to share resources, such as vehicles or other equipment, when possible. In this fashion, a larger or combined project is formed which will produce multiple resource program outputs which in turn will be multi-funded by the various programs receiving benefits in proportion to the expected work to be done or outputs produced. A significant amount of communication, coordination, and cooperation is needed to ensure that integrated resource projects are properly funded. Detailed work planning documentation, clearly identifying the activities and related costs associated with each fund (budget activity) involved in the combined or integrated project, is required to determine what portion of a large, combined or integrated project shall be charged to individual funds (budget activities).

A contrasting application of the benefitting function concept involves the situation that the agency addressed in its FY 1995 Budget Reform proposal which dealt with projects with an identified primary objective or purpose (e.g., watershed improvements, timber sales, and wildlife habitat improvements). These single, or primary objective projects, required support from, and coordination with, other programs for their completion. Congressional approval of this part of the Agency's FY 1995 Budget Reform proposal resulted in a one-time transfer of funds among budget accounts at the Agency level to ensure that all support dollars needed to accomplish program objectives or activities were represented within the primary funding account. Under this definition of benefiting function, the primary purpose account pays for the entire project.

General Administration Funds

GAO has criticized the Forest Service's use of General Administration funds that are used to pay for rising indirect costs. The General Administration line item as currently funded does not adequately represent the total cost of indirect expenses incurred by the agency. The Appropriations Committees Conference Report directed the agency to eliminate this budget line item from the FY 2000 budget request as part of proposals to further revise the budget structure and clearly display all indirect expenditures and administrative needs in their appropriate programs.

Question 145 Why, despite this direction, does the Forest Service's FY 2000 budget submission include a General Administration budget line item?

Answer: Just like the pressure the Committee faced, it was not possible in the timeframe remaining after the Omnibus Appropriation passed to the time when the Administration had to submit its budget to develop a new budget structure and work with the Congress to achieve a mutually satisfactory result. As such, a proposal was included in the Congressional justifications.

Forest Service Organizational Structure

GAO and an independent consultant have reported that the Forest Service's autonomous organization may hinder top management's ability to achieve financial accountability and have noted that the agency lacked a consistent structure for financial management practices. The consultant characterized the structure as a "chaotic financial environment" that creates credibility problems and recommended that the agency reorganize its financial management structure at its

headquarters and the regions. The agency subsequently reorganized its headquarters structure but not its regional financial management structure.

Question 146 Does the Forest Service plan to hire Chief Financial Officers at the regional level to mirror the financial management reorganization in the Washington Office?

Answer: The Agency's primary emphasis at this time is to address critical financial management and accountability issues and complete appropriate business process re-engineering efforts. At such time as these areas have been effectively addressed, and FFIS has been fully implemented Agency-wide, the Forest Service will be in a better position to evaluate and complete any appropriate changes in organizational structure at regional levels. We anticipate that such an evaluation will begin in FY 2000.

Question 147 What steps will the regional foresters take to be sure that their financial managers perform?

Answer: Forest Service regional foresters have been tasked by the Agency's Chief to ensure that their staffs understand the importance of financial management activities and associated accountability related to these activities. Policy statements, such as the Forest Service Financial Health Handbook, have been developed to guide Agency managers. In addition, Agency financial management policies and procedures are available on the Forest Service Intranet and readily accessible by all managers. As the Agency's financial systems are improved and internal controls established, a consistent application of policies and procedures will be assured. Additionally, training has been provided on new processes. Financial managers have also participated in the newly developed "Business Principles for Forest Service Managers" class.

Regional foresters have also included financial management and accountability issues as discussion topics at their regional leadership conferences. Emphasis has been added to these discussions through participation by the Forest Service Chief Financial Officer representing the Agency's newly formed Office of Finance Deputy Chief staff area. Financial managers are also held accountable through the performance plan process for implementing financial management and accountability, a major goal of the Forest Service Strategic Plan and the Agency's Government Performance and Results Act Performance Plan.

Question 148 What steps is the Chief taking to be sure that his regional foresters take financial management seriously?

Answer: The Chief initiated Project Ponderosa within the Forest Service to devise business processes that would meet the needs of the Forest Service. This Project addressed specific recommendations and findings raised by Congress, the General Accounting Office, the Office of Management and Budget, the U.S. Department of Agriculture Office of the Inspector General, and consulting reports regarding financial management and accountability within the Forest Service. The Business Action Team (BAT), commissioned under Project Ponderosa and comprised of cross functional personnel, examined and made recommendations to improve Forest Service financial management processes. The study conducted by the BAT team identified many key elements for improving financial accountability within the Forest Service, with implementation of FFIS

comprising a key element. The regional foresters and Washington Office staff have been welcomed as partners by their full engagement in implementing the report recommendations.

One of the Agency's major goals is to assist all Forest Service managers to devote equal attention to both business management and natural resource management issues. The Agency's Chief, and Chief Operating Officer, approach financial management issues seriously and capitalize on every opportunity to emphasize their commitment to efficient and effective Federal financial management. For example, at the October, 1998 National Leadership Conference, which was attended by all regional foresters, an entire day's agenda was devoted to issues involving the use of sound business management when implementing the Natural Resource Agenda for the Forest Service. Additionally, the Chief fully supported the development of a "Business Principles for Forest Service Managers" class to address the application of sound business principles in their day to day activities. He also requested each regional forester's support of this training class to ensure successful application of the learned principles. The Forest Service's Strategic Plan and Government Performance and Results Act Performance Plan share the common goal of emphasizing financial management and accountability. The regional foresters' efforts to implement this goal are evaluated through the performance plan process.

Co-Locating Program Development and Budget Staff and Financial Management Staff in One Location

In order to enhance the operations of the Chief Operating Officer's staff, a Forest Service team recommended improved coordination among Deputy Chief staffs to support fiscal accountability, as well as the use of financial information in resource decision making. This would entail, among other things, co-locating the Program Development and Budget and Financial Management staffs in the Forest Service headquarters in the Sidney R. Yates Building.

Question 149 In view of this recommendation, why is the agency planning to move the Program Development and Budget staff to the Forest Service's offices in Rosslyn?

Answer: The Business Action Team (BAT) recommended that the Agency's Program Development and Budget (PD&B) staff be co-located with its Financial Management staff in the Sidney R. Yates Building, Washington, D.C., as a way of improving coordination among these two staffs as well as having the entire CFO organization housed in the same location. This was viewed as a sound recommendation by all concerned in comparison with the no action alternative of leaving the staffs in two separate locations. However, this team did not evaluate the option of co-locating the two staffs in Rosslyn, Virginia. When it became evident that the Financial Management staff was too large to fit in the Yates building without displacing another Deputy Area, the Agency began looking at other options to obtain the coordination and proximity objectives for the CFO organization. Moving the Program Development and Budget staff to Rosslyn became the next best option for meeting these objectives.

Question 150 Won't it be even more difficult for your budget staff to properly coordinate with all program staff and top agency leaders if they are housed in a distant location in another state?

Answer: The Program Development and Budget staff does work very closely with Agency leadership, Deputy Areas and WO staff in developing, presenting and executing the Agency's

budget. They also work very closely with the Department, OMB, and the Congress. Housing the Program Development and Budget staff in Rosslyn, Virginia, will make it more difficult to work with all of their internal and external customers who are located in Washington, D.C. However, a number of steps will be taken to ensure that the impacts of this move are minimized. The Forest Service currently operates a shuttle bus system between Rosslyn, Virginia, and the Sidney R. Yates Building in Washington, D.C., which will provide members of the CFO staff with relatively quick access to the Yates building. Additional space in the CFO's office in the Yates building will be made available to accommodate members of the budget and financial management staffs who need to meet or work with other Agency personnel in the Yates building on a short-term basis. Full advantage will also be taken of all available means of communication to ensure continued quality service with both internal and external customers.

Roads and Trails (10 Percent) Fund

Ten percent of national forest receipts are made available to build and maintain roads and trails within the national forest. The Appropriations Committees Conference Report directed the agency to use these funds for priority forest health related management and to reduce the backlog in important road, trail and bridge work but not to use the funds to replace ordinary appropriations in the trails construction budget line item.

Question 151 In view of this specific direction, why is the agency proposing to use $10 million from this fund to offset a reduction in trails construction funding in its FY 2000 budget submission?

Answer: The language in the conference report was taken seriously as a strong policy recommendation of the Congress. However, it is not a statutory provision. Given the tight constraints on discretionary domestic spending, the Administration chose to exercise its prerogative under the Constitution to make a different recommendation to the Congress that part of the trail program be funded from the 10 percent fund.

National Recreation Area Funding

The Undersecretary of Agriculture has appeared before committees of the Congress several times to note that recreation has become and will continue to be an increasingly dominant use on many areas of the national forests. National Recreation Areas are a key component of this use. And yet, a recent GAO report on the Sawtooth National Recreation Area has raised disturbing questions about whether the administration is currently putting its money where it says a growing need is. It would appear that failure to do so has limited recreational opportunities sought by the public as well as related grazing activities and is contributing to species conservation problems.

Question 152 How does the agency's proposed FY 2000 budget propose to better address this problem?

Answer: The Region's budget will address the funding needs of the National Recreation Area and other "special areas" within the Region. Funding will be provided to all three NRAs, (Flaming Gorge, Sawtooth, and Spring Mountain) and our wild and scenic rivers on the Salmon NF. Our agreement with the line officers of the NRAs and the wild and scenic rivers was to keep their funding at the FY 1997 levels which are sufficient to provide adequate services to the public.

Question 153 What changes, if any, do you anticipate making in the criteria allocating funds to recreation areas?

Answer: We too have struggled with this issue. With the exception of Spring Mountain, none of the NRAs compete well in the area of budget criteria. Aside from creating special criteria, there appears to be little that can be done to make them competitive. It is not yet agreed upon, but it is anticipated that the Region will hold them at some artificial level so they may maintain viability.

As state above, it was at FY 1997 level that all four line officers representatives agreed that they are still viable to produce recreation products and services, and yet also allow the rest of the Regional Recreation Program to produce public services in recreation. We realize this is a short-term solution. Because the two of the three NRAs do not compete well in criteria budgeting (of which the Sawtooth NRA is one), there are still long-term solutions to be developed.

Decoupling of Payments to the States from Receipts

Traditionally, about 90 percent of the Forest Service's receipts are generated from the sale of timber. Over the last 10 years, the volume of timber harvested from national forest lands has drastically decreased from about 11 billion to the current level of about 3.5 billion board feet annually. There has been a similar decrease in revenues and a corresponding decrease in the 25 percent payments to the states for the use by counties for roads and schools. The Congress came to the assistance of certain counties by passing the "spotted owl" legislation, which guaranteed payments to these counties, based on their historical payments. This program ends in 2003. Currently, there have been various proposals to decouple the payments to the states from receipts and provide payments nationwide similar to the "owl payments."

Question 154 Does the agency's proposed FY 2000 budget address the issue of payments to the states, and, if so, how?

Answer: Yes. The President's budget proposes a permanent, definite appropriation through a legislative proposal to be submitted to Congress.

Question 155 Has the Forest Service estimated the cost of providing payments similar to the owl payment nationwide?

Answer: Yes. We estimate outlays resulting from this Administration initiative to be approximately $269,095,070 annually.

Question - 156 What are the advantages and disadvantages of such a program?

Answer: This provides a stable, predictable payment to local governments that would not be affected by the unstable, and generally declining, nature of commodity receipts. This would provide compensation for local governments having non-taxable National Forest System lands within their jurisdictions. It also increases payments above the current law. Payments are boosted by $259 million over 5 years above the current couple payment baseline.

Elimination of Trust Funds and Certain Permanent Appropriations

The Forest Service has numerous trust funds and permanent appropriations. The largest of which are the Knutson-Vandenburg (KV) Trust Fund which is used for reforestation and timber stand improvement; the Salvage Sale Fund which is used to prepare and administer future salvage sales; and the Brush Disposal Fund which is used to dispose of debris resulting from timber sales. The administration of these funds is very complicated and GAO has been critical of the operations and financial management of these funds. Moreover, due to their very nature, the Congress does not exercise the traditional oversight given to appropriated programs.

Question 157 How does the agency's proposed FY 2000 budget address the Forest Service's position regarding maintaining the status quo or placing the funds under the normal appropriations process, and, if so, how?
Answer: The Administration is considering different alternatives to reforming the permanent appropriations and trust funds in part to make funds more available for the highest priorities such as forest health and to make budgeting and operations simpler, more visible and efficient with greater accountability. We are trying to incorporate the interest of the Committee into this analysis.

Question 158 What would be the advantages and disadvantages of changing the funding process?

Answer: Placing these funds under the normal appropriations process would remove the incentive to use the trust funds to achieve a higher harvest level. It may also make funds more available for targeting for the highest priority and simplify accounting. Finally, there are concerns that management of KV sites is conducted differently, less natural resource regeneration and more intensive timber stand improvement, than other non-KV sites.

The main disadvantage would be the uncertainty about whether the programs would be funded on a consistent basis to address the needs identified. In addition, the following are considerations we feel are important:

1) Our ability to plan effectively for production of seed or nursery stock for reforestation could be affected by fluctuating appropriated funding levels.

2) Our inability to predict catastrophic events does not allow for accurate development of budget needs or outputs for salvage sales. Thus, the Salvage Sale Fund was created so that we may maintain an adequate balance to respond in a timely manner to catastrophic events that require prompt salvage of material.

Ecoregional Assessments

When the administration first proposed the Interior Columbia Basin Ecosystem Management Project, it cited as advantages that (a) it would lead to better decisions, and (b) it would save tens of millions of dollars by eliminating the need for much additional analysis in making forest plans and individual plan decisions. However, the preferred option would call for extensive additional analyses at smaller geographic scales in order to make such decisions.

Question 159 Does this mean the originally forecast savings due to reduced planning costs will not be fully realized and, if so, to what extent?
Answer: Based on public response to the Draft Environmental Impact Statement (DEIS) and recent guidance from the Secretaries of the Interior and Agriculture, the direction of the project has changed since its beginning. Recently, based on guidance from the Secretaries of the Interior and Agriculture, a new approach to plan direction will address issues from a basin-wide perspective. Direction will be built around four basic components: 1) Aquatic habitat; 2) terrestrial species habitat; 3) landscape health; and 4) human needs. These components, and any other basin-level considerations, will be science-based and integrated to support restoration and maintenance objectives. Accordingly, a limited number of issues will be addressed. We expect the supplemental DEIS to be completed in late summer 1999 at which time estimates for implementation of various policy options will be available.

We still anticipate efficiencies and savings as a result of these efforts. A better, more complete and up-to-date scientific information base, combined with an overall plan for dealing with broad-scale land management issues in the Interior Columbia River Basin, should provide for better, more sound land management decisions for federal lands in the years ahead.

Question 160 To what extent does this alter the cost-effectiveness of achieving "better decisions"?

Answer: We still assume that the plan will lead to efficiencies in our planning processes throughout the basin.

Question 161 What funding, by EBLI, is included in the FY 2000 request to implement the ICBEMP?

Answer: The FY 2000 President's budget does not include funding to implement ICBEMP decisions. However, the budget does include base funding for the Forests within the Columbia River Basin which will be redirected toward implementation once the Final EIS is completed and the Record of Decision issued.

Question 162 What proportion of the activities listed in the preferred alternative would this funding cover?

Answer: The FY 2000 President's budget does not include funding to implement ICBEMP; we do not have a breakdown by activities.

Recreation Program Problems

Question 163 We understand that concessionaires are very important to the Forest Service management of recreational facilities, especially campgrounds. Can you tell us how many campgrounds you have and how many are concessionaire run, both in terms of number of facilities and in terms of capacity.

Answer: The Forest Service has more than 4,000 campgrounds on its inventory with a capacity of 700,000 persons at one time. At this time, the Forest Service does not track the number of individual campgrounds under permit. The new data system being implemented in FY 1999 will be able to track such information.

Question - 164 If the Forest Service had to use appropriated dollars to run the concessionaire-run facilities, how much additional funding would you need?

Answer: As stated in previous testimony, the Agency's accounting system does not track the information requested. The Agency is developing the ability to generate such information through a program called Meaningful Measure. We will share this information with the Committee as soon as we have it.

Question - 165 How much revenue and how much site maintenance money, through use of the Granger-Thye Act authority, would be lost if concessionaires were discontinued?

Answer: Currently, under the Granger-Thye Act authority, 100 percent of the "rental" fees due the government by the concessionaire are offset by work the concessionaire does for the government with respect to the facilities maintenance backlog. Loss of concessions would mean that the only permanent authority for the Agency to operate and charge fees to the user would be the authority under the Land and Water Conservation Fund Act (L&WCF).

Under L&WCF, the Agency can retain 15 percent of the "user" fees collected to assist the Agency in collecting these fees. Without any additional authorities, 100 percent of facility maintenance funds would be lost to the facility, but 15 percent of the collected user fee revenues could be retained. The remaining 85 percent of the user fees would be deposited in the Treasury.

Without a detailed cost analysis, an examination of the two programs comparing each concession permit's net loss and, in some cases, gain to the government cannot be made.

Without concessions, appropriated funds would be required for the Agency to operate campgrounds unless authorities were developed to allow the Agency to retain user fees collected.

Question 166 We hear that the Department of Labor wage interpretation for employees of concessionaires is having a serious impact on their ability to run facilities. Can you please explain this situation.

Answer: The requirement to use Service Contract Act (SCA) pertains only to new concession permits. As new wage requirements come forward, the cost of doing business by the concessionaire is increased. To make up for this cost, the concessionaire has four options: 1) reduce the number of employees; 2) pass the cost on to the user through increased camping fees; 3) reduce proposed rental fees to the government when bidding on new contracts; or absorb the cost by reducing profit margin.

To date, the Agency only knows of six opportunities of new concession offerings. Two were single bids to sole proprietors (large companies said the offering was not economically viable); four received no bids due to economic viability. These four offerings are being repackaged to try and make them viable.

Question 167 What efforts did the Forest Service, and the USDA, take to try to get an exemption similar to the National Park Service exemption?

Answer: The concession exemption found in 29 CFR Part 4.133(b) is not a National Park Service exemption. The Park Service is required to meet Service Contract Act requirements like all other agencies. Park Service concessions are mentioned in the regulations as an example of a type of concession that meets the criteria for exemptions. If the Park Service has a campground concession similar to the Forest Service, they would be required to pay wage scales.

To be exempt, the concession must be principally providing, "for the furnishing of food, lodging, automobile fuel, souvenirs, newspaper stands, and recreational equipment to the general public. . ." In August 1998, the Agency requested a determination from Labor if campgrounds would qualify as a concession exemption because they were a form of lodging. Labor responded in November of 1998 that only facilities such as lodges, cabins, motel, etc. qualify as lodging.

Question 168 What kinds of administrative or legislative solutions have you heard various interest groups discuss with respect to this problem?

Answer: It our understanding that the National Forest Recreation Association has approached Members of Congress to address their concerns.

As of February 1, 1999, the Agency has moved ahead to implement the wage requirements as new concession offerings come up.

Question 169 Do you have any suggestions?

Answer: The Forest Service will comply with the statutory requirements contained in the Act. Should Congress consider legislative changes, the Administration will thoroughly evaluate such changes before taking a position.

Other Issues

Question 170 In the aftermath of Hurricane Hugo, restoration efforts in longleaf ecosystems in South Carolina have been restricted due to concerns over smoke management and safety. Prescribed burning and habitat improvement needs have increased dramatically in the Francis Marion NF due to the restrictions in burning, lack of habitat maintenance, and regrowth of vegetation. Reports indicate a decline of over 10% in the last three years of the Francis Marion red-cockaded woodpecker (RCW) population, one of the largest populations of this endangered species in existence. How has the Forest Service responded in regard to red cockaded woodpecker declines this past year?

Answer: The Southern Regional Office and the Francis Marion NF convened an interdisciplinary (ID) team to propose solutions. The U.S. Fish and Wildlife Service (USF&WS) was also involved. The ID team developed an aggressive, cooperative (Forest Service {Research & NFS}, USF&WS, and the SC Forestry Commission) plan to address the problem of lack of fire and midstory encroachment on Marion RCW population. The plan has two elements: 1) increase prescribed fire accomplishments by slightly relaxing previous restrictions on smoke management; and 2) use mechanical treatments to reduce midstory encroachment in areas where the urban interface presents problems with smoke.

Question 171 What is your projected need for FY 2000 to reverse this trend and meet your stated goals of restoration?

Answer: The agency will evaluate the need to provide the Francis Marion National Forest $200,000 more in Threatened, Endangered, and Sensitive Species Habitat Management funding to complement Hazardous Fuels Reduction funding. The Regional Office and the Francis-Marion NF will seek partnerships to leverage this funding.

Question 172 Within your budget request for TES species habitat, how much will go toward this problem?

Answer: $200,000 more for FY 2000 to treat an additional 7-8,000 acres.

Question 173 How does this funding compare with the past 2 years?

Answer: 1998: $400,000
1999: $400,000
2000: $600,000 (projected)
2001: $600,000 (projected)

Question 174 The Committee appropriated $207,918,000 for land acquisition in fiscal year 1999. This was a unique year in which additional funds were provided on a one time basis in addition to the annual appropriations. How much of those funds will actually be expended in fiscal year 1999?

Answer: Actual expenditure figures will not be available until after the fiscal year closes.

Question 175 Should the allocation for fiscal year 2000 not be sufficient to fund your budget request, please provide the Committee with three separate spending lists: $30 million; $50 million; and $70 million. Please include specific projects as well as all acquisition related costs.

Answer: This is covered on page 240 of the FY 2000 Budget Justification.

NOTE: The committee expects that the Forest Service will not spend any of the $40 million appropriated for the Baca acquisition without prior approval Committee approval.

Additional Questions From
House Interior Appropriations Subcommittee

Sierra Nevada Framework

Question 123 The Conference report to the FY 1999 Interior and related agencies appropriations act included $2,000,000 to complete the environmental impact statement for the Sierra Nevada framework for conservation by July 31, 1999. To date, how much of this funding has been obligated and for what? What is your plan for the rest of the funding?

Answer: As of February 28, 1999, spending on the overall framework is approaching $1,000,000. The costs include funding for (a) program management, (b) science team, (c) interdisciplinary EIS team, (d) collaboration team, and (e) monitoring team. Two cost areas that are higher than we expected are for Fish and Wildlife Service consultation and for the analysis of more than 50,000 public comments in a short period of time; both are part of the interdisciplinary EIS cost center.

The remaining $1,000,000 appropriated to prepare the EIS will be needed to continue analysis of public comments, consultation with the Fish and Wildlife Service, any needed additional effects analysis and preparation of the Final EIS. We anticipate that there will be a need for an additional $700,000 to complete the EIS. This is due in large part to the cost of consultation with the Fish and Wildlife Service (est. $150,000) and the analysis of the large number of public comments received (est. $500,000). This would bring the total cost of the EIS to between $2,600,000 - $2,700,000.

Question 124 Is the $2 million sufficient for this effort in its entirety? Will you use other funds to supplement or augment this $2,000,000 intended for the EIS effort? Do you have any plans or discussions underway to seek additional funds for this effort?

Answer: No, as mentioned in our response to Question 123 we estimate the cost of the EIS to be $2,700,000. It is our intent to fund the additional $600,000 to $700,000 within current appropriations. We will continue efforts to be as cost effective as possible.

In addition, to the cost of the EIS we anticipate expenditures of approximately $3,500,000 for implementation of portions of task 4 of the Framework as explained in our answer to Question 131. It is estimated that this additional expenditure will be made up of $800,000 for program support, $800,000 for scientific assistance, $500,000 for collaboration efforts and $1,400,000 for monitoring and adaptive management.

Question 125 Will you use some of the funds intended for the implementation of the Quincy Library Group legislation for the Sierra Nevada EIS effort?

Answer: None of the funds intended for implementation of the Quincy Library Group legislation will be used for the Sierra Nevada EIS effort.

Question 126 The conference report directed the Forest Service to offer the State of California an opportunity to participate in development of the EIS as a co-lead agency so long

as this would not expand the scope of the EIS as it had been defined by the Forest Service. What contacts have been made to the State of convey this offer? What has been the State's response? What exactly is the role currently of the State in the EIS process?

Answer: Because this is a federal project that will implement Forest Service responsibilities, the State has a shared oversight and technical, but not co-lead, status. Extensive dialogue occurred with the State of California through discussions between Regional Forester Sprague, Station Director Salwasser and California Resources Secretary Wheeler, Framework leader Connaughton and Fire Resource Assessment and Planning (FRAP) team leader Stewart, and staffs of both the EIS team and FRAP team as to the level of involvement of the State. In these discussions it appeared the State was looking at a broader scope that lent itself well to strong involvement in the overall Framework. The State has responded positively to the offer to participate in both guidance of the overall Framework and collaboration with us in the preparation of the EIS to the degree staffing and funding has allowed. There is strong participation from the California Department of Fish and Game, California Department of Forestry and Fire Protection, California Department of Parks and Recreation, and the University of California.

Specifically the State has been an active participant in :

- Developing the Draft Environmental Impact Statement (DEIS) through one-on-one, specialist to specialist, involvement with the interdisciplinary team (IDT).

- Serving as an integral member on the interagency team, which acts as a review committee to share thinking on the project.

- Participating as a full player on the design team, which is responsible for designing and overseeing
  all aspects of the Framework.

Question 127 The Committee has seen a press release dated February 25, 1999 from the Sierra Nevada Framework project office that states that the final EIS timeline was being extended to October 1, 1999, well beyond the July 31 deadline agreed to by the Administration during negotiations on the Interior Appropriations Act last fall. Is this press release in error?

Answer: No. Our intent has been the same as the Committee's since the initial agreement is to complete the Framework EIS as quickly as possible. It became increasingly evident that due to the complexity of the analysis, evaluation of public comments and consultation with the Fish and Wildlife Service that we would be unable to make that target date. It was our intent to consult with members of Congress prior to the public notification of a new target date to complete the EIS. To that end we consulted with the local representative for Congressman Doolittle, who has served as the key contact for California, about the need for the additional time to complete the EIS in a thorough and professional manner. We believed this would provide the needed notification. We regret the misunderstanding and have taken steps to insure this will not happen in the future. This includes sharing weekly briefing papers and increasing the number of briefings with Congress.

Question 128 The web site of the Sierra Nevada framework site also has on it a detailed timeline dated February 26, 1999, that extends the EIS completion date to October 1. Is this information on the web in error?

Answer: No, as stated above in response to Question 127, the complexity of the analysis, evaluation of public comments and consultation with the Fish and Wildlife Service necessitated additional time to complete the EIS in a thorough and defensible manner.

Question 129 Does the Forest Service, the USDA, and the Administration take conference report language seriously?

Answer: The Forest Service, the USDA, and the Administration do take Conference Report Language seriously. However, circumstances change on projects such as these and the public, the Congress, and the Executive Branch need to weigh the benefits and risks of being flexible in providing more time. We strongly believe that providing the additional time will result in a better EIS for the region in many respects, particularly a scientific one.

Question 130 As of today, March 22, 1999, the House Committee on Appropriations has not been consulted at all regarding this alteration of the a completion date. We understand that congressional offices of the affected districts also have not been consulted. Why did you not consult with the Committee and the Congress and seek relief from the deadline agreed to last year?

Answer: Please see response to Question 127.

Question 131 Task 3 of the Sierra Nevada framework, as Congress was told last year by the Forest Service, was designed to identify changes and amend the California Spotted Owl guidelines in a manner consistent with the scientific findings developed in Task 2. Task 4 was reserved for a long-range planning effort with broad goals for the health and management of the forests. Why has the Forest Service greatly expanded the scope of the Framework during Task 3 when Task 4 is designed for the long-term purposes?

Answer: Experience suggested we merge all tasks under the broad framework philosophy. Task 3 was intended to amend the Forest plans through the Environmental Impact Statement (EIS), while Task 4 was intended to develop relationships and means to broadly address changes in conservation policy. We concluded that Task 3 contributed importantly to Task 4 and that we needed to take immediate steps to prepare us to address issues not covered by the EIS. Hence, the two steps are occurring simultaneously under the broad umbrella of the Sierra Nevada Framework for Conservation and Collaboration. Through the Science Review and many public meetings held throughout California, it was brought to our attention that several topics in addition to the California Spotted Owl guidelines, including fire/fuels, aquatic and riparian, old forest and road issues, needed to be addressed in a prompt manner. These problems cannot be effectively addressed by treating them separately. The scope of the DEIS was tailored to respond to these relationships.

Questions Submitted for the Record by
Congressman George Nethercutt
U.S. Forest Service Hearing

Committee of Scientists Report

Questions: Both Secretary Glickman and Chief Dombeck mention in their testimony the report and final recommendations of the Committee of Scientists. Chief Dombeck states that he "looks forward to issuance of the Committee of Scientists Report from which revised forest planning regulations will be developed in late spring." A)When will the final report be available? B) If you are planning to develop revised forest regulations sometime late this spring, will there be ample time for public review and/or comment on the report?

Answer A: The Committee of Scientists has completed their report and presented it to the Secretary of Agriculture on March 15, 1999. The Forest Service had limited copies of it due to printing delays but made a number of copies available to the interested Committees in the House. The Committee of Scientists were able to complete their work over a fifteen month period. They elected to hear from people in each region of the country and conducted a series of twelve open, public conference calls. The location of each committee member and the need to hear from a wide variety of people led to the time required to complete their work.

Answer B: Yes. We are anticipating that the public will have an opportunity to comment on the draft proposed planning regulations we are now developing. In addition to the opportunity to review and comment on the regulations after they are published in the Federal Register (including electronic comments), the agency expects to host many public meetings throughout the country.

ICEBMP

Question: You state in your justification that the EIS and Records of Decision are expected in FY 2000. How much funding is USFS planning on dedicating to ICEBMP for FY 2000? When can we expect to see the final EIS?

Answer: The FY 2000 President's Budget includes $5.2 million to develop the Supplemental Draft and Final Environmental Impact Statement (EIS) and the Record of Decision. The Forest Service portion of the FY 2000 cost would be $3.5 million.

The release of the Final EIS and signing of the Record of Decision is scheduled for winter 1999/2000.

Land Aquisition

Question: You requested $118 million in funding for land acquisitions as part of the President's Lands Legacy Initiative and have included a list in your budget justifications of priorities for acquisition by the Forest Service. The number one priority of the Forest Service is Pacific Northwest Streams. Can you provide the committee with a list of the lands you plan to acquire in Region 6? How much of that land is private land? How many of these lands are considered "in-holdings" and what does the Forest Service define as an in-holding?

Answer: The properties identified in the proposed Pacific Northwest Streams acquisition in Region 6 are:

City of Seattle/Bowe Ranch, Phase II
Seattle River
Bonanza Queen Mine
Whalen Island

All of these lands are considered private. All of the lands are considered inholdings, which would be lands within a National Forest boundary.

Snake River

Question: While I understand that the National Marine Fisheries Service is the lead agency on listings with salmon in the Pacific Northwest, the Forest Service does have a role in consulting on this decision. How many different federal agencies are consulting on this process? How many different processes is the Forest Service involved in out in the Pacific Northwest having to do with salmon listings?

Answer: Five federal agencies: Forest Service, Bureau of Land Management, Corps of Engineers, Bureau of Reclamation, and Bonneville Power Administration are known to be consulting on salmon listing process in the Pacific Northwest.

The Forest Service is involved in three distinct processes having to do with salmon listing in the Pacific Northwest. The first is defined by the Endangered Species Act, produces a Biological Evaluation/Assessment, and may require consultation with the USFWS/NMFS.

The second is required by the National Environmental Protection Act which is used to evaluate the effects of individual projects. Hundreds of individual projects may be ongoing at any time on National Forest System lands in the Pacific Northwest.

The final process involves National Forest Plans and is implemented under the guidance of the National Forest Management Act.

Forest and Rangeland Research

Question: In your budget justification, you include $25 million for research for insects, disease and non-native invasive species. As you know, in the Northeastern part of Washington we have a severe problem with the bark beetle. What research is being done to address this problem in the Pacific Northwest and what results are your projecting long-term from this research?

Answer: In response to this serious problem, Forest Service Research and Development has a number of projects in progress by scientists at the Rocky Mountain Research Station and the Pacific Northwest Research Station. Our program of work is providing new knowledge essential to reducing impacts of bark beetles across the landscape by better regulating the spatial distribution of beetle activity using knowledge of population dynamics, silvicultural treatments and pheromone treatments. These efforts are briefly summarized below.

Studies conducted by Pacific Northwest Station scientists are located in WA and ID, in collaboration with Oregon State University, State of Idaho, Colville, Panhandle and Nez Perce National Forests, and Forest Health Protection staff in Regions 1 and 6. Studies are testing the

use the insect's natural chemicals for attraction and dispersal (pheromones) in management of bark beetles at the landscape scale. Early results show that an avoidance pheromone can be used to protect campgrounds and special habitat areas.

End products: Pheromone use as a tool for manipulating bark beetle distribution is expected for land managers within two years for the Douglas-fir beetle. Similar applications are anticipated for other major bark beetles in the region within four to eight years.

Silvicultural studies by Rocky Mountain Research Station scientists are conducted at both the Priest River and Deception Creek experimental forests, located on the Idaho Panhandle National Forests. A variety of silvicultural approaches (individual tree selection to clear cutting) are being evaluated to better understand how different stand compositions and structures affect a range of management objectives (wildlife habitat protection, watershed restoration, timber production).

End products: silvicultural treatment options for a range of management needs - reducing the impact of bark beetle damage, enhancing wildlife habitat, watershed production, and timber production.

A second area of research by Rocky Mountain Research Station scientists, with application for bark beetle problems in the northwest, is conducted at Logan, UT. These studies are providing sampling designs for monitoring Spruce beetle and Mountain Pine beetle at the landscape level, as well as increasing knowledge of the effectiveness of thinning strategies for reducing susceptibility of forests to bark beetle attack.

End products: Fundamental knowledge of bark beetle population dynamics and new methods for monitoring these pests.

Forest Legacy Program

Question: In the budget justification you mention there are seventeen states involved in the Forest Legacy program, including Washington State's Mountain to Sound Program. What other lands are proposed for the Forest Service's Forest Legacy program in Washington State?

Answer: All of the proposed Forest Legacy Program projects in Washington State are included in the Mountains to Sound Program.

Trails Backlog

Question: You mention in your budget justification that trail restoration is "a major focus" in all Regions. What is the Forest Service's backlog for trail maintenance and how has the fee demonstration program assisted you in managing that backlog?

Answer: The backlog of trail maintenance, as reported by field units in January, 1999, is $519 million. The fee demonstration pilot has provided additional resources to help address facility and trail maintenance backlogs. Through the end of FY 1998, funds from the limited number of fee demonstration projects (67) generated over $30 million in new revenues, $9.6 million of which was spent on repair and maintenance, annual operation and facility enhancements - categories associated with facility and trail system needs. Fee demonstration funds provided

funds on a number of projects that allowed seasonal trail maintenance crews to be hired for the first time in a number of years.

Regional Funding

Question: The Colville National Forest's timber budget (located in Region 6) was reduced $660,000 from last year's FY98 final budget to FY99's final budget. Given the fact that the national timber sales management budget was increased nationwide for FY99, why was there a cut for this specific National Forest's budget reduced to that extent?

Answer: The national total timber sales management budget was increased from $209 million in FY 1998 to $226 million in FY 1999. Of the FY 1999 increase, about $30 million were earmarks for specific regions and projects. The Pacific Northwest Region did not receive any of this earmarked funding, and the regional allocation was approximately $1.6 million less in FY 1999. Within the Region, funds were distributed to maximize their regional timber sale program priorities. The first priority was to complete work on sales that weren't offered in FY 1998 that forests intended to carry over and offer in FY 1999. The second priority was to fund the Pacific Northwest Forest Plan program, where the forests have a predominantly greater regular timber sales program compared to salvage sales.

In addition to the priorities, funds were allocated based on our need to balance appropriated and salvage sale funding across the Region. The total timber sale workload is financed through a combination of appropriated and salvage sale funds. The Region's salvage sale collections have declined significantly, which has contributed to a reduction in the salvage sale program. The regional salvage sale limitation request was about $13 million less in FY 1999 than in FY 1998. The Colville NF did receive its full request for salvage sale limitation.

Minerals and Geology Management

Question: The Forest Service Minerals and Geology Management budget for national programs since 1995, as adjusted for inflation, has been reduced by about $6.4 million, yet Washington office overhead appears to have increased almost a million dollars during that same time frame. The result is that distribution of resources to the field has been reduced by about $7.7 million. Not only does this reduction in funding affect the ability of the Mineral and Geology staff to meet its inspection and monitoring objectives, but makes it almost impossible for Forest Service Districts to review and process mining plans in a timely manner. Delays in permitting hardrock mines on federal lands is one of the primary reasons domestic mining companies are moving off shore. Banks will not loan money for development of a mine if there is not a reasonable expectation that the project will come on line and produce income to service the debt. Permitting delays on public land are reducing and in some situations eliminating this expectation. Please explain why the Minerals and Geology program has an increased Washington headquarters budget and a reduced field budget, rather than the other way around? Is this the result of money being budgeted for this program being used for other Forest Service programs?

Answer: Funds held within the Washington Office are frequently provided for national commitments. The majority of these funds are allocated to the field to emphasize important national programs including programs directly related to Minerals and Geology management. Some Washington Office indirect costs are increasing as the agency takes strong action to improve its accountability. Although

the Minerals and Geology program funds will be part of these increases, every effort is being made to maximize the availability of funds for direct on-the-ground projects.

Representative David R. Obey
Hearing Questions

Question: The budget justification mentions the Administration's plans to decouple the payment of 25% of gross National Forest receipts to states, basing it on a historical formula instead. This proposal is justified on the basis of declining receipts by counties from this fund.

However, this is not the trend that is seen in the National Forest units in my state. In fact, in recent years, the payments to counties in Wisconsin have risen significantly. How does the Forest Service plan to take into account the fact that in many Southern and Eastern forests, decoupling would deny them the benefits of their efforts to revitalize their forests?

Answer: For those Forests, our proposal would first ensure that they are "held harmless", that is, that they would not receive a payment below that which they received the previous year. Secondly, it would provide stability and predictibility in the future as insurance against various events which can impact timber harvest levels.

Question: In the budget for Forest Health the priorities for FY 2000 cite plans to move the Gypsy Moth Slow-the-Spread program from a pilot to actual implementation, and also note the increased problems with Gypsy Moth in Eastern Region states, including Wisconsin.

While this is gratifying, can you explain why, if this is such a priority, that the Eastern Region gets only $3,000 in Federal Lands money and $2,000 in Cooperative Lands money to actually carry this out?

Answer: The Federal Lands Forest Health Management ($3,000) and Cooperative Lands Forest Health Management funds ($2,000) included in the President's budget for the Eastern Region are funds that specifically support the multi-program funded Woodsy Owl program administered by the Eastern Region. The administration of the Forest Health Management Program that provides forest health protection technical and financial assistance to States, other federal agencies, and the National Forests in midwest and northeast US is the responsibility of the Northeastern Area, State and Private Forestry. The Area is administered by the Area Director, a senior executive position. In Wisconsin, the Area Director works closely with the Wisconsin Departments of Natural Resources and Agriculture, the Eastern Region, the North Central Research Station, Tribes, as well as other federal agencies to address invasive forest pests, including the gypsy moth. (Also see the response to the following question). In FY 1999, the Northeastern Area provided the State of Wisconsin financial and technical assistance in excess of $1 million through the Forest Health Management program to detect, evaluate, and suppress forest pests.

Question: The Eastern Region takes a beating in other areas of the budget as well.
No money for assistance to volunteer fire fighting agencies.
No money for cooperative forestry despite the fact that our National Forests are tightly integrated with state and private forests.
No money for the stewardship incentive program despite the fact that non-industrial private forests are a major feature of the landscape.

Only $2,000 for urban and community forestry despite the fact that about 46% of the U.S. population lives in the Eastern Region.

While the Eastern Region getting the short end of the financial stick is not new - in fact, we have discussed this on several occasions - can you enlighten us as to why this is so?

Answer: The programs cited are not the administrative responsibility of the Eastern Region. As you correctly point out, nonindustrial private forests constitute a majority of the forest landscape in Wisconsin. In fact, more than 90% of the forests in the twenty states of the northeast and midwest encompassed by the Eastern Region are non-federal. Recognizing this is the highest percentage of nonindustrial private ownership in the country, the Forest Service dedicates a field unit supervised by an Area Director, a senior executive of rank equivalent to the Regional Forester to administer the cooperative forestry programs. This unit, the Northeastern Area, State and Private Forestry, is Headquartered in Radnor, Pennsylvania, with field offices in St. Paul MN; Morgantown, WV; and, Durham, NH. The Northeastern Area services Wisconsin through the St. Paul office. Additional support for the Urban and Community Forestry program in Wisconsin is provided by the Northeastern Area's Urban Forestry Center for the Midwestern States in Chicago, Illinois.

As with Forest Health Management Programs, the Northeastern Area works in direct cooperation with Wisconsin Departments of Natural Resources and Agriculture in administering these State and Private Forestry programs. Through this partnership role of technical assistance and focused financial assistance, Federal resources are leveraged to help produce a variety of forest-based goods and services, including recreation, wildlife and fish, biological diversity, and timber. In so doing, the Northeastern Area works across various ownerships and maintains close working relations with other Forest Service units, including the North Central Research Station, the Northeastern Research Station, the Forest Products Laboratory, and the Eastern Region.

In FY 1999, the Northeastern Area received $55.1 million to implement the cooperative programs of State and Private Forestry. These funds include $9.78 million for Forest Health Management; $6.57 million for Cooperative Fire Protection, including $772,000 for Volunteer Fire Assistance; and $31.8 million for Cooperative Forestry. Included within Cooperative Forestry funds are over $12 million for the Urban and Community Forestry Program. The Stewardship Incentive Program was not funded by Congress in FY 1999. The President's FY 2000 request would provide the Northeastern Area about $72.5 million.

Through the Northeastern Area, State and Private Forestry, Wisconsin received $2.44 million in FY 1999 from the State and Private Forestry appropriation. This level contained $399,000 for Cooperative Fire Assistance, including $56,647 for Volunteer Fire Assistance. Wisconsin Cooperative Forestry funds total $1.03 million. Included within that amount is $241,421 for the Urban and Community Forestry program. For FY 2000, the President's request would provide Wisconsin over $3 million.

The administration of the Eastern Region and Northeastern Area, as well as Research units, provides a strong complementary Forest Service presence in the East to work cooperatively with our partners to address complex resource management issues. Our capability to work with our many partners to achieve results on-the-ground and across the landscape was significantly increased in FY 1998 and again in FY 1999 when Congress included provisions for "Watershed Restoration and Enhancement Agreements" in the appropriation acts for the Department of the Interior and Related Agencies. General Provision 323 in the FY 1999 appropriation act (PL 105-277) provides for the use of any funds appropriated to the Forest Service for the purpose of

entering into cooperative agreements with willing Federal, tribal, State and local governments, private and nonprofit entities and landowners for protection, restoration and enhancement of fish and wildlife habitat, and other resources on public or private land and for the reduction of risk from natural disaster where public is threatened that benefit the resources within the watershed. This provision is in efect through FY 2001. In addition, under Title II of PL 105-277 and as in past years, Congress included a provision making any funds appropriated to the Forest Service available for interactions with and providing technical assistance to rural communities for substainable rural development purposes.

Mr. Hinchey
Questions for the Record
Forest Service Hearing March 1999

State and Private Forestry

Question: I have some questions regarding State and Private Forestry and Forest Legacy. I was interested that the Secretary mentioned watershed protection as the Service's top priority for FY 2000. As you know, a large part of the New York City Watershed lies within my district and I am aware that the State and Private Forestry program has already been helpful in protecting that watershed. I am interested in hearing what the program could do to protect watersheds if it received the increased funding you have requested. If possible, I would appreciate your mentioning some of the cities that could benefit from this, and also what benefits it would have for people who live in smaller communities in watershed areas.

Answer: The proposed funding level for State and Private Forestry programs focuses resources to improve the monitoring, management, protection and better use of America's forests, with an emphasis on the stewardship of nonfederal forestlands and watersheds. Through programs such as Forest Stewardship, Forest Health Management, Forest Legacy, and the Stewardship Incentives Program, the Forest Service will work cooperatively, and on a voluntary and non-regulatory basis, with States, local governments, and Tribes to determine the appropriate mix of resource management activities necessary to protect and improve high priority watersheds, such as the New York City Watershed. Through the Forest Legacy Program, State and Private Forestry works with States to foster protection and continued use of forested lands threatened with conversion to nonforest uses by purchasing conservation easements or fee titles from willing private landowners. Specific types of community assistance is provided to local communities through our Economic Action Programs, Urban and Community Forestry Program, and the Pacific Northwest Community Assistance Program. Through the Economic Action Program, assistance is focused to strengthen the economic conditions of communities through the wise use of forested and related natural resources. The Urban and Community Forestry program enhances cities and towns through planning and management of urban forest resources. The PNW Community Assistance Program focuses assistance to communities in the Pacific Northwest that have been adversely affected economically as a result of changes in policies affecting federal lands in the northwest.

Question: My region of the country has historically enjoyed the least direct benefits from the Forest Service budget. We have few national forests, limited Forest Service road mileage, and relatively little economic activity in the forests we do have. What direct benefits could an increase in Forest Legacy and State and Private Forestry have for my region, and other states with limited National Forest acreage? In your view, would an increase in these programs help equalize the value of the Forest Service in different regions?

Answer: The State and Private Forestry Program represents important tools for the monitoring, management, protection, and better use of forestlands, primarily nonfederal forest lands. Any increases in programs would directly benefit the stewardship of nonfederal lands in the Northeast, as well as the rest of the Nation. The proposed funding level for State and Private Forestry programs is based on the need to accelerate partnerships with States, local governments, communities, and Tribes to protect and improve the Nation's watersheds.

Question: Some of my colleagues have expressed concern about the level of funding requested for wildfire management in the national forests, and I can understand their concerns. However, I appreciated your request for additional funding for fire management in the state and private forestry account, because problem wildfires are obviously not confined to the national forests. Can you comment further on the need for these funds, how they will be spent, and who will benefit?

Answer: The fire management program in the State and Private Forestry appropriation is under the Fire Protection budget line item. This line item has two expanded budget line items: State Fire Assistance and Volunteer Fire Assistance. These programs provide technical and financial assistance to States and local fire agencies to protect Federal, State, and private lands from wildfire. The State Fire Assistance program is proposed at $31.5 million. This program provides direct assistance to States to help state and private lands. Over 1 billion acres of state and private lands are under the protection of State and local fire agencies. The Volunteer Fire Assistance program is targeted to volunteer fire departments that protect communities of less than 10,000 people. Local fire agencies are often the first line of defense in meeting the expanded protection needs for wildland/urban interface areas threatened by wildfire. Assistance focuses on training, equipping, and organizing volunteer fire departments.

Timber Program

Question: Last year, you issued a report indicating that below-cost timber sales cost the Forest Service $88 million each year, and that sales in the Tongass Forest alone represent a net cost of $33 million. Have you made any adjustments in this year's budget that would reduce these losses?

Answer: In FY 1997, the Forest Service did report that the overall timber sale management program's direct and indirect expenses exceeded its revenues by $88.6 million, and that the Tongass NF expenditures exceeded revenues by $33.5 million. What is missing from the discussion is consideration of why timber sales are being offered. The data presented in our annual Forest Management Program Reports indicates that timber sales with a stewardship purpose are increasing. The reason we are offering these timber sales is because they are the tool that provides the most effective means to treat vegetation on the national forests to improve forest health, reduce risks, and provide other multi-resource benefits, while at the same time collecting the fair market value for the commercial wood products that are produced. Were we to do this same vegetative treatment work using service contracts, no revenues would be generated. All of these benefits from management are not incorporated into the expenditure-revenue equation, nor in the discussion about the below-cost timber sale program. We continue to believe that timber sales are oftentimes the least net cost method of achieving desired management objectives.

There is little that can be done in the budget to modify this situation. The budget is a reflection of the agency's funding needs to do the work required. It has no influence on revenues received. Only to the extent that we successfully manage our programs in a cost-effective manner can we minimize the cost side of the equation.

Question: On the basis of that report's accounting, it would seem to be difficult to justify continuing sales that result in a net cost to the Service, given your demonstrated needs for maintenance, etc. Can you comment on this generally, and also specifically in the case of the exceptionally large net losses in the Tongass? Does your management plan for the Tongass

anticipate continuing net losses from timber sales, and are you considering changes in the plan with an eye toward reducing these losses?

Answer: From a revenue-expense standpoint, several factors contributed to the results on the Tongass NF. First, the depressed timber market in FY 1997 resulted in less timber being harvested, which generated the lowest revenues received in recent history. The average annual revenue for FY 1990 - 1996 was almost $28 million; in FY 1997 it was $5 million. The agency has no control on world timber markets. In addition, if the Tongass net revenue for FY 1997 is compared to previous years, the change in accounting for "road prism costs" resulted in $14 million of the $33 million loss. It is also of note that profitability is not the main goal; the NFMA goal is to maximize public benefits, not revenues. Costs reflect timber production and environmental concerns.

There are no considerations for changing the Forest Plan to reduce losses. The 1997 Tongass Land Management Plan Revision and the 1999 Record of Decision do reduce the land base available for timber harvest and the timber planned volume, but not with an objective of decreasing losses associated with the timber program. Increased environmental protection measures and changes in harvest techniques (alternatives to clearcutting) have increased logging costs. Through collaborative stewardship, implementation of the new plan will streamline the evaluation and preparation of future timber sales, resulting in fewer appeals and litigation, thus reducing the cost of planning. It must also be mentioned that the benefits of timber sales go beyond the revenues produced. Many communities in Southeast Alaska depend on timber harvest and manufacturing of wood products from the Tongass. Without the employment and related services generated in those communities, they would likely cease to exist.

Question: An Inspector General's report (OIG) from this past January found that in most of the cases it reviewed, the Forest Service did not implement promised mitigation measures aimed at reducing environmental damage from timber sales. What are your plans to rectify this situation? Is mitigation being neglected because it would increase the net cost of the sale?

Answer: On March 26, 1999, the Forest Service submitted a "Request for Management Decision" to the Inspector General. This Request contains the Forest Service's suggested corrective actions in response to the recommendations in the Inspector General's Evaluation Report. The Inspector General has not yet responded to the Forest Service's submission. Therefore, no definitive response strategy has yet been approved. It should also be noted that the OIG reviewed only fourteen environmental documents, out of the nearly 4000 produced in the 4-year time period covered by the review. Many of the Forest Service's own management oversight reviews have found that implementation of NEPA decisions has been carried out completely. However, we are planning further management oversight reviews to look specifically at the type of deficiencies identified by OIG.

Trust Funds

Question: In the past, you have spoken of the need for greater accountability for spending KV and the other trust funds, a position I agree with. However, your budget request would permit greater discretionary authority over the trust funds. Can you reconcile this apparent discrepancy, and can you comment on your plans for the trust funds in FY 2000?

Answer: The Forest Service is fully committed to achieving greater accountability for all agency activities. In particular, we are discussing various ways to improve our accountability of the several permanent appropriations and trust funds associated with timber sales. We have begun to institute a number of administrative actions designed to help achieve this end and are considering additional legislative proposals that may be needed.

Administrative actions include:

- Consistent procedures and definitions controlling assignment of costs as direct or indirect and their allocation to programs or accounts, following FASAB standards;

- Fully disclosing spending from the permanent and trust funds, anticipated outcomes, work accomplished, and overhead costs, by unit and program, as part of the annual Report of the Forest Service;

- Publishing a free-standing trust fund report, based on the material in the annual report, to make the basic information available to a wider audience;

- Explaining in plain English the definitions and procedures employed in determining and allocating indirect costs and in collecting and disbursing trust fund moneys, so these transactions become transparent to external observers;

- Posting the plain English definitions on the internet to make it available to all interested parties and holding briefings for Congress and interest groups;

- Expanding the role of the Washington Office in fund policy, administration, accounting, and systematic oversight of indirect costs and trust fund management;

- Establishing a position of Trust Fund Manager within the Washington Office, to provide program expertise, management controls, oversight, and a focus for accountability;

- Automating fund management procedures for trust funds through the Timber Information Manager application, including all phases of K-V from planning to project implementation (our best estimate for implementation is October, 2000);

- Requiring field units to report planned out-year expenditures for K-V projects, to facilitate out-year budget planning and disclosure of budget needs at agency level; and,

- Increasing the use of multiple-objective stewardship contracting to minimize entry into stewardship project areas, control costs of accomplishing stewardship objectives, and reduce collections for K-V and Brush Disposal by carrying out project-related work as part of the initial stewardship contract.

The President's Budget proposal for FY 2000 calls for eliminating indirect cost charges to the Knutson-Vandenberg, Brush Disposal, Salvage Sale, Cooperative Work - Other, and Roads and Trails funds. That provision would simplify accounting for these moneys and thereby increase transparency and accountability.

The President's budget also provides for the revenues to the Knutson-Vandenberg, Cooperative Work - Other, and Brush Disposal funds to be available for use without regard to the state of origin, for reduction of hazardous fuels accumulations. This use of revenues to the funds would be targeted towards the wildland-urban interface and other areas where there is an abnormally high risk of fire and ecological integrity has been compromised by fire suppression. This provision would provide new discretionary authority to allocate revenues to these funds to a purpose other than those for which they have historically been used. However, the range of new purposes is narrow; the expansion of discretion is limited; and all expenditures from these funds will be subject to the administrative actions outlined above. We believe the net effect would include both a modest increase in agency discretion to allocate resources to an area of pressing need and a noticeable gain in public scrutiny and accountability.

Roads

Question: The road construction moratorium promulgated by this Service does not apply to all areas under the Forest Service's jurisdiction. Can you tell me how many miles of new roads the Forest Service expects will be built this year, by the Service or purchasers?

Answer: In FY 2000, the Forest Service is planning to build 6.2 miles of Forest Access roads and 288.0 miles of Timber Access roads built by purchasers. Of the total of 294.2 miles, no new construction is planned within moratorium direction guidelines.

Question: The Service has requested $37.4 million for planning and engineering support for roads in FY 2000. Would any of this money support development of new roads within areas covered by the moratorium?

Answer: There will be no use of the $37.4 million that will not conform with provisions of the interim roads rule. However, there is a provision in the rule that permits road construction or reconstruction in unroaded areas covered by the rule. These exceptions are for public safety; imminent threat of flood; fire or other catastrophic event that, without intervention, would cause the loss of life and property; and reserved outstanding rights including those ensured by statue, treaty, or other outstanding right. Therefore, some areas would qualify as unroaded under the rule, may have road construction or reconstruction for the reasons stated above--these should be very minimal.

Question: Questions have been raised about the high cost of decommissioning of roads. Can you tell us something about the economic benefits in decommissioning roads? Would decommissioning create jobs.

Answer: There are several economic benefits in decommissioning roads. When roads are decommissioned there is a reduction in the amount of sedimentation that enters streams and reservoirs. This in turn results in a lower cost to maintain reservoirs and allows economic benefits to accrue through the enhancement of fisheries. Other potential savings could also include the reduction of water purification costs to local municipalities when they have cleaner water.

Long term costs to the Forest Service are reduced when roads are decommissioned. When unneeded roads are removed from the inventoried road system through decommissioning, funds

will not be diverted to maintain and manage these routes, therefore reducing the long term costs to the Forest Service.

The environmental benefits are positive when roads are decommissioned. The primary benefit lies in the reduction of sedimentation to stream courses and the vegetation of bare soil. These improvements greatly enhance the surrounding resources by eliminating fish barriers when culverts are removed; by improving aquatic habitat with cleaner water; reducing the introduction of noxious weeds; improving security areas for wildlife and enhancing the recreational experience for the non-motorized user and recreational fisherman.

Forest Ecosystem Restoration

Question: I am very interested in your new proposal for a Forest Ecosystem Restoration and Improvement fund? Can you tell us what environmental and economic benefits (such as job creation) that it would have? Why do you propose delinking these expenses from timber revenues?

Answer: The proposed forest ecosystem restoration and improvement program is intended to fund activities that promote the improvement of the health, diversity, resiliency, and productivity of national forest system lands. It is also designed to focus specifically on the non-commercial component of needed vegetative treatments, which historically have been more difficult to accomplish due to the lack of economic incentives to remove them because of their low or nonexistent market value. The Forest Service proposes to use the agency's risk assessment and mapping work to set priorities for the use of these funds. Thus, more emphasis would be placed on treating forests at high risk of having catastrophic fires or damaging insect and disease infestations that could potentially affect the wildland-urban interface and threatened and endangered species. Since this funding would not be used to prepare timber sales, a likely tool for accomplishing the needed work would be the use of service contracts. To the extent that this program can be established and maintained, it offers potential for employment for displaced workers living in nearby communities.

Recreation

Question: As others have noted, you have often emphasized increasing recreational use of the national forests, and your interest in promoting recreational use. However, your budget request calls for lower expenditures on recreation in FY 2000. Will these reductions result in reduced access, or further deterioration of existing facilities? Do you have projected estimates for the cost of keeping up with recreational demand in the years ahead?

Answer: The annual cost of maintaining recreational facilities and trails is $113 million and $90 million, respectively. The FY 2000 budget provides $27 million and $20 million, which will increase the backlog of maintenance and add to the further deterioration of existing facilities. Our efforts will focus funding to avoid trail closures.

Research

Question: Does your research program support research on damage to forests and forest resources by acid rain? Are the effects of other air and water pollutants on forest health under study?

Answer: Yes, the Forest Service research program studies both damage by acid rain and other air and water pollutants on forests and other resources. This research is conducted in Riverside, CA, Durham, NH, Parsons, WV, Grand Rapids, MN, Coweeta, NC, and Fort Collins, CO and other locations. Studies include effects of air pollution including acid deposition on water, soil and vegetation resources. Forest Service Research also supports 20 installations of the 200 site National Atmospheric Deposition Program rainfall chemistry monitoring network.

Revenues

Question: Our subcommittee held a hearing last month regarding the failure of the Forest Service over the past 45 years to collect revenues from various uses, including utilities rights-of-way, cabins, ski areas, etc. Does your budget request anticipate any increased effort to collect revenues from these sources?

Answer: As stated in previous hearings, the Forest Service is actively working on updating fee schedules and appraisals for the assessment and collection of fair market value rental fees associated with authorized uses and occupancies of National Forest System lands. For ski areas, the Agency has implemented the fee schedule provided in the Omnibus Parks and Public Lands Management Act of 1996. Later this year (1999), the Forest Service will submit a report to the Secretary of Agriculture analyzing that fee system's effects to date. The Forest Service continues to conduct appraisals of recreation residence tracts to update the fees assessed for those uses, and make them commensurate with the current fair market value of the land being occupied. We are also diligently applying the fee schedule rates for communications uses that were adopted in conjunction with the Bureau of Land Management in 1995 and 1997.

The Forest Service is actively working on a set of draft regulations needed to exercise our current statutory authorities to assess and collect "cost recovery fees"; fees to recover the agency's costs to process applications for special use authorizations, and to monitor uses and occupancies for compliance with the terms and conditions of special use authorizations. This is an interagency effort with the Bureau of Land Management, which is currently proposing revisions to their existing cost recovery regulations for comparable uses on BLM-administered public lands. A draft of our proposed cost recovery regulations will be published for public review and comment in the summer of 1999, with the publication and adoption of a final set of regulations planned in the year 2000.

QUESTIONS FOR THE RECORD
CONGRESSMAN JIM KOLBE

International Arid Lands Consortium

Question: What is the Forest Service's present level of commitment to the International Arid Lands Consortium?

Answer: The Forest Service current funding commitment to the Internationl Arid Lands Consortium is $600,000.

Question: Would you like to maintain that level of commitment and would you like the source of the funding from National Forest Systems and Research to remain the same in this area?

Answer: The Forest Service plans to fund the International Arid Lands Consortium in FY 2000 at the current level of funding. The funding source will remain the same from the National Forest System and Research.

Tucson Rod and Gun Club (TRGC)

Mr. Secretary, as you are well aware, we have been struggling to resolve the TRGC matter in the Coronado N.F. Throughout last year, I spoke with you, Chief Dombeck, Deputy Chief Joslin, and Supervisor McGee; however, no realistic resolution of this matter was achieved. To be honest, it appears that all of my interactions with the Forest Service yielded no results. I continue to watch for any real, positive developments by the Forest Service to reinstate this recreational opportunity for the community, but after two years, I am skeptical.

The Forest Service and the TRGC are currently engaging in discussions to resolve this issue, but I am losing my patience. I cannot idly stand by while the Forest Service eliminates this recreational opportunity.

Question: Are you committed to resolving this issue to the satisfaction of the community in the coming months?

Answer: The Forest Service is committed to resolving this issue in the coming months by allowing an opportunity for TRGC to provide community shooting range services in Sabino Canyon while providing appropriate public health and safety and adequate environmental protection.

On November 20, 1998, the Forest Service issued a Decision Notice and Finding of No Significant Impact (FONSI) which provided a solution to provide shooting range services to the community while protecting public health and safety and adequate environmental protection. While the TRGC initially appealed the Decision Notice, they have since agreed to participate in facilitated discussions with the Forest Service to find a solution that works for both parties. The discussions are proceeding with evidence of issue resolution taking place. The appeal suspension that allows for the discussions is in effect until July 7, 1999. Currently, the TRGC plans to hire a contractor to design a master development plan to meet standards in the Decision Notice.

Question: Do you need legislative authority to implement any solutions?

Answer: The Forest Service does not need legislative authority to implement a solution in the TRGC case. The Forest Service has the full authority needed to resolve the issue.

ADDITIONAL QUESTIONS
for
SECRETARY DAN GLICKMAN
from
CONGRESSMAN SKEEN

Question: Is the proposed acquisition of the "Baca Location" by the U.S. Forest Service dead ? If not, what would lead us to believe it is still alive?

Answer: The Administration remains interested in pursuing acquisition of the Baca Ranch from willing sellers. We are hopeful that further productive discussions with the owners of the Baca Ranch will be possible. It is critical to pursuit of this goal that the funds appropriated for acquisition of the Baca Ranch remain available for that purpose.

Question: Regarding the proposed listings of a number of species, including the prairie dog and the mountain plover, what impacts will these listings have on USDA programs? For instance, it appears the Conservation Reserve Program works to the detriment of the mountain plover.

Answer: In general sound conservation practices do not promote the desired habitat for the mountain plover or black tailed prairie dog. Both species utilize short grass or denuded areas. Sound range management promotes more growth than desired by the species. On cropland, utilized at time by the Mountain plover, tillage operations often occur during nesting season and can result in nest destruction.

The producers attitude regarding the species, with more concern regarding the black tailed prairie dog, is not always positive as they are often viewed negatively from economic and safety viewpoints. Any "enforcement" activities would have a negative impact on USDA's ability to work with impacted producers.

Incentive based efforts with producers, to maintain desirable habitat or create desirable habitat, may alleviate some of their concerns.

Are USDA programs and program participants subject to Section 7 consultations?

Answer: USDA program and activities may be subject to section 7 consultations. However, program participants are not required to consult. NRCA or another federal agency will consult with the U.S. Fish and Wildlife Service (FWS) on the action under Section 7 of the Endangered Species Act, and obtain FWS concurrence that the proposed actions may affect but are not likely to adversely affect the species.

Would those consultations be with USDA officials, with Individual Conservation Districts or with who?

Answer: Section 7 consultations are between Federal agencies and the FWS. When NRCS is involved, generally includes the NRCS state office staff (state Biologist) who represents the State Conservationists.

How does USDA participate in the listing process?

Answer: USDA staff provides comments to Federal Register notices during the applicable comment period.

How would HCP's work etc?

Answer: Private landowners can work with FWS to develop Habitat Conservation Plans (HCP) that are designed to assist in the development or protection of designated critical habitat. After the HCP has been in place for an established period of time, the landowner may more intensely use the land covered by the HCP and the HCP provides assurances to the landowner which allows for "incidental takings" to occur after the established period of time.

The remainder of the questions are for the Forest Service.

The National Environmental Policy Act analysis and allotment management planning process conducted for the reissuance of the term grazing permit for the Diamond Bar Allotment was a controversial issue on the Gila National Forest (GNF) for many years. Currently, the Diamond Bar Allotment term grazing permit is essentially non-active due to the Forest Service (FS) decision to reduce livestock numbers from 1188 head to 300 head. The reduction in the number of permitted livestock forced the Diamond Bar permittees, Kit and Sherry Laney to refuse the reissuance of the term grazing permit, sell most of their cattle, and move the remainder to leased ranch properties.

Central to the original decision by the Laneys to buy the private property and the associated federal land grazing permit for the Diamond Bar, was a 10-year MOU entered into by the FS and the Federal Intermediate Credit Bank of Texas in 1984. The bank held the term grazing permit until it was purchased by the Laneys. The MOU was binding on the Laneys. It was part of the term grazing permit, and it required the Laneys to implement a substantial range improvement development plan deemed necessary by the FS to reinstate 188 head of the total permitted number of 1188. The Laneys accepted the terms and conditions of the term grazing permit, including the MOU, and attempted to implement the range improvement development program. The FS never allowed the provisions of the MOU to be implemented, and as such, did not honor the MOU, or the provisions of the allotment management plan (AMP).

In another situation involving the Hermosa and North Palomas Allotments, also located on the GNF, the FS entered into a 10-year MOU with Ted and Jane Turner in 1993 to allow total nonuse by livestock on the two permits. Currently, the FS is complying with the provisions of the MOU with the Turners.

The following questions regard the discretion of the FS concerning agency decisions to comply with, or disregard, MOUs concerning livestock grazing on national forests, specifically the Diamond Bar Allotment MOU and the Hermosa/North Palomas Allotments MOU on the GNF.

Question: The Hermosa/North Palomas Allotments MOU requires the FS to conduct a range analysis and biological evaluation for the allotments during the 10 year non-use agreement. It would seem reasonable that a substantial monitoring and analysis program would already have been conducted by the FS on the allotments as part of identifying the need to provide 10 years of livestock grazing non-use. Why has the FS agreed to conduct these studies after entering into the MOU, rather than prior to the MOU, to determine if non-use is the appropriate management action?

Answer: The range analysis and biological evaluation for these allotments are currently scheduled to be completed by the end of Forest Service fiscal year 2002 in conjunction with National Environmental Policy Act (NEPA) requirements and the GNF schedule for completing NEPA on grazing activities. Some monitoring and analysis work was completed on these allotments prior to the 1993 MOU which provided sufficient information as a basis for the MOU. The MOU was developed with the idea that an ecosystem analysis and plan would be developed to determine the existing condition of forest resources including but not limited to rangeland condition. Associated with this ecosystem analysis, various resource inventories to assist in determining current, historic, and desired ecological conditions have been completed. Consistent with the completed ecosystem analysis, projects such as prescribed burning have been initiated within the past couple of years to advance achieving the desired ecological condition. Prescribed fire totaling approximately 37,000 acres has been conducted within the past couple of years on the allotments. It was determined early on in the implementation of the MOU that nonuse by livestock would be needed in order to maximize residual forage to successfully carry out a prescribed fire program.

Question: FS Manual §2209.13, 17.2 - For Resource Protection or Development states, "Total or partial non-use for resource improvement shall not exceed 5 years except when long term development programs requiring longer periods have been agreed upon." The MOU - Resource Management and Non-Use Agreement for the Hermosa and North Palomas Allotments makes no reference to any substantial development programs other than to develop an AMP. Does the FS require total non-use by livestock of an allotment for a 10-year period in order to develop an AMP? In the case of the Diamond Bar, the MOU and AMP did specify an intensive long term development plan. Why did the FS not honor the Diamond Bar MOU when it complied with FS Manual guidance, and yet honors the Hermosa/North Palomas Allotments MOU when it does not comply with FS Manual guidance?

Answer: In addition to development of an AMP, the Hermosa and North Palomas Allotments MOU called for development of "ecosystem unit plans." As described above in the answer to question 3, the AMP(s) are scheduled to be completed before the ending date of the 1993 MOU. "Ecosystem plans" were substantially completed in 1997, and projects emanating from that planning effort are being implemented as part of achieving the identified desired ecological condition. Total nonuse was determined to be desirable early on in the implementation of this MOU. The Forest Service has no specific requirement for total nonuse by livestock in order to

develop an AMP. The Hermosa/North Palomas Allotments MOU is fully within the scope of Forest Service manual guidance.

We disagree with your characterization that the FS did not comply with the Diamond Bar Allotment MOU. We believe the GNF did honor the MOU. The Forest Service must comply with all applicable laws, including NEPA, the Endangered Species Act (ESA), and the National Historic Preservation Act (NHPA), before implementing projects such as range improvements. The 1984 AMP for the Diamond Bar Allotment specifically required cultural resource and threatened and endangered species clearances before initiating construction of the improvements listed in the AMP and referenced in the MOU. These clearances were necessary for the Forest to comply with NEPA, NHPA, and ESA. NEPA requires that the scope of an analysis include connected actions (40 CFR 1502.4 and 1508.25).

When the Company submitted a proposal for significant new development in addition to that already in the 1984 AMP, the GNF determined that an analysis of all connected actions was necessary. The Company was fully aware of these requirements. While the GNF intended to honor the Diamond Bar MOU, it was also obligated to comply with all applicable federal law and regulation before approving the range improvement projects proposed in the AMP.

Question: The Hermosa/North Palomas Allotments MOU requires the expenditure of FS and permittee funds for maintenance of range improvements, resource condition monitoring and analysis, and allotment management planning. Some of these activities will occur in the Aldo Leopold Wilderness area located on the Hermosa/North Palomas Allotments. Why has the FS committed to the level of expenditures, and authorized maintenance of range improvements in the Aldo Leopold Wilderness on the Hermosa/North Palomas Allotments, while forbidding such activities on the Aldo Leopold and Gila Wilderness areas located on the Diamond Bar Allotment? In fact, one of the decisions given by the FS for the reduction in livestock numbers on the Diamond Bar Allotment was the lack of range improvements which would facilitate the implementation of the allotment management plan. Does the FS have any documents, plans, or policies which establish the ability to manage resource values for a wilderness area differently based on its location, or based on the allotments located in the wilderness area?

Answer: Range improvements within the Hermosa/North Palomas Allotments are being maintained by the permittee as provided in the MOU. The MOU does not obligate the expenditure of funds; it explains how the agency intends to redeem its management responsibility on Hermosa/North Palomas Allotments.

The Forest Service did not forbid maintenance of range improvements located in wilderness on the Diamond Bar Allotment (see answer to question 4). In addition, subsequent to their permit being issued to them in 1986, the Diamond Bar Cattle Company was authorized by the Forest Service, and the Company completed the following designated improvements in the Wilderness: construction of four new stock ponds, reconstruction of three stock ponds, three well facilities, and 15 miles of fence (portions accomplished by the Forest Service). Maintenance of range improvements in wilderness areas within the Diamond Bar Allotment have occurred on a routine basis.

The Forest Service administers National Forest System lands for livestock grazing purposes in accordance with a lengthy list of federal statutes. Where National Forest System lands have been congressionally designated as wilderness, the Forest Service must also refer to the Wilderness Act, and regulations at 36 CFR. 293, as additional authorities by which livestock grazing activities are administered. Of particular interest is the Chief's administrative appeal decision of February 7, 1996 concerning the Diamond Bar AMP, which provided uniform direction to assist the agency in the administration of livestock grazing in Congressionally designated wilderness areas. Policies and procedures in the Forest Service Manual at 2320 provide further guidance regarding the administration of livestock grazing within Congressionally designated wilderness areas. The Forest Service applies provisions of the Wilderness Act, regulations, and agency policies, consistently throughout the National Forest System.

Question: Does the FS intend to give the same consideration to the MOU with the Hermosa/North Palomas Allotment permittees as was afforded the MOU with the Diamond Bar Allotment permittees? Both MOUs are signed I0-year arrangements and it is assumed that the FS considered the MOUs necessary for proper management of the range resources located on the GNF. Based on what has already transpired with the MOU with Kit and Sherry Laney, past permittees on the Diamond Bar Allotment, how does the FS intend to assure that the MOU with the Hermosa/North Palomas Allotment permittees is valid and will be implemented? What documents, policies, regulations, or laws, guide the FS in deciding which MOUs are implemented and which ones are not?

Answer: To the extent it is consistent with all applicable law and regulation, the Forest Service will abide by the terms and conditions of the Hermosa/North Palomas Allotment MOU.

The Forest Service administers all similar MOUs in accordance with federal statutes related to livestock grazing on National Forest System lands, pertinent regulations, and agency policies and procedures. MOUs of this nature can serve as a valuable and important component of grazing permits to provide specific agreement between the Forest Service and grazing permittees to jointly accomplish National Forest resource management objectives.

Question: Paragraph (b) of the Diamond Bar Allotment MOU states that it became a part of the term grazing permit. The Laneys were never allowed to implement the provisions of the MOU or the AMP which called for a range improvement development program to assist in proper range resource management. What documents, policies, regulations or laws, guide the FS in deciding which parts of a term grazing pent it must be implemented by the FS, and which parts are not? This is especially important in consideration of the binding nature of the terms and conditions of a term livestock grazing permit on permittees. The FS also has latitude in part 3 of the term grazing permit to create as many terms and conditions it feels necessary to properly administer the grazing permit. Does the FS have discretion to determine what terms and conditions will or will not be applied by the agency, while no latitude is given to the permittee concerning the same terms and conditions?

Answer: The Forest Service administers all provisions of grazing permits and does not have the discretion to determine which terms and conditions it will enforce. Once again, we disagree with your characterization that the Forest Service never allowed the Laneys to implement the range

improvement program identified in the AMP. As noted previously, the range improvement program proposed by the Laneys (which substantially exceeded the scope and extent of developments proposed the 1984 AMP) was subject to compliance with applicable law and regulation.

Question: The Diamond Bar Allotment MOU states that it was mutually understood by the parties of the MOU that the Diamond Bar Allotment was in need of resource improvement. It also states that the development program contained in the AMP was needed to realize the full capacity of the allotment. The Hermosa/North Palomas Allotments MOU implements total non-use of livestock to meet the proper management of range, wildlife habitat, and watershed resources within the allotment. Based on the obvious discrepancy between the MOUs concerning how best to manage the natural resources on national forest lands, does the FS have, or use, any clear guidance to establish what management programs are actually needed to manage national forest resources?

Answer: The use of MOUs are oriented towards site specific situations and management objectives unique to individual grazing permits and allotment management situations. There is no generic management application to achieve proper management of rangeland, wildlife, watershed resources within a given grazing allotment. Each grazing permit and grazing allotment provide a unique set of management challenges and circumstances. MOUs for nonuse and other purposes can serve as a valuable tool for the agency and the grazing permittee to jointly meet these challenges and circumstances.

With respect to guidance to establish what management programs are actually needed to manage National Forest resources, authorized forest officers must determine the type, level, and intensity of grazing that should be authorized based on a site specific analysis in compliance with NEPA. Grazing authorizations must comply with environmental laws, regulations, the forest land and resource management plan, and Forest Service policy and procedures. The Rescission Act of 1995 (Public Law 104-19, specifically Section 504(a)), requires each National Forest System unit to identify all allotments for which NEPA is needed. These allotments must be included in schedules that set due dates for completion of the requisite NEPA analysis. Guidance for the completion of NEPA analyses and decisions is found in Council on Environmental Quality implementing regulations at 40 CFR Parts 1500-1508 and the Forest Service implementing policy and procedures issued in Forest Service Manual 1950 and Forest Service Handbook 1909.15 which establish basic process for conducting and documenting environmental analyses.

Question: The Hermosa/North Palomas Allotments MOU states that the GNF will offer the determined grazing use on the Hermosa/North Palomas Allotments to other applicants under a temporary grazing permit. The MOU was signed in 1993. Has the FS ever offered the forage resources to applicants under a temporary grazing permit? If so, what was the actual grazing use as compared to the carrying capacity of the Hermosa/North Palomas Allotments? Additionally, the Hermosa/North Palomas Allotments MOU implemented a 10-year period of livestock grazing non use as the best management practice for the rangeland resource. If this is true, why did the FS and the Hermosa/North Palomas permittees agree in the MOU to allow other qualified applicants to use the forage resources on the Hermosa/North Palomas Allotments?

Answer: The GNF has not issued any temporary grazing permits for the Hermosa/North Palomas Allotments since signing the MOU in 1993. Early in the implementation of the MOU, it was decided that prescribed fire would be needed as an integral part of the "ecosystem unit plans". In order for prescribed fire to be effective, maximum ground fuels are needed to carry the fire. For this reason, it was jointly decided between the Forest Service and the permittee, that authorizing temporary grazing of the allotments would not be in the best interest of achieving resource objectives and implementation of the MOU. The Forest Service will continue to evaluate the opportunities for livestock grazing during the remaining period of the MOU, however, to date, it has been determined that cattle will continue to be kept off the allotments for the near future.

Question: Are similar MOUs easily available to all national forest livestock grazing permittees? If not, why not?

Answer: The need for MOUs are jointly decided, on an as needed basis, between authorized forest officers and grazing permittees.

Question: Would the Forest Service support a program that would allow the suspension of grazing leases for extended periods (5, 7, 10 years) due to Endangered Species Act issues?

Answer: Livestock grazing is managed by the Forest Service under a permit system. Management options open to a decision maker include approving nonuse for resource protection or development of up to five years except when long-term development programs may require a longer period (Forest Manual 2200 and Forest Service Handbook 2209.13, Chapter 10, Section 17). This option may be used in the short term to deal with Endangered Species Act related issues. Nonuse for resource protection or development is usually approved under an agreement with the permittee. The agreement period can not extend beyond the term of the active grazing permit. However, the Forest Service does not consider nonuse agreements for resource protection or development where it is clearly evident that the allotment has been stocked beyond capacity of the resource. When an allotment is stocked beyond its capacity, the options open to a decision maker are limited. After an environmental analysis disclosed through the NEPA process, a decision makers most appropriate action may be to permanently reduce permitted numbers of livestock.

Question: What about using the same provisions (10 year permit suspensions) to assist ranchers, who because of grazing cutbacks can no longer economically utilize their allotment? If not, why not?

Answer: The permit holders may apply for nonuse for personal convenience for a period of up to three years under current direction found in the Forest Service Manual (FSM 2200) and Forest Service Handbook (FSH 2209.13, Chapter 10, Section 17). This option can be used by permittees to deal with the changing economics of livestock production.

Question: During such a suspension, would there be an issue, or problem with suspending all of the operators normal responsibilities on the allotment- monitoring, maintenance of improvements etc? If so, why wouldn't this be fair to someone who has followed USFS management plans and

now finds their operation in a problem because of ESA issues they had basically nothing to do with?

Answer: The terms and conditions of a nonuse agreement for resource protection or development may be negotiated between the permittee and the Forest Service. The agreement may include a stipulation on whether the permittee or the Forest Service is responsible for the annual maintenance of existing improvements internal to an allotment. However, the permittee's responsibility to maintain assigned portions of allotment boundary fences is critical to proper management of adjacent allotments and their relationship with other permittees.

Question: What is the Southwest strategic plan?

Answer: There is no Southwest strategic plan. However, the Southwest Strategy was initiated at the direction of the Secretaries of the Interior and Agriculture, and the Deputy Under Secretary of Defense (Environmental Security) in November 1997. The goal of the effort is to promote collaboration among the involved federal agencies, the states, the tribes, and the public to maintain and restore the cultural, economic, and environmental quality of life in Arizona and New Mexico. The Southwest Strategy overlaps nicely with the Western Governors Association "Enlibra" Policy, since both involve collaboration and planning at the local level. There are currently 11 federal agencies and departments participating in the Southwest Strategy.

Question: Who is involved in this plan? Has the plan been vetted with the general public? Does the plan need an EIS? If not, why not?

Answer: The Southwest Strategy is not a plan and thus does not require an environmental impact statement. The early focus of the Strategy was on improving collaboration among the involved federal agencies in the region. Over the past several months, the effort has expanded to include discussions with state agency officials and tribal representatives to identify opportunities and mechanisms for increased collaboration. The Southwest Strategy is engaged in supporting existing collaborative efforts at the local level and facilitating the creation of new efforts that contribute to natural resource conservation and community development. Some key results and activities in New Mexico include:

Continuing dialogue with New Mexico Lieutenant Governor Bradley on ways to work together on issues of mutual concern, such as community development opportunities in rural New Mexico.

Tribal-Federal roundtables in Arizona and New Mexico resulting in draft recommendations for collaboration.

Calendar year 1999 workshops on Building Community Partnerships for Healthy Ecosystems; have been held in Safford, Arizona and Cloudcroft, New Mexico. Courses are planned for November 4-6, 1999 in Espanola, New Mexico and for December in Bradshaw Foothills, Arizona.

Northwest-Central New Mexico Local Forums and community capacity building training.

Publication of community development resource guides with the State of New Mexico.

Question: What activities is the money budgeted for and how will this spending be different than under existing programs?

Answer: No special funds are designated for the Southwest Strategy. Costs associated with increased collaboration are coming from existing allocations. This is work we are already mandated to do and we are trying to do this with more coordination and less duplication, with increased sharing of efforts and involvement of all affected stakeholders.

Question: I continue to be concerned regarding the implementation of your controlled burn policies. Last year in New Mexico there apparently were controlled burns that got out of control. I remain extremely concerned that proper safeguards must be in place before controlled burns are used in my state. What assurances can you provide regarding your policy on this matter?

Answer: Forest Service policy requires all prescribed fires to have site specific Burn Plans developed prior to ignition and each Burn Plan requires approval by a line officer. The content of these plans is set in forth in fire management policy. Each Burn Plan must contain a description of acceptable weather conditions to meet the desired resource objective, the number of people and resources necessary to safely implement the project, an ignition strategy, provisions to patrol the burn and extinguish hotspots after the ignition phase, specific safety considerations, an organization chart of personnel assigned to the burn, and a contingency plan. In addition, the Forest Service has training and experience requirements for employees engaged in prescribed fire projects.

Question: Have Southwest Region employees had any ethics, conflict of interest training, during the past year? Have any memos or other reminders gone out to employees regarding potential conflicts in this area? If not why not? As you know there have been numerous allegations regarding ethical conflicts in the Region. Wouldn't it be wise to do so, to reassure the public that the USFS takes such charges serious?

Answer: During the past year (FY 98), the Southwest Region provided the required annual ethics training to 215 out of their 218 confidential financial disclosure statement filers in accordance with Office of Government Ethics regulations. In addition, ethics training was provided in conjunction with seasonal employee orientation at all national forests in the Region during the past year. The Region also put out an annual notice to employees reminding them of certain ethics standards as well as sanitized (individual identification information is removed) summaries of misconduct cases for which corrective action was taken administratively. Additional emphasis is also being planned in terms of program resources and training of those responsible for ethics program coordination. Whereas it is important that the public has confidence that the Region takes employee misconduct seriously, it is believed that the primary focus of ethics program delivery should be directed internally to prevent ethical lapses from occurring and to correct them quickly if they do.

Question: What is the USFS doing to the preserve the integrity of your internal E-mail system? Or are you planning to give all groups the same access to your employees as certain environmental groups were given?

Answer: The volume of e-mail traffic from outside groups is manageable and has not compromised the integrity of Forest Service e-mail system. All outside groups have access to internal FS e-mail addresses via the Forest Service internet site which is consistent with the public access requirements of the Freedom of Information Act. The Forest Service has not made any changes to the access available on that site.

Rep. Jack Kingston
Questions for the Record
March 10, 1999

Question: The Forest Service has asked for a major increase in its research budget from $197.4 million to $234.6 million or an increase of approximately $37.2 million. How much of this proposed increase would focus on non-federal forestland issues and in particular productivity and sustainability on smaller land holdings?

Answer: Forest Service Research & Development is responsible for generating credible, relevant knowledge and new technologies that can be used to sustain the health, productivity, and diversity of the nation's forest and rangelands, both public and private. We concentrate on solving the highest priority issues, no matter who owns or administers the land.

Nearly all of the research resulting from the increased funding would be applicable to private landowners, with some results having a more direct impact than others. For example, non-native invasive plant and insect species (NIS) are causing serious economic and environmental losses to private landowners and ranchers. The $5 million increase proposed for NIS will be used to improve: (1) assessment of economic and environmental impacts from NIS, (2) control and mitigation for NIS, (3) early detection and eradication of NIS, and (4) restoration of degraded areas. The $6 million increase proposed for the Climate Change Technology Initiative is aimed at increasing productivity and sustainability on smaller holdings. It will be used to develop new forestry practices and woody cropping systems for farmers and landowners that increase sequestration of carbon, reduce emissions, and conserve soil carbon through biomass production and management. The $4 million increase proposed for forest inventory and monitoring will improve the information available to land owners and managers on the status and trends in forest productivity and sustainability.

Question: How much of the current $197.4 million in Forest Service research funding is utilized for cooperative agreements or collaborative programs with forestry schools around the country such as the University of Georgia, Ohio State, the University of Washington, or N.C. State?

Answer: The actual total funding for FY 1999 for cooperative and collaborative programs with colleges and universities is not known until November, following the close of the fiscal year. Of the $187,944,000 enacted for FY 1998, $15,800,000 went to institutions of higher education. Of that total, $12,700,000 was utilized for cooperative agreements and collaborative programs with forestry schools around the country.

Question: How much of the proposed $37.2 increase in Forest Service research would be focused on challenges facing private landowners?

Answer: Private landowners will benefit from nearly all of the proposed increase. For example, research proposed on invasive species will be of great help to ranchers who have experienced reductions in desirable forage on both their own lands and on public lands used under grazing permits. Invasive insects, like the Asian long-horned beetle, have devastated shade trees in the

backyards of many private homeowners. Invasive species do not respect ownership boundaries. A second example is the proposed acceleration in forest inventory and monitoring activities. These are of great interest to State Foresters, who use the information to help target better State technical and financial assistance programs for private landowners. Even though State agencies and forestry consultants are the ones who help private landowners implement our research results, the intermediaries in no way diminish the value of our results to private landowners. Indeed, the intermediaries add great value to the results by speeding implementation and making it more efficient than we could ever accomplish by ourselves. Even where our research results are used by public land managers, all Americans benefit by improved health and management of their public lands.

Question: How much of the proposed $37.2 increase in Forest Service research would be used to expand collaborative programs with university-based researchers to avoid unnecessary duplication and maximize existing capability in our forestry schools?

Answer: Over the past 5 years, approximately 8 to 10% of our total budget has been allocated to colleges and universities for collaborative research. The FY 2000 President's Budget proposes $10.2 million (27.4%) of our $37.2 million increase for research cooperative agreements and competitive grants to universities.

Congressman Taylor
Questions for the Record

Question: In the Forest Service FY 2000 budget, $218 million is proposed for the Lands Legacy Initiative. How can the administration continue to justify purchasing additional lands, when there is a tremendous backlog of forest maintenance needs that are going unaddressed? Would it not be wiser to address existing needs of the forest before creating new programs?

Answer: Our budget proposal is a balanced and reasonable attempt to meet the demands of all program areas within the Forest Service. In striking this balance, we are laying the foundation for an effective National Forest System in the 21st century that will meet the needs of the public. The Lands Legacy Initiative helps build this foundation by making an investment in open space and public land for future generations.

This is not a new concept, it renews the commitment made by the Land and Water Conservation Fund Act of 1965 which provides funding to preserve land and open space for future generations. The initiative expands our commitment with State and local communities to help them develop communities that ensure a high quality of life while sustaining economic growth.

Highlights of the program include:

Great Places

Land Acquisition - National Forest System land acquisition to provide land critical for wildlife habitat, watershed protection, outdoor recreation opportunities and improved management of the National Forests. Virtually all of the lands acquired are adjacent to existing National Forest System land and many will be developed if not acquired. Once lands are subdivided or developed it is unlikely they would be available for future acquisition by the Forest Service. This is especially critical in the eastern United States where approximately 50% of the land within the National Forest boundary is not National Forest System land. Funding is at the same level appropriated in FY 1999.

Green Spaces/Smart Growth

Forest Legacy - With active participation of States, the Forest Service would facilitate the purchase of conservation easements to protect forested land in areas where development is expected in the short-term near urban areas.

Urban and Community Forestry - With active participation of local and State officials, the Forest Service would provide technical and financial assistance to help protect and enhance forest resources in towns and cities to reduce air pollution and mitigate storm water runoff.

Stewardship Incentive - establishes a green trust partnership to protect and invest in open spaces, limit sprawl and enhance air and water quality.

Question: On February 17, 1999, a press release announced that the National Forests in Alabama suspended all timber sales on all four forests due to "irregularities" found in the timber

sale program on one ranger district. In the same release, the Regional Forester was quoted "if these problems appear to be indeed wide-spread, she would consider shutting down timber sales on a region-wide scale and conducting new NEPA training for all districts." Please explain if this statement is true, and if so, why would there be a need to stop all timber sales in the Southern Region to conduct NEPA training? If so needed, why could employee training not be performed without stopping timber sales? How many appeals has Wild Law and Wild Alabama actually won in the Southern Region based on NEPA violations?

Answer: In regard to the situation in question, only operations on timber sales on the Shoal Creek Ranger District of the National Forests in Alabama were suspended. Advertising of new timber sales was halted Forest-wide for a short time while a review team visited the other Ranger Districts to determine if similar problems existed elsewhere on the Forest. Following that review, the Forest Service determined that the problem was confined to the Shoal Creek Ranger District, and the other Districts were released to resume advertising and awarding new timber sale contracts.

The Regional Forester wants to be assured that the Forest Service is in full compliance with all existing laws and regulations. When compliance concerns arise, we will immediately take whatever actions are necessary to correct the problem. Fortunately, this problem was unique to the Shoal Creek Ranger District and that there was no need for further action on other National Forests. To assure compliance in the future, we are increasing the oversight of the national forests in the Southern Region regarding compliance with NEPA and other laws.

During fiscal years 1997-1999, six appeals filed by Mr. Ray Vaughn for Wildlaw have resulted in reversed decisions. The reasons for reversal of the decisions were varied.

Question: I understand that as of May 15, 1999 the Forest Service is committed to changing from oil based to water based tree markings. Does GSA have a contract to purchase the newly desired paint? What direction has been given the districts in the event the new water based paint is not available by May 15?

Answer: You are correct, the Forest Service has made the transition from oil based to water based tree marking paint. Yes, the new paint is available through a contract with GSA using Lighthouse for the Blind. They are in full production of the new paint and are shipping to National Forests across the country. Units are sharing paint as needed until full deliveries of orders are made.

Question: On February 11, 1999, Secretary Glickman issued an 18 month moratorium on new road construction in most national Forests. While the 18 month suspension is in effect, a long-term road policy for the National Forest Transportation system will be developed. In the past three years the Forest Service has obliterated ten times as many roads as they constructed. Why does there need to be a moratorium on road construction to allow a road policy to be developed? Can this not be accomplished without this moratorium? Also, what additional information or management strategies does the Forest Service hope to gain about roads that is not currently known?

Answer: The interim rule will suspend very little overall planned road construction and reconstruction during the 18-month period and will have a negligible effect on user access and the environment. However, the suspension will apply to unroaded areas that are ecologically important where road construction and reconstruction could have disproportionate and long-term impacts. Therefore, the Department of Agriculture believes a temporary suspension is beneficial and will provide time to develop a revised road management policy.

The intended purpose of the moratorium is to safeguard the significant ecological values of roadless areas from potentially adverse effects associated with road construction, while new and approved analytic tools are developed and a long-term transportation policy is decided. Specific goals are to accomplish the following: (1) more carefully consider what new roads to build; (2) assess which roads are no longer needed; and (3) selectively upgrade significant public access roads.

Question: In a news release dated March 2, 1998, Forest Service Chief Dombeck stated "a stable timber supply from National Forests is essential for many rural communities. We need to help provide this stability so that companies will make needed investments in new equipment and technologies and provide jobs." While I agree with his statement, I am confused as to how Chief Dombeck thinks the above stated objectives can be accomplished in light of continued declines in timber sales and the road moratorium. Please explain.

Answer: The decline in timber sale offer volumes from the peak in the early 1980s to the relatively stable levels now can largely be attributed to the implementation of ecosystem management principles and required additional environmental protection measures. Presently, most regions have additional capability to produce timber offer volumes. The implementation of new resource protection provisions, such as the roads moratorium, will affect no more than 180-190 million board feet over an eighteen month period, during which the Forest Service plans to offer 4 1/2 billion board feet for sale.

Question: How do you plan to increase the receipts of "special forest products" in 2000? What are they currently?

Answer: In FY 2000, if the special forest products legislative proposal is approved, the Forest Service would begin collecting additional funds in the form of a user fee on special forest products. Through bidding, the Forest Service would help ensure collection of fees by better establishing market values for the commodity. In FY 2000 these fees would go to Treasury; beginning in FY 2001 they would be retained by the agency and used by the field units where collected to conduct inventory and monitoring to assure that an expanded program is sustainable. To the extent that this inventory indicates that the program can be expanded, additional revenues could be generated in the future.

National records are only available for some special forest products. The following is the number of sales and the revenue collected from the sale of these products for the past five years. A new permit system is being implemented, and with its tracking mechanism will give us the ability to provide better information in the future.

Fiscal Year	Number of Sales	Revenue
1998	185,890	$2,977,626
1997	171,998	$3,134,176
1996	217,208	$3,197,124
1995	199,739	$2,802,943
1994	221,747	$3,136,709

Question: As an advocate for the Cradle of Forestry, I invite the Forest Service to work with me on the development of a plan for Conservation Education in Western North Carolina.

Answer: We are pleased with your interest in the Cradle of Forestry and will be very interested in working with your office to discuss a Conservation Education program.

WEDNESDAY, FEBRUARY 24, 1999.

DEPARTMENT OF ENERGY

WITNESSES

HON. BILL RICHARDSON, SECRETARY, U.S. DEPARTMENT OF ENERGY
HON. DAN REICHER, ASSISTANT SECRETARY
JAY HAKES, ADMINISTRATOR, ENERGY INFORMATION ADMINISTRATION
ROBERT KRIPOWICZ, PRINCIPAL DEPUTY ASSISTANT SECRETARY, FOSSIL ENERGY

Mr. REGULA. Good morning. The subcommittee will come to order.

This morning we will receive testimony from the Honorable Bill Richardson, Secretary of Energy. We're delighted to welcome you, Mr. Secretary. This is your maiden voyage in front of this committee in your role as Secretary. Your entire statement will be made a part of the record, and we would appreciate it if you could summarize.

OPENING REMARKS

Secretary RICHARDSON. Mr. Chairman, thank you very much. First, let me say that it's an honor to return to this room. I used to as a member of this body be a supplicant to this committee, as I am here today, mainly for my New Mexico district and my Native American programs, and I will always remember the very generous ways that this committee treated me.

Mr. Chairman and Mr. Ranking Member, let me just try to explain how the Department of Energy is working for America today. When I took over the Department I knew I was facing a challenge. What I would like to discuss with you is some of the decisions that I have made, some tough decisions on tritium productions, on assessing the viability of Yucca Mountain, contracting procedures on energy issues. Let me give you an example of how we are dealing with some of the problems that are facing us that are in our budget.

First, the oil and gas situation, the dire situation of our industry. Last December I appointed an internal oil emergency task force to deal with this problem. I asked the task force to go into the oil patch to feel out the industry. We've already done several initiatives that I would like to briefly mention to you.

To enhance the nation's energy security, we will shortly be putting 28 million barrels of federal royalty oil in the Strategic Petroleum Reserve. In a related move, we are offering unutilized space in the Reserve for commercial storage with storage fees to be paid in oil. For the first time in recent memory we have mechanisms to refill the reserve during peacetime. These first of a kind efforts are

designed to make the most of today's low prices. By putting oil in the reserve today, we will receive a higher rate of return tomorrow; specifically, energy security, more strategic assets, and a great buy for the taxpayer. I especially appreciate the positive words of support that you and Mr. Dicks offered following my announcement.

The Administration has also altered its requirements for federal leaseholders to diminish the threat that near-term low prices hold for long-term production. This change would allow stripper well operators to temporarily suspend production without losing their leases or having to plug their wells. To help see small operators through tough times, the Administration is also offering various types of federal royalty relief and is actively considering additional categories of relief.

To help lower the cost of production, we have just committed $18 million for a technology-driven industry cost-share program to improve oil recovery from endangered domestic reservoirs. We also kicked off a program to assist small independents, those with less than 50 employees, which have specific production problems ranging from reservoir characterization to environmental complaints. We have launched a large-scale pilot program in six States—California, Texas, Ohio, Utah, Wyoming, Colorado—to decrease production costs through the use of new energy efficient technologies. A similar small scale pilot in Kansas has shown promising results, lowering the cost of production by 77 cents per barrel.

Just last Friday we announced another innovative pilot program in Texas that could be the first towards paperless regulation. This new on-line permitting system could save the industry millions of dollars in administrative costs and countless hours of labor.

Let me just deal, Mr. Chairman, briefly with the fiscal year 2000 budget request. The Department of Energy is requesting a total of $1.229 billion for fiscal year 2000 from the Interior Subcommittee. This is nearly 2 percent below the fiscal year 1999 appropriation.

Let me deal with energy efficiency. On transportation, the Department builds on a record of strong accomplishments. Back in 1992, America had trailed Japan in car production for 13 consecutive years. The last five years, America's auto builders have led the world in auto and light truck production. This turnaround was made possible, in part, by technology breakthroughs by our nation's scientists and engineers and by programs which the subcommittee funded, such as the Partnership for a New Generation of Vehicles (PNGV) which has the goal of developing an 80 mile per gallon automobile.

We have made progress this past year when we shared costs with industry to develop a smarter, smaller, less expensive electric powered system for the cars of the future. Working together, we have already shrunk the system from the size of a large suitcase to smaller than a shoebox, and now we are working to cut the $10,000 cost to less than $500.

For fiscal year 2000, we are requesting $143 million to focus on key component technologies, including fuel cells, advanced direct-injection engines, exhaust control, advanced batteries, and electronic power controllers. A Clean Cities request of a little over $10 million will advance infrastructure development to deploy alternative fuels to over 65 communities.

Let me turn to industries. The Energy Department is working with nine industries that account for 75 percent of the energy used in manufacturing, working to remake them as industries of the future. I know, Mr. Chairman, this is an important program for you. These include forest products, steel, aluminum, metal-casting, chemicals, petroleum refining, agriculture, mining, and glass. These industries also account for most of the emissions and waste produced by U.S. manufacturing. So we have developed new efficiency methods. We have developed innovative technologies to help these industries boost efficiency and competitiveness with less pollution. To realize these efforts, our budget requests $171 million for the Industries of the Future program.

Buildings. America's homes and offices represent significant opportunities for boosting efficiency and cutting environmental risk. Heating and lighting our homes and workplaces account for over one-third of American carbon dioxide emissions. We need to do better there, and our new buildings need new energy-saving technologies to help us do so. Therefore, we are requesting $145 million to bring our R&D resources to bear on this challenge.

I ask for your support, Mr. Chairman, for the Department's request for the Appliance Standards Program. The appliance standards rulemaking is now underway will result in billions of dollars in savings for consumers. It represents my highest priority in the Department's Office of Buildings. We are also requesting $154 million for the Weatherization Assistance Program, where we're weatherizing nearly 80,000 low-income houses for warmer winters, cooler summers, lower utility bills, and we're requesting $37 million for State Energy Programs.

The Energy Smart Schools Project is supplying schools with the information they need to cut energy costs and save money.

Federal Energy Management Program. Buildings like this one offer considerable opportunities for efficiency and saving of taxpayer dollars. The Federal Government spends $8 billion a year on energy. That's too much. We are requesting about $32 million to help accelerate the Federal Energy Management Program which helps Federal agencies identify, finance, and implement energy efficiency improvements for their facilities.

Management. Mr. Chairman, in response to your request, the Department of Energy is working with the National Academy of Public Administration (NAPA) to undertake an independent review of our financial management and procurement practices. This review will address concerns expressed by you and other members of the subcommittee, including the extent of carry-over balances, cost-sharing, and competition in our acquisition and financial assistance processes. We're working with NAPA to develop an appropriate statement of work and are now completing the steps required to award a contract. NAPA has proposed completing review by the end of August and will document its findings including any recommendations for reforms to the business practices of our agency in these programs. We look forward to working with NAPA and expect its contributions will help us.

Mr. Chairman, with me today is the Assistant Secretary for these programs, a very able individual who in the course of some

of the questions I may want to turn to, Assistant Secretary Dan Reicher.

Mr. Chairman, let me turn to fossil energy research and development. Our fiscal year 2000 request for fossil energy research and development is $364 million, a slight reduction from the $384 million appropriated for fiscal year 1999. In this portion of the budget we continue to address three primary challenges. One, developing new technologies that can provide the nation with cleaner air at lower cost; secondly, research into affordable options for greenhouse gas controls; and thirdly, ways to enhance our energy security.

Bob Kripowicz from our program is also here, Mr. Chairman, and Jay Hakes from the Energy Information Agency, who has every statistic you will ever want to know about.

Let me turn to coal. Mr. Chairman, our request for advanced coal technologies is $122 million, about the same as was appropriated in fiscal year 1999. At the core of this program is our research on the Vision 21 energy concept, our goal of a virtually pollution-free powerplant in the post 2010 timeframe. This is an energy facility that could be twice as efficient as today's nuclear power plants, reduce greenhouse gases by more than 40 percent, and co-produce fuels and chemicals in addition to electricity.

In our coal program, we also include exploratory research in carbon sequestration. This is an extremely important research priority. We've increased our budget request from $5.89 million in fiscal year 1999 to $9.1 million in fiscal year 2000. If we can develop low cost ways to capture and permanently dispose of carbon dioxide, we could make future climate change policies much easier to implement here and abroad.

Natural gas. Our natural gas budget request is $105 million. I should point out that there is another $114 million of gas-related R&D conducted by other offices in the Department. A significant portion of this budget is to assure that we have affordable gas supplies in the future. This is particularly important given projections that gas demand could increase by a third in the next decade, perhaps more if gas is used to meet climate change strategies.

Our gas R&D budget also includes funding for two high priority power generation technologies—advanced gas turbines and fuel cells. We are within a year of running the first test of a revolutionary new gas turbine that will far surpass any other utility turbine in the world both in efficiency and in environmental performance. Our fiscal year 2000 budget continues to fund the final phase of this effort.

On oil, we have increased our funding slightly for the Oil Technology Program. Within our $50 million request, we will continue to fund several high priority initiatives that I announced in the last couple of weeks. First, I plan to return to the nation's most endangered oil reservoirs with cost-shared projects to keep these fields from being abandoned, and second, work with independent producers to solve specific oil field problems by applying new technologies.

Clean coal technology. In the clean coal technology budget, I know this is a big interest of yours, we are requesting that $246 million of prior budget authority be deferred until fiscal year 2001

and later. This program continues to produce results. For example, fully one half of all coal-fired plants in America are today equipped with low polluting combustors that resulted from our Clean Coal and R&D programs. Within the next year or so, the figure will be 75 percent. Of the 40 projects in the program, only 2 will not be fully funded by fiscal year 2000. These two are still in the pre-construction phases and have sufficient funds to carry them through the year 2000. Because of this, we can defer the funding without impacting the pace of the program.

Global climate change. I know this is of great interest to you and especially Mr. Dicks. Global climate change poses major environmental challenges for the entire world. We are going to continue to dialogue on the Kyoto Protocol to help improve the framework that it provides. At the same time, we will continue research and development and push for accelerated use of energy efficient and clean energy technologies, all components of the President's Climate Change Technology Initiative. Even without the Kyoto Protocol, we believe these investments are wise national policy—boosting national security, improving air quality, strengthening our national economic competitiveness while protecting American jobs.

Our budget is looking to increase support for CCTI programs by about 13 percent. Included among this broad and balanced energy R&D portfolio are clean, advanced fossil energy technologies, carbon sequestration, and energy efficiency applications in the building, industry, and transportation sectors. These programs are part of the Administration's larger Climate Change budget which include activities at four other agencies and $3.6 billion in tax incentives over five years for energy efficient homes, fuel efficient cars, and renewable energy.

Finally, Mr. Chairman, management changes back our work at home, specifically within the Department and among our management. Today, the Department is functioning smarter and leaner, working with the Congress and with you, we have reduced our Federal employee workforce by 25 percent—I repeat, 25 percent—in less than four years, beating our goal by almost two years. We've also reduced our contractor employment by 29 percent since its peak in 1992. But this streamlining has left gaps in departmental skill areas. To resolve this, Mr. Chairman, I initiated Workforce 21, a targeted effort to bring specialized skills into the Department as part of our Workforce 21 initiative. These efforts will bolster the strength of our skills and our comprehensive expertise department-wide. We are going to improve diversity, making sure women and minorities are better represented within the Department. I would ask for your support in this undertaking.

Management study. We are taking a comprehensive look at the structure of the Department looking for ways to improve efficiency, strengthen management, ensure accountability, and improve reporting requirements. We're looking at the relationship between our field offices and headquarters to enhance communications and capability. Mr. Chairman, I know you have heard this before, but I am really going to make an effort to improve the management of this Department, and I can tell you, it needs it.

In summary, I would like to state for the record that our Department's proposed budget for fiscal year 2000 will provide our sci-

entists and engineers with the tools, facilities, and talented personnel necessary to help lead this country into the new millennium. The technological breakthroughs which lie ahead will provide improvements to the quality of life of everyone. And with this subcommittee's continued support, the Department of Energy will produce the science, security, and energy to power this nation into the 21st century.

WRITTEN STATEMENT

[The statement of Mr. Richardson follows:]

Prepared Statement for
The Honorable Bill Richardson
Secretary
U. S. Department of Energy
before the
House Committee on Appropriations
Subcommittee on the Department of The Interior and Related Agencies

February 24, 1999

Mr. Chairman, and members of the Subcommittee, it's my pleasure to be with you to discuss the Department of Energy's budget request for FY 2000. I especially appreciate the opportunity to come back and visit with my colleagues.

Thank you for your support in helping ensure that the Department of Energy continues succeeding in its missions which are crucial to America's future. I know that several of you have major DOE facilities in your states and you work closely with our people. In return, we want to be good neighbors to you. I plan to spend a lot of time "on the ground" at these sites. In fact, I've already visited 25 of our sites since coming to the Department this past August. I look forward to working closely with you to maximize the value of DOE's presence in your states.

I knew I was taking on an important challenge by coming to the Department. For several years now, DOE has been asked to do more for the nation while using fewer resources. Its staff has been cut by 25 percent in less than four years while its responsibilities have grown. Also, quite frankly, the Department needs a thorough examination and infusion of the same pioneering spirit that enabled it and its predecessor agencies to achieve spectacular successes and to benefit our nation immensely. As I view DOE today, it doesn't need rebuilding, but I think its batteries need a good recharging. That's where I see my role. I'm there to help provide a new perspective to the Department and to help make it one of our best cabinet agencies.

Science, Security and Energy: Powering the 21st Century

In this year's State of the Union message, the President set a bold agenda to lead our nation in meeting the challenges of the 21st Century. The Department's capabilities place it at the forefront of America's technological advance into the next millennium. This budget will enable our people to use DOE's capabilities in science, security and energy to power the 21st Century with American ingenuity, competitiveness, and technological breakthroughs that will dramatically improve our quality of life.

The President's agenda and budget build on a record of accomplishment. For example, just five of the various technologies and innovations developed through funding provided by this Committee are responsible for over $33 billion in net savings to consumers and businesses - that is, energy savings less any additional costs of the associated efficiency improvements. The five innovations are: the flame retention head oil burner, the efficient refrigerator compressor, building design software [DOE-2], the electronic fluorescent lamp ballast, and advanced window coatings.

All were developed by DOE, and are successful commercial products, today holding market shares from 15 to 100 percent. The total cost to DOE to develop these particular technologies was less than $30 million. Our success formula seeks not only to improve technologies and methods but also to work with industry, consumer groups, and other organizations to accelerate the market acceptance of those improvements.

Another example of the value of federal and private sector partnerships in research and development is the Partnership for a New Generation of Vehicles (PNGV). DOE is cost-sharing with private industry to develop a smarter, smaller, less expensive electric power system for the "car of the future." They've already shrunk this system from the size of a large suitcase to smaller than a shoe box. Now they're working to cut its $10,000 cost to less than $500.

Our environment is cleaner today than at any time in the past quarter century. Still, global climate change poses major environmental challenges for the entire world. Our efforts at Kyoto helped negotiate an international agreement to reduce greenhouse gas emissions in an environmentally strong and economically sound way. Research and development, and accelerated use of energy efficient and clean energy technologies are major components of the President's *Climate Change Technology Initiative (CCTI)*. Even without global climate change, these investments are wise national policy, increasing our energy security, improving our air quality, and strengthening our national economic competitiveness. Our budget seeks to increase support for *CCTI* programs by about 25 percent. Included among this broad and balanced R&D portfolio are:

- clean, advanced fossil energy technologies;
- carbon sequestration; and,
- energy efficiency applications in the building, industry, and transportation sectors.

This Committee has a solid record of support for *Energy Conservation*. The FY 2000 budget is requesting an increase of 33.4 percent above the FY 1999 enacted level. The programs which would benefit most from this increase are in the *Building Technology, Transportation and Industrial* sectors, and the *Federal Energy Management Program*, which will enable us to pursue our ambitious goals of:

- cutting energy use in new homes 50 percent by 2010;
- lowering power bills for America's most energy intensive industries, making them even more competitive internationally;
- continuing cuts in federal energy use so by 2005, it's reduced by 30 percent from its 1985 level;
- weatherizing nearly 80,000 homes to make winters warmer and summers cooler for low-income residents, while lowering utility bills; and,
- providing ways to cut school energy costs through "Energy Smart Schools".

The U.S. is expected to remain dependent on fossil fuels for about 85 percent of its energy consumption for at least the next 20 years. One of the Department's key goals is to ensure that

economic benefits from low-priced fossil fuels do not come with unacceptable environmental costs or energy security risks. Natural gas can play a key role in slowing the rate of carbon dioxide emissions and be a bridge to a renewable energy future. The programs in this budget include a portfolio of activities designed to accomplish this.

Preserving America's energy security is among the Department's chief responsibilities, and one which this Committee has worked hard to ensure. Today's world-wide, near-record-low oil prices have adversely affected domestic oil production, as well as increased U.S. oil consumption, resulting in greater dependency on imported oil. In fact, as the world's largest consumer of fossil fuels, the U.S. imported about half its 1998 daily oil consumption of 18.7 million barrels.

The 1973 oil embargo pointed out how vulnerable we had become to supply disruptions in foreign oil. Since then, we've diversified our suppliers and prepared for unexpected supply disruptions. In fact, with this Committee's help, we've stored 561 million barrels in the *Strategic Petroleum Reserve (SPR)*. We're requesting $164.0 million to operate the *SPR* in FY 2000, without having to rely on the sale of oil. As you know, we are planning to partially refill the *SPR* with federal royalty oil from the Central Gulf of Mexico, which I announced two weeks ago. In a cooperative transfer from the Department of Interior, we plan to replace about 28 million barrels which were sold in FY 1996 and 1997, largely for deficit reduction purposes. I feel it makes good business sense to take advantage of today's low oil prices to rebuild our reserves. At the same time, we're enhancing our national energy security, increasing our strategic assets, and getting a very good deal for the American taxpayer. This plan would enable the government to add oil to the *SPR* without an appropriation or any budget offsets.

To concentrate its resources on the most pressing problems, the Department's *Fossil Energy* program has integrated its R&D activities in petroleum and natural gas to maximize advantages of technologies that benefit both oil and gas production. Examples of this shared R&D include advanced seismic technologies, new drilling systems, and more cost-effective environmental compliance options. This work could yield an extra one million barrels of oil per day and more than two trillion additional cubic feet per year of domestic gas production by 2010. These expected DOE and industry breakthroughs could ultimately save the oil and gas industry $16 billion in environmental compliance costs by 2010.

FY 2000 Budget Request

The Department of Energy's FY 2000 budget request, before the Interior and Related Agencies Appropriations Subcommittee, proposes funding of $1.229 billion, a 1.9 percent reduction, or $23.7 million below the FY 1999 appropriation. The reduction in budget authority is the result of an increased deferral of *Clean Coal Technology* funding, from $40.0 million in FY 1999 to $256.0 million in FY 2000, and the ability to fund the required $21.2 million operating budget of the *Naval Petroleum and Oil Shale Reserve* account entirely from prior year balances. A total of $375.0 million is proposed in FY 2000 for *Fossil Energy R&D,* offset by the use of $11.0 million in prior year balances.

Within the total request, we are proposing $837.5 million for *Energy Conservation;* a 2.4 percent increase, to $164 million, for the *Strategic Petroleum Reserve;* and an 11.0 percent increase, to $2.0 million, for *Economic Regulation* activities. The request for the *Energy Information Administration* rises by 3.0 percent, to $72.6 million. Following are highlights of some of the specific activities we are proposing for FY 2000:

Energy Efficiency

The *Energy Efficiency* programs funded by this Subcommittee improve fuel economy of automobiles and other vehicles, increase productivity of the nation's most energy-intensive and polluting industries, and improve energy efficiency of buildings and appliances. The FY 2000 budget requests $837.5 million for the Department's *Energy Conservation* programs, an increase of $209.8 million over the FY 1999 level. An amendment to the Petroleum Overcharge Distribution and Restitution Act, contained in the Omnibus Consolidated and Emergency Supplemental Appropriations for FY 1999, transferred most of the refined product funds held in escrow for payment of refund claims to *EE* for use in *Energy Conservation* programs in FY 1999. As a result, there will be no PODRA funds used for funding *EE* during FY 2000.

Transportation economies for the 21st Century -- The U.S. transportation sector depends on oil for 97 percent of its fuel requirements. The *Office of Transportation Technologies (OTT)* funds research, development and deployment of technologies that can significantly alter current trends in energy usage. Developing and commercializing these innovative technologies and alternative fuels is the nation's best strategy for diversifying our use of fuels and dramatically reducing criteria pollutants and greenhouse gas emissions from the transportation sector. The *DOE* is a leader in the government's *Partnership for a New Generation of Vehicles (PNGV)* which focuses on significantly improving automobile energy efficiency and reducing emissions. The FY 2000 *PNGV* request of $143.1 million, a $15.0 million increase, will focus on key component technologies, including fuel cells, advanced direct-injection engines, exhaust control, advanced batteries, and electronic power controllers. An increase of $2.8 million in the *Clean Cities* program, providing $10.7 million for FY 2000, will advance infrastructure development to speed the deployment of alternative fuels in over 65 communities.

Industrial energy technologies -- Industry consumes over one-third of the energy delivered in the U.S. and spends tens of billions of dollars annually for pollution abatement and control. Nine industries account for 75 percent of the energy used in manufacturing: forest products, steel, aluminum, metal-casting, chemicals, petroleum refining, agriculture, mining and glass. These industries also account for over 80 percent of pollutant emissions and over 90 percent of the waste produced by U.S. manufacturing. The *Office of Industrial Technologies* focuses on developing innovative technologies to assist the nation's most energy-intensive industries to become more resource efficient and economically competitive, and pollute less. The budget requests $171.0 million for the *Industries of the Future* program. This amount reflects a reduced requirement of $21.0 million in the *Turbine* program, which has reached a stage where less

government funding is needed. Thus, the $171.0 million request actually represents an increase in all the remaining *Industries* programs.

Improved energy efficiency for building technologies -- America's homes and offices consume $232.0 billion worth of energy each year. Heating and cooling, lighting, appliances, and equipment account for over one-third of U.S. carbon dioxide emissions. The Department is requesting $335.9 million for the *Office of Building Technology, State and Community Programs (BTS)*, including $88.2 million for *Building Research and Standards*, $41.4 million for *Building Technology Assistance - non grants*, and $154.0 million for the *Weatherization Assistance Program* and $37 million for the *State Energy Program*. The budget allows the Department to implement technology roadmaps and provide the next generation of energy-efficient, environment-friendly technologies industry requires.

Federal Energy Management Program -- As America's largest energy customer, the Federal Government spends $8 billion each year on energy for its facilities and operations. The *Federal Energy Management Program (FEMP)* helps federal agencies identify, finance, and implement energy efficiency improvements for their facilities. This saves money for U.S. taxpayers through reduced federal energy spending. The *FEMP* request for FY 2000 is $31.9 million, an increase of $8.1 million over FY 1999.

Management Improvements -- During the past year, the Department of Energy has intensified its efforts to increase competition, achieve results-oriented quality and performance program measures, and increase efficiencies in management of construction. As part of these efforts, the *Office of Energy Efficiency and Renewable Energy* has been focusing on resolving long-standing management issues to increase dividends from its investments in new energy technologies. Specific management reforms accomplished this past year, and new initiatives, include:

Strategic Planning for Results and Technology Roadmaps: *EERE* is developing a results-oriented strategic plan, building on technology roadmaps being developed, and focusing on procurement and business strategies.

Increasing Competition and Refining Merit Review Processes: *EERE* is increasing funds competitively awarded, by issuing both targeted and broad-based solicitations for research, development, and demonstration proposals, and for information dissemination and outreach. The Broad-Based Solicitation for Information Dissemination and Outreach, issued in December, 1998, has attracted more than 400 applications. We are convinced it will bring many new, high quality participants, including leading universities and researchers, into DOE's energy-efficiency community. Also, in 1998, the Department completed the competition for its billion-dollar management and operating contract for the National Renewable Energy Laboratory in record time and with an improved focus on mission results.

Managing Smarter: *EERE* has reduced its uncosted balances for *Energy Conservation Research and Development* programs by 38 percent between the beginning of FY 1996 and the beginning

of FY 1999. It also has increased the proportion of funding for mission functions and reduced the proportion for support costs.

Strengthening Program Integration: Recognizing solutions to energy challenges often cross sector lines, *EERE* is increasing integration across technologies and across their applications. Two leading examples are *Bioenergy* and the *EnergySmart Schools Initiative.*

Leveraging Federal Investments by Expanding Partnerships with Federal, State and Other Entities: *EERE* is working closely with national laboratories, businesses, universities, nonprofit organizations, and the Congress to establish R&D priorities, conduct high-priority research, facilitate private-sector technology deployment, and disseminate information. Their EERE Regional Support Offices are strengthening delivery of services at state and local levels.

Increasing Emphasis on Project Management: As *EERE* increases its role in demonstration projects, it will strengthen its capabilities in project management of costs, schedules, and performance.

Emphasizing Program Evaluation and Continuous Improvement: *EERE* has discontinued activities that have not met predetermined goals and will continue to modify its strategies based on results from its program analysis and evaluation.

Fossil Energy Research and Development

The FY 2000 request for *Fossil Energy Research and Development* is $375.0 million, including $11.0 million from prior year balances for a net FY 2000 request of $364.0 million. This level continues investments in advanced technological concepts, such as the capture and sequestration of CO2, and development of advanced, highly efficient, power generation and fuel producing technologies that together could reduce, or perhaps nearly eliminate, carbon emissions from fossil fuel facilities. In a world nearly 90 percent dependent on fossil fuels, development of new technologies along these lines will help maintain strong economic growth while meeting existing and new environmental goals.

The Department's FY 2000 *Natural Gas and Petroleum* programs continue to emphasize technology transfer, especially to independent producers that make up an increasingly large share of the domestic oil and gas industry. The FY 2000 program also includes support for follow-on advanced oil recovery projects, especially where prior field tests have shown that such projects could be the difference in keeping oil flowing in fields that otherwise would be abandoned.

Coal -- The FY 2000 request for advanced coal-related R&D technologies is $122.4 million, which is basically the same as FY 1999. The program will begin to couple progress made to date in advanced gasification and combustion systems, coal conversion, and environmental controls, with potentially revolutionary approaches to carbon sequestration, in a concept called the "V*ision*

21 Powerplex." Its goal is to develop a set of advanced technology modules that could be configured into a new class of fuel-flexible facilities for both central and distributed energy production in the 2010-2030 time frame. These new facilities would be capable of co-producing electric power, process heat, and high value fuels and chemicals at peak efficiencies with virtually no emissions of air pollutants. The $28.9 million for the *Vision 21* concept could ultimately be combined with the $9.1 million in FY 2000 funding elsewhere in the *FE R&D* budget for *carbon sequestration*, to produce a class of fossil fuel-based energy complexes with virtually no environmental impacts outside of their physical "footprints." Work also continues on characterizing and reducing pollutants such as particulates (PM2.5), air toxics, and NOx from existing powerplants.

Petroleum -- The FY 2000 request for *Oil Technology* activities is $50.2 million, an increase from the FY 1999 appropriation of $48.6 million. The majority of the Department's *Oil Technology* program continues to focus on providing independent producers with advances that can keep oil flowing from U.S. reservoirs that would likely be abandoned with conventional technology. In the FY 2000 budget, funding for a preferred *"Petroleum Upstream Management Practices" (PUMP)* program will be initiated, focusing on best management practices, data management, and effective environmental compliance.

Gas -- The FY 2000 request for gas-related R&D is $105.3 million. The supply portion of the *Gas* budget, $25.9 million, will continue to focus on advanced technologies that can locate and produce gas that otherwise would be bypassed or unmarketable. In addition, a small $ 2.0 million R&D program in methane hydrates is being initiated with the long-term goal of converting the large potential gas hydrate resource (estimated at up to 200,000 trillion cubic feet, or over one hundred times the amount of US conventional gas resource) into economic gas reserves. The gas budget also continues to support two high-priority power generation technologies -- *High Efficiency Gas Turbines*, and *Advanced Fuel Cells* -- that could enhance the future use of natural gas, as well as ultimately contribute to higher-efficiency coal-based power generation. In the power generation *Advanced Gas Turbine* program, DOE is requesting $41.8 million, which will enable it to complete full-scale component/subsystem testing and engine manufacturing, and begin full speed prototype testing of a new class of gas turbines with unprecedented efficiency and environmental performance. DOE is requesting $37.6 million for the *Fuel Cell* program in FY 2000, to continue R&D to reduce costs and improve performance for market-ready systems early in the next decade. In FY 2000, the program will begin testing of the first market prototype solid oxide fuel cell at commercial sites for distributed power applications. In addition, $5.0 million of fuel cell activity is included in the Vision 21 activity in the *Coal* program.

Strategic Petroleum Reserve

The *Strategic Petroleum Reserve (SPR)* remains a crucial element of our national energy security policy. The FY 2000 budget request for *SPR* operations and maintenance is $159.0 million, a 1 percent reduction from the FY 1999 appropriation and a 44 percent reduction from FY 1996's peak level of $284.1 million. These reductions reflect the successful completion in FY 2000 of

the Life Extension Program and Weeks Island Decommissioning, as well as the completion of treatment for gas-in-oil by the end of the first quarter FY 1998. This 1 percent decrease reflects the resumption of post Life Extension Program full standby operations and maintenance activities offset by the reduction in funding for the Life Extension Program. The FY 2000 budget request for the *SPR Petroleum Account* is $5.0 million. At the end of FY 1998, the account's remaining balance of $33 million was capable of supporting approximately 55 percent of a full *SPR* emergency drawdown for a six-month period. This addition assures the capability to sustain drawdown operations for close to four months of the six-month performance criteria. Although the budget does not request funding for oil acquisition, the Administration has determined that the very low price of oil makes this an ideal time to replace the oil that was sold during 1996 and 1997 for budget balancing purposes. In addition to the transfer of 28 million barrels of federal royalty oil from the Department of Interior, I have directed that the remaining unutilized capacity of the *SPR* be offered for private storage, thereby adding oil to the *SPR*.

Clean Coal Technology

The FY 2000 budget reflects a net amount of $246.0 million of previously appropriated budget authority be deferred until FY 2001 and beyond. The proposed deferral of funds reflects schedule delays, primarily resulting from project restructuring activities. The 40 active projects have a total cost of $5.7 billion, of which DOE has committed $1.9 billion. At the end of FY 2000, 29 projects are expected to be completed and one additional project is expected to complete operation and begin preparing final reports. Four projects are expected to be in operation, three projects in construction, and three projects in design. At the end of FY 2000, two projects are expected to have outstanding obligation commitments. In FY 2000, the *Clean Coal Program* will complete the demonstration of Pinion Pine, the third integrated gasification combined cycle project, using air-blown gasification and hot gas cleanup for improved thermal efficiency; and continued operations of the Polk project in order to establish the engineering foundation leading to a new generation of 60 percent efficient powerplants.

Naval Petroleum Reserves and Oil Shale Reserves

The FY 2000 budget of $21.24 million is to be funded entirely from prior year balances. No new funds are being requested for FY 2000. During the fiscal year, ongoing activities will be funded from prior year balances which resulted, in large part, from terminating operations at NPR-1 during FY 1998. FY 2000 ongoing activities include the continued operation of the Teapot Dome Oilfield, the Rocky Mountain Oilfield Testing Center, environmental remediation activities at Teapot Dome, environmental and cultural resource assessments at NPR-1, with some remediation activity anticipated, finalization of NPR-1 equity shares with Chevron, and continued oversight of the NPR-2 property and leases.

Elk Hills School Lands Fund -- Section 3415 of Public Law 104-106 provides for the settlement of longstanding claims to certain Elk Hills lands by the State of California. Under the terms of the settlement, a contingency fund has been established in the Treasury for payment of nine percent of

the net sales proceeds generated from the divestment of Elk Hills over a seven-year period. Provided funds are appropriated annually, the Department will pay the State of California Teachers' Retirement Fund $36.0 million each year for five years which began in FY 1999. Any remaining balance due after the five years shall be paid in two equal installments in years six and seven unless the seventh payment is deferred due to delay in the equity finalization process. For FY 2000, the Department is requesting $36.0 million for the second payment to the State of California Teachers' Retirement Fund.

The *Office of Fossil Energy* has modified its research and development program significantly through the use of the strategic planning process and the development of detailed program plans and road maps often done in conjunction with the industrial and technical communities as well as other portions of the Department.

Field operations have been successfully consolidated into the *Federal Energy Technology Center (FETC)* which is now fully operational. In addition, the privatization of the National Institute of Petroleum and Energy Research (NIPER) has been recently completed, reducing the costs of conducting oil research and increasing the amounts of funding for competitive research.

With the sale of the giant Elk Hills oil field in California, we have begun to significantly reduce the Federal presence in competition with the oil industry. The Oil Shale Reserve in Colorado has been transferred to the Department of the Interior for leasing and other reserves will be transferred or closed in the next several years.

Energy Information Administration

The FY 2000 budget request is $72.6 million which will fund *EIA* data and analysis activities supporting issues related to energy use. This level will enable *EIA* to produce approximately 240 reports and analyses covering a wide variety of energy issues, respond to about 300,000 inquiries and requests for energy information, overhaul their energy consumption surveys and continue overhaul of their electricity and natural gas surveys and data systems. The following programs are included: efficiency and renewable data collection and analysis; end-use energy consumption surveys; greenhouse gas data collection studies; mid-term energy demand modeling; and integrated end-use energy data compilation.

Economic Regulation

The budget request of $2.0 million, for the *Office of Hearings and Appeals (OHA)*, is for processing applications for refunds and for related activities arising from the regulatory program initiated under the Emergency Petroleum Allocation Act of 1973. OHA will transfer a portion of the money collected by the Department with respect to crude oil price violations to the Treasury Department for deficit reduction.

Conclusion

The Department of Energy's proposed budget for FY 2000 will provide our scientists and engineers with the tools, facilities and processes to help lead this nation into the new millennium. The technological breakthroughs which lie ahead will provide improvements to the quality of life of all Americans. With your continued support, the Department of Energy will produce the science, security and energy to power this nation in the 21st Century.

U.S. Department of Energy
Washington, D.C. 20585

BIOGRAPHY

Bill Richardson

Bill Richardson was sworn in as the ninth United States Secretary of Energy on August 18, 1998, following his unanimous confirmation by the United States Senate. He is the highest ranking Hispanic in the Clinton Administration, and upon nominating Richardson to the energy post, President Clinton remarked, "If there's one word that comes to mind when I think of Bill Richardson, it really is energy."

Bill Richardson is putting that energy to quick use. His priorities for the Department include protecting our national security, advancing the frontiers of science and technology, helping to solve the challenge of global climate change, ensuring the safe and effective environmental cleanup at DOE sites, working to deliver $20 billion in savings to the consumers by bringing competition to the electricity industry, and ensuring a balanced energy portfolio for our nation.

Known for his skill as a negotiator and problem solver, Richardson is already making headway in key areas. He resolved a dispute with the State of Washington over cleanup at the Hanford Site, averting a lawsuit and getting cleanup on track with realistic schedules and budgets. He negotiated and signed the Nuclear Cities Initiative agreement with Russia to bring commercial private sector businesses and jobs to Russia's ten closed nuclear cities. The initiative will help prevent economic hardship from driving their nuclear weapons scientists and engineers into employment in places like Iraq or North Korea and helps Russian efforts to rightsize their nuclear weapons complex.

Richardson has made it a priority to see firsthand the ongoing work at DOE facilities and labs. In his first two months on the job, he traveled to 14 DOE sites and met with thousands of employees, contractors and stakeholders. To better coordinate cleanup and ensure continued protection of the environment, Richardson has proposed a National Clean-Up Initiative involving Governors, tribal officials, local leaders and communities. Richardson is also creating an Office of Consumer Affairs to improve direct lines of communication between the Energy Department and the American public.

Prior to joining the Department, Richardson served as the United States Permanent Representative to the United Nations from February 13, 1997 to September 10, 1998. He addressed numerous difficult international negotiating challenges and crises from Afghanistan to Iraq to Zaire. He is a vigorous proponent of U.S. engagement around the world. Having served simultaneously as the Permanent Representative to the United Nations and Secretary of Energy, Richardson is the first person in history to have headed two Cabinet agencies at the same time.

-More-

Prior to serving as the UN Ambassador, Bill Richardson was elected eight times to represent New Mexico's 3rd Congressional District, home to DOE's Los Alamos National Laboratory. In addition to his Democratic Leadership role in Congress, he was a longtime and active member of the House Energy and Commerce Committee.

Richardson has served as President Clinton's special envoy on many sensitive diplomatic missions, and has been nominated twice for the Nobel Peace Prize. As a diplomatic "trouble-shooter", he has freed hostages and prisoners in Bangladesh, Cuba, Iraq, North Korea and Sudan.

Richardson received a Bachelor of Arts degree from Tufts University in 1970 and a Master of Arts degree from The Fletcher School of Law and Diplomacy in 1971. He is fluent in Spanish, with good speaking and reading abilities in French.

Richardson and his wife, Barbara, maintain homes in Washington, D.C. and New Mexico.

10/98

Secretary RICHARDSON. I see my good friend from New Mexico and would say good morning to him.

Mr. SKEEN. Good to have you back, Kotter. [Laughter.]

It's an inside joke. From New York to New Mexico is a big span. We're glad to have you back.

Mr. REGULA. Thank you very much.

How would you describe in a brief sentence what the Nation's energy policy is, or do we have one?

NATIONAL ENERGY STRATEGY

Secretary RICHARDSON. Increase our energy security, reduce our dependence on foreign oil, maintain our lead in science and technology, preserve and maintain our nuclear weapons, and develop alternative sources of energy, at the same time, Mr. Chairman, recognizing the importance of coal, of nuclear, or our basic energy industries. I think one of the main objectives of our energy policy is to help our domestic energy producers across the board.

Mr. REGULA. Have you done an estimate of what the energy needs of this nation will be in let's say 20 years down the road and how we meet those?

Secretary RICHARDSON. My Energy Information Administration Director has, Mr. Chairman. Could I call him up?

Mr. REGULA. Yes, certainly.

Secretary RICHARDSON. Jay Hakes.

Mr. REGULA. State your name for the record, please.

Mr. HAKES. Jay Hakes, Administrator of the Energy Information Administration. Assuming that current laws stay in effect, we would see the biggest growth in natural gas, there would be a strong coal component as coal continues to be burned more at the existing plants, and we would be projecting that under current laws nuclear would decline over this period. Gas would be the major fuel substituting for nuclear. Of course, changes in economics, changes in environmental regulation, and other things could change that outlook.

Mr. REGULA. Do you see a growing consumption of energy in this country? Obviously, appliances have proliferated a lot in the last 25–30 years and industry is using more.

Mr. HAKES. Basically, energy consumption has been rising at about the rate of population growth, which is a little over 1 percent a year. In some ways, given the size of our economic growth, that's an impressive achievement. Again, if current laws continue and current strong economy continues, that will be an engine to drive up energy consumption in the future. It won't be as high as it was in the 1970s and 1980s because of more technologies that are very efficient. But economic growth does cause people to drive more, build bigger houses, and do things that do drive up energy consumption.

Mr. REGULA. I notice when you look at the numbers that at one time the fossil budget was about equal to energy conservation, but each year energy conservation becomes dominant in relation to fossil. Do you see that as a continued pattern, and what is the rationale for it?

Secretary RICHARDSON. Well, Mr. Chairman, let me say that on the fossil budget it's a little bit lower than last year. I must tell

you, we undertook quite a battle within the Executive branch to move it back almost as close as last year's number.

What I want to stress to you, Mr. Chairman, is I don't want you to look at a flat fossil energy budget, but I would like you to consider the other steps that we've taken that deal with the oil initiatives I announced last week as part of our fossil energy package—the SPR initiative, the initiatives to help the oil and gas industry with commercial spacing, with paperless regulations, and the ways to help them within the interior and Federal lands so that they can drill with less red tape. What I would like to say to you, Mr. Chairman, is that I would like to do a lot more for fossil energy but we have budget caps.

When I look at the energy efficiency and renewables budget, I don't see it as just climate change. I think this is important to our energy security. What they do in terms of our budget is the clean fuels, the energy conservation programs, they promote our energy security by reducing energy consumption in the country, they create jobs by encouraging new technologies, they help address our air quality standards by reducing emissions, they help address some of the climate change concerns by reducing CO_2 emissions. We've improved the management of these programs, as I think Mr. Reicher can point to, in terms of contracting, in terms of streamlining. I think he runs this department very well. I have seen the management changes that you have proposed and that have helped us. We have to do a better job of selling these programs.

Mr. Chairman, I'm not trying to de-emphasize the fossil. This is big for me. I come from New Mexico where we have uranium and coal and natural gas. In fact, I had more in my district than Mr. Skeen did. So I understand.

Mr. SKEEN. We're down the stream from you, though. [Laughter.]

Secretary RICHARDSON. So I understand the importance of these programs.

Mr. REGULA. You mentioned management. Do you have a policy of reevaluating programs to determine if they have outlived their usefulness? I think there is a tendency to start a program, and it just goes on and on and on.

Secretary RICHARDSON. I've been there five months and I want to do that, Mr. Chairman. We do have some programs that maybe have outlived their usefulness. And I commit to you, I have put forth a serious management review that looks at what programs are duplicative, which ones we don't need anymore. I kind of came in a little late for this budget to do that as effectively as I could. But I would be prepared to review them with you in terms of which ones you think may have outlived their usefulness.

Mr. REGULA. I commend you for the program on the filling of SPR. I think this is an imaginative way to deal with two problems.

What are we doing to reduce imports of foreign oil, anything? We're now still over 50 percent, and, obviously, many of our military policies are driven by the need to depend on foreign imports of oil.

VISION 21

Secretary RICHARDSON. Well, I think a key is helping our domestic production, Mr. Chairman. In coal, as I mentioned to you, I've got the Vision 21 program, the coal-fired plants. We're promoting

alternative sources of energy, as I mentioned. I think there is enormous potential still for solar, wind, biomass. I think we need to do more in those areas. Nuclear, the budget is up a little bit in terms of research. Natural gas. I want to shift that balance. It is, as you said, at about 50 percent.

Mr. Chairman, I have gone to Saudi Arabia and to Mexico and Venezuela, these are allies, these are friends, so we want to secure their energy independence and relationships with us. But at the same time, we are promoting our own domestic production. I know the oil and gas industry is going through some hard times. What we don't want to do, Mr. Chairman, is do anything that effects oil prices in the marketplace, that goes in and tampers with markets that doesn't push the free market philosophy that we have and the view that the market is the one that dictates prices.

Mr. REGULA. One more question and then we'll move on. I have a lot and most of them I'll put in the record.

Do you agree with the statement that fossil energy, coal, oil, and natural gas, will continue to provide the vast majority of worldwide energy requirements for the foreseeable future?

Secretary RICHARDSON. Yes, I do.

Mr. REGULA. Mr. Dicks.

Mr. DICKS. Mr. Richardson, we're very glad to have you up here in your new capacity as Secretary of Energy. I want to compliment you on the job you're doing. I think in every area that I have seen you are providing very real leadership and the Department of Energy needs that, as you mentioned before, in terms of management, and I commend you on your initiatives.

Secretary RICHARDSON. Thank you.

CLIMATE CHANGE

Mr. DICKS. You mentioned this briefly, but I would like to address an area where the Department of Energy's effective leadership has been making a real difference. The issue is reducing carbon emissions. Before we talk specifics, I want to establish on the record that the Department is complying fully with last year's congressional direction not to take any action required solely by the Kyoto Protocol on Global Climate Change before Senate ratification of the treaty, which has not been submitted yet to the Congress. Is that the case?

Secretary RICHARDSON. Yes, Mr. Dicks. Let me just answer your question also by saying we are not trying to implement the Kyoto Protocol through back door channels with funding for the President's Climate Change Technology Initiative. The answer is we are complying. Climate Change goals are one of many policy goals addressed by these investments. But the Congress has to enact any tax legislation and appropriate any funds to help the United States begin to move its greenhouse gas emissions rate off its business-as-usual path.

I do think that the energy R&D investments in the budget are important for increasing our energy security, decreasing oil import dependence, maintaining our lead in science and technology, maintaining abundant supplies of affordable energy, and maintaining a strong national economy.

Mr. DICKS. Well, I want to commend you on that. I think those are all very appropriate initiatives.

A couple of issues that affect Washington State. I'm sure you are aware of the urgency of the reprogramming request of $56.3 million at the Hanford site for the Tank Waste Program. The lay-off notices could be sent to nearly 1,000 employees as early as March 15. Can you tell me the status of that reprogramming request?

Secretary RICHARDSON. Yes, Mr. Dicks. Because of your very strenuous efforts, I am proud to tell you that today we are submitting the reprogramming request.

Mr. DICKS. From OMB? Or just the Energy Department?

Secretary RICHARDSON. No, no, no. I took care of the whole thing.

Mr. DICKS. The whole thing?

Secretary RICHARDSON. Yes.

Mr. DICKS. It's going to be up here?

Secretary RICHARDSON. It will be up here today.

Mr. DICKS. That's what I like to hear.

Secretary RICHARDSON. And we won't have any disruptions. Hanford is very important in our priorities.

Mr. DICKS. I appreciate that. I just would also mention that I understand John Wagner, who has been the long-time manager out at Hanford, is retiring and that James Hall, the manager of DOE's Oak Ridge Operations Office, would serve as acting manager until a permanent replacement can be found. Can you tell me what you think the timeline is on the Department's selection of a new site manager at Hanford?

Secretary RICHARDSON. Thirty days. I want to select somebody very soon. We have a wide core of applicants. I want the strongest person there. Hanford is one of our priorities. We have not met our standards there. We need to improve our performance.

Mr. DICKS. I want to compliment you, though. You met with the governor and the attorney general and they were very pleased with the meeting you had. They felt that you are keeping the commitments the Federal Government has made on this cleanup effort.

Secretary RICHARDSON. We signed a consent decree recently with the State of Washington that commits us to a new tank cleanup performance, and we're going to meet it.

Mr. DICKS. It's a tough problem and we will be supporting you on this.

I wanted to mention one other thing. There is a start-up company in my district that has built a prototype engine demonstrating the application of ram-jet technology to electrical generation. This ram-gen engine offers tremendous advantages over combustion, turbines, and all other operations including lower capital and maintenance costs and substantially higher efficiencies. In addition, it can use a wide range of fuels including methane from coal mines and other currently wasted gases and thereby eliminate these greenhouse gases.

Representatives of the company have briefed your staff about the new technology and the company is currently preparing a request for assistance from the Department. I would appreciate it if you would review the potential of this technology and consider sending

technical staff from the Department to evaluate the data that is now being collected from the prototype testing. I actually went out and took a look at this a few weeks ago and I think this could be a tremendous breakthrough.

Secretary RICHARDSON. Well, as you mentioned, our energy staff met with company representatives yesterday. We're going to make sure they're eligible for solicitation bids to compete. We will send people to evaluate them, and my staff tells me they were very impressed with these people.

Mr. DICKS. Thank you, Mr. Chairman.

Mr. REGULA. Will you yield?

Mr. DICKS. Yes.

Mr. REGULA. Can you describe how one of these works, I'm just curious.

Mr. DICKS. This is remarkable technology, you have this great round turbine engine in which fuel and air are compressed. We tried to create this ram-jet technology for the aerospace plane and this thing is very close. It minimizes the emission of nitrogen oxides and greenhouse gases.

Mr. REGULA. Does it use gas?

Mr. DICKS. Yes, it uses several different energy sources including gas.

Mr. DICKS. I can give you more background, bring in some more detail. Actually, if you want to get a briefing on it, these guys are tremendous. I've seen this thing work and they think they can be very competitive and use these gases that today create part of the greenhouse problem.

Mr. REGULA. They still need some research money.

Mr. DICKS. Yes. They are still trying to develop this thing. But they've actually demonstrated it, so they may be able to do it all in the private sector. We're testing that.

Mr. REGULA. Thank you.

Mr. Peterson.

Mr. PETERSON. Yes. Thank you, Mr. Chairman.

Good morning, Mr. Secretary. I wanted to commend you also for your efforts at filling the reserve. That's a step in the right direction. Is there a game plan of when we would have it full?

Secretary RICHARDSON. Yes, 60 days. We would complete the 28 million barrels that we announced last week. It would take 60 days to finalize the plan. Then there is still a remainder, as you know, Mr. Peterson. My goal is eventually to fill the entire SPR.

Mr. PETERSON. How long would that take?

Secretary RICHARDSON. Well, I've got——

Mr. PETERSON. How many days supply does that give us?

Secretary RICHARDSON. With our new initiative, we would have 64 days.

Mr. PETERSON. If that's full, how much would we have?

Secretary RICHARDSON. Probably about 75 days.

Mr. PETERSON. Okay. About two and a half months.

Secretary RICHARDSON. So with the help of many of you here, we were able to make that announcement.

Mr. PETERSON. I was also pleased to hear you talking a lot about helping independents. I guess you are more optimistic than I am. In Pennsylvania, New York, Ohio, and West Virginia, which pri-

marily have stripper wells, in a few more years it's over. We're just out of the business, period. And I'm told by people in Louisiana, Texas, and other states that we're just going to lose—I don't know how long it takes to crank up an oil business, but it takes quite a while. If we have people with wells out of production, wells capped, wells plugged—I'm not sure we're really thinking about what happens down the road.

I think we're drunk on cheap oil in this country. I don't we realize what will happen. The next issue down the road is how can we help an industry that cannot make it on $9 oil? I don't think you could subsidize them enough to make it. There is no way to make $9 oil profitable. So how long we have $9 oil dictates whether or not we have a future oil business in many parts of this country.

REFINING CAPACITY

And the issue I want to raise from that is, if all things remain the same at EPA, we won't have much refining capacity in this country in a decade. We're quickly losing our refining capacity and I don't think anybody is even talking about that. But if we lose our refining capacity, you will never regenerate an oil business because you can't generate here and haul it someplace else to refine it, the costs prohibit it.

Is there anybody monitoring the refinery capacity in this country?

Secretary RICHARDSON. Well, we're working with EPA on this and we're sensitive to what you just said. Let me also mention that we want to come out with more initiatives to help our stripper wells and our small independents. We're working on that. It's a global problem.

Mr. PETERSON. Work fast.

Secretary RICHARDSON. I understand. It is a global problem. In fact, we're looking at some emergency loans that we might consider for some of those that are not in good shape. We're also within the Administration discussing tax relief, although it is not Administration policy yet. Let me also mention to you that we have tried in terms of regulations to reduce the number of regulations that independents have to go through. We are also looking at ways that on federal land we can make the process of drilling and development easier. We're working on that.

But I understand the urgency. I represented many of these oil and gas producers in my State and I know that they're hurting. The only consolation that I would offer is that oil prices over the years have been cyclical and things will hopefully get better, and we're working on that.

Mr. PETERSON. I don't think we ever face the glut of cheap oil that appears to be coming from all parts of the world. Countries have built their economies on oil and as the price goes down they have to sell more to maintain their economies. So they've lost their ability to squeeze us like they used to. But aren't we close to 60 percent foreign import now?

Secretary RICHARDSON. No, we're at about 50–51 percent.

Mr. PETERSON. We're still producing almost half of our oil in the U.S.?

Secretary RICHARDSON. Yes.

Mr. PETERSON. Now that's in the United States?
Secretary RICHARDSON. Yes.
Mr. HINCHEY. And Alaska.
Secretary RICHARDSON. Alaska.
Mr. DICKS. That's part of the United States. [Laughter.]
Secretary RICHARDSON. Well, I know that. But I heard it and thought it was a very helpful comment, so I repeated it. [Laughter.]
Mr. DICKS. Senator Stevens will appreciate that. [Laughter.]
Mr. PETERSON. Is there a goal of how far we can go?
Secretary RICHARDSON. We want to reduce it—I don't want to get into a fixed percentage, but we are constantly investing in new energy technologies, in our traditional technologies. My hope is during my tenure to go under 50 percent as much as we can.
Mr. PETERSON. Thank you.
Mr. REGULA. I would just like to follow up. I can remember, and I think some of you at this table may also, when we were in late night sessions trying to figure out what to do about oil when it was $40 a barrel. Today, it's $9. What would you say has made that difference? Is it that more is being produced, or less consumption? Why suddenly has there been that enormous price drop?
Secretary RICHARDSON. I think, Mr. Chairman, it is international economic conditions of global marketplace. The financial situation in Asia is a contributing factor, in Latin America. I think our strong economy also is an engine that internationally has allowed us to survive this. At the same time, our consumers, and we also represent consumers, I think we have to have a balance between continuing our policies of ensuring our domestic production is there and giving the consumers the best options that they have and that they need.
Mr. REGULA. Mr. Hinchey.
Mr. HINCHEY. Thank you very much, Mr. Chairman.
Mr. Secretary, we still miss you up here but we very much appreciate the jobs you're doing for the Administration and for the country. It's great to see you again, Bill.
Secretary RICHARDSON. Thank you, Maurice.

STRATEGIC PETROLEUM RESERVE

Mr. HINCHEY. The issue of the Strategic Petroleum Reserve and our dependence on foreign oil is I think a critical question. And so I would just like to follow up a little bit on what Mr. Peterson was talking about. Is that reserve adequate do you think, two and a half months?
We're in a situation now where oil is very, very cheap and from the country's point of view, not from the oil producers' point of view but from the general economy's point of view, that's a good thing. But it is going to change at some point and one of the questions is will it change precipitously or will it change gradually so that we will have an opportunity to make some adjustment. If it changes precipitously, we may be caught off guard and it may create some very serious disruptions in the economy. So I would appreciate your thoughts on that.
Secretary RICHARDSON. Well, I think this is why—and before you came in I thanked everybody on the subcommittee that was instrumental in helping us make this decision—we were able with the 28

million barrels to get the SPR filled at a time when prices are low, so we're saving for a rainy day. So I think that's good energy policy, good energy security. My hope is that in the course of the next year through other measures we can refill the SPR. We have also said that we are willing to lease commercial space and have it paid through oil. I think that will allow more barrels in SPR. We have also said to some of our friends that we are willing for them to store some of their oil, like Venezuela, like Mexico, in the SPR, provided they pay, and maybe they can use that oil as collateral for some of their loans in this country.

Our goal in the end is to fill it. We were able to fill it by transferring so it didn't cost the taxpayer a cent. So we were very pleased with how we were able to do this within 60 days. This sends a signal that we have an energy policy and we're saving for a rainy day. You're right, things can change. Although Mr. Hakes, who heads our Energy Information Administration, makes these projections and, as I understand it, we are looking at slight increases for the price of oil in the next year. Do you want to hear from him on this?

ECONOMIC ESTIMATES

Mr. REGULA. We might hear his comment. I'm sure some oil companies here would like to know about that. [Laughter.]

Mr. HAKES. The price decrease that we're seeing now is more sustained than the price drop in 1986 which, as you remember, was a pretty major bang in and of itself, and also deeper than the 1993 drop which was a milder drop. There is a lot of excess supply around the world that is slowing the return of prices to a more normal level.

However, U.S. production at the end of last year was 500,000 barrels a day less than it was 12 months earlier. That's a pretty substantial drop.

Mr. REGULA. Is that from lack of demand or lack of wells?

Mr. HAKES. Shutting down wells and not being able to produce at the low price. And we have less precise data on the North Sea, but one would accept a similar reaction there because it is high priced production compared to places like the Middle East where it is cheaper to produce.

That will over time readjust the world market and quite a bit of equilibrium between supply and demand. We certainly see prices going up during 1999 and further in 2000. But we wouldn't see them getting back into the normal range until probably at least 2001. The reason being that you've got these excess supplies out there that have built up over several years with the mild winters. And, of course, Asia, which the Secretary mentioned earlier, was growing at about 800,000 barrels a day each year and that was soaking up a lot of the supply. Last year, Asian demand actually went down slightly. So there is this imbalance, but it is cyclical. This is just the deepest down cycle that we've seen probably since we've been keeping statistics.

Mr. REGULA. I purchased gasoline last week back in Ohio for 79 cents a gallon, and 43 cents of that is tax.

Mr. HAKES. The national average as of Monday was 91 cents, and in the Midwest and Lower Atlantic States, the average is below 90 cents in some states.

Mr. HINCHEY. You mentioned prices getting back up to normal range in two or three years. What do you regard as normal range?

Mr. HAKES. Well, for West Texas Intermediate, which is a very good class of oil, the normal range would be in the $17 to $21 a barrel range. A lot of the oil that is produced on shore in the U.S. is a heavier grade of oil that could sell for $3 or $4 less than that. We've seen heavy oil being sold recently for $6 a barrel, which, as one person pointed out, you can now buy 42 barrels of crude oil for what you would spend for one cup of coffee in a ritzy restaurant. So, for our producers, the normal range in many cases, unless they're producing West Texas Intermediate, would be somewhat lower than that, maybe in the $15 range. But most people can produce and make money at that range.

But there's a lot of potential around the world and, of course, the Middle East is a big unknown with their potential. Some of those countries could be producing double what they produce now.

Mr. HINCHEY. Also, you can pay more for bottled water today than you're probably paying for refined petroleum products.

ENERGY CONSERVATION

I would like to talk for a few minutes about the Department's initiatives on energy conservation, which in the present climate might seem almost unnecessary to people. But we know that this is going to change and I think the energy conservation initiatives that you're taking are very important. I know that is one of the major increases that you are requesting in the budget. I wonder if you could talk to us a little bit specifically about some of the things you're proposing with regard to improving efficiency of buildings, community weatherization programs, and also the industrial sector—such as how you are approaching improving industrial efficiency.

Secretary RICHARDSON. If I could have our Assistant Secretary answer that. He can get into some of the specifics. I am very proud of this program. We got an increase in it and we're going to push it very hard. We hope this committee is generous on it.

Dan, just briefly highlight what the Congressman asked.

Mr. REICHER. Congressman Hinchey, in the industries area, we're very proud of the work we're now doing, for example, and have asked for new money, with the oil refining industry, with the agriculture industry, the mining industry. Those are industries that use a great deal of energy and where there is a great deal of energy to be saved which could go directly to the bottom line for those industries in terms of their productivity. And I think also it addresses some of the oil challenges we face. That program has improved greatly in terms of the return on the dollars invested and the amount of energy saved per home. Also we are becoming more effective in working with states directly on energy conservation.

In the buildings, in terms of R&D and demonstrations, we have asked for increases to accelerate our development of standards for various kinds of appliances. There's several billion dollars of savings for consumers represented by improving the energy efficiency of appliances. And also we are demonstrating with industry a whole host of new technologies in commercial buildings and in residential buildings, ways to save energy and lower the cost of oper-

ating buildings, lower the price of buying a building. So there's a broad range of things and they all show very good returns on investment.

Mr. HINCHEY. Can you give us some idea of what we would save in terms of BTUs or barrels or however you would like to put it if your objectives are realized.

Mr. REICHER. There is a variety of ways you can measure this. We project individual homeowners can save hundreds of dollars a year in their energy bills to operate a home. We estimate that commercial building owners can save tens of thousands, hundreds of thousands of dollars a year. There is a brand new building being built in New York City where we're able to demonstrate savings of on the order of $500,000 a year in operating an office building in New York with a very small incremental cost up front, a return of about three to five years in terms of the incremental cost. That goes directly to the users of those buildings.

In terms of the work on actual replacements for oil, there are a whole host of alternative fuels from natural gas to ethanol where we can show direct correlation between the use of those fuels and reduction in imported oil. And so bringing the prices of those down, improving the technologies for developing them goes directly to energy security.

Mr. REGULA. Mr. Skeen.

Mr. SKEEN. Thank you, Mr. Chairman.

Mr. Secretary, it is good to have you back.

Secretary RICHARDSON. Thank you.

WASTE ISOLATION PILOT PROJECT

Mr. SKEEN. And, as usual, I appreciate your knowledgeable background in energy production from our perspective in New Mexico and so forth. Let me ask you a question. I know that you've already made some pronouncement about the Waste Isolation Pilot Project. I am hopeful that we can get this thing going. The highways networking has come a long ways and so forth. I think that we're in a position now that we can get over the hump and get this material down in the facility. I just wanted you to know I appreciate the stand that you took.

Secretary RICHARDSON. Thank you. Congressman Skeen, let me say that I'm going to need your help and your intervention in the next few months because this is a critical period for WIPP. As you know, the court has set March 12 as the date for the oral arguments in the WIPP case. It is our hope that the first shipment of transuranic waste would occur shortly thereafter, this is the one from Los Alamos to WIPP. We also have another commitment and that is to the State of Idaho.

Mr. SKEEN. And to Colorado.

Secretary RICHARDSON. And Colorado. The Idaho one is more imminent because it is the end of April. I have to tell you that we are frustrated with the State of New Mexico's delay and with statements that they've made about when we can move this waste. The RCRA permit is eluding us; the State is not providing it. They are giving us different timeframes and I am faced with having, by a settlement decree, to abide by the agreement I made with Idaho to have it before April of 1999.

We had some meetings with the State officials from New Mexico yesterday. We hope to get some better answers than we've had. But I have to tell you that the Department is becoming increasingly frustrated with the New Mexico Environment Department's constant changing of the goal posts, and I want to work with you to try to deal with these problems.

Mr. SKEEN. But it also involves a concerted effort not only from the executive branch in New Mexico, but you've had the folks like Mr. Hancock and some of the rest that have made a career out of this thing.

Secretary RICHARDSON. Right.

Mr. SKEEN. But I think it is really abused, because the technology has proven to be wise. I think we've gone through all the careful planning and appropriations process to get this thing done.

Secretary RICHARDSON. I agree with you. WIPP is ready to open now, that's our view. It is certified through the EPA. You and I worked on this over the years. I know you weren't totally happy with every initiative I made when I was here.

Mr. SKEEN. Oh, Bill, I've always appreciated every one, particularly today. [Laughter.]

Secretary RICHARDSON. But we're together today and we want to open this.

Mr. SKEEN. Together again. [Laughter.]

Mr. SKEEN. We've had a good liaison with this situation, and you're well aware of what it is. I think we can overcome this situation. As I've said in jest, some of the detractors were going to lay down in front of the trucks that are moving the stuff and so forth, I said, no, don't let them do that, just use them as a hood ornament. [Laughter.]

Mr. SKEEN. You can at least move it.

On the oil and gas, you've got a good background in this area. You know that our production in New Mexico is largely stripper wells, and we're also leading in technology and development of underground resources with deep penetration radar systems and other technology. So the picture is kind of bad now from the standpoint of the price on oil, but there's not much we can do about that. I might even suggest that since we have disaster payments for agriculture and so forth, we might do that for the oil business. But I can see right now that would be a tough nut to crack.

Secretary RICHARDSON. Well, we're working, as I told Mr. Peterson, on ways that we can support them in terms of some of the problems that they've had. We hope to announce something soon, not like the payment in agriculture, but of other ways that they can get some help.

Mr. SKEEN. Well, we always appreciate it. And once again, welcome back.

Secretary RICHARDSON. Thank you.

BLACK LIQUOR GASIFICATION

Mr. REGULA. Mr. Cramer.

Mr. CRAMER. Thank you.

Mr. Secretary, welcome to the committee. Good to see you again as well. I want to turn your attention to the issue of black liquor gasification. The ultimate question I want to get to is how much

do you anticipate spending on black liquor gasification in fiscal year 2000. And as a way of maybe telling you the way I see this, it appears to me that in your fiscal year 2000 budget you've got $21 million for research related to forest and paper products industry under your Energy Efficiency Program. And of that amount, $11.5 million is set aside for "research targeted to increase the industry's fuel flexibility, improve process, energy efficiency, and ultimately allow the industry to become essentially independent of fossil fuels."

I just wondered, we've got a black liquor gasification project proposed by Champion International which is to be carried out at a significant plant of theirs that happens to be in my district, and I think that fits into that definition. But how much do you anticipate of the $11.5 million that I assume would be available would be spent on black liquor gasification? Will there be one project, more than one project, or do you know?

Secretary RICHARDSON. I'm going to have Dan get specific. Let me just say that we have separated this proposal and another one into an engineering and cost study, as you know, for fiscal year 1999, and a follow-on construction and demonstration phase for fiscal year 2000 and beyond. Right now that engineering study is being reviewed by a panel of experts consistent with our procurement process. We should finish this review process by the end of this April, to be followed by an award or awards shortly thereafter.

But, Dan, can you answer the Congressman?

Mr. CRAMER. Excuse me, Mr. Secretary, did you say "award or awards"?

Secretary RICHARDSON. Award or awards shortly after.

Mr. CRAMER. Okay.

Secretary RICHARDSON. Can you get more specific?

Mr. CRAMER. Or, if you can't now, I would follow up.

Mr. REICHER. Yes. Let me just say Champion is one of the companies that we are talking with right now about some money in fiscal year 1999.

Mr. CRAMER. Exactly.

Mr. REICHER. We're working towards that and we hope to be able to, as the Secretary said, announce the initial conceptual study phase of this with real money in April and we're hopeful that Champion will——

Mr. CRAMER. This April, of course.

Mr. REICHER. Correct. And then in the fiscal year 2000 budget, as you said, there's on the order of, depending on how you count, somewhere between $9 and $11 million that we've requested for gasification work, including black liquor gasification. That would allow companies like Champion through a competitive process to go forward and actually do large scale gasification projects in actual plants to demonstrate this technology, which has the prospect of dramatically reducing energy use in the forest products industry, literally turning forest products companies into net exporters of electricity to the grid. Under a deregulated grid, you could actually see this industry sending electricity and getting paid for it. And it would also reduce pollution very substantially. So we're very excited about gasification technology overall, black liquor gasification particularly with the forest products industry.

Mr. CRAMER. And I would hope you wouldn't spread your limited resources over too many projects. [Laughter.]

Mr. REICHER. No, we will not spread it over too many, because we want to actually demonstrate two or three technologies very quickly in real, live, large-scale plants. And so if we get this funding request met on the order of $9 to $11 million, we're going to be able to go forward with a small number of very focused projects in large-scale plants and really demonstrate this technology quickly and get it into common use.

DOE AND RESEARCH LABS

Mr. CRAMER. Thank you.

Mr. Secretary, on another issue that you and I have had some dialogue over, Lawrence Livermore Labs and the relationship between DOE and the labs. I've been very concerned about the relationship between DOE and the labs for a number of years dating back to when I was on the Science Committee and we examined it and targeted hearings to the management relationship between DOE and the labs and basically on efforts to change the institutional behaviors of some of the labs.

I've gotten a lot more interested in it since a constituent company of ours, Time Domain, has been engaged in protracted, litigation with Lawrence Livermore Labs. I sat down with George Brown a couple of weeks ago and we reviewed and unraveled information about the labs in this particular kind of technology. And I just want to warn you that issue is not going to go away and it doesn't seem to me that DOE really has a handle, especially in this case, on Lawrence Livermore and holding them accountable and seeing that they come to the table and try to negotiate through a very difficult situation. So I hope you can help us deal with that.

Secretary RICHARDSON. I know how you care about this. The U.S. Patent Office, as you know, is reviewing this. We have asked Livermore to contact Time Domain to see if they can jointly market these proposals. But also I've asked my Under Secretary Ernest Moniz, who is the chief scientist, and he's around here testifying somewhere, to see how we can deal with our transferred technology activities and see if we need to correct some things, because I know how much you care about this. I promise you from our standpoint it won't go away either and we need to resolve this.

Mr. CRAMER. Thank you, Mr. Secretary.

Thank you, Mr. Chairman.

Mr. REGULA. Mr. Wamp.

Mr. WAMP. Thank you, Mr. Chairman.

Welcome, Mr. Secretary. First, I want to thank you, Mr. Secretary, for the great way in which you deal with the Congress. Having been here and certainly your service throughout the years on a variety of fronts, you're my third Secretary of Energy after O'Leary and Peña, each of you had different styles and I enjoyed working with each of you, but, clearly, you've got the best relationship with us and I thank you for that. I also want to make the point, you said Ernie Moniz is testifying somewhere around here, I think everybody from downtown is testifying somewhere around here today because I'm just hopping from one committee to another and seeing all the important people. So, welcome.

Assistant Secretary Reicher will tell you I continue to be concerned about this climate change/global warming issue in that we must continue to study climate change and try to get to the bottom of it. But it seems like recently even former Secretary O'Leary has kind of taken issue with some of the Administration's approaches to global warming.

The concern that I have coming from the TVA region, and I appreciate your cooperation in the TVA region, but we have a high dependency on coal-fired plants. If these policies do, in fact, as the estimates indicate, lead to an increase in electric rates of 20 to 80 percent, we need to throw a big gauntlet down here and say make sure the hurdles are high enough that we don't go rushing in. At some point, this economy is going to turn down. When it does, if we are in the middle of raising energy costs in this country severely through an implementation of, in many cases in my opinion, unproven results, we are at risk of really weakening our economy. I think there's got to be a balance as we approach this issue. And my question to you is, do you think Ms. O'Leary is right, or where do you come down as the Secretary of Energy on these issues of going forward with any of the Kyoto Protocol requirements until which time that the Senate embraces them?

Secretary RICHARDSON. Well, thank you for your very nice words. Let me say, Congressman, I, personally, and this Department has a very positive view of coal's future, I can assure you of that. We're developing more clean, more efficient technology. Our request of $122 million is similar to last year's. We foresee in the next 20 years or more that coal is going to supply half of the nation's electricity; it is 55 percent today. Low cost coal is why we have the cheapest electricity of any free market economy.

Let me turn to climate change. I don't know where Secretary O'Leary made that statement. If she did, I would differ with her. I would simply say that the major challenge that we have in the next 10 years is to reduce the cost of pollution controls. We have some new air quality controls. We believe that we are able in the year 2010, I said this earlier speaking about the Vision 21, the possibility of developing a pollution-free powerplant that would have no harmful air emissions of any type. It is a Vision 21 concept that we have.

Mr. WAMP. Is that a coal-fired plant you're talking about?

Secretary RICHARDSON. Yes. Yes. Maybe in 2010 I'll be back to talk to you about it. I doubt it.

Mr. REGULA. You may be here, but——

Secretary RICHARDSON. But we have to find ways to capture and dispose of these greenhouse gases. Let me just say to Mr. Wamp that in terms of this Department, what we want to do is, we realize we have to, bridge the gap between the developing countries and the developed countries. We know that we don't have too many supporters within the developing countries. In fact, in the last meeting in Argentina, Khazakhstan and Argentina were the only two developing countries that were basically with us that had the goal of reducing emissions by a certain target.

What we want to do is use technology—turbines, coal-generated technology—with these developing countries so we can have a win-win situation. They reduce their greenhouse gas emissions, we cre-

ate jobs, we work together. That's got to be a major task. But I can assure you we are not trying to back-door the Kyoto Protocol by asking you to fund certain projects. These projects that Dan Reicher has in his shop are to promote our own energy security, our own conservation. They are good projects. They are in your area—in coal, in oil, in natural gas, in many areas that I think in the end improve our energy security.

Mr. WAMP. I think it is appropriate for this subcommittee to keep a short leash on your activities, so to speak, because China, for instance, you mentioned some of the smaller countries, but China really is the big question with the coal reserves that they have. What Ms. O'Leary actually said is the Administration's support of the Kyoto Protocol is "wrong-headed," her words, because she said it did not invest enough in R&D for coal combustion, and that is really the issue. If we invest in R&D on coal, you don't have to wipe it out, you can through the technology, as you say.

So I think it's going to take constant monitoring of your working with us throughout this process. Let's not kill the goose that laid the golden egg. Let's just shape that goose up to make sure it lives. In that way we're not giving countries like China that are not even required to participate in this Protocol a huge advantage in the global marketplace and putting our country at a disadvantage. This should not be about pulling down the developed nations so that the undeveloped nations can rise. This should be about bringing them all up to our level. And that's an important big, broad policy issue that we cannot take lightly in the Congress.

Secretary RICHARDSON. I understand and I respect everything you said.

Mr. WAMP. Thank you.

Mr. REGULA. Well, I think we have time for another round of questions.

China, as I understand it, will be 90 percent dependent on coal for energy in the foreseeable future; is that correct?

Secretary RICHARDSON. That is close. I believe your statistic is correct.

Mr. REGULA. And I think I read that they will be producing more emissions of greenhouse gases in about 10 or 12 years than we are even though they're not as developed industrially.

Secretary RICHARDSON. That's right. Mr. Chairman, this presents us with a great opportunity of American investment in technology in China, them using our technology to reduce their greenhouse gas emissions. I think there's a great opportunity with China. I hope to make China, India, Brazil, Mexico, Pakistan as five countries that we need to target in the Kyoto Protocol and getting them to work with us to reduce their greenhouse gas emissions. I think Mr. Wamp and you are absolutely right. We can do this through our technology. We are developing technologies in climate change that China would find very attractive. This creates jobs for us.

Dan, do you—do you want to hear from Dan or not really? [Laughter.]

Mr. REGULA. We're always happy to hear from Dan.

Mr. REICHER. I just wanted to say that with respect to developing countries, as the Secretary said, there are a whole host of technologies on the fossil side, the efficiency side, renewables that

are big, big markets for us. And we are, in fact, working with the Chinese on their use of advanced fossil fuel generation, they are very interested in our wind technologies because they have big wind resources, they are very interested in our industrial efficiency technologies because as they grow they don't want to use per unit of output, the kind of energy they might otherwise use. As they develop and own their own homes and businesses progress, we want to be sure that U.S. companies are represented there in building those homes and in supplying efficient appliances. So there's big, big opportunities in those countries.

I also wanted to mention in the context of coal and TVA, one of the interesting projects that we're working on directly with TVA, and that they are very supportive of, is mixing coal with biomass and burning it in traditional powerplants. It is great for farmers, it is great for the forest products people, it is great for the coal industry, it reduces pollution, you can use traditional plants. So as we bring down the pollution in those plants and provide alternative fuels to those plants, we can kind of have a win-win situation.

Mr. WAMP. Would the gentleman yield?

Mr. REGULA. Yes.

Mr. WAMP. I would just like to ask Assistant Secretary Reicher, on the exportation of these technologies to China on these new frontiers, do you work with the Department of Commerce? How do we encourage private sector investment in China? I think that is our best link to China because I'm not going to trust them as far as the government, frankly. But if more and more of our private interests are allowed into that country to do business, to export our technologies, sooner or later we'll get to the point where we can trust them. I think the free enterprise system is the best thing we have to offer them, and if you can work with Commerce, I'm actually meeting Secretary Daley for lunch today, that's a great way I think of helping our national security interests abroad.

Secretary RICHARDSON. I just wanted to mention we are participating in Secretary Daley's trip to China next month where we're going to do precisely what you mentioned. We have two representatives from the Department of Energy on his trip.

Mr. REICHER. I would just add one thing. I also wanted to mention that in the nuclear area we have worked on behalf of U.S. nuclear companies to open markets in China for U.S. nuclear technologies as well as for power generation. So we span the spectrum from renewables to efficiency to coal, gas, and then end-use efficiency, the industrial, transportation, and building efficiency as well.

FUNDING OFFSETS

Mr. REGULA. Two questions. Mr. Secretary, GAO testified here recently that you have a substantial carry-over balance, as much as $319 million, and at least $74 million is available for fiscal year 2000. Could we not take that into account in establishing our appropriation number?

Secretary RICHARDSON. Well, I think we dispute that amount from GAO.

Mr. REICHER. Mr. Chairman, our view is that virtually all of that $74 million is what is called uncosted balances, money that is al-

ready under contract, already has been obligated, and that its use to offset the budget in fiscal year 2000 would have impacts on existing programs. It could slow contracts, could force us to break contracts, and it could have a whole host of consequences that we really need to avoid.

Mr. REGULA. But I notice [in fossil] you offset in the NPR, Naval Petroleum Reserve account, but not in conservation. If offsets are good in fossil, they ought to be good in conservation.

Mr. REICHER. This is the clean coal offset which is a different situation.

Bob, do you want to speak to that?

Secretary RICHARDSON. This is Bob Kripowicz, my coal man.

Mr. DICKS. A former staffer on this subcommittee.

Mr. REGULA. Very familiar. Highly regarded up here.

Mr. KRIPOWICZ. The uncosted obligations in the Naval Petroleum Reserves came about because of the sale of the Elk Hills oil fields. Those balances cannot be applied to any other programs and they don't apply to existing contracts, so they can be used for the work in fiscal year 2000. I think that's a different situation than Dan has, where there are uncosted balances on existing contracts.

Mr. REGULA. I think GAO may dispute with Dan as to whether or not these are obligated.

FUEL EFFICIENT CARS

One last question and then I'll go to Mr. Dicks. PNGV. We are spending a lot of money to develop fuel efficient cars. But here's Ford producing the Excursion which is a monster as far as gas consumption and impact on the use of fuel. It weighs 3 tons. We're giving money to the industry to get fuel efficient, but because of profits they're producing these huge guzzlers. There's a little inconsistency here.

Secretary RICHARDSON. Mr. Chairman, I was in Detroit about a month ago and Ford and the Big Three are producing efficient vehicles, too. I saw some hybrids, fuel cell, natural gas. Yes, there are some vehicles that based on their demand they are producing. I have to tell you I was very attracted, Ford is bringing back the Thunderbird. I don't know if you've seen that.

Mr. REGULA. I have and I like it.

Secretary RICHARDSON. I do, too. I don't think I probably could buy one.

Mr. REGULA. What does it get per mile?

Secretary RICHARDSON. I'm not going to answer that. But this partnership with natural gas vehicles, Mr. Chairman, is working well. The Big Three chairmen like it. We're investing together. We have some targets. It's the right thing to do. I think we're pushing a little bit to put some of these vehicles into the market. They are developing the technology. They said to me they wanted to see some of the tax credits moved more into the technology area rather than the performance area. That is being addressed right now. The Administration will probably submit some kind of tax incentive package soon on this. But I think it is a very good program. I would urge you if you get a chance to talk to the Big Three and also to Honda and Toyota. They actually have some very, very interesting vehicles, they're hybrid—is that right, Dan?

Mr. REGULA. Toyota and Honda both have hybrid vehicles on the market, but I don't think they participate in this research effort.

Secretary RICHARDSON. Well, we're working on a way to make it more inclusive but there is some sensitivity on the part of our guys which we're respecting.

Mr. REICHER. Just on the issue of the large sport utility vehicles and light trucks, another part of the work that you're funding this year is work with the diesel engine manufacturers to put those kinds of engines which are far more fuel efficient into sport utility vehicles and light trucks. The challenge there is to bring the emissions down to a level where they will meet upcoming standards. There is very good progress being made in that area and we expect that you could cut fuel use in sport utility vehicles and light trucks by 35 percent.

Mr. REGULA. With diesel engines?

Mr. REICHER. With diesels that can also meet stringent air emissions if we continue to make the progress we think we can make. And you could see those in vehicles in the next three years being actually used. So that's another part of this technology development program.

Mr. REGULA. Mr. Dicks?

Mr. DICKS. I would just like to say on this subject the Administration's fiscal year 2000 budget has a significant commitment to global climate change technology programs. One of the elements of this program is a partnership for the new generation of vehicles we were just talking about, which is a significant part of the Department of Energy's portfolio. I would just like to mention the State of Washington has developed the Northwest Alliance for Transportation Technology, which is part of the PNGV program, developing light weight vehicles for automobiles and, increasingly important, sport utility vehicles and light truck programs.

I think this has got the potential to reduce emissions, increase mileage. In our area, we see aluminum as a potential here to get the weight of these cars down and hopefully that would help on the efficiency side, too. So I kind of think we need to stay with this thing.

Secretary RICHARDSON. This is a very good coalition. I think in my last trip I met with some of their representatives informally. These are the kinds of coalitions we're trying to promote around the country, and I think the Northwest region is far ahead of others.

Mr. DICKS. The staff says that maybe we should do more in this area and less in other areas, Mr. Secretary. I will leave that to your consideration. We might even help you in that area.

NUCLEAR REACTORS

Let me ask you, you not only have served as Secretary of Energy but as our Ambassador to the United Nations, and one of the issues that we're concerned about still is the question of the Russian nuclear reactors and the ones in the Ukraine particularly. I visited Chernobyl several years ago and have taken some interest in this. I'm concerned about what the Administration's overall policy is regarding these reactors, and what can or what should the United States be doing with them in trying to deal with this prob-

lem, especially the Chernobyl reactors which I understand they are now going to keep operating.

Secretary RICHARDSON. Right. We think this is a key priority and for fiscal year 2000 we're asking for $34 million. We think it is an important program that continues some of the safety improvements we've done. There's a total of 65 reactors if you take the whole Soviet Union in Central and Eastern Europe. We think this is a very important program. It's about $30 million more than we requested last year.

Mr. Dicks, you've been to Russia and you know that this is a problem. This is an issue that is important to our national security, making sure that Russian scientists don't defect to the Iraqs, Irans, North Koreas, making sure that these nuclear weapons are safe, making sure that these nuclear reactors are safe, are operating effectively and efficiently.

And in that connection, let me just mention, I cannot resist, Mr. Chairman, we have asked your committee, and I have called the Chairman, to reprogram about $14 million for Y2K improvements in Soviet reactors, in Russian reactors and we hope you will favorably consider this. We have not reprogrammed yet because we want to hear from the committee. I know there may be some division here. But Mr. Dicks, maybe you can help us with this. This is very important. Y2K is something that is not just our problem. You can imagine in Russia just how serious it is. We are asking on an emergency basis to see if we can transfer this $14 million to deal with these Y2K problems in Soviet reactors. That is pending before your committee right now.

Mr. DICKS. Okay. I yield.

Mr. REGULA. Mr. Peterson?

ACCOUNTING PROBLEMS

Mr. PETERSON. I want to just go back for a moment to the conservation program balances that the Chairman brought up. Two weeks ago in testimony here the evidence that was given to us was the following—I think you have some accounting problems in the Department that are hiding money. The statement was given that if you have a new lease on a property for five years, you had to reserve five years' worth of money. If you had a three or four year contract with me for doing some sort of research, that you had to reserve three or four years' money. Well, that's not how government works in many other areas. You would reserve one year at a time for that year's budget. I understand if you have a little slush, but not multi-year leases and not multi-year contracts for research where money is held in abeyance. If that's really true, that's money that could be spent and not harm you.

Secretary RICHARDSON. Let me just say, because a lot of these issues are in some of the conservation programs that Dan Reicher has, I can say to you that the uncosted balances in Dan's department, which is called EE, maybe in my seventh month I will find out what EE and all these abbreviations at DOE are, have decreased by 38 percent from fiscal year 1996 until now. The reason for this, Mr. Peterson, is that when you have uncosted balances you have a very heavy reliance on R&D contracts, subcontracts with industry, with universities, other entities, competitive ways to award

these funds. This is sort of a normal way you do business. So I don't think we are trying to hide this money. But Dan I know told me when I came in this was one of the main concerns of this committee. He has a plan to deal with it, and I think based on that review by that NAPA that you've made some progress.

Mr. PETERSON. If you have appropriate accounting procedures, we could all understand the need for the money, I don't think you have that today.

The second issue, back to helping independent producers. I would just like to make a suggestion. I was in State government for 19 years and came from the oil patch personally, I never was in the oil business but came from the area where it all started, where the first well was drilled, and I would like to suggest that you need to bring the oil patch States together with their regulatory agencies, the Federal Government trying to reach out and help them individually really won't work, but if you could bring the States in conjunction with the regulators, because they need to get involved, too, that's the only way we can reach out to help this industry.

Secretary RICHARDSON. Congressman, I think that's a very good idea. Let me tell you what was very useful to me when I became Energy Secretary. The governor of Oklahoma, Governor Keating had a summit of all the energy and gas States and they came out with recommendations. We've adopted three out of the five. I agree with you. One of the things that I've said to my Department, with all due respect to the Congress, is that we have not had the kind of relationship we need to have with States, with governors, with county commissioners, with State regulatory agencies. I've beefed up my operation, not too much, to deal with that problem. But I can assure you that that's a suggestion we will take.

Like Congressman Skeen, we think of perhaps oil and gas mainly in the Southwest and other parts of the country. I'd like to familiarize myself more with the energy situation in your part of the country.

Mr. PETERSON. We'd love to help you do that because we're also where coal started.

Secretary RICHARDSON. I know.

REFINING CAPACITY

Mr. PETERSON. Refining capacity, do we have numbers of where we're headed? Could that be furnished to us?

Secretary RICHARDSON. I think for the record.

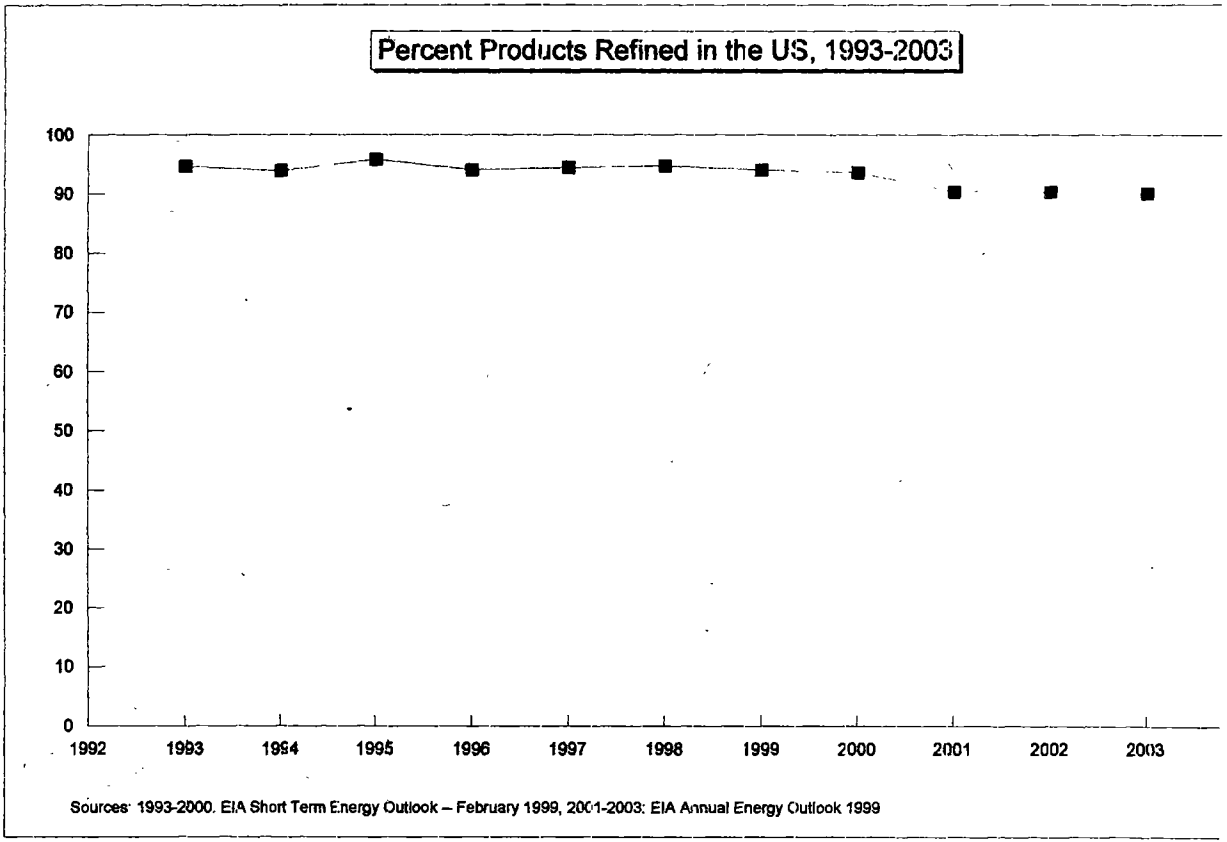
Mr. REGULA. Let's put that in the record.

Mr. PETERSON. Yes. I'd like some history and what's happening and what you project.

[The information follows:]

PERCENT OF PETROLEUM PRODUCTIONS REFINED IN THE UNITED STATES—1993–2003

Please see attached chart.


Percent Products Refined in the US, 1993-2003
100
90
80
70
60
50
40
30
20
10
0
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
2003
Sources: 1993-2000. EIA Short Term Energy Outlook – February 1999, 2001-2003: EIA Annual Energy Outlook 1999

KYOTO PROTOCOL

Mr. PETERSON. Back to the Kyoto protocol and greenhouse gases, you've mentioned that a number of times. Which of the greenhouse gases are you referring to? Which ones are you most concerned about?

Secretary RICHARDSON. Dan, do you want to respond?

Mr. REICHER. The primary gas is carbon dioxide. That represents the bulk of the emissions that we worry about. But there are other gases, methane and some of the others as well.

Mr. PETERSON. But CO_2 is the one that you'd like to regulate?

Mr. REICHER. CO_2 is the gas that we are analyzing in terms of its significance in terms of climate change.

Mr. PETERSON. Have you looked at the numbers that have been brought together by some of the scientists on what percentage of the current greenhouse gases come from manmade efforts?

Mr. REICHER. There has been work done. I don't know those numbers.

Mr. PETERSON. Well, it's interesting to look at them when you look at the percentage factor. Of course, CO_2 is a life-producing gas for all plant life. Has there been any studies done on the capacity of a young growing forest, or agricultural land to absorb CO_2?

Mr. REICHER. Yes. A great deal of work has been done and a lot more is being done. I would say with respect to the natural versus manmade there is no issue that anybody has with the fact that there is a large base level of CO_2 produced by nature and that is, in fact, what gives us the warmth on this planet that we have today. The issue is the increased CO_2, the manmade CO_2 over that base level and what it will do to temperatures around the globe.

Mr. PETERSON. I guess Russia right now would say it hasn't had much positive impact on them. I think we ought to be monitoring the potential of warming. But I personally have studied this issue a lot and I think we're really reaching to say that it has happened. I guess I have a feeling this Administration is working as if global warming has been proven, it's a fact, and you're working from that premise. I want to tell you that it is not a fact.

Mr. REGULA. Thank you. Let me say to the members that if you have questions for the record, try to get them in today because they only have five days to respond. We're under a real tight timetable in getting our bill out.

Mr. PETERSON. Can I ask one quick question of Bill?

Mr. REGULA. Okay.

Mr. PETERSON. Where are we headed on the Nuclear Waste Policy Act implementation?

Mr. REGULA. That's a quick answer, too.

Secretary RICHARDSON. Congressman, I'm going to testify on that tomorrow.

Mr. PETERSON. Send me a copy.

Secretary RICHARDSON. I will.

Mr. REGULA. Fair enough.

Mr. Nethercutt.

MEDICAL ISOTOPES

Mr. NETHERCUTT. Welcome, Mr. Secretary. Nice to see you again. I'm sorry I missed your testimony but I've had conflicting hearings, as all of us do, this morning.

I want to focus your attention if I may on the fast flux test facility on which you need to make a decision by I believe April 1 relative to whether the civilian use of that facility would be allowed for production of medical isotopes. I don't know if you've touched on that today.

Secretary RICHARDSON. No, I haven't.

Mr. NETHERCUTT. Do you believe your Department will be making a decision on this by April 1, as expected?

Secretary RICHARDSON. Yes, I am.

Mr. NETHERCUTT. I notice in the budget request for FFTF it is $30 million for fiscal year 2000, yet I understand the costs for a decision either way are estimated at $40 million to do the Environmental Impact Statement and $60 million to shut the facility down. I really think there is value in this medical isotope potential with this facility. Bill Magwood has done a good job of communicating with those of us who care about it, and I want to compliment you for him and his effort.

Have you looked at where the shortfall would come from if you go ahead and authorize it, approve it? You know, $30 million doesn't add up to $40 million or $60 million to shut it down. I am just wondering what your thinking might be as to where it might come from.

Secretary RICHARDSON. As you know, Congressman, Magwood and his team were just out there at Hanford and they have an advisory committee that is supposed to report to me very soon. I told Magwood, I saw some statements in the press, I said that I will make the decision. I also recognize those cost factors. I visited the facility, I think you may have been there in my earlier meetings, but I visited the facility when I was making the decision on tritium. I said then that we would look at April at seeing if there was further use for the facility. I have a very technical team that is looking at this. Your view is that we should continue the medical isotopes, is that right?

Mr. NETHERCUTT. Right. At least the evidence that I have been provided is that it has high opportunities in the medical side, the medical isotope use, with a lack of material and ability to deal with the medical side of nuclear involvement. I think it has some potential based on what a lot of people have talked to me about.

Secretary RICHARDSON. I agree with you. I have tried to deal with the medical isotope issue in another context. At Savannah River they were pressing me. I think as a nation we have to develop the right mix of commercial-public-private partnership in this and we need to do that as a country. But I will take your comments very much under consideration. I am going to stick to that deadline. I hate to put things off. It's the worst thing you can do I have found, especially in this Department where it seems that every decision was put off for me to make. [Laughter.]

ELECTRICITY DEREGULATION

Mr. NETHERCUTT. Lucky you, Mr. Secretary.

I know we have a vote, and I don't know if I'm edging up on my time, but I will be very brief. With regard to the issue of electricity deregulation, that's not a prominent item at this moment. But being from the Northwest, we have a special circumstance there relative to electricity deregulation, especially as it relates to Bonneville. I am wondering if you are planning to re-introduce the proposal that your Department had previously. I am involved as co-chairman of the Energy Caucus in the House and am very concerned about the future and the impact of deregulation as it relates to our part of the region, hydropower and the low cost of hydropower. So I am wondering what you can advise the subcommittee about that.

Secretary RICHARDSON. Well, Congressman, the answer is, yes. We hope to have an Administration bill for you within four to six weeks. We think it is a priority. We are going to work with the Congress to pass a bill. We are fine tuning it policy-wise, improving it, making it a little more acceptable to get a few more votes. At the same time, we're trying to ensure that we have looked at BPA and some of the other public entities. We want to work with you. We hope your Energy Caucus puts this at the top of your list because it will be a big priority of ours. Congressman Wamp and TVA, all of these issues, we are dealing right now on an interagency basis to come out with a bill that is slightly changed from last year making it policy-wise more competitive, giving the States the option that they deserve to opt-in or opt-out, dealing with public entities, making sure that rural customers and Indian tribes are properly taken care of, the whole transmission reliability. This will be a big priority.

Mr. NETHERCUTT. And I hope there is some credit for hydro-electric power since cost-wise we are way below others. Thank you.

Mr. REGULA. Mr. Hinchey.

CLIMATE CHANGE

Mr. HINCHEY. Thank you very much, Mr. Chairman.

I just want to return to this issue of greenhouse gases for a moment. The fact of the matter is that we are, that is, all of us living on this planet, are conducting a planet-wide chemistry experiment which in its most basic form could be described as how much more of these gases can we pump into the atmosphere on top of those that are ordinarily produced by nature without disrupting weather and climate patterns around the world. There is some evidence that we are already seeing the effects of the disruption of those climate and weather patterns. And if it continues, indications are that they are going to get only worse and the cost of that is incalculable.

So it is important that this problem be faced up to honestly. And if it is going to be addressed honestly, and if it is going to be solved without global catastrophe, it is important that we have American leadership. I think that includes leadership in international treaties such as Kyoto. I think it also includes technological leadership. I know that your Department, Mr. Secretary, is doing some break-

through work on technologies relating to environmental protection, control, remediation, things of that nature in this area. I congratulate you for that and I would like very much to be informed of technical aspects of this work.

Secretary RICHARDSON. We will do that. And you are right, this is our strength, the technology side of climate change. It creates jobs, cleans up pollution. We will work with you and we will have a major initiative with developing nations in this area to convince them in Africa, in Latin America, the five countries I mentioned, the Island States that this is in their interest to reduce greenhouse gas emissions and, at the same time, with our technology.

Mr. HINCHEY. I think you are absolutely right. Those five countries that you mentioned will be the predominant markets for an entirely new industry that is being created as a result of this phenomenon. We can be on the ground floor of that industry and that industry can produce an enormous amount of jobs and be very, very important to our economy as well. So I thank you for that.

I would just like, if I may, Mr. Chairman, to ask if you could also tell us a little bit about some of the breakthrough work you are doing in the transportation sector with regard to energy efficiency. I know that you are working on things like fuel cells and hybrids.

Secretary RICHARDSON. Hybrids, fuel cell, natural gas vehicles.

Mr. HINCHEY. Yes.

Mr. REGULA. Make this brief. I know Mr. Wamp has one quick question and we've got the vote on.

Mr. REICHER. Yes, very brief. We are basically working to put on the road by the middle of the next decade hybrid vehicles, electric-gas, electric-diesel, fuel cell-powered vehicles, advanced natural gas vehicles, all electric vehicles. There's a whole host of opportunities with passenger cars. And then we are also trying to get at what is the real emerging fuel challenge, which is the sport utility vehicles and light trucks. We think we are making good progress. It is a very strong partnership with the industry and we are doing well.

Mr. REGULA. Mr. Wamp, last question.

Mr. WAMP. Really a word of encouragement. If I had been asleep for the last 20 years and woke up to find out that we are being asked to put $14 million to basically keep the lights on in the Soviet Union and make sure that those reactors are safe at Y2K and that we are promoting the development of nuclear reactors in China, I would ask what in the world happened in the last 20 years? But when we went on the Kyoto Conference 15 months ago, one of the top four ways to reduce CO2 emissions in the atmosphere was nuclear power. We don't have a single nuclear reactor construction permit underway in this country, yet we are promoting it in China. Something is wrong here. Isn't nuclear still a safe and efficient, if it is not over-regulated and we are efficient as a Government, isn't it a great alternative to safe, clean power so that we can reduce the dependence on coal-fired plants?

Secretary RICHARDSON. Congressman, we did at the Buenos Aires Conference on Climate Change acknowledge the role of nuclear, the United States delegate did do that. We recognize that and we are working on that. Now the reactors that I was talking about were in Russia.

Mr. WAMP. I understand that.

Mr. REGULA. The committee will be in recess until 1:00.

[Additional Committee questions follow:]

ADDITIONAL COMMITTEE QUESTIONS

National Energy Strategy

Question: What is the role of the federal government in setting energy research priorities?

Answer: The federal government supports a variety of energy research, development, demonstration, and occasionally deployment activities. When setting objectives for these activities, the government pursues significant national benefits relative to energy security, the environment, and the economy, as described in the April 1998 Comprehensive National Energy Strategy. In the process, the government seeks input from a variety of groups including states, energy-related companies, environmental groups, and consumers.

Relative to prioritizing activities to meet stated objectives, the federal government's approach depends on the stage of research. For example, the closer a technology is to commercial introduction, the more important is the role--both as a cost-sharing partner and source of advice on research and development priorities--of the companies that will ultimately commercialize the technology. For activities focused on the early stages of research, such as basic and early applied research, input on research and development priorities is particularly important from universities and national laboratories.

Question: How should states be involved?

Answer: The Department of Energy has an ongoing dialogue with states about working collaboratively on research and development projects. An executive committee, comprised of representatives from the Department and state organizations, has been formed to identify a process for better coordination between both entities. The purpose of the group is to identify joint planning efforts within federal and state budget cycles where coordination is most feasible. DOE's collaborative efforts with states in planning and prioritizing cooperatively our collective research and development efforts improves performance and maximizes resources for both the states and DOE. Group criteria where states and the federal government may collaborate are evolving. In late January, the collaborative executive committee on research, development, and demonstration selected the following seven focus areas for its initial efforts, with the goal of reviewing the areas and adding or removing items as progress is made.

- Petroleum extraction and refining
- Biomass/bioenergy/bioproducts/biopower
- Smart schools
- Fuel cells and micro-turbines
- Combined heat and power and distributed generation
- Data collection for EIA and states
- Process identification for joint planning and implementation activities

Collaborations are not limited to the above topics. The executive committee has not defined

which areas of research will be carried out exclusively by DOE or by states.

Question: What are the roles of energy consuming and producing industries in setting priorities?

Answer: The Industries of the Future program embodies a partnership between DOE and nine of the most energy intensive industries in the United States. These industries have collectively developed, or are in the process of developing, their vision of their future over the next 20 years. They then develop technology roadmaps which outline the research and development pathways to achieve those visions. The DOE program works to bring industries together to develop those visions and roadmaps. The Industries of the Future program then overlays the Department's mission priorities onto the industries highest priorities and cost shares selected projects.

Question: What types of research are best left to industry; that is, no federal involvement?

Answer: In general, the types of research best left to industry are those areas which the research entity can obtain the bulk of the benefits from a successful outcome of the research. Often, this occurs in the stages of research closest to commercialization.

Question: What types of research should be left to the states?

Answer: Research should be left to the states when state priorities and needs are unique or limited to a few states and when there is no broader national interest.

Question: What is the role for the national laboratories in the National Energy Strategy?

Answer: The Comprehensive National Energy Strategy (CNES) articulates the Nation's goals and policy priorities for energy security, environment, and economic prosperity. As part of its mission and in conjunction with many participants, the Department develops a plan for research and technology development (R&D) and carries out R&D programs authorized by Congress needed to achieve these CNES goals and priorities. The national laboratories play a very important role in carrying out these R&D programs, both internally within their own capabilities and as R&D collaborators with research partners in industry, academia, and other research institutions. In the civilian energy R&D arena, the energy R&D activities of the Department's national laboratories traditionally account for the performance of approximately 30 to 40 percent of the Department's annual energy R&D budget. National laboratories perform the more fundamental of research endeavors, where risks are greater and the possibilities for commercial development are more distant. These R&D activities are often performed best when large interdisciplinary research teams with specialized energy and technology expertise can be assembled and applied to complex technological problems requiring years to solve. These R&D activities are often performed in conjunction with the existence at the laboratories of large or unique instrumentation and experimental facilities. As a result, the national laboratories have conducted much of the basic science and fundamental research that has provided the scientific

underpinnings for many of the technology breakthroughs in energy. They also have a proven ability of successfully developing and evaluating novel, advanced technologies and of successfully transferring such developments to the private sector.

Question: How do you decide when it is time to end federal research efforts and let the market take over?

Answer: As research projects reach the point where risks for further development and commercialization are within the reach of the private sector, the role of the federal program phases out.

Question: What suggestions do you have for terminating lower priority research efforts to focus on high priority research?

Answer: The Department's portfolio of research, development, demonstration and deployment activities has undergone intense scrutiny for over 2 decades, including review by numerous distinguished panels. In addition, policy priorities set by different administrations have also had an effect. As a result, many programs have been terminated or significantly refocused over the years.

In spite of this, there is always room for improvement. In the spring of 1999, the Department will release a major internal review of its energy research and development portfolio (a so-called R&D roadmap). One objective is to lay out the portfolio of activities in a way that would make it easier to align activities with national goals. Another is to test the portfolio against several measures of "reasonableness." We expect to see that in a number of ways the portfolio of research and development activities is reasonable, but it is far from clear whether it is optimal. The Department will continue to pursue these questions in the coming months.

Question: I am concerned that DOE places too much emphasis on studies that seem to reinvent the same ideas year after year. How can we address legitimate needs without spending more and more money on studies and task forces and advisory committees?

Answer: In the last decade, the Department has witnessed a period of dynamic change in world situations affecting its missions and in the general climate for federal support for its funded programs. These changes have necessitated a number of comprehensive and challenging reviews of existing programs, priorities, physical infrastructure, and management practices. The Department finds that special studies, task forces, and external advisory committees are valuable, in that they often look at issues from fresh perspectives and bring to bear unique experiences and insights on proposed solutions. Although some study activities may appear to address broad issues within similar subject areas, compared to past studies, each study addresses a new or emerging concern. The fact that a new study is addressing a similar area is, itself, an acknowledgment that the overall context of the issue is dynamic and may require further course corrections.

Recent examples of fairly broad studies in the civilian energy area include the Galvin Report

(*Alternative Futures for the Department of Energy National Laboratories*, February 1995); the Yergin Study (*Energy R&D: Shaping Our Nation's Future in a Competitive World*, June 1995); and the Holdren PCAST Report (*Federal Energy Research and Development for the Challenges of the Twenty-First Century*, by the Energy Research and Development Panel of the President's Committee of Advisors on Science and Technology, November 1997); the Five-Lab Study (*Scenarios for U.S. Carbon Reductions*, September 1997); and the Eleven-Lab Study (*Technology Opportunities to Reduce U.S. Greenhouse Gas Emissions*, October 1997).

The charter of these studies was each unique. Galvin focused on laboratory infrastructure and management. Yergin focused on the federal role in energy R&D and on R&D management reforms. The PCAST focused on specific energy R&D priorities and investments. The Five-Lab focused on near-term efficiency and renewable energy technologies and their potential roles in U.S. carbon reductions. The Eleven-Lab focused on long-term technology development needs. All had shared a common goal, however, which was to encourage the research programs of the Department to become more focused, efficient, and cost-effective. Rather than reinventing the same ideas, each study served to build upon the efforts, conclusions, and recommendations, where applicable, of the previous efforts.

Moreover, many of the recommendations of the studies, task forces, and advisory groups have had lasting and positive effects. Galvin's recommendations were incorporated in the Department's Strategic Alignment Initiative (SAI) which set an ambitious agenda to reengineer key processes, privatize major functions, overhaul contracting practices, and downsize personnel. The Department achieved its SAI target of reducing federal personnel 27 percent below the 1995 baseline ahead of schedule in January 1999. Implementation of recommendations from Yergin's study resulted in savings in applied research programs of $97.4 million in fiscal year 1996 and $314.9 million in fiscal year 1997. Contract reform initiatives have made significant progress in re-engineering the Department's procurement and financial assistance programs and processes, including the following:

- Reduced acquisition and financial assistance regulations by 50 percent,
- Authorized DOE contractor managed research facilities to apply best commercial practices to purchasing,
- Published simplified procurement and financial assistance guidebooks based on guiding principals,
- Established a commercial "balanced scorecard" of performance indicators stressing cost reduction and efficiency objectives,
- Streamlined purchasing procedures across the DOE complex with estimated savings in excess of 30,000 person-hours per year,
- Reduced time-consuming iterative administrative reviews,
- Initiated electronic purchasing and financial assistance business processes,
- Engaged in consortium benchmarking of commercial practices and re-engineering numerous business processes with cycle time reduction of up to 70 percent, and
- Reduced headquarters procurement staffing overhead by approximately 40 percent.

Removing Barriers/Administrative and Legislative Remedies

Question: There are some things that could be done administratively to get new technologies into the marketplace without investing any additional appropriated funding. For example, streamlining the EPA permitting process for high efficiency/low emission technologies has the potential to be much more timely and cost effective than federal outreach programs to "sell" technology to consumers. What is the Department of Energy doing to help in this regard?

Answer: To a large extent, the Department in the energy resources area acts as primarily as a research and development organization. Working in partnership with the private sector, we develop more efficient and cleaner energy technologies. We believe that the environmental benefits of such advanced technologies are self-evident and that regulatory bodies attempting to meet environmental goals have a large incentive to help deploy such technologies as rapidly as possible. To take but one example, consider the situation of powerplants when EPA or state agencies consider a permit application for a new powerplant, they must determine what the "best available control technology" is for that application and ensure that the powerplant owner will install that technology. The cleaner the technology, the easier it is for regulators to quickly approve the permit application. In this way, our research and development efforts complement the actions of the regulatory agencies, rather than being in conflict with them.

Use of Prior Year Balances to Offset Budget Requests

Question: You propose to offset $11 million in program requirements for the Fossil Energy program by using funds from prior years. What is the impact of prior year funds on the Fossil Energy programs?

Answer: Through the contract closeout process, approximately $4.0 million has been recovered from contracts that are no longer active. In addition, as a result of delays in the procurement process, various amounts from the Coal, Oil, and Gas programs were not obligated by the end of fiscal year 1998. However, most of these funds will be obligated during fiscal year 1999. We expect additional procurement delays will occur in fiscal year 1999. Additional contracts will be closed out to make available sufficient funding at the end of fiscal year 1999 to cover this offset.

Question: Why is there no offset for the use of prior year funds in Energy Conservation?

Answer: Carryover balances in the Energy Conservation account were very carefully considered as part of the fiscal year 2000 Congressional budget request. The budget includes $25 million from prior year balances in the Biomass Energy Development account to offset the request for the Energy Conservation account. Balances have been reduced over the past couple of years, and at this point, use of fiscal year 1999 funds to finance fiscal year 2000 activities would short-change the current activities.

Question: How do you explain that it's okay to offset programs in Fossil Energy but not in Energy Conservation?

Answer: As answered by Mr. Kripowicz at the hearing, "The uncosted obligations in the Naval Petroleum Reserves came about because of the sale of the Elk Hills Oil Field. Those balances cannot be applied to any other programs and they don't apply to existing contracts, so they can be used for the work in fiscal year 2000. I think that's a different situation than Dan Reicher, Assistant Secretary for Energy Efficiency and Renewable Energy has, where there are uncosted balances on existing contracts."

Buildings and Transportation Research

Question: You have requested a $74 million increase in research in the buildings area. For the past 4 years this Committee has been encouraging the Department to eliminate and streamline programs in the buildings area. Your budget request appears to blatantly ignore the Committee's direction, please explain.

Answer: The fiscal year 2000 budget request for the Buildings program is responsive to the Committee's direction, because it is based on the completion of 8 programs in fiscal year 1999 (Residential Energy Efficiency, Home Energy Rating Systems, Furnace and Boiler Combustion Research, Urban Heat Island Research, Volume Purchases, Municipal Energy Management Program, Affordable Housing, and Highly Reflective Surfaces) and the consolidation of 12 programs into 4 in fiscal year 2000. It is also responsive to the Committee's request for a strategic plan, technology roadmaps, greater peer review, a simpler organization, and an understandable budget. The Office of Building Technology, State, and Community programs (BTS) is making enormous strides to transform the organization into one that is customer-focused and results driven. The increase in the budget is requested because of the large budget cuts several years ago in areas that are still very important to the nation and to take advantage of the significant opportunities to reduce energy consumption in buildings and communities, thus saving consumers money. Of the $74 million increase, $25 million is for the Weatherization Assistance Program ($21 million) and State Energy Program ($4 million) to address the huge backlog of families who need to reduce the energy use and the corresponding costs in their homes and to strengthen state capability to reduce energy costs for businesses and consumers. An additional $30 million is for research and development to implement the technology roadmaps Congress asked BTS to do; these funds will be awarded competitively. The remaining funds will be applied to accelerate appliance standards, expand the Energy Star program, strengthen existing programs such as Building America with homebuilders, and increase the Rebuild America partnerships to 330, including Energy Smart Schools in at least 50 percent of all Rebuild America partnerships.

When these funds are invested, the Buildings program is expected to reduce energy costs for Americans by $16 billion in 2010. The reduction in energy consumption in the nation is forecast to equal to all of the energy used in the entire State of Texas.

Question: Again this year, you have asked for increases in transportation research. Given the recent mergers in the auto industry and the announcements by certain automakers of hybrid vehicles that are ready for marketing now, how do you justify increasing the budget for automotive research?

Answer: Now is not the time to reduce federal support, when our industry partners, particularly suppliers, are in the midst of multi-year development efforts. We still have major technical hurdles to overcome before 80 mile-per-gallon, mid-size sedans with performance and price similar to today's Lumina, Concorde, and Taurus can be offered for sale in large numbers. With current fuel prices providing scant incentive for efficiency, the government has a valid role in pushing the fuel economy envelope through cooperative research and development programs such as PNGV. In fiscal year 2000, we will focus on the critical technologies such as automotive integrated power modules, high power energy storage devices, pollution control devices, fuel cells, and compression ignition direct injection engines, needed to make the 80 mile-per-gallon, mid-size automobile a reality. Additional resources for these priority technologies will allow for both PNGV success and the application of new technologies to significantly improve the fuel economy of sport utility vehicles, minivans, and pickup trucks. Continued support is critical to ensure that these technologies mature to a level where industry will employ them in commercially available vehicles.

Importance of Fossil Energy Research

Question: How will you ensure that the use of prior year balances in Fossil Energy will not undermine your newly announced initiatives to help the domestic oil industry?

Answer: The Department has not withheld nor do we plan to withhold any funds from the oil program to offset the fiscal year 2000 Fossil Energy Research and Development budget request.

Question: Currently much of the coal technology in this and other countries that provide electric power needs is old and inefficient. Do you agree with that statement?

Answer: Yes, the average age of coal-fired generating capacity in the United States is approximately 27 years. The average efficiency of coal-fired power plants in the United States is currently about 33 percent and it has been virtually the same for the past 35 years. This value is likely typical of industrialized countries. However, in developing nations such as China, the average efficiency is considerably lower. A 1994 study by Argonne National Laboratory indicated that coal-fired generators in China average 25 percent efficiency. This means that the average U.S. generating plant is one-third more efficient than the average Chinese plant. To be specific, in the United States it takes three tons of coal to generate a certain amount of electricity; in China it takes four tons of coal. If we can get China's efficiencies up to 65 percent, it would be possible for them to generate the same amount of electricity with 1.5 tons, thus saving 2.5 tons of the 4 they would have used.

The state-of-the-art efficiency of a new clean coal technology, coal-fired power plant today, based on gasification combined cycle technology, is about 45 percent. With the successful completion of research and development now under way at DOE, we expect that this value should increase to 60 to 65 percent by 2015.

Question: Why doesn't your budget increase coal research to ensure that we continue to

fund critical research that will greatly increase efficiency and reduce emissions?

Answer: The Department is fully supportive of the Coal Research Development and Deployment program. This program has made great technology advances and has had many successes; for example, cutting environmental compliance technology costs by more than half, developing S02 and other emission control technologies capable of reducing pollutants by well over 90 percent, improving power generation efficiency from 33 percent to over 40 percent today, with the promise of 60 percent in the future. The program is now pursuing a Vision 21 development effort which will lead to the creation of "Powerplexes" that will have generation efficiencies of over 60 percent--over 85 percent in coproduction or cogeneration configurations--and will essentially be pollution free, including no C02 emissions when linked with sequestration activities. However, as with all federally funded programs, budget constraints are reflected in all program funding decisions. While the fiscal year 2000 Coal Research and Development program request is below the fiscal year 1999 appropriation level, most of this reduction is due to the completion of the Low Emissions Boiler program. The budget is sufficient to address the key research and development issues in the program and to pursue the high priority Vision 21 and Sequestration programs, both of which have increased funding in the fiscal year 2000 request.

Question: Your budget has a great emphasis on funding research to improve appliance efficiency. That's an important area but don't you get a much bigger "bang for the buck" if you greatly reduce energy consumption and emissions by improving the underlying electric power generation technology?

Answer: Improving the efficiency of electric power generation will directly reduce emissions of all pollutants, including carbon dioxide. The Energy Information Administration estimates that in 1997, 36 percent of total U.S. emissions of carbon dioxide came from electric power generation. Improving the efficiency of today's coal-fired powerplants from a typical 33 percent to the level achievable with new plants, incorporating the results of DOE's research could reduce their greenhouse gas emissions by as much as 40 percent. Even better performance improvements are being targeted for natural gas powerplants, although their baseline emission rates are lower. The Department expects to have these improved powerplant designs ready for commercial deployment by 2015, which is a few years before the majority of existing plants will need to be retired and replaced. In addition to improving the efficiency of current technology, the Department is also developing technologies to sequester the carbon dioxide not eliminated by efficiency improvements.

Kyoto, Global Warming, and China

Question: The Energy Information Administration (EIA) within DOE released an analysis last October on the impacts of the Kyoto Protocol on U.S. energy prices and the economy in 2008 through 2012. EIA reports that electricity prices will rise between 20 and 86 percent and natural gas prices will rise between 25 and 147 percent under the Kyoto Protocol. The report points out that, as people pay more for energy, they will buy less of everything else. How is the EIA analysis of the Kyoto Protocol being used to make needed changes to the agreement?

Answer: The EIA analysis of the Kyoto Protocol does not explicitly take into account the availability of the various flexibility mechanisms (international emissions trading, Clean Development Mechanism, and joint implementation) that will allow countries to comply with their agreed-upon emissions targets at relatively low cost. That is why the cost estimates in the EIA analysis are so much larger than those presented elsewhere. In contrast, the Administration's analysis of the economic impact of the Kyoto Protocol, prepared by the President's Council of Economic Advisers, indicates that the United States should be able to meet its Kyoto Protocol obligations at modest cost. The Administration's analysis rests on widespread participation in an efficient emissions trading system, a goal that the Administration will pursue over the next 2 years as part of the agreement on the Buenos Aires Work Plan.

Question: What is being done to establish reasonable targets in developing countries?

Answer: The Administration has been working on an interagency basis to help developing countries see that it is in their economic and environmental self-interest to accept an emissions target and participate in the international emissions trading system. Teams of specialists, including representatives from the Department of Energy, have recently visited several countries in this regard, most notably Argentina and Kazakhstan. We hope to see further progress in this area in the coming months.

Question: What actions, short of targets, are being considered for developing countries?

Answer: Developing countries can reduce their greenhouse gas emissions in a wide variety of ways, particularly by deploying technologies that are more energy efficient or that use renewable energy sources. Developing countries that have such opportunities would be able to participate in the Clean Development Mechanism on a project-by-project basis. However, countries that accepted emissions targets and participated in the international emissions trading system would likely see greater economic benefits from their emissions reduction efforts.

Clean Coal Deferral

Question: The Administration proposes to defer $256 million in clean coal technology funding until future years. Getting that $256 million back into the base budget in future years may be impossible. If we spend that $256 million on other programs in fiscal year 2000, what programs will you reduce in the future when you need that money to meet commitments to our industry cooperators in the clean coal program?

Answer: The Administration does not plan on specific reductions in future programs to fund the remaining commitments of the Clean Coal Technology program. The Administration's proposal includes a schedule for returning the funds that will enable the Department to meet existing funding commitments with our industry partners. Of the 40 projects in the program, 38 projects are fully funded. Additional funding for the two remaining projects will not be needed until fiscal year 2001 and beyond.

The two projects with remaining funding requirements are the Clean Energy

Demonstration Project, an Integrated Gasification Combined Cycle planned for Illinois, and the Clean Power From Integrated Coal/Ore Reduction (CPICOR) project, a combined steel making and power generation project planned for Utah. The Department recently approved project restructuring and design phase extensions for both of these projects. These extensions were necessary to complete teaming arrangements, perform design activities, and obtain environmental permits. Both projects already have adequate funding to complete these tasks. Funds for the construction phase will not be needed until fiscal year 2001, allowing for the deferral of funds. The Department intends to fulfill funding commitments for both remaining projects.

Industries of the Future

Question: The industries of the future program in energy conservation has been very successful. It has focused on 7 energy intensive industries that account for 70 percent of industrial energy consumption. This year you expanded the program to include 2 new industries --agriculture and mining--and there is talk of considering a tenth industry (cement) for inclusion in the program. What are you doing to ensure that this program remains focused and doesn't become too large?

Answer: As you know, the Industries of the Future program was designed to focus our investments on the greatest opportunities to improve energy efficiency and waste reduction in the industrial sector. With the addition of agriculture and mining, and potentially cement in the future, the program will interact with the most energy and waste intensive industries constituting 80 percent of the energy consumption and almost 90 percent of the waste production. This set of industries have similar technological challenges and opportunities because of their basic operations to separate or combine raw materials. Accordingly, we see significant benefits to covering the whole set of industries. We are very focused on these challenges in both our "specific" industry budget request, as well as in our "cross-cut" budget request.

Question: The Committee has been very supportive of the industries of the future program because of its focus. For 2000, the program plans to expand into the area of gasification. This has traditionally been the domain of fossil energy. Why should the industries of the future program be involved in gasification research?

Answer: The DOE through the Office of Energy Efficiency and Renewable Energy (EERE) has supported the American Forest and Paper Association (AF&PA) research agenda, "Agenda 2020", which outlines six focused research task groups. Gasification technologies involving forest products have been a consistent priority in three of the six task groups: energy performance, environmental performance, and capital effectiveness. Chief executive officers within the industry have also stressed the importance and urgency of this activity since a fleet of chemical recovery boilers need to be replaced or overhauled in the next 5 to 10 years. Once this time frame expires the next opportunity may not arrive for another 60 years. Although the timing is right, the risk associated with replacing conventional technology is too burdensome for one company to undertake. Therefore, DOE support is essential for the success of gasification implementation in the forest products industry. The benefits that gasification technologies offer

are substantial. Broad scale adoption will result in the forest products industry becoming a stable electric power generator rather than a significant energy consumer; an electrical capacity increase of 30 gigawatts is potentially attainable. These technologies can also significantly reduce greenhouse gas emissions, with potential reductions of 30 to 60 million metric tons of carbon equivalent. Other benefits include improved operational safety, improved capital effectiveness, and chemical consumption reductions.

The gasification effort is aligned with the EERE mission of energy efficiency, environmental stewardship, and productivity and is part of a broader EERE Bioenergy program. Historically, there has been significant EERE support in biomass and black liquor gasification technologies, contributing over $100 million since 1980 in these activities. To advance the application of these technologies in the forest products industry, technology demonstrations are necessary. An EERE/OIT gasification program will augment previous research and development and will utilize the results from the coal gasification efforts in order to provide the best chance for success in this industry.

Projects with the States

Question: As a result of an oversight hearing held by this Committee over a year ago, the Department of Energy developed memoranda of agreement to work with the states on joint research projects. What projects have resulted from those agreements and what cost share do you expect from the states?

Answer: There has been substantial progress in collaboration between DOE and state Research, Development, and Demonstration (RD&D) organizations since the signing of the initial Memorandum of Understanding (MOU) with the California Energy Commission less than 3 years ago. This progress has been in three areas. First, the Department, state agencies, and national laboratories have worked steadily to develop and put into place the procurement mechanisms that would enable cost-sharing of projects. Because of the very different legal, procurement, and management rules and regulations governing the actions of these diverse organizations on a variety of issues (for example, joint work and intellectual property), it has required considerable effort to develop the mechanisms that will enable the MOUs to function. These mechanisms are now close to completion. Second, there have been a number of joint projects undertaken since the signing of the MOUs that, for a variety of reasons, did not require the use of the above mechanisms. These collaborations are listed in Attachment 26. These initial projects were identified as obvious potential areas for joint work that did not require extensive discussions to identify and were possible under current budgets. Third, there has been substantial progress made in developing a process of coordinated planning of RD&D portfolios. This is the most important of the three areas, because without coordinated planning, project-level coordination would generally be on an ad hoc basis. Coordinated RD&D planning will enable the budget planning of DOE and the states to use resources more efficiently. Discussions at both the top management and project management levels are currently under way with the objective of generating fiscal year 2001 energy technology RD&D budget requests at the federal and state levels that capture synergies and opportunities that the various organizations represent.

The Department of Energy is typically asking for a 20 to 50 percent cost share from the states on collaborative projects. The cost share level is largely a function of how close a project is to potential commercialization. A lower cost share is generally required for high-risk research and development, while a higher cost share is generally requested for first-of-a-kind technology demonstrations.

Question: What has been the hold-up in getting the projects started with the states?

Answer: As stated above, the Department has worked steadily to develop and put into place the procurement mechanisms that would enable cost-sharing of projects among the DOE, state agencies, and national laboratories. The very different legal, procurement, and management rules and regulations governing the actions of these organizations on a range of complex issues ranging from joint work to intellectual property rights has required considerable effort by lawyers and procurement experts to develop mechanisms to enable the MOUs to function. In addition, the huge degree of specificity in the DOE budgets (particularly, Energy Conservation) frequently allow for collaboration with states only when a state objective or project lines up precisely with a particular DOE budget line.

Question: What projects are under consideration now and when will they be started?

Answer: Attachment 26 lists several projects for fiscal year 1999. We are currently working with the states to identify additional projects for fiscal year 2000 in the six technical priority areas determined by all the parties. A listing of the identified collaborations under consideration is in Attachment 28.

Attachment 26
Collaborations Resulting from Preliminary Discussions with State RD&D Agencies

- Collaboration is occurring with states through the Lawrence Berkeley National Laboratory on the Compressed Air Challenge. The three awardees are Iowa Energy Center, Wisconsin Energy Center, and New York State Energy Research and Development Authority, who are 3 of 14 sponsors for Compressed Air Challenge.

- RD&D road mapping is jointly sponsored by the DOE Office of Energy Efficiency and Renewable Energy and the Association of States Energy Research and Technology Transfer Institutes (ASERTTI). A meeting with 18 states and the Industries of the Future program resulted in DOE funding money targeted to ASERTTI states assisting in the industrial visioning process at the state level.

- Four awards to the Lawrence Berkeley National Laboratory from the California Energy Commission (CEC) annual CEC Public Interest Energy Research (PIER) solicitation are pending.

- Oak Ridge National Laboratory is collaborating with the California Energy Commission on thermal insulation testing.

- DOE funding and support for a variety of technologies have been instrumental in the success of the CEC's successful energy technology export program which, based on government-to-government relationships at the ministry and utility levels, opens doors for energy and environmental businesses. The investment in this export program has resulted in $400 million in sales by California energy companies.

- Cooperative efforts between the CEC and the DOE have dramatically reduced the energy use in buildings and appliances through energy efficiency programs and services. The CEC, with DOE funding, has assisted many California local governments and schools reduce the costs of energy by modernizing their facilities and solving deferred maintenance problems. These programs have directly served nearly 70 city and county governments and more than 250 school districts. These projects have contributed to establishing a growing robust energy service industry in California. Just one example is Sacramento County, which is saving $350,000 annually as a result of its comprehensive lighting improvement project--enough to help the county maintain four additional law enforcement officers and keep a local library open.

- Another recent energy efficiency program conducted with California is a partnership between the DOE and the California Building Industry Association to launch a comprehensive training program for builders on how to comply with the energy efficiency standards in order to build more energy efficient housing. The training is directed to large production builders and consists of classroom and on-site training, including diagnostics and follow-up. A total of 1,269 participants from 191 builder companies have participated in the training during this project to date, impacting 48,000 homes. The program has been embraced by the building community and is consistently cited as an outstanding example of a successful public/private partnership.

- Another project is a partnership between the Department and Solar Turbines, Inc., on the development of a more efficient and cleaner small industrial combustion turbine. A related CEC/DOE partnership effort with Catalytica Corporation has resulted in the development of a super-low-emission turbine combustion system currently being tested in Santa Clara.

- The DOE and CEC have three joint projects in the fuel cell area. The first is a 75-kilowatt molten carbonate fuel cell demonstration at the Miramar Naval Air Station. The second is a conceptual design of a one megawatt solid oxide fuel cell system. Both these projects are part of the DOE Office of Fossil Energy cooperative agreement and winners in the CEC PIER program. The third project is the testing of a 250-kilowatt solid oxide fuel cell/turbine hybrid system at the University of California, Irvine National Fuel Cell Research Center.

- A project of mutual interest in the turbine area is the market and technical assessment of flexible mid-size turbines which is funded by the DOE Offices of Energy Efficiency and Renewable Energy and Fossil Energy and the CEC.

- The DOE Federal Energy Technology Center and the CEC are currently co-funding a market study to determine the market potential and public benefits of developing a next generation of small gas turbine power systems. The study is being performed by Arthur D. Little and the CEC is funding 31 percent of the $98,000 effort. Early indications are that developing gas turbine systems in the 30 to 150 MW range could have far reaching public benefits--including lower emissions, lower cost of electricity and more reliable distribution of electricity. With the assistance of the CEC, the DOE is also holding workshops to get input from engine developers, the developer's vendors, power generators, and the public on the viability of a future program. It is envisioned that any future programs would be a collaborative effort between the DOE and CEC to avoid duplicate work and maximize the leveraging of the DOE and CEC funds.

Attachment 28
Identified Potential Collaborations

- An upcoming petroleum meeting and workshop co-sponsored by California Energy Commission and the DOE is to be held this spring. The DOE Offices of Fossil Energy and Industrial Technologies, petroleum industry companies and several states (for example, WY, UT, CA) will participate.

- The Energy Information Administration (EIA) is working on a data collaboration with CEC. Both the DOE and CEC collect similar data on power plants--pollution, fuel use, and other data. Under utility deregulation CEC's ability to gather data has been greatly reduced. Collaboration between CEC and EIA would reduce duplicate data gathering and still give CEC access to the data it needs. Data collection collaboration has been an ongoing activity and has been helped by being a technical focus area between EIA and the CEC.

- During the February meetings among CEC, New York State Energy Research and Development Authority (NYSERDA), Association of States Energy Research and Technology Transfer Institutes (ASERTTI), the National Association of State Energy Offices, and the DOE, agreement was reached on the following six technology areas upon which we will initially focus collaboration and planning activities.

  - Energy Information Administration data
  - Petroleum
  - Biomass/biofuels/biopower/biofeedstock
  - Fuel cells and micro-turbines
  - Combined heat and power and distributed generation
  - Smart schools

  The five organizations have met and are coordinating in the six technical areas. Further meetings of program managers in the different organizations are planned. Each organization has determined the lead contact in each of the five organizations for the six

technical coordination areas.

- We are exploring opening up state special projects to research and development projects under the State Energy Program grants. In order to do this, we are considering a recommendation to revise the state energy program rule which currently prohibits funds going to research and development. Other state partnerships are being reviewed to further incorporate research and development collaborations with the states.

Reprogramming Requests

Question: This Committee receives about one reprogramming a week from agencies under its jurisdiction. In the more than 4 years that I have been chairman of this Committee, we have never received a reprogramming request from the Office of Energy Efficiency. To what extent is this related to the large carryover balances in that account?

Answer: There is no relationship between the carryover balances in the Energy Conservation account and reprogramming requests. The carryover balances in the Energy Conservation account were very carefully considered as part of the fiscal year 2000 Congressional budget request. The budget includes $25 million from prior year balances in the Biomass Energy Development account to offset the request for the Energy Conservation account.

Question: If you believe it is unrelated, how do you account for the lack of reprogramming requests?

Answer: The Department complies fully with the Committee's reprogramming guidelines. If there is a need for any departure from the manner in which the funds were appropriated, the Department either submits a reprogramming to the Committee for approval or uses the limited flexibility provided under the authority provided by the Interior and Related Agencies Appropriations Subcommittees for the internal reprogramming of funds.

The Department has implemented reprogramming requests for the Energy Efficiency programs and this information has been provided to the Committee in the Department's Congressional base table. For example, in fiscal year 1997 the Office of Energy Efficiency and Renewable Energy (EERE) obtained DOE approval to internally reprogram a total of $253,000 from Energy Conservation prior year recovery funds to the Policy Management area to offset a shortfall for federal employee salaries. Subsequently, in fiscal year 1998 EERE obtained DOE approval to internally reprogram $345,000 from Energy Conservation prior year recovery funds to the Policy Management area to again offset a shortfall for federal employee salaries. In fiscal year 1999, the Department approved an internal reprogramming for $288,877 from Energy Conservation prior year recovery funding to provide financial support for six full-time equivalents for the President's Council on Sustainable Development.

Also, in fiscal year 1998, EERE worked very closely with the Committee to seek approval to use $6.9 million of Energy Efficiency research and development funds to support a broad range of crosscutting activities which directly supported and benefitted the Energy

Efficiency programs. While this was not accomplished through a reprogramming, it was implemented only after the EERE had obtained approval from Committee staff based on our providing detailed information on the work to be performed and the funding sources. Subsequently, in fiscal year 1999, EERE obtained approval from the Interior and Related Agencies Appropriations Subcommittee staff to use fiscal year 1998 unobligated carryover funds for crosscutting projects which benefit the Energy Efficiency mission requirements.

QUESTIONS SUBMITTED BY CONGRESSMAN NORMAN DICKS

Lewis and Clark Bicentennial

Question: Mr. Secretary, as you know, the Administration is beginning the planning for commemoration of the Lewis and Clark bicentennial. As you also know, the expedition has a significant historical relationship to the State of Washington, especially the Snake River and Columbia River from the Tri-Cities to the mouth of the Pacific Ocean. A couple of months ago, several federal agencies signed a Memorandum of Understanding (MOU) to pool their resources to develop a series of programs that will highlight the outstanding scientific, cultural, economic, and historical aspects of this expedition. The Department of Energy was not a signatory to that MOU. Given the fact the Department of Energy has a significant presence in the State of Washington, especially in the Tri-Cities along the Columbia River, I would like to encourage the Department to become a signatory. Do you see any reason why that can't take place?

Answer: Thank you for bringing this matter to my attention. To my knowledge, we were not aware of the Lewis and Clark Bicentennial Commemoration (2003-2006) Memorandum of Understanding at the time it was circulating for review among federal agencies in the fall of 1998.

The Lewis and Clark Expedition of 1803-1806 was a major event that shaped the boundaries and the very future of the United States. The expedition does have a significant historical relationship to the State of Washington. We support the mission of the National Lewis and Clark Bicentennial Council to commemorate that journey, rekindle its spirit of discovery, and acclaim the contributions and goodwill of the native people.

Energy Savings Performance Contracts

Question: One effort that is generating tremendous savings from a relatively small federal investment is the Federal Energy Management Program's energy savings performance contracts (ESPC) initiative. This endeavor is targeted to reducing consumption at our nation's largest single consumer of energy--the federal government's 500,000 buildings and structures. It is a partnership with the private sector that has been successful in leveraging huge amounts of private capital in a program that benefits all involved parties. Please bring the Committee up to date on the accomplishments of this effort, including actual savings compared with the goal of a 20 percent efficiency improvement by 2000, and estimated savings over the life of the program.

Answer: In fiscal year 1997, federal agencies reported data to DOE that indicated that the government had decreased energy consumption in its buildings and facilities by 17 percent since 1985 when measured in terms of British thermal units (Btu) per gross square foot of buildings space. The government has made great progress toward the Energy Policy Act's 20 percent reduction goal for 2000, but must maintain this momentum in the face of declining appropriations for direct funding of energy efficiency. Meeting the President's 30 percent reduction goal for 2005 presents an even greater challenge with limited direct appropriations. Depending upon assumptions relating to effectiveness of investment and the future trend of

government floor area, the range of investment needed to achieve the fiscal year 2005 goal of 30 percent is from $3.4 billion to $5 billion. The purpose of the Federal Energy Management Program's (FEMP) energy savings performance contracts (ESPC) initiative is to ensure the availability of the necessary capital for agency investments to attain these goals.

To date, FEMP has awarded indefinite-delivery, indefinite-quantity Super ESPCs accessible to all agencies and covering the entire United States. In addition, three nationwide technology-specific Super ESPCs were awarded for concentrating solar thermal, photovoltaics, and geothermal exchange technologies. These contracts represent over $5 billion in contract ceiling and more technology-specific awards are pending. Solicitations were issued within the last month for contracts focusing on solar ventilation pre-heat systems and integrated chiller projects. Savings to the government over the life of the Super ESPC program are estimated to br more than $10 billion.

Agencies use FEMP Super ESPCs by issuing delivery orders under the umbrella contracts. Six delivery orders have been awarded under the Western Regional Super ESPC, to four Federal agencies (U.S. Coast Guard, General Services Administration, Department of the Interior, and Department of Veterans Affairs), with potential savings of approximately $15 million over the life of the projects. These savings will begin to be realized once the technologies are installed over the next 3 to 12 months.

An additional 200 identifiable projects are in development with potential savings of $1.2 billion. Savings to the government will be about $600 million and will generally accrue to the government once the private sector contractors are paid.

Partnership Activities

Question: Energy saving performance contracts is just one example of a successful government/industry partnership. It is my understanding that in an effort to stretch scarce budget resources and improve management practices, the Department is expanding its partnership activities in several fields, including agriculture, oil and mining. Please give us some highlights of recent partnership developments in these areas, and indicate which ones you feel hold the greatest promise.

Answer: A unique, broad-based coalition from the agricultural, chemical, and forestry communities unveiled their new strategic vision, "Plant/Crop-based Renewable Resources 2020," and signed a compact with the U.S. Departments of Energy and Agriculture at the "Commodity Classic" trade show in February 1998. The Renewable Resources Vision 2020 lays out the ambitious goal of winning 10 percent of the market for chemical feedstocks from bio-based sources by 2020: a five-fold increase in a huge and growing market. In May our industry partners formed an Executive Steering Group to oversee the implementation of their vision. That group sponsored workshops in Indianapolis in late summer that laid the groundwork for their technology roadmap which was just published this month. With guidance from the Executive Steering Group, the Office of Industrial Technologies also just issued its first solicitation based on the Renewable Resources vision and roadmap. We anticipate awarding

contracts for the projects selected in late summer of 1999. Our coalition of partners continues to expand and remains excited about the potential for using home-grown crops, trees and agricultural wastes to reduce the use of imported oil, improve the environment, and increase economic opportunities in America's rural communities.

Petroleum refining as one of the largest, if not the largest energy consuming industry, provides unparalleled opportunities for energy efficiency improvements. It is an industry that prides itself on already optimizing its operations to realize peak efficiency. For example, it obtains most of its energy by burning by-product fuels and seeks maximum value for every part of the barrel by converting what was once sold as low margin residual fuel to lighter, more valuable transportation fuel products. Since the industry has traditionally used incremental improvements in its optimization process and is likely to continue to do so, major advances in efficiency, productivity and cost reduction are likely to come from a new, different approach, the Industries of the Future strategy. Using this strategy, the industry formulates a vision of its desired future, and a technology roadmap which prioritizes research needs to meet vision goals. The vision of the U.S. downstream petroleum industry has been formulated by members of the American Petroleum Institute (API) including some of the industry's most innovative technology specialists. Now in the final approval stages by API member companies, the industry sees itself as more energy efficient with safer, more reliable production facilities and improved environmental performance. With the release of the vision considered imminent, the industry is scheduling a workshop in mid-April to develop a technology roadmap which will establish a prioritized research agenda.

The contribution the mining industry has made to the economic health, well-being and security of our nation, throughout our history, is substantial. All of our 50 states produce non-fuel minerals and/or coal, and the minerals industry in the United States is a $39.5 billion industry which consumes about 3.2 percent of all industrial energy. The U.S. mining industry is working to increase its productivity in the face of stiff international competition. The mining industry has come together in the National Mining Association and has formed a positive partnership with the Department of Energy to make a technology investment in its future. The National Mining Association has published a Vision document and has released a "Mining Industry Roadmap for Crosscutting Technologies." This Roadmap will provide a basis for DOE solicitations aimed at technologies for energy efficiency improvements and emissions reductions. The Roadmap is also intended to provide a focus for public and private research and development across the entire mining industry.

Question: Although the United States is the world's largest consumer of energy, our conservation efforts have markedly slowed our rate of energy usage growth. Many other nations, and especially developing countries, have not been nearly as concerned with reducing energy use and slowing the growth of fossil fuel related emissions. What is the Department of Energy doing to help other countries address their energy consumption rates?

Answer: The Department of Energy is supporting a broad range of capacity building, technology diffusion, and private investment programs designed to assist developing countries to improve energy efficiency and to introduce renewable or low-carbon fuels, thereby reducing the

impact on the environment of energy production and use.

Through the interagency U.S. Country Studies and Joint Implementation Initiative programs, co-managed by DOE, the Administration has assisted most of the 55 countries in the Country Studies program to identify energy efficiency opportunities and strategies that would lead to reduced environmental effects. Some of the projects accepted into the U.S. Initiative on Joint Implementation involve increased efficiency in the production and use of energy. The Department has also undertaken a number of activities in developing countries aimed at reducing their energy consumption. For example, we have supported the Beijing Energy Efficiency Center and were involved in the establishment of the recently passed Chinese Energy Conservation Law.

The Department is now leading an internationally-supported Climate Technology Initiative. The 23 country initiative has as its mission to foster international cooperation for the accelerated development and diffusion of climate-friendly technologies and practices for all activities and all greenhouse gases. Among its many activities, this initiative has held workshops on technology diffusion in Asia and Africa. It has held training courses on energy efficiency in Japan and the United States. It maintains an Internet search engine dedicated to assisting developing countries in finding relevant technology information.

We have bilateral and multilateral agreements to support the transfer of U.S. energy technologies to numerous countries. These agreements form the core of the Department's relationships with these countries in the energy efficiency and renewable energy areas, as well as in the fossil energy and nuclear energy areas.

Question: Given the total high energy usage of the United States, how receptive have other countries--and especially developing nations--been to inducements to use less energy?

Answer: Developing countries realize that energy is a necessary ingredient of economic prosperity. They also realize that developed countries generally emit much more greenhouse gases per capita than developing countries. For this reason, developing countries are concerned that efforts by developed countries to obtain their commitment to reduce emissions will limit their ability to compete in world markets and prevent them from achieving the economic prosperity that they all are seeking.

The Administration and the Department of Energy are trying to eliminate these concerns by showing how commitments to constrain emissions growth need not halt the growth in energy use and, in fact, could help bolster future economic growth. The Department stresses technology development and transfer and flexible international mechanisms, such as emissions trading, as the keys to limiting global emissions of greenhouse gases, while also sustaining or improving economic performance.

QUESTIONS SUBMITTED BY CONGRESSMAN JOE SKEEN

Long Term Role of Domestic Oil Industry

Question: What do you see as the long term role of our domestic oil industry?

Answer: The U.S. economy and the quality of life that many Americans have come to enjoy rely in large measure on fossil fuels. In particular, oil is an important resource, supplying 97 percent of our transportation needs and comprising the raw material for numerous consumer products. Even with an increased emphasis on the development and use of other sources of energy such as natural gas, the demand for oil is projected to grow.

According to the Energy Information Administration, U.S. dependence on imported oil has increased to record levels during the last 25 years. Net imports provide about 50 percent of U.S. oil consumption. Oil imports are projected to increase to 60 percent, as the gap between domestic oil production and consumption widens. While domestic oil production is high cost when compared to other oil supply sources, the capability to produce oil domestically is an important aspect of our national security. Domestic production contributes to a diversity of supply sources, thereby reducing our dependence on oil imports from politically less stable countries and the vulnerability of the U.S. economy to oil supply disruptions. Through its history of technology innovation, the domestic oil industry also contributes to the United States' technology leadership in the global marketplace.

Oil Imports

Question: Has the Department of Energy identified a level of oil imports that it feels creates a threat to our national security? If not, shouldn't we do so?

Answer: It is difficult to identify a specific level of imports that would constitute a threat to our national security. Many factors affect national security, in addition to the level of imports. For example, a low level of imports all coming from only one country that is unstable may present more of a threat than a high level of imports coming from many countries. Other factors, such as the nation's dependence on oil relative to other energy sources, fuel switchability, and the level of the Strategic Petroleum Reserve, affect national security. A Section 232 investigation follows this method.

Under Section 232 of the Trade Expansion Act (19 U.S.C., S 1862), the Department of Commerce can investigate the effect on national security of importing articles, including imports of petroleum or refined products. There have been seven Section 232 investigations regarding oil imports conducted by Commerce, the most recent completed in December 1994. All have concluded the level of oil imports threatened to impair national security. The 1994 investigation found that while the level of imports threatened to impair national security, the Administration's energy policy adequately addresses this threat.

The situation the nation faces today is not significantly dissimilar to the situation faced in

1994, or at the time of the other previous investigations. The Administration is concerned about the situation of the domestic oil and gas industry. Maintaining a viable domestic oil and gas production industry is essential to our energy security. In order to maintain this domestic production capacity, the Administration has taken a number of steps. These steps are detailed in a report released by the Department on February 21,1999, titled, "America's Oil: Our Strategic Resource, Initiatives for Energy Security." The Department of Energy is committed to work within its existing authorities to improve national energy and economic security and decrease the growing U.S. dependence on imported oil.

Strategic Petroleum Reserve Royalty Oil In Kind Program

Question: Can you provide our committee with details on how the recently announced royalty in kind program to fill the Strategic Petroleum Reserve will be implemented?

Answer: We will implement the program in two phases. In order to start as quickly as possible, the Department of Interior will offer to convert the royalty payment obligations of a small number of the largest producers in the Gulf of Mexico to an obligation for Strategic Petroleum Reserve deliveries, for a total of 50,000 barrels of oil per day. We would expect to fill the Strategic Petroleum Reserve this way for about 3 months and to complete this first phase by August 1999. In the second phase, we will offer all Gulf of Mexico Outer Continental Shelf producers an opportunity to bid to deliver oil to the Strategic Petroleum Reserve in lieu of making royalty payments. This phase will run concurrently with the fill from the first phase, and if successful, we expect to receive 100,000 barrels per day of these bids for delivery from August 1999 until April 2000, at which time the Reserve will have accepted 28 million barrels of royalty in kind oil.

Government Impediments to the Petroleum Industry

Question: Has the Department of Energy identified impediments the government imposes on our oil and gas producers that impact the economics of our domestic industry? If not, could the DOE do so?

Answer: The Department has identified several ways that government activities could affect the economics of the domestic petroleum industry. In response to these findings, last month, DOE unveiled a series of actions being undertaken--some in concert with other agencies--to enhance the nation's energy security, preserve our domestic oil and gas production capacity, lower costs of production, and improve government decision making. Some of the specific steps we are taking in these areas include: accepting federal royalties in the form of oil used to add to the Strategic Petroleum Reserve; funding the development and deployment of advanced technologies to improve recovery from endangered reservoirs; supporting streamlined administrative processes, such as on-line permitting; and helping ensure that producers have full access to Small Business Administration loans.

Streamlining the Leasing Program

Question: Many in our domestic industry have called on the federal government to streamline its oil and gas leasing program. Could that help the industry?

Answer: A streamlined leasing process promises a wide range of benefits. The Department of Interior has had a streamlining process underway for the last few years that will continue. Both the Minerals Management Service, which governs Federal offshore operations, and the Bureau of Land Management, which regulates onshore Federal operations, have been working to implement a more streamlined and efficient process. This process will not only make it easier and less costly for the industry to operate on federal lands, it will also make it easier for the industry to protect the environment, thus improving environmental quality.

Administration Actions in Support of the Domestic Petroleum Industry

Question: In November you formed a DOE emergency task force to address the price crisis being faced by America's independent oil and natural gas producers. Nearly 50,000 U.S. oil and gas industry jobs have been lost since November 1997 and almost 200,000 wells have been permanently shut-in. I'm aware of the initiatives DOE has announced to help including re-filling the 28 million barrels of oil sold from the SPR by initiating a royalty-in-kind program and providing technical aid and efficient energy programs to domestic producers. I also understand you may be announcing a DOE/SBA effort to publicize existing loan guarantee programs for domestic producers and their capital providers. I congratulate you on these efforts but I'm afraid that much more is necessary. One can argue that America's oil producers are facing the same crisis as America's farmers and steel manufacturers. However, President Clinton and Vice President Gore haven't uttered a word about the serious economic and national security threats posed by this downturn. Why haven't we seen the White House, the Treasury Department and other agencies take a stronger and more visible position in support of far-reaching initiatives to help this struggling industry?

Answer: As the cabinet officer for energy issues, the Secretary of Energy is the Administration's main spokesperson for all energy issues. In this capacity, I have been very active in voicing our concerns about the effects of the current cycle of low oil prices on our vital petroleum industry.

It should be noted that this Administration has been working for the last 6 years to make changes to help the industry maintain and improve its position in highly competitive world oil markets. It has supported financial incentives, such as royalty relief for deepwater projects and marginal and heavy oil wells. The Energy Policy Act of 1992 amended the federal tax code by making the net income limitations on the use of percentage depletion allowances less restrictive and reducing preference items for alternative minimum tax calculations, and the Tax Payers Relief Act of 1997 eliminated the alternative minimum tax for small companies. The Administration is working to streamline and clarify regulations governing petroleum operations on federal lands to help reduce costs of operations at the same time it helps protect the environment. The Department of Energy has an active research and development program for

new oil and gas production technologies to help small operators deploy the technologies needed to stay competitive in world oil markets.

Last month, I unveiled a series of actions being undertaken by DOE (some in concert with other agencies) to enhance the nation's energy security, preserve our domestic oil and gas production capacity, lower costs of production, and improve government decision making. Some of the specific steps we are taking in these areas include: accepting federal royalties in the form of oil used to add to the Strategic Petroleum Reserve; funding the development and deployment of advanced technologies to improve recovery from endangered reservoirs; supporting streamlined administrative processes, such as on-line permitting; and helping ensure that producers have full access to Small Business Administration loans. Specifically, DOE has:

- Initiated a process with the Minerals Management Service to take 28 millions barrels of royalty oil "in kind" to add to the Strategic Petroleum Reserve,
- Issued a solicitation for new research and development proposals for technologies to lower costs of production,
- Set up a 2-day White House conference with industry to address the industry's concerns,
- Met with the Department of Interior to explore other initiatives that could be pursued on federal lands, and
- Met with the Small Business Administration to discuss means to make loans more readily available to small operators.

Question: When will the rest of the administration begin publicly discussing ways to avert the loss of significant amounts of America's onshore lower 48 states domestic oil production and the attendant risk to future natural gas development industry?

Answer: The Departments of Energy and the Interior have been actively discussing these issues on an ongoing basis, and the Administration has for the last 6 years been working effectively to make changes to help the industry. The issue of the health of our domestic petroleum industry and what can be done to help it is a top priority, and we will work to make sure these concerns are heard and fully considered in the ongoing development of Administration policy.

DOE Oil Emergency Task Force

Question: Again, referring to your task force. Do the members of the task force have other recommendations that will go further and provide substantial relief for the industry?

Answer: Yes, the task force has noted a number of specific actions that could go a long ways towards helping enhance our energy security and preserve domestic production capacity. These actions include the following:

- Taking a portion of federal royalties in the form of oil and storing this in the Strategic Petroleum Reserve (SPR),
- Making better use of excess SPR capacity by offering it for commercial storage,

- Making Small Business Administration loans more readily available to small operators,
- Suspension of production requirements for marginal oil properties on federal lands,
- Enlisting the assistance of the Petroleum Technology Transfer Council to assist operators in dealing with the effects of low prices,
- Developing and deploying more efficient production technologies to reduce costs of operations,
- Streamlining regulations governing operations on federal lands, including providing support for online permitting, and
- Improving coordination with other federal and state agencies.

Question: Has DOE been working with the Treasury Department on tax relief measures?

Answer: Yes, DOE and the Treasury Department have been sharing information on the tax relief proposals currently being considered by Congress. DOE would be willing to work with Congress as part of this process.

Federal Oil Royalty Rulemaking

Question: The Administration and DOE should be looking for ways to sustain this nation's strategic petroleum reserve--domestic production. For federal oil wells, we should be cutting royalties, not increasing royalties, to keep wells on line. The Administration seems intent on pushing ahead a rule that allegedly raises less than a $100 million, while increasing uncertainty, litigation, and other administrative burdens on a crippled industry. This effort continues while little appears to be occurring to restore domestic production and preserve billions of dollars for education. Due to low oil prices and shut-in production, the federal treasury is expected to lose significant revenues. What is the Administration doing about resolving this oil royalty rulemaking in a fair manner so we can move on to initiatives, such as reducing royalties, save billions for taxpayers, not millions?

Answer: The oil valuation rulemaking currently underway is under the authority of the Minerals Management Service (MMS). At the present time, that rulemaking cannot move forward until July 1999 when a Congressionally-imposed moratorium will expire. The MMS believed it had developed a proposal with considerable industry input that is fair to the industry, and will also ensure that the nation receives fair value for the oil produced on federal lands. In response to concerns expressed by members of Congress and our constituents, however, on March 12, 1999, MMS reopened the comment period for the oil valuation rule for 30 days and scheduled three workshops to discuss resolution of the remaining issues. The workshops were held in Houston, Texas, on March 24 in Albuquerque, New Mexico, on March 25 and in Washington, D.C., on April 6 and 7. Attendees included industry, press, State, and Department representatives. Discussions were productive in exploring the various proposals presented and in clarifying the issues. Once the comment period has closed, the Department will thoroughly consider all ideas discussed at the workshops and received in writing.

With respect to the issue of royalty relief for oil producers on federal lands, MMS, and the Bureau of Land Management already have a number of royalty relief mechanisms in place

and are considering others. These two agencies have reduced royalties for deep water projects, stripper oil properties onshore, heavy oil projects onshore, and can provide royalty relief for any needy projects on a case-by-case basis.

Impact of Low Oil Prices on Natural Gas Supply

Question: The Clinton Administration has consistently touted its global climate agenda--an agenda which most in Congress do not support. One of the key elements of that agenda is a substantial increase in domestic natural gas production. Has anyone in the Administration recognized the implications of the current oil price crisis on this natural gas agenda?

Answer: The Administration is aware that continued low oil prices could potentially affect future U.S. gas production by: reducing exploration and drilling activities, eroding the existing oil and gas infrastructure and a skilled workforce, and slowing the development and deployment of new technologies for improving productivity and environmental performance. Low oil prices pose a particular threat to smaller domestic companies. In the United States, the vast majority of oil and gas companies are smaller independent firms with less than 20 employees. These independents drill 85 percent of all new oil and gas wells in the country and produce 40 percent of the crude oil and 60 percent of the natural gas. Our nation's oil and gas production capacity are in many ways interrelated; for instance, one quarter of the Nation's current natural gas production comes from oil wells.

The National Petroleum Council, an advisory body to the Secretary of Energy, is conducting a study which may provide insight on the extent to which natural gas supply is affected by low oil prices. Specifically, the Council is reassessing its 1992 study on the "Potential of Natural Gas in the United States," taking into account the past 5 year's experience and evolving market conditions that the affect natural gas supply and demand in the United States to 2020 and beyond. This new assessment is expected to be completed by September 1999.

Question: Some of your predecessors viewed DOE's Fossil Energy programs, particularly the oil and gas program, as a source of additional funds for other programs. I am pleased to see that you have made a slight increase in Fossil Energy's oil research and development program. Can we count on DOE to continue fully funding this important program?

Answer: I fully support the Fossil Energy fiscal year 2000 budget request. I believe that the oil and gas program budget level is appropriate and balanced in light of current budget constraints.

Question: Will you fight to maintain this program when Congressional appropriators attempt to rob this program to fund more popular programs such as Energy Efficiency?

Answer: I support the levels in the Administration's budget request for both Fossil Energy and Energy Efficiency. These requests are appropriate and balanced in light of current budget constraints.

QUESTIONS SUBMITTED BY CONGRESSMAN CHARLES TAYLOR

Question: Last year, this subcommittee and our Senate counterpart created some controversy as a result of directing the Department of Energy (DOE) to "...consider the total energy consumed over the full fuel cycle, emissions and energy costs" and this language's relationship to the Department's appliance efficiency program. This language was ultimately addressed in the fiscal year 1999 Omnibus Appropriations act, which stated "With regard to energy measurement techniques, nothing in the House or Senate reports should be construed as an attempt to circumvent or contradict the National Appliance Efficiency Conservation Act or any other relevant statute." What actions are you taking as a result of last year's discussion and conference report language on this issue?

Answer: The Department has not had to take any actions as a result of the discussion on the need for consideration of the full fuel cycle in establishing appliance efficiency standards. The Department has always believed that in evaluating the impacts of appliance standards, one must consider the full range of impacts, including consumer and national impacts. In the analysis of consumer impacts, the Department considers the energy directly consumed by the product at the point of use. The measures of energy efficiency and energy use are, for example, all based on the energy consumed at the point of use and these are the measures of energy use that are used in the consumer analyses, for example, life-cycle-cost. The DOE believes this provides useful measures to consumers since it can be directly related to information readily available, such as utility bills. In examining the impacts of standards on the nation, however, the Department considers the total energy consumed over the fuel cycle as well as emissions and energy costs. In this manner, the analysis captures the total impact of the standards. Further, in accordance with the recommendations made to the Department by the Advisory Committee on Appliance Energy Efficiency Standards, the Department is committed to using the full range of consumer marginal energy rates in examining the impact of standards on consumer life-cycle-costs. Similarly, with stakeholder input, the Department intends to use a range of energy price forecasts and energy conversion factors and associated emission reductions based on generation displaced for the standards analysis.

Question: Do you share the view that the measurement of energy at its site rather than a full fuel cycle agrees with both Congressional intent and the authorizing statute?

Answer: The Department believes that in evaluating the impacts of appliance standards, one must consider the full range of impacts, including consumer and national impacts. Site energy consumption and costs should be considered when determining the life-cycle cost to the consumer and the full-fuel cycle when determining the impact on national energy use.

QUESTIONS SUBMITTED BY CONGRESSMAN GEORGE NETHERCUTT

Office of River Protection

Question: In fiscal year 1999's Defense Authorization bill, Congress created the Office of River Protection creating an office who's sole responsibility is managing all aspects of the Tank Waste Remediation at the Hanford Nuclear Reservation. There are about 55 million gallons of high level radioactive waste in 177 underground tanks located near the Columbia River, and 70 of them have already leaked waste into the soils. As I am sure you are well-aware Mr. Secretary, these leaks have begun to contaminate the soil beneath the tanks, and there have been some contaminants found in groundwater that is moving toward the Columbia River. The stretch that flows through the Hanford Nuclear Reservation is the last free flowing section of the river and is prime habitat for endangered and threatened salmon. Protecting this area from leaking contaminants is a priority and was reiterated last year in the fiscal year 1999 Defense Authorization Act.

Section 3139(b) of the Defense Authorization bill describes the management and operations of the office and creates a senior official position to manage the office and reporting to the Assistant Secretary of Energy for Environmental Management, who then reports to the Deputy Secretary of Energy. I understand that all three of these positions have yet to be filled. Will the lack of a manager for the Office of River Protection prohibit a final Integrated Management plan from being released?

Answer: A final version of the Office of River Protection Management Plan has been released and was transmitted to Congress on January 15, 1999. A selection has been made for the Manager of the Office of River Protection and is presently progressing through the administrative hiring process. A selection was also made for the Assistant Secretary of Energy for Environmental Management and the candidate is presently going through Congressional confirmation. Deputy Secretary T.J. Glauthier was recently confirmed by the Senate and sworn in on March 18, 1999.

BPA Subscription Process

Question: One of the challenges Bonneville faces is balancing the power needs of the region's residential and small farm customers with the needs of industrial customers that have historically purchased power from BPA. Over the years, this has not been an easy task for any Bonneville Administrator to handle, and I would like to first of all commend Judi Johansen for the job she's done so far in handling this issue.

I do have a couple of questions about the current rate case for subscribing to Bonneville's power for the 2001-2006 period. Is Bonneville able to balance its current legal requirements to provide power to preference customers (public utilities) and residential and small farm customers with the needs of those industrial customers with direct service contracts under this new rate case?

Answer: Bonneville's 1999 rate case will define the rates, terms, and conditions for the sale of federal power by Bonneville for the 2001-2006 period. Bonneville established policy guidelines for how it will sell power during that period in its Power Subscription Strategy, which the agency released in December. The Power Subscription Strategy is a result of 18 months of discussions between Bonneville, its customers, and interested parties, which had the goal of developing a strategy that would equitably spread the benefits of the Federal Columbia River system among regional interests in a new more competitive environment consistent with existing law. Bonneville's final Subscription Strategy accomplishes this goal by striking a balance among the many competing interests in the region. Under the Strategy, Bonneville will serve all public agency net firm load requirements placed on it. Bonneville's strategy is to provide approximately 1,800 average megawatts to residential and small farm consumers of investor-owned utilities--at least 1,000 average megawatts in power sales and an equivalent of up to 800 average megawatts in power or financial benefits. We expect to be able to serve all direct service industry loads the customers ask the agency to meet. Consequently, Bonneville expects its 1999 rate case to establish rates, terms, and conditions that reflect the balance achieved in its Subscription Strategy.

Question: Has Bonneville explored best and worst market scenarios for this current rate case and how will these scenarios affect the ability of current BPA customers to sign up for the 2001-2006 period?

Answer: Bonneville and the region have looked at the factors that affect the market price for alternative supplies of power and how they will affect Bonneville's ability to competitively price its power supply. All forecasts show the market price for power rising after 2001. Taking the forecasts into account, Bonneville expects to be able to offer its customers a very competitively priced product for the 2001 to 2006 period and anticipates being fully subscribed. In order to provide high assurance that Bonneville's product will be competitively priced, Bonneville has pledged to minimize rate impacts on Pacific Northwest power and transmission customers and hopes to avoid rate increases through a creative and business-like response to markets. Consistent with its statutes, Bonneville will sell first and most of its power to its public entity customers and then the residential and small farm customers of its investor-owned utility customers. Any power remaining will be sold to Bonneville's direct-service industrial customers.

QUESTIONS SUBMITTED BY REPRESENTATIVE JACK KINGSTON

Question: I understand that EPA is releasing a proposed rule that would reduce the amount of sulfur in gasoline from 330 parts per million to 30 parts per million by the year 2004. What is the status of technology available to assist the refining industry to meet these new requirements?

Answer: The refining industry has some compliance options in existing technologies and is expected to have other options from new technologies now being demonstrated and developed. For example, because of their reliance on Alaska North Slope oil, which is a relatively high sulfur crude oil, refineries in California made investment decisions over the last 20 years which have resulted in hydrocracking and desulfurization configurations that now produce gasoline averaging 30 parts per million of sulfur. Some refineries outside of California may make similar technology decisions, depending on their strategies for crude oil purchases and their ability to make the significant capital investments.

Most of the rest of the nation's refineries rely on fluid catalytic crackers to produce the blendstocks they use in gasoline production. These refineries are expected to need new desulfurization units for their blendstocks. In its Tier II Gasoline Study, EPA discussed two technologies which have been newly developed for this purpose. The new technologies are projected to have a lower cost per gallon for desulfurization than the approach used in California. Both technologies have one unit in use or in the later stages of implementation. We expect other vendors will develop technology options as a result of the forthcoming requirement. All technology approaches will face challenges in accomplishing the design, permitting, and construction of the necessary facilities by 2004.

Question: Can you give a cost estimate for the development of this technology?

Answer: Refiners are expected to have options regarding the technology they use to reduce gasoline sulfur. Their choices would affect cost estimates. The EPA and the refining industry have both developed cost estimates for gasoline desulfurization, but DOE's analysis indicates that these estimates reflect different assumptions. EPA estimated in their Tier II Gasoline Sulfur Study that the cost of gasoline desulfurization, including both the capital cost and the operating cost of the newly developed technologies, will be less than 2 cents per gallon nationwide. The refining industry estimated, using different assumptions about adoption of the new technologies and current technologies, that the cost would be 5 to 8 cents per gallon nationwide. DOE believes that two factors which explain these different estimates are assumptions about the refiner's choice of technology--the gasoline blendstock approach versus the larger refinery input approach--and the pace at which refining industry construction and operating engineers gain experience with the new technologies and achieve cost efficiencies. The DOE is preparing its own analyses of cost as part of its assessment of the new proposal. The costs to individual refineries will depend upon the age, size, and location of the refinery, as well as the type of technology chosen.

Question: What environmental consequences may be associated with this new technology?

Answer: The gasoline desulfurization requirements will lead to the installation of new processing units at almost every refinery outside of California. States will be responsible for assessing whether the new units will result in increases in overall refinery emissions and trigger New Source Review requirements. If the new units appear to lead to "significant" emissions increases, the refineries and states will have to develop solutions before construction and operating permits are issued. In addition, the use of sulfur recovery units already in place at refineries will increase and some refineries may need to add sulfur recovery or handling capacity.

Question: In expectation of these new rules, what is the DOE doing to support or encourage the development of related emerging technologies such as biodesulferization?

Answer: The Office of Fossil Energy has five projects addressing this subject area. The five projects for fiscal years 1999 and 2000 totaled $1.3 million. This work is all at the exploratory stage of development.

THURSDAY, MARCH 18, 1999.

U.S. DEPARTMENT OF ENERGY

WITNESSES

ROBERT W. GEE, ACTING ASSISTANT SECRETARY FOR FOSSIL ENERGY

ROBERT S. KRIPOWICZ, PRINCIPAL DEPUTY ASSISTANT SECRETARY FOR FOSSIL ENERGY

Mr. REGULA. We will get the Committee started. I think the other members will be here shortly. We are pleased to welcome you, Mr. Gee and also, of course, our old friend, Bob Kripowicz. You feel right at home, here, I assume?

Mr. KRIPOWICZ. Yes, sir, I hope so.

Mr. REGULA. Your full statement will be made a part of the record, and we will appreciate your summarization of the highlights.

OPENING REMARKS

Mr. GEE. Thank you, Mr. Chairman.

I am pleased to be here today and very pleased to have Mr. Bob Kripowicz, who is also well-known to this subcommittee, as you know, seated beside me.

I am going to rely on Mr. Kripowicz to fill in many details during our discussion this morning.

My formal statement describes the content of our fiscal year 2000 proposal. Let me take just a few minutes to describe the reasons behind our budget request.

Mr. Chairman, some of your colleagues often ask, why support fossil fuel research and development? The coal, oil and natural gas industries are mature industries and should not need Federal support. Let me answer that question in two ways.

First, much of the research we are proposing is research to achieve two national benefits: a cleaner environment and a growing economy. Americans are being asked to pay more for cleaner air, safer drinking water, and healthier living conditions.

The research proposed in this budget, however, can substantially reduce the burden of future environmental costs by literally billions of dollars each year while sustaining environmental progress. That is good for consumers, good for the economy and good for the environment.

For example, we have research in this budget that will significantly reduce the costs of meeting new smog and ozone controls that 22 eastern and midwestern states must implement in the coming years under the Clean Air Act amendments.

We have research that will help tell us where microscopic airborne particles, called PM 2.5, are being emitted and how to control

them. We have research that will give us new ways to remove mercury and other air toxics from the exhaust of power plants if that becomes necessary in the future.

These are programs that can benefit our environment and our economy over the next 10 years. But a major portion of our budget looks beyond that time frame to the next wave of powerplants that will be built in 2015, 2020 and beyond. We believe technology——

Mr. REGULA. Excuse me, what will those plants be fueled with?

Mr. GEE. They would be fueled with a variety of feedstocks: coal, natural gas.

Mr. REGULA. The same mix we have now?

Mr. GEE. Yes. The same mix of fossil fuels.

Mr. REGULA. They would be additional capacity with perhaps more energy efficient boilers?

Mr. GEE. They would be much more energy efficient. We are targeting in our research efforts to significantly reduce or even potentially eliminate the traditional pollutants that we control today.

Mr. REGULA. So, a lot of your research is designed to make sure that the new generation of power plants are more environmentally friendly?

Mr. GEE. Correct. And fuel efficient.

Mr. REGULA. Yes.

Mr. GEE. To make them competitive.

Mr. REGULA. Thank you.

Mr. GEE. As I said, the next wave of power plants will be built to meet the challenges of 2015, 2020 and beyond. We believe technologies are in sight that can make those plants nearly pollution free, as I have just indicated. That means not just reducing the release of airborne pollutants but virtually eliminating them.

VISION 21

This is our Vision 21 Power Plant Program. It is perhaps the best example of research that is too long range and too high risk for industry to do on its own, yet, the payoffs could be tremendous. The Vision 21 concept is applicable to a wide variety of fuels, as I have indicated, Mr. Chairman, but is perhaps most relevant to coal.

Coal is one of the true measures of this nation's energy and economic strength. It generates 56 percent of our electricity. It is our lowest cost fuel. And one of the primary reasons why the United States has the lowest cost of electricity of any free market economy.

Mr. REGULA. Would you anticipate that that percentage would remain fairly constant in the foreseeable future?

Mr. GEE. Our estimates show, and I think the estimates of our Energy Information Administration show that coal will continue to have a significant share as a fuel feed stock for electric power generation. It will still range at or near 55 percent by our calculation.

Mr. REGULA. In the foreseeable future?

Mr. GEE. For up through 2020 at least, yes, over the next two decades.

Mr. REGULA. Thank you.

Mr. GEE. There is no reason why with the right technology we cannot continue to rely on coal and at the same time improve the quality of our environment. We have solid evidence on our side that

demonstrates what research and development can do. Let me give you two examples.

Twenty years ago, there was basically only one way to remove large amounts of air pollutants from coal. That is by installing expensive, sometimes unreliable, scrubbers. Today, because of public and private research and development, scrubber costs are way down and reliability is way up.

The government helped move these advancements forward and they have saved consumers more than $40 billion in the last 20 years. Or consider that 10 years ago devices to control nitrogen oxide (NO_X) pollutants cost nearly $3,000 per ton of NO_X to install and operate.

Today, because of government and industry research and development and the Clean Coal Technology Program, low NO_X burners cost only $200 per ton, a savings of more than tenfold. As a result, nearly three-quarters of U.S. power plants will have them installed in the next few years.

The track record is good, Mr. Chairman, and you can see evidence of it in the hundreds of fluidized bed combusters operating throughout the world; in the state-of-the-art coal gasification power plants, like the Tampa Project, all of which can trace their roots to the Fossil Fuel Federal Energy Program.

So, what about the truly long range, the next 30 or 50 years? What if the world community ultimately decides that it must address another major environmental issue, climate change? Plants like Vision 21 will help. They will be more efficient. In fact, nearly twice as efficient as today's powerplants and that will reduce the release of greenhouse gases. But if we have to go beyond that, we will need other options. We are exploring one of those options in this budget.

We are asking for a slight increase in funding for research into carbon sequestration. This is potentially revolutionary research, Mr. Chairman. Theoretically, it may be possible to recapture and permanently dispose of all the carbon dioxide released by energy systems. Sequestration could not only become a major tool for reducing carbon emissions, it may be essential for continued large-scale use of fossil fuels.

We also recognize that when we talk about the environment we must also talk about natural gas. It is the cleanest of our fossil fuels. Demand for gas could increase by a third over the next 10 years. To meet this demand at reasonable prices it is important to diversify our domestic gas supplies. There are projects in this budget to develop tools that will find and produce gas in formations that are deeper, denser and more difficult to produce than those being tapped today.

There is also an effort to look again beyond the near term to gas supplies that may be needed 20 or 30 years into the future. One of those future gas supplies may be methane hydrates. We have asked for a moderate increase in hydrates funding because, among other reasons, it is a resource that could be 5,000 times larger than all of the world's current gas reserves.

I said there were two reasons why the federal government is involved in fossil fuel programs. One is to produce national benefits, such as a cleaner environment and a vigorous economy; the other

is because there is clearly a strategic interest. The strategic value of crude oil is one of the main reasons we are requesting funding for oil technology research.

We import more than half of our oil today. If prices stay low, that figure could be 65 or possibly 70 percent in the next 20 years. The key reason why much of our domestic industry is in difficulty today is because our largest oil reservoirs have been producing for 40 or 50 years or more.

That does not mean we are running out of oil. In fact, for every barrel we produce in this country there are still two barrels in the ground. It does mean, however, that producing domestic oil is becoming more expensive. It often costs more to pump it from the ground than the oil brings on the market.

Mr. REGULA. Can those two barrels be recovered with proper technology?

Mr. GEE. We believe that a significant share of those two barrels is still recoverable through advances in technology. Yes, Mr. Chairman.

Research and development can help lower those costs, but the companies that can most afford research and development are no longer concentrating here, in the United States. They have moved to more lucrative prospects overseas.

Smaller, independent producers now drill 85 percent of the wells in our country. Most of them have less than 20 employees and for many of these companies and the oil they produce it is the Federal Fossil Energy Research and Development Program that will make the difference between continued production or shutting-in those wells.

Finally, the strategic value of oil is the reason why we maintain support for the Strategic Petroleum Reserve in this budget. As members are aware, we have announced initiatives in the last few weeks to add oil to the reserve without having to ask this Committee for additional appropriations.

In summary, we are recommending continued support for our fossil energy budget because fossil fuels supply 85 percent of our nation's energy and that percentage is likely to grow in the coming years. A commitment to fossil fuel technology and a commitment to maintaining our Strategic Petroleum Reserve mean that this nation can continue to benefit from fossil fuels at the same time we continue to improve the environment, grow the economy and enhance our energy security.

Thank you for giving me the opportunity to present the reasoning behind our budget request, Mr. Chairman. With Mr. Kripowicz's assistance I will be pleased to answer any questions you may have.

[The statement of Robert W. Gee follows:]

Statement of Robert W. Gee
Acting Assistant Secretary for Fossil Energy
U.S. Department of Energy
to the
Subcommittee on Interior and Related Agencies
Committee on Appropriations
U.S. House of Representatives
March 18, 1999

Introduction

America's economic engine remains the envy of the world. The major fuels powering our Nation's economic growth are fossil fuels – coal, petroleum and natural gas – which supply more than 85 percent of the energy consumed in the United States. The relatively low cost of these fuels and, particularly for coal and natural gas, their domestic abundance are largely responsible for the vitality of our economy. Despite their dominance, however, if these fuels are to continue to fuel economic growth, several challenges must be met:

Petroleum – Over the past two years, crude oil prices have dropped by more than 40%. Adjusted for inflation, the price of oil is at its lowest value since the Great Depression. Our domestic oil industry is strategically important, yet net oil imports now account for a record 49% of consumption and could reach 65% by 2020 or possibly 70% if low prices persist. For many U.S. operators, it now costs more to produce a barrel of oil than the producer receives in revenue and, as a result, 140,000 U.S. oil wells have been shut in since November 1997. Daily domestic production has declined by 360,000 barrels. As many as 41,000 oil industry jobs – almost 1 out of every 10 – have been lost or are threatened. Particularly hard hit are the smaller independent companies that are now the mainstays of the domestic petroleum industry.

A combination of actions will be necessary to sustain production from some of our most endangered oil fields, especially from our

What is Possible...
if we sustain a commitment to Fossil Energy programs in the FY 2000 budget:

- $5 billion per year in environmental cost savings at U.S. power plants through 2010, and $7 billion per year after 2010;
- $16 billion in cumulative cost savings for oil and gas environmental compliance by 2010;
- $5 to $15 billion per year in savings in the cost of electricity through at least 2030;
- A 60% efficient coal plant that emits 45% less CO2 by 2010, and the potential for a revolutionary "zero emissions" plant in the post-2010 time frame;
- The world's most advanced gas turbine with 60% efficiencies and ultra-low emissions by 2002;
- A multi-megawatt fuel cell with near zero emissions of priority pollutants by 2003;
- Almost 2 trillion cubic feet/year of *additional* natural gas production by 2010;
- More than 1,000,000 barrels per day of additional domestic oil production, primarily from smaller independent producers, by 2010; and
- A Strategic Petroleum Reserve capable for the next 25 years of supplying up to 4.2 million barrels/day of emergency crude oil.

2

A Track Record of Results

The goals in our FY 2000 Fossil Energy program are admittedly ambitious, and many of the concepts, while achievable, remain high risk. Yet, over the last two decades - and especially within the 1990s - our program has established a solid track record of results. Technology successes, such as those listed below, give us confidence that we can achieve the objectives we have set in the FY 2000 program:

Clean Power from Coal

- *Fluidized bed combustors* - the "Commercial Success Story of the Last Decade," according to *Power* magazine - were pioneered in cost-shared R&D with the U.S. boiler industry. Today, hundreds of industrial versions of this clean-burning coal technology are in operation, and from experience gained in the Clean Coal Technology Program, the technology is moving into utility use with more than $6.2 billion in domestic sales and $2.8 billion in sales overseas.

- *Low-NOx burners at 1/10th the cost* - A decade ago, the only technologies to reduce emissions of smog- and acid rain-forming nitrogen oxide (NOx) pollutants cost $3000 per ton of NOx removed. Today, DOE's R&D and Clean Coal Technology efforts have helped lower costs to $200 per ton, and more than half of U.S. boilers now employ these low-polluting burners.

- *The "next generation" of power plants* - Until the 1990s, power plants had basically one way to generate power from coal: burn it. Now, DOE's R&D has helped pioneer a new -- and significantly cleaner and more efficient -- way to use coal to generate electricity. By gasifying coal, then using the gases to fuel a gas-turbine/steam-turbine combined cycle, a coal power plant can achieve the same low pollutant standards as a natural gas plant. Three pioneering "integrated gasification combined cycle" plants have been built in the U.S.

Finding and Producing More Oil and Gas

- *Keeping endangered reservoirs flowing* - The age and high cost to produce many known U.S. oil reservoirs put them at risk of being prematurely abandoned, even though they still contain large quantities of oil. DOE's "Reservoir Class Field Demonstration Program" has shown producers how to keep many of these fields in operation by using state-of-the-art technologies. As a result, more than 500 million barrels of oil that would have been abandoned are now being produced.

- *A change in thinking about natural gas* - DOE R&D showed that natural gas doesn't drain uniformly through reservoirs to wells. Producers can now use 3-D seismic and other advanced technologies to locate gas that otherwise would have been missed. By 2000, this new way of developing gas fields will produce 2.6 trillion cubic feet of gas that would have been bypassed.

- *Smaller "footprints"* - A smaller wellpad is an environmentally better wellpad. DOE helped pioneer advances in horizontal, "slimhole," and other techniques that have reduced the size of wellpads. If R&D had stopped in 1985, today's drill pads in the U.S. would have covered an *additional* 17,000 acres of land, an area roughly the size of nearly 13,000 football fields.

430,000 marginal wells. But one of the most significant actions will be to develop lower-cost, more effective exploration and production tools. Improved oil field technologies can mean the difference between continued production and premature shut-in of wells.

Natural Gas – The Nation's natural gas industry is facing the likelihood of a 33% increase in demand over the next decade. Even without possible climate change actions, U.S. gas consumption, now at 22 trillion cubic feet (TCF) per year, could grow to nearly 35 TCF by 2020 if economic expansion is strong. Yet, questions have been raised as to whether the industry can meet the steady growth in demand at reasonable prices. The current price situation in the oil patch can influence the future supply of gas, since much of the Nation's gas is produced by the same companies that produce oil.

In many existing fields, natural gas has been bypassed by conventional exploration and production technologies. Better imaging and other detection technologies, new drilling and stimulation tools, and more effective production approaches can increase the flow of natural gas from these known fields. Improved, lower cost technologies for removing impurities can upgrade the more than one-quarter of our domestic gas supply that is below pipeline quality. New gas-to-liquids conversion methods can turn currently unmarketable gas resources into future supplies of valuable energy. Beyond 2015, natural gas from traditional resources may begin to taper off. The Nation will likely have to turn increasingly to non-traditional gas sources locked in even more complex, harder-to-produce formations, such as deep gas and, in the longer-term, possibly methane hydrates.

Coal – Although coal is the most abundant and lowest cost energy form in the United States and in many other countries, it is also a major source of both traditional pollutants and greenhouse gases. Particularly in the electric power generation sector, where coal supplies 56% of the Nation's electricity, improvements in environmental performance and generating efficiency will be necessary if the U.S. is to continue to benefit from the economic advantages of coal. Improved technology has already allowed the Nation's coal burning power plants to cut annual sulfur dioxide emissions by more than half from 1980 levels and to reduce nitrogen oxide emissions by more than 40% since 1990. Yet, further technological improvements will be necessary to meet the Government's new smog and fine particulate standards and possibly, new requirements for air toxic emissions. Land constraints will increase the need to reduce solid wastes. Pressures will increase to find economically acceptable ways to reduce both emissions and atmospheric concentrations of greenhouse gases.

A combination of ultra-high efficiency technologies and low-cost carbon capture and disposal technologies could make it possible to significantly reduce, if not eliminate, these environmental concerns over coal use and permit the Nation to continue to prosper from coal's economic benefits. Technology now appears within reach that can double today's power plant efficiencies, virtually eliminate air emissions, release no net carbon dioxide, and still produce power that is low enough in cost to be competitive with the best of today's pulverized coal plants. It may also be possible to use coal in an integrated "energy complex" to produce high-grade, low-polluting

transportation fuels that, coupled with improve engine technology, could double fuel combustion efficiency and further reduce air emissions from the transportation industry.

To help the U.S. energy industry take advantage of these opportunities, the Administration's FY2000 Fossil Energy budget proposes the following funding levels:

Fossil Energy Budget (Dollars in thousands)	FY 1998 Approp.	FY 1999 Approp.	FY 2000 Request	Change (FY99-00)
Coal				
- Advanced Clean, Efficient Power Systems	$72,420	87,676	84,737	-2,939
- Advanced Clean Fuels	15,559	15,528	14,500	-1,028
- Advanced Research & Technology Development	17,312	19,939	23,195	+3,256
Subtotal, Coal	105,291	123,143	122,432	-711
Natural Gas				
- Natural Gas Supply	25,430	26,507	25,857	-650
- Advanced Gas Turbines	43,875	44,500	41,808	-2,692
- Fuel Cells	39,156	44,200	37,649	-6,551
Subtotal, Natural Gas	108,461	115,207	105,314	-9,893
Petroleum				
- Oil Technology	47,708	48,616	50,166	+1,550
Other Fossil Energy R&D and Activities				
- Cooperative Research and Development	5,686	6,836	5,836	-1,000
- Advanced Metallurgical Processes	4,965	5,000	5,000	–
- Environmental Restoration	12,935	11,000	10,000	-1,000
- Fossil Fuels Regulatory Programs	2,173	2,173	2,173	–
Subtotal, Other	25,759	25,009	23,009	-2,000
R&D Headquarters/Field Management and Plant & Capital Equipment	69,362	72,081	74,079	+1,998
Prior Year Offsets				
- From Fossil Energy R&D Program	-64	0	-11,000	-11,000
Subtotal, Fossil Energy R&D	[illegible]	[illegible]	[illegible]	[illegible]
Clean Coal Technology Demonstration Program	**-101,000**	**-40,000**	**-246,000**	**-206,000**
Strategic Petroleum Reserve				
- Facilities Management	207,500	160,120	159,000	-1,120
- Petroleum Logistics	0	0	5,000	+5,000
Subtotal, Strategic Petroleum Reserve	207,500	160,120	164,000	+3,880
Naval Petroleum & Oil Shale Reserves				
- Operations and Management	107,000	14,000	0	-14,000
- Elk Hills School Lands Fund	0	36,000	36,000	–
Alternative Fuels Production (Interest)	-1,500	-1,300	-1,000	+300
TOTAL, FOSSIL ENERGY PROGRAM	[illegible]	[illegible]	[illegible]	[illegible]

Advanced Clean, Efficient Power Technologies

The low cost of America's abundant coal supplies is one of the reasons why the United States benefits from the lowest electricity rates of any free market industrialized country. Yet, a host of new environmental requirements could add significantly to the future cost of generating electricity from coal and, in turn, to costs borne by the nation's ratepayers. Better technology can significantly reduce these costs while continuing to protect the environment.

In the post-2010 era, a new wave of power plant construction and modernization is also likely as the nation's economy continues to grow. Advanced technology is in sight that can enable this new fleet of power stations to virtually eliminate all harmful emissions, including greenhouse gases, while continuing to be fueled by coal. After a year of "roadmapping," stakeholder input, and preliminary studies, the FY2000 program moves into the early stages of engineering designs and development of key modules for this new fleet of central and distributed power facilities – a concept we have termed the *Vision 21 PowerPlex*.

Our Performance Goals for Power Technologies R&D in FY2000 Include:

- Begin construction of an advanced low-emission boiler power facility that will achieve superior environmental performance and enhanced efficiencies,
- Verify high temperature air furnace for use in indirectly fired cycles and potentially in *Vision 21* power plants,
- Begin providing to regulatory agencies and industry detailed, high quality data on the "fingerprints" of microscopic airborne particles (PM2.5) as well as cost-effective emission control technologies.

Elements of the Fossil Energy program, such as fuel-flexible gasifiers, advanced turbines, fuel cells, fuel cell/turbine hybrids, advanced steam bottoming cycles, and innovative liquid synthesis processes, form the nucleus of the *Vision 21* concept. The goal is a 60%-efficient power plant with the flexibility to produce power along with premium fuels and chemicals, incorporate industrial process heat generation, and boost overall thermal efficiencies to as high as 85% or more, reducing carbon emissions by more than 62%. Equipped with carbon capture devices, *Vision 21* units would be virtually "zero discharge" plants. "Enabling technologies," such as new membranes for separating oxygen and hydrogen, high-temperature heat exchangers, new gas stream purification systems, etc., are being developed as part of the *Vision 21* effort. Critical research, ranging from high-strength materials to advanced computer models that provide "virtual demonstrations" of future power generation and fuel conversion processes, is included in the FY2000 budget to undergird the *Vision 21* concept.

In parallel with this effort, the FY2000 budget includes R&D on other innovative combustion and environmental technologies. Construction of a new low emission boiler system will begin, and R&D support will continue for several first-of-a-kind Clean Coal Technology projects.

Another high-priority effort in the FY2000 program is expanded research on carbon sequestration. Sequestration – advanced methods for capturing and permanently disposing of greenhouse gases – may be the single most important research initiative for the future of coal and

6

other fossil fuels. *It is the only option for addressing climate change that is completely compatible with the current energy infrastructure.* DOE's Fossil Energy Program is approaching carbon sequestration as a research challenge, a way to provide future options should climate change response measures be enacted in the future.

The possibilities are enormous – if low cost, practicable sequestration can be developed, it would be theoretically possible to sequester *all* human-caused carbon emissions (7 billion tons currently emitted; 10-14 billion tons per year projected for 2050). Yet, there remain major uncertainties that can be answered only with exploratory research. Particularly challenging is DOE's aggressive cost target of $10 per ton of carbon, which if achieved, *could save the United States hundreds of billions of dollars compared to current alternatives.*

The major budget categories of the Advanced Clean, Efficient Power Systems Program are:

Low Emission Boiler System ***FY1999 - $15.00 million*** ***FY2000 - $3.0 million***

- The FY2000 budget completes funding for the final development of this advanced pulverized coal combustion technology with DB Riley Inc. scheduled to begin construction of an 80-megawatt proof-of-concept unit in Illinois.

Indirectly Fired Cycle ***FY1999 - $ 6.50 million*** ***FY2000 - $7.01 million***

- Foster Wheeler Corp. and United Technologies will continue development of this innovative concept that incorporates a high temperature advanced furnace to heat a clean working fluid (air) to drive a gas turbine and when integrated with fuel cells is a candidate *Vision 21* concept.

Integrated Gasification Combined Cycle ***FY1999 - $32.39 million*** ***FY2000 - $38.66 million***

- The FY2000 focus will be on developing *Vision 21*-tailored coal gasification techniques that can handle multiple fuel forms and produce gases for power generation and fuels/chemical synthesis. With much of the work taking place at the Wilsonville (AL) Power Systems Development Facility and the University of North Dakota Energy & Environmental Research Center, R&D will be carried out to reduce the formation of air toxic pollutants, improve gas separation and cleaning technologies, and integrate coal gasification with possible carbon sequestration approaches. Also, fuel cell development in support of *Vision 21* will be conducted.

Pressurized Fluidized Bed Combustion ***FY1999 - $14.64 million*** ***FY2000 - $12.20 million***

- This advanced process, which incorporates sulfur capture and nitrogen oxide reduction in a high-efficiency coal burning process, is envisioned as a core combustion technology for *Vision 21.* In FY2000, primarily at the Wilsonville (AL) Power Systems Development Facility, pilot scale tests will be conducted of "2nd generation" concepts to provide R&D data for ongoing Clean Coal Technology Demonstration projects. Studies will also be carried out on advanced hot gas filter materials and sulfur sorbents that release less carbon dioxide, and test firings will be conducted on fuels that mix coal with carbon neutral feedstocks to reduce CO2 emissions.

Advanced Research and Environmental Technology ***FY1999 - $19.15 million*** ***FY2000 - $28.86 million***

- The major increase in the FY2000 budget is to support an expanded exploratory research program for low-cost carbon sequestration concepts (FY1999 - $5.89 million; FY2000 - $9.13 million). In FY2000, several innovative concepts will be ready for the first stages of engineering scale development and geologic field tests. Also, R&D will continue on more effective ways to retrofit existing power plants to reduce nitrogen oxides (to meet new Clean Air standards) and to control the release of microscopic particles (PM2.5) and air toxics. Waste management R&D will also continue to ensure that any solid wastes from advanced coal systems can be safely disposed of or converted into marketable products.

Advanced Clean Fuels Research

Liquid hydrocarbons will continue to be important transportation fuels well into the next century, both in developed nations and increasingly, in developing countries. The U.S. transportation sector relies on liquid fuels for 97% of its fuel requirements. Not only are future liquid fuels an energy security concern, the use of traditional petroleum-based fuels in the transportation sector accounts for a large portion of urban air pollution, including 81% of carbon monoxide, 49% of nitrogen oxides, and 37% of volatile organic compounds. The transportation fleet also contributes 1/3rd of U.S. carbon dioxide emissions and could account for 40% of these emissions by 2020. Developing innovative processes to produce coal-based transportation fuels, chemicals and carbon products provides an insurance policy against future supply problems, and the potential to achieve high combustion efficiencies and ultra-low fuel emissions from coal-based alternative liquids can play an important role in meeting 21st century environmental goals.

New technologies that enhance the precombustion characteristics of coal can help reduce the release of hazardouse air pollutants and convert unused carbon now discarded from coal operations into future energy feedstocks. Advanced technologies can also create new options for producing high-value carbon products from coal for structural materials and high-purity carbon for 21st century industries. The major elements of the FY2000 Advanced Clean Fuels Research Program are:

Coal Preparation ***FY1999 - $5.10 million*** ***FY2000 - $4.00 million***

- In FY2000 this program completes its transition to a broader-based R&D effort to produce solid fuels and feedstocks. As in prior years, R&D will continue on ways to pretreat coal to remove impurities that can form air toxics and other pollutants, but work will also extend into new areas including the preparation of combined coal/biomass/waste fuels, the recovery of previously discarded carbon raw materials from waste piles and ponds, and the development of new technologies for producing premium carbon and coal-based industrial products.

Direct and Indirect Liquefaction ***FY1999 - $8.65 million*** ***FY2000 - $8.30 million***

- Restructuring of these programs will continue in FY2000 with increased emphasis on advanced, low cost indirect liquefaction that convert coal-derived gases into clean diesel fuels (no sulfur or aromatics) and premium chemicals. A new effort will study ways to integrate coal-to-liquids processing with electric power generation using existing infrastructure. R&D will also be continued, at a reduced level, on advanced concepts for converting coal directly into liquid fuels.

Advanced Research and Environmental Technology ***FY1999 - $1.78 million*** ***FY2000 - $2.20 million***

- This activity in FY2000 will support several exploratory concepts, such as research to identify liquid fuels that might be suitable as chemical storage agents for hydrogen and could be used in fuel cell powered vehicles. Molecular modeling efforts that simulate the growth of carbon structuresand the interactions between moledules will be carried out to help design better energy and industrial catalysts.

Advanced Research and Technology Development

The Advanced Research and Technology Development (AR&TD) program funds two types of activities: 1) long-range research and studies that provide the technological foundation for future *coal-related* systems and 2) more generic research, analyses, and technical support that can be applied to all fossil energy technologies.

Coal-Related Advanced Research ***FY1999 - $9.16 million*** ***FY2000 - $11.45 million***

- Having completed its transition in FY1999 from a primary emphasis on basic coal combustion research to an expanded effort to identify and resolve critical barriers to the *Vision 21* concept, this effort in FY2000 will include research on intriguing concepts for CO2 capture such as artificially stimulating mineral growth and the use of advanced computing concepts to create "virtual demonstrations" of *Vision 21* processes. Research will also be done to apply advanced biological techniques to solve key challenges in producing clean, coal-based fuels. In FY2000 pilot scale efforts will continue in the conversion of coal-derived gases into ethanol, the removal of nitrogen oxides using biofiltration techniques, and biological CO2 sequestration.

  This funding also includes support for the University Coal Research Program (FY1999 - $2.9 million; FY2000 - $3.0 million) which provides grants to student-professor research teams to carry out fundamental coal science and technology studies.

Fossil Energy-Wide Crosscutting R&D ***FY 1999 - $10.78 million*** ***FY2000 - $11.75 million***

- FY2000 funding will support the development of high-performance materials that can be used for structural elements of future *Vision 21* plants or other energy facilities and for advanced gas separation and particulate control filters. Research will also continue on better instrumentation and diagnostics that can lead to improved controls and sensors for advanced energy processes.

  Support for fossil energy research at Historically Black Colleges and Universities and other minority institutions is also part of this budget category (FY 1999 - $900,000; FY2000 - $1.0 million). Also included is support for crosscutting environmental, technical and economic analyses and international programs.

Natural Gas Supply Research

In all cases in the Energy Information Administration's recent *Annual Energy Outlook - 1999*, natural gas consumption continues its steep rise, reaching nearly 30 trillion cubic feet (TCF) per year by 2020 in the low economic growth case to almost 35 trillion cubic feet per year if economic growth is high (current consumption is 22 trillion cubic feet per year). Should

emission targets be enacted for greenhouse gases, the upward trend in gas demand could be even more pronounced in the post-2010 timeframe, perhaps pushing gas demand to 40 trillion cubic feet or more per year.

At the same time, however, natural gas reserves-to-production ratios have been declining in North America since 1986. New fields are smaller than their predecessors, and improved technologies deplete them faster than in the past. Proven reserves in the Gulf of Mexico, which account for almost one-quarter of U.S. gas production, continue to fall.

Our Performance Goals for Natural Gas Supply R&D in FY2000 Include:

- *Demonstrate the cost-effective productivity of horizontal wells in fractured, low permeability formations for which vertical wells are uneconomic, increasing recovery of the approximately 5,000 TCF currently uneconomic in the Greater Green River Basin of Wyoming, Colorado, and Utah.*

The challenge for the coming century will be to develop an adequate gas supply resource base and the necessary infrastructure to meet a 30 TCF-plus market and at reasonable prices. Future gas supplies will likely come increasingly from today's immature and undiscovered resources. As gas demand grows in the next two decades and conventional gas resources continue to decline, gas from deeper and denser formations and potentially, gas from hydrates could become important new sources of this clean-burning, versatile fuel.

New technology is the key to unlocking these future resources; however, R&D expenditures by industry and the Gas Research Institute, now transitioning to an all-voluntary funding basis, are declining. The federal natural gas research program is now the only national effort providing a consistent level of support for gas supply technologies. Without these R&D investments in supply side technologies, the nation's gas production may not keep pace with the growing demand for gas, especially for power generation.

In FY2000, the major elements of this program will include:

Exploration and Production ***FY1999 - $13.43 million*** ***FY2000 - $14.93 million***

- The majority of R&D in this category continues efforts begun in prior years to 1) develop and field test new technologies, such as hydraulic pulse and underbalanced drilling, that are faster and less damaging to gas-bearing formations, 2) study advanced fluid fracturing techniques using the unique facilities and expertise at the University of Oklahoma, 3) improve techniques for imaging and predicting gas production in naturally fractured reservoirs, 4) study the potential for deep gas production in priority basins, 5) support industry-national laboratory partnerships in new gas technologies, 6) examine ways to revitalize production from gas stripper wells, and 7) continue work to produce missed or bypassed ("secondary") gas from formations in the Appalachian Basin and the Gulf Coast offshore.

  One area where increased funding is requested is for the study of methane hydrates (FY1999 - $500,000; FY2000 - $1.99 million). Methane hydrates — natural gas molecules encased in ice crystals — is a potentially vast, global gas resource, with resource estimates that are more than 5000 times the world's currently recoverable gas reserves. After a year of developing a multi-agency methane

hydrates program strategy, the FY2000 budget would increase funding for DOE's share of research in such areas as resource characterization, production, and safety and seafloor stability.

Delivery and Storage ***FY1999 - $1.00 million*** ***FY2000 - $1.00 million***

- As gas demand grows, reliable, cost-effective storage of natural gas will remain key to customer confidence in gas supplies. Depleted oil and gas reservoirs are used for interim storage of natural gas primarily to meet seasonal increases in gas demand during the winter. Each reservoir has characteristics that determine how fast gas can be injected and withdrawn and the total amount of gas that can be effectively stored. R&D is necessary to improve storage methodologies and technologies to prevent a loss of deliverability from these fields and to better remediate lost deliverability when it occurs. In FY2000, DOE will continue its R&D efforts with industry to develop advanced storage technologies, novel and improved fracture simulation techniques and better remediation efforts to offset today's annual losses in deliverability. Work will also continue to improve gas metering (such as ultrasonic metering) that can provide real time, automated data on pipeline gas flow.

Emerging Processing Technology Applications ***FY1999 - $9.06 million*** ***FY2000 - $7.31 million***

- Development of a lower cost method to convert natural gas to liquid fuels remains a high priority in this budget area with R&D in FY2000 continuing in the 3rd year of an 8-year program to develop ceramic membrane technology for the conversion process. If this R&D is successful, gas-to-liquid costs could be reduced by 25-35% into a range of $18-22 per barrel, improving prospects for applying the technology to prolong the life of the Trans-Alaska Pipeline and increase gas production from remote locations in the Gulf of Mexico.

R&D also will continue in FY2000 to improve upgrading technologies to reduce polluting contaminants that make as much as 1/3rd of the nation's gas resources unsuitable for pipeline transport unless the impurities are removed. An important aspect of this research also applies to the often-ignored gas released from coal mining. Support is also provided in this category for the International Center for Gas Technologies.

Effective Environmental Protection ***FY1999 - $3.02 million*** ***FY2000 - $2.62 million***

- In recent years, environmental concerns have led to numerous Federal and State regulations being imposed on oil and gas operations in the United States. The increasingly higher costs of environmental compliance — now amounting to $8 billion a year for the oil and gas industry, including refining — places a substantial economic burden on producers, particularly in times of low oil and gas prices. DOE's efforts in FY2000 will be to continue efforts with Federal and State agencies to reduce overlapping and sometimes outdated regulations that can add unnecessary costs, and to develop lower-cost environmental technologies — for example, to treat and dispose of naturally occurring radioactive material (NORM) from oil and gas operations.

Advanced Gas Turbines

The United States now has in sight an advanced gas turbine that will surpass any other utility-scale turbine offered in the world. The FY2000 budget represents the last *major* funding year (FY2001, at a lower level, will be the final funding year) in an 8-year program to produce working prototypes of a natural gas turbine for baseload power generation that will be 10% more efficient and will produce less than half the nitrogen oxides of current gas turbine systems.

The likely benefits of this program are enormous. The Energy Information Administration estimates that gas turbines will satisfy as much as 81 percent of new electric power demands in the U.S. by the year 2010. More than 70 percent of all new power generation equipment installed in the U.S. after the year 2000 is forecast to be derived from the DOE Advanced Turbine Systems program. Because the advanced turbine systems will produce lower cost electricity than currently available technology (around 2.6 cents per kilowatt-hour), U.S. consumers stand to save an estimated $7 billion in electricity costs in the 2002 to 2015 timeframe because of our investment in this "next generation" turbine system. Billions more will be saved in reduced environmental compliance costs due to the low emission characteristics of these new systems.

Our Performance Goals for Advanced Gas Turbines in FY2000 Include:

- *Complete validation testing for critical components of advanced utility-scale turbines with over 60% efficiency and ultra-low Nox emissions. Initiate advanced gas turbine full speed, no load testing as the last step before demonstration by industry.*

In FY2000, the Advanced Turbine Systems (ATS) Program will include:

Major Systems Development ***FY1999 - $35.49million*** ***FY2000 - $32.59 million***

- In FY2000 the two turbine developers that entered into the final phase of the utility scale advanced turbine program will complete ATS component/subsystem testing and initiate engine manufacturing. One manufacturer will begin the first full-speed, no-load testing, while both developers will begin work on integrating the turbine technology into a fully-capable power plant configuration. The ATS power plant demonstration will be privately financed and will require no cost-sharing from DOE.

Technology Base Research ***FY1999 - $8.57 million*** ***FY2000 - $8.00 million***

- Support work will continue at universities and in-house to assist in the final stages of development and testing of the prototype units (above), but emphasis will begin to shift to evaluating future advancements in turbine systems.

Vision 21 Support ***FY1999 - $0*** ***FY2000 - $0.80 million***

- With advanced turbines figuring prominently in the *Vision 21* concept, work will begin in FY2000 to study ways to enhance the fuel flexibility of future advanced turbine systems, including their adaptability to coal-based technologies.

Fuel Cells

Cost reductions and performance improvements continue to be the major emphasis of DOE's program to develop stationary power fuel cells. If costs can be brought into the $1,000-$1,200 per kilowatt range, the inherently clean, highly efficient performance of fuel cells should make them attractive options, particularly for distributed power applications. Because they rely on an electrochemical reaction — much like a battery — rather than on combustion to generate power and heat, fuel cells will be ideally suited for urban, environmentally constrained regions. At the

same time, because they can be packaged as virtually self-contained, natural gas-powered power units, they may also be attractive in remote settings far from the power grid.

The Office of Fossil Energy's fuel cell efforts in FY2000 will continue to include the development of both molten carbonate and solid oxide technologies. For molten carbonate technology, commercial prototype systems, which reconfigure the cells stacks and power processing modules into more compact, lower cost packages, are being readied for testing in FY1999 and FY2000.

Our Performance Goals for Fuel Cells in FY2000 Include:

- *Begin testing first market prototype solid oxide fuel cell in a commercial setting for combined heat and power applications;*
- *Deliver a 250-kilowatt fuel cell/turbine hybrid power plant to verify possible market entry design for distributed power generation and, in the longer term, provide a building block for Vision 21 systems.*

The solid oxide effort continues through progressively larger prototype units with FY2000 representing the 3rd year of a planned 5-year development effort. In FY1999, a 250-kilowatt fuel cell/microturbine test will be initiated, and testing will continue into FY2000. A particular emphasis is to develop pressurized ceramic tube technology. Development to this point has concentrated on atmospheric pressure systems for combined heat and power; pressurized systems would be more suitable for fuel cell/turbine hybrid configurations for distributed generation.

In FY2000, the major elements of the Fossil Energy fuel cell program will include:

System Development/Vision 21 ***FY1999 - $41.00 million*** ***FY2000 - $36.45 million***

- Performance improvements and cost reduction R&D will continue with two molten carbonate system developers and one solid oxide system developer. (Fuel cells development for *Vision 21* is also being conducted under the Integrated Gasification Combined Cycle Program in the Coal R&D program.)

Advanced Research ***FY1999 - $1.20 million*** ***FY2000 - $1.20 million***

- Research will continue on ways to lower fuel cell costs, including studies of new high performance, lower cost ceramic designs and processes. Fundamental work will also be conducted to address crosscutting materials and design issues, and early-stage development of thin film advanced cell processing techniques will continue.

Petroleum

The United States is a mature oil-producing region; domestic production is more difficult and more expensive than overseas production. For every barrel of crude oil produced in this country, two barrels have been left behind, but much of this oil is beyond the recovery capabilities of current technology. Even more oil remains locked in deep, complex reservoirs or in environmentally sensitive areas where high costs of operation and environmental compliance place U.S. producers at a competitive disadvantage with foreign producers.

At the same time, America's appetite for petroleum continues to grow. The *1999 Annual Energy Outlook*, produced by the Energy Information Administration, forecasts that the demand for petroleum products, mainly for transportation, will grow faster than any other aspect of primary energy consumption through at least the year 2020.

Even with advances in oil technology, U.S. oil production could decline from the current 6.4 million barrels per day to 4.9 million barrels per day by 2020, and oil imports could contribute more than $135 billion to the Nation's trade deficit by 2020 as a result.

These trends could be even more pronounced if oil prices remain low — as current projections indicate — and private sector R&D declines even more precipitously than it has. A major reason for this is the fundamental change that has occurred in the make-up of the domestic petroleum industry. The days of "Big Oil" dominating the U.S. petroleum sector are over. Today, independent producers drill 85% of new wells and produce almost half the Nation's oil and nearly two-thirds of our natural gas. These small producers, who typically employ less than 20 people, lack the capital to support major R&D projects, and few — especially in the current price climate — are likely to take on the risks of applying advanced, unproven technologies without some type of risk-sharing and technical assistance. For many, the DOE R&D program, with its emphasis on technology transfer, may be the only way they can acquire the tools and techniques to survive.

Our Performance Goals for Petroleum R&D in FY2000 Include:

- *Completing demonstration and transfer of 7 advanced secondary and tertiary recovery technologies, adding 92 million barrels of reserves, increasing the number of economic wells and reducing abandonment rates.*
- *Completing field testing and monitoring of two technologies for downhole separation of oil and water, resulting in a significant reduction in produced water and potential increase in oil production per well.*

The Petroleum program takes on added emphasis given the current state of the domestic oil industry. In FY2000, this program will include:

Recovery Field Demonstrations ***FY1999 - $7.80 million*** ***FY2000 - $7.80 million***

- Because of the jointly funded, government-industry *Reservoir Class Field Demonstration Program*, the United States has more than 500 million barrels of crude oil either being produced or now added to its recoverable reserves that likely would have been abandoned otherwise. In FY2000, DOE will try to further capitalize on the prospects for additional oil production by providing a second year of funding in a program to "revisit" geologic classes of reservoirs that still contain large amounts of recoverable oil but face prospects of near-term abandonment, particularly with oil prices at their current levels. The funding (FY1999: $7.1 million; FY2000: $6.6 million) will provide up to 35% of the costs of 10-20 projects to be selected in FY1999. To further assist small producers, the FY2000 budget also would target funding (FY1999: $660,000; FY2000: $600,000) to help companies with less than 20 employees solve specific field production problems or adopt improved reservoir management practices.

The major increase in funding in this category in FY2000 is for a new effort to help slow the decline in domestic oil production by undertaking a targeted, aggressive regional technology transfer program — an initiative to make direct contact with as many producers as possible to provide them with improved technology in ways they can most easily used. Termed PUMP — for *Preferred Petroleum Upstream Management Practices* — this initiative will enlist the Nation's leading oil technology experts in a coordinated effort with States and expert technology providers to convey to producers and States 1) "best practices" guidelines, 2) problem solving and regulatory streamlining approaches for environmental compliance, such as on-line permitting, and 3) improved tools and techniques through enhanced "face-to-face" technology transfer. (FY1999 - $0; FY2000 - $0.5 million.)

Exploration and Production
Supporting Research ***FY1999 - $30.80 million*** ***FY2000 - $31.55 million***

- This effort in FY2000 will continue to develop the advanced imaging, drilling and production tools that can find and recover oil in deeper, more geologically complex, or smaller and more compartmentalized reservoirs. Work will continue in advanced seismic technology, much of it carried out by industry and national laboratory development teams and a major part of it focused on the potentially large new discoveries that could be made below the salt formations of the Gulf of Mexico. Work will also continue to improve advanced diagnostic systems, including those that use magnetic resonance imaging and computer assisted tomography to help locate oil-bearing structures. Studies will also continue to portray the flow patterns of oil and to predict patterns of oil-bearing rock distribution, both horizontally and vertically, to help guide "infill" drilling (between existing wells). Basin-wide analyses are also an important aspect of this program with activities in FY2000 continuing to examine hydrocarbon creation and flow patterns in South Central Appalachia formations and the onshore Gulf of Mexico formations in Alabama and Mississippi.

  Chemical, gas flooding, and other enhanced recovery processes that produce oil otherwise left behind by conventional processes will continue to be developed along with computer modeling techniques that can simulate the likely production improvements possible with these technologies. Microbial processes will continue to be developed that extract surfactant (detergent-like) and other oil recovery agents from waste products, thereby minimizing disposal requirements and costs.

  This portion of the budget also includes DOE support of the industry-led Petroleum Technology Transfer Council and its 10 regional centers.

Effective Environmental Protection ***FY1999 - $10.02 million*** ***FY2000 - $10.82 million***

- This effort, combined with similar activity in the Natural Gas program, has as its objective the continued protection of the environment while decreasing the costs of environmental compliance. Included in this program are efforts to streamline regulations, especially where Federal, State, and local requirements overlap, to provide scientifically-sound risk assessments to assist the Environmental Protection Agency and states make cost-effective decisions regarding the release of particulate matter and other pollutants, and to develop lower cost compliance technologies especially for produced water treatment, air emissions controls, remediation, and oil field waste management.

Other Fossil Energy Research and Supporting Activities

In addition to its primary R&D efforts, the Office of Fossil Energy sponsors other types of research and supporting programs including:

Cooperative Research and Development ***FY1999 - $6.84 million*** ***FY2000 - $5.84 million***

- This funding provides the federal share of support (up to 50%) for jointly sponsored research programs at the University of North Dakota Energy and Environmental Research Center and the Western Research Institute.

Advanced Metallurgical Processes ***FY1999 - $5.00 million*** ***FY2000 - $5.00 million***

- This program at the Albany (OR) Research Center address life cycle studies of materials production, disposal and recycling, including a key supporting role in the *Vision 21* program

Environmental Restoration ***FY1999 - $11.00 million*** ***FY2000 - $10.00 million***

- Funding assures the protection of workers, the public and the environment at DOE-Fossil Energy facilities and supports environmental remediation activities at several locations of former Fossil Energy R&D projects.

Fuels Programs ***FY1999 - $2.17 million*** ***FY2000 - $2.17 million***

- This budget supports regulatory functions still required of DOE to review natural gas imports and exports, exports of electricity, and the construction and operation of electric transmission lines which cross U.S. international borders, along with other regulatory responsibilities.

Program Direction and Management Support ***FY1999 - $69.48 million*** ***FY2000 - $72.08 million***

- This category provides funding for salaries, benefits, and overhead expenses for managing the Fossil Energy program at headquarters, the Federal Energy Technology Center, and the National Petroleum Technology Office.

Plant and Capital Equipment ***FY1999 - $2.60 million*** ***FY2000 - $2.00 million***

- Funding for the DOE field sites to repair, improve, or refurbish buildings.

Clean Coal Technology Demonstration Program

The Clean Coal Technology Program has established the technological foundation for a generation of cleaner and higher efficiency coal processes in the 21st century. Several of the first-of-a-kind demonstrations have provided a preview of technologies that could one day be enhanced and integrated into the *Vision 21* fleet of new coal-based energy facilities.

For example, three gasification combined cycle projects — in Tampa, FL; Terre Haute, IN; and Reno, NV — have provided valuable data on using gasification as a core technology for super-clean, enhanced efficiency power generation. A Clean Coal Technology Project in Kingsport, TN, is demonstrating an improved way to convert coal-derived gases into liquid methanol, and

could serve as an early model for an "energyplex" process that would produce liquid fuels and chemicals, in addition to process heat and electrical power.

The 40 advanced projects that make up the Clean Coal Technology Program have a total cost of $5.7 billion, of which DOE has committed $1.9 billion. With all projects selected and all the necessary funding appropriated, the budget for the Clean Coal Technology Program depends largely on the pace of the remaining projects that require final funding allocations for construction and operation.

Our Performance Goals for the Clean Coal Technology Program in FY2000 Include:

- *Completing demonstration of the 3rd integrated gasification combined cycle project (Pinon Pine in Reno, NV) using air-blown gasification and hot gas cleanup for improved efficiency, and*
- *Continued operation of another integrated gasification combined cycle plant (Polk Plant near Tampa, FL) to establish the engineering foundation for a new generation of 60% efficient power plants.*

Currently, of the 40 projects in the program:

- 23 have completed test operations and have either been concluded, moved into commercially-financed operations, or are in the final stages of reporting results to the department;
- 7 projects are in design, permitting, or other pre-construction activities;
- 1 project is in construction, and
- 9 projects are in operation, generating test data.

In FY2000, only two projects are expected to have outstanding obligation commitments — the Clean Energy Demonstration Project (an integrated gasification combined cycle and fuel cell project now planned for southern Illinois) and the CPICOR combined steelmaking and power generation project planned for Geneva, Utah. DOE's current projections are that neither of these two projects will require funding allotments from previous appropriations in FY2000, and consequently, $246 million can be deferred into future years.

Strategic Petroleum Reserve

The Strategic Petroleum Reserve — the largest single inventory of emergency crude oil in the world — provides the United States with an effective response to interruptions in the supply of crude oil. The Reserve currently holds just over 561 million barrels of high-quality crude oil, an amount that is slightly lower than in recent years due to the 1998 exchange of the Reserve's Maya oil for a lighter crude that is suitable for a greater number of U.S. refineries (adjustments because of quality differences resulted in 8.5 million barrels of oil being received in return for 11 million barrels of Maya crude).

An inventory of 561 million barrels provides about 60 days of net import protection, but by FY2000 because of rising imports, this is projected to decline to about 55 days.

The Strategic Petroleum Reserve also has just over 100 million barrels of unfilled cavern capacity in its salt dome storage sites along the Texas and Louisiana Gulf Coasts. Recently, in this period of excess oil supplies and historically low oil prices, DOE has intensified efforts to examine options that would take advantage of current market conditions to enhance our energy security by stockpiling additional oil in the Reserve.

Our Performance Goals for the Strategic Petroleum Reserve in FY2000 Include:

- *Complete the Life Extension Program to ensure the long-term reliability, effectiveness, and operational readiness of the Reserve for the next 25 years, and*
- *Ensuring that the calculated site availability of 95% or greater with drawdown capability of 4.2 million barrels per day for a sustained 90-day period within 15 days of Presidental notice are achieved.*

The Administration is pursuing options to add oil to the Reserve without requiring additional appropriations. On February 11, 1999, Energy Secretary Richardson announced plans to refill the Reserve with 28 million barrels of federal royalty oil from production in the Central Gulf of Mexico. The following week, on February 17, the Department announced plans to offer up to 70 million barrels of unfilled cavern space for lease with the lease fees paid in crude oil. Also, recent commercial leases of underused SPR pipelines have been signed with payments to be made in the form of crude oil.

In FY2000, the Strategic Petroleum Reserve budget will be made up of:

Facilities ***FY1999 - $145.12 million*** ***FY2000 - $144.00 million***

- This funding is for operating the four primary storage sites in the Reserve, including maintenance, security, drawdown and readiness testing. The department will complete the brine fill and decommissioning of the geologically unstable Weeks Island site in 1999 with 98% of the site's 72 million barrels of crude oil successfully removed and relocated to other sites. The FY2000 budget also includes the final allocation of funding for the complex-wide refurbishment and modernization program which has effectively extended the useful life of the Strategic Petroleum Reserve for at least another 25 years.

Management ***FY1999 - $15.00 million*** ***FY2000 - $15.00 million***

- This provides salaries and benefits for the 135 federal employees that oversee management and operations of the Reserve, along with funding for analytical support for policy decisions, the Reserve's program to pursue commercial leasing of underutilized distribution and cavern facilities, the oversight of geotechnical stability and mine integrity (at the Weeks Island site), and necessary environment, safety and health corrective actions.

Petroleum Logistics ***FY1999 - $0*** ***FY2000 - $5.00 million***

- This funding augments the current account balance of $33 million which has been set aside to initiate drawdown activities (for example, to pay for terminalling throughput fees, electrical power for operating drawdown pumps, and increased manpower requirements) in the event of an energy supply emergency.

18

Naval Petroleum and Oil Shale Reserves

With the successful divestiture of the government's interest in the Elk Hills Naval Petroleum Reserve in California and the transfer of jurisdiction over the Naval Oil Shale Reserves in Colorado, the properties remaining under DOE authorities include:

- Naval Oil Shale Reserve No. 2, an undeveloped property in Uintah County, UT;
- Naval Petroleum Reserve No. 2 (Buena Vista Hills) in Kern County, CA, a producing oil field in which DOE collects lease royalties of about $1.5 million annually; and
- Naval Petroleum Reserve No. 3 (Teapot Dome) in Natrona County, WY, a producing stripper well field operated directly by the department and expected to produce about 350 barrels of oil per day in FY2000.

DOE also owns and operates the Rocky Mountain Oilfield Testing Center (RMOTC), established in 1995 at the Naval Petroleum Reserve Number 3. During calendar year 2001, plans are to privatize this facility. RMOTC currently serves as a training center and a facility for demonstrating, testing, and evaluating new technologies and equipment in an operating oil field environment. In addition to appropriations, funding for the center is also received through cost-sharing arrangements with industry, Federal, State and local governments, Native American tribes, trade associations, and others. Efforts will increase at RMOTC in FY1999 and FY2000 to demonstrate its potential as a profitable operation and to generate interest from the private sector in the privatization initiative.

The FY2000 budget for the Naval Petroleum and Oil Shale Reserves includes:

Naval Petroleum Reserves ***FY1999 - $14.00 million*** ***FY2000 - $0***

- In FY2000, approximately $21.24 million will be necessary for final contract closeouts and settlement of equity shares at the Elk Hills Naval Petroleum Reserve, well plugging and environmental restoration necessary for the eventual abandonment of the Naval Petroleum Reserve No. 3, privatization of the Rocky Mountain Oilfield Testing Center (on the NPR-3 site), and funding for 39 federal staff. No new funding is required for the Naval Petroleum and Oil Shale Reserves. The Department will use unobligated prior year balances in the Naval Petroleum and Oil Sale Reserves account to fund these requirements, and therefore requires no new appropriations in FY2000.

Elk Hills Schools Lands Fund ***FY1999 - $36.00 million*** ***FY2000 - $36.00 million***

- The FY2000 budget provides for the 2nd of seven installments to be paid by the Federal Government to the State of California under terms of a Settlement Agreement that set aside nine percent of the net proceeds from the sale of the Elk Hills field for the State. DOE has deposited $298 million in a contingent fund. Additional funds may be added when final ownership equity shares with Chevron are established and all of the costs associated with the Elk Hills sale are determined. Under the Settlement Agreement, the first five installments are for $36 million each year, and any remaining balance is to be divided between two installments to be paid in FY2004 and FY2005.

This concludes my prepared statement, Mr. Chairman. I will be pleased to answer any questions the Subcommittee may have.

U.S. Department of Energy
Office of Public Affairs
Washington, D.C. 20585
202/586-3640

BIOGRAPHY

ROBERT W. GEE
Acting Assistant Secretary for Fossil Energy

On December 31, 1998, Secretary of Energy Bill Richardson named Robert W. Gee as Acting Assistant Secretary for Fossil Energy of the United States Department of Energy. The White House nominated Mr. Gee to this position on January 29, 1999.

As Acting Assistant Secretary, Mr. Gee oversees the national research program to develop and demonstrate advanced natural gas, petroleum, and coal technologies. He also oversees the Clean Coal Technology Demonstration Program, a multi-billion dollar government -industry partnership that is constructing and testing environmentally superior, first-of-a-kind coal-based energy facilities in the United States.

Mr. Gee also has the responsibility for overseeing the operation of the Strategic Petroleum Reserve, the Nation's emergency crude oil stockpile, and the Naval Petroleum and Oil Shale Reserves, which include government-owned, commercially-producing oil fields in Wyoming.

During the pendency of Senate confirmation to become Assistant Secretary for Fossil Energy, Mr. Gee continues to hold the position of Assistant Secretary for Policy and International Affairs at the Department of Energy. President Bill Clinton nominated Mr. Gee to that position on August 1, 1997. Following confirmation by the U.S. Senate, Mr. Gee was sworn into office on October 29, 1997. In that capacity he has played a leading role in the Administration's efforts to advance the production of oil and gas and the development of multiple pipelines in the Caspian Sea region of Central Asia. He also was responsible for overseeing the timely completion of the Department's 1998 Comprehensive National Energy Strategy, representing the Administration's framework for current and future initiatives regarding our country's energy policy.

Mr. Gee was appointed to the Public Utility Commission of Texas by Governor Ann Richards, serving in that position from October 1991 until August 1997. He served as Chairman of the Commission from 1991 through 1995.

As a state utility commissioner, Mr. Gee was active in the National Association of Regulatory Utility Commissioners, chairing both its Committee on Electricity and Ad Hoc Committee on Electric Industry Restructuring. He testified numerous times before the United States Congress, and has been interviewed by various news media, including the Wall Street Journal, National Journal and CNBC television on the subject of utility mergers and acquisitions.

Mr. Gee currently is a Senior Fellow with the American Leadership Forum, and a Fellow with the Texas Bar Foundation. He has been a member of the Harvard Electricity Policy Group at the Kennedy School of Government. Other past affiliations include serving as a trustee for St. Edward's University in Austin, the Advisory Council of the Center for Public Utilities of New Mexico State University, and the Board of Advisors of The Texas Center for Public Policy Dispute Resolution of the University of Texas School of Law. He has also served on the Dallas Regional Panel of the President's Commission on White House Fellowships.

Mr. Gee practiced public utility regulatory law for 15 years in the public and private sectors, with experience in gas pipeline, electric, and transportation public utilities. He has served as an Attorney Advisor at the Interstate Commerce Commission and as a Supervisory Trial Attorney at the Federal Energy Regulatory Commission.

He has held the position of General Attorney at Tenneco Oil Company, and was Of Counsel to the law firm of Akin, Gump, Strauss, Hauer & Feld.

Mr. Gee received a Bachelor of Arts Degree in government with honors from the University of Texas and a Doctor of Jurisprudence degree from the University of Texas School of Law.

A native Houstonian, Mr. Gee is the first Asian Pacific American to become an Assistant Secretary at the Department of Energy and is the first Texan of Asian ancestry ever to serve as Chairman of a major Texas regulatory board. He is married to Dr. Pauline Wong Gee.

U.S. Department of Energy
Office of Public Affairs
Washington, D.C. 20585
202/586-3640

BIOGRAPHY

ROBERT S. KRIPOWICZ
Principal Deputy Assistant Secretary for Fossil Energy

Robert S. Kripowicz was appointed U.S. DOE Principal Deputy Assistant Secretary for Fossil Energy on March 4, 1996. As Principal Deputy Assistant Secretary he is assisting the Assistant Secretary for Fossil Energy with the internal development of a working budget and the external negotiations with appropriators in Congress. Mr. Kripowicz will also help the Assistant Secretary with strategic planning. One of his main duties will be to build a unified focus for the Fossil Energy coal, oil and natural gas programs for the long term.

Mr. Kripowicz previously was appointed Acting Deputy Assistant Secretary for House Liaison in April 1995. As House Liaison he was responsible for coordinating all interactions with members and staff of the House of Representatives on departmental programs. He was also responsible for establishing legislative and budget strategies and for coordination of hearings, floor, and conference action on all legislation in the House affecting the Department.

Previously, he was appointed Deputy Assistant Secretary for Building Technologies in January 1995. The Office of Building Technologies, within the Office of Energy Efficiency and Renewable Energy, is responsible for Department of Energy (DOE) programs to increase the energy efficiency of the nation's residential and commercial heating and cooling systems; solar systems; high efficiency lighting, windows, and equipment; and advanced building materials.

Prior to joining DOE, Mr. Kripowicz was on the staff of the House Interior and Related Agencies Subcommittee of the Committee on Appropriations. He was responsible for appropriations for DOE programs in energy efficiency, fossil energy, clean coal technology, and Strategic and Naval Petroleum Reserve activities, as well as Interior Department energy, scientific, and land management programs. He also served as Staff Director of the House Energy Subcommittee of the Committee on Science and Technology, responsible for energy efficiency, renewables, fossil energy, high energy and nuclear physics, and basic science programs at DOE.

Mr. Kriopowicz began his government career in the early 1970's in program analysis and budgeting activities at the Atomic Energy and Nuclear Energy Commissions and the Energy Research and Development Administration.

In the private sector, Mr. Kripowicz managed research and development programs at Mechanical Technology Inc.; construction contracts for Consolidated Edison of New York; and financial planning and budgeting at NUMEC, a nuclear subsidiary of ARCO, and was a chemist for Dupont. He also served as an officer in the United States Army. Mr. Kripowicz received his B.S. in chemistry (cum laude) from Lafayette College in 1963, and his M.B.A. from the University of Pittsburgh in 1970. A native of Butler, Pennsylvania, Mr. Kripowicz currently resides in Frederick, Maryland.

March 1997

Mr. REGULA. Thank you.

I have several and I am sure Mr. Moran does.

First of all, you mentioned the Tampa project. I visited that site. Is that working out well?

Mr. GEE. It is going very well.

Mr. REGULA. It looked like the state-of-the-art to me.

Mr. GEE. It definitely is state-of-the-art in terms of the integrated gasification combined-cycle process using the particular type of coal, known as Ohio-type. It has been very successful.

Mr. REGULA. I am just curious, is it more efficient? In other words, does it transfer more of the BTUs in the coal into power than conventional systems?

Mr. GEE. What is the efficiency rate at this time?

Mr. KRIPOWICZ. Mr. Chairman, the rate is around 40 percent efficiency. Replications of that plant would be in the mid-40 percent range.

Mr. REGULA. Which is pretty high?

Mr. KRIPOWICZ. The current fleet average is about 33 percent The best state-of-the-art facility that you can put on now is probably about 37 or 38 percent. So, it is very efficient.

Mr. REGULA. It was very impressive. I wonder what their costs are per KWH? Is it higher than the rest of their plants?

Mr. KRIPOWICZ. Yes, sir. On an overall basis the cost is probably $200 to $300 a kilowatt more than the cost of the pulverized coal plant.

Mr. REGULA. There is a downside, and that is the cost of a plant of that kind.

Mr. KRIPOWICZ. That is one of the reasons that we are continuing the research in that area to drive down the costs and also increase that efficiency. We hope to get it in the neighborhood of 60 percent which then gets you a considerable fuel savings in addition to the capital cost reduction.

Mr. GEE. That is our target number that we are looking for right now, 60 percent.

Mr. REGULA. That would be pretty efficient.

Mr. GEE. Right.

Mr. REGULA. You mentioned climate change and carbon sequestration. Can you describe some innovative things you are contemplating in the sequestration program?

Mr. GEE. Sequestration focuses on two areas. One is trying to capture the carbon at the point of use of the fossil fuel or even at the point of developing the fuel resource in the case, for instance, of natural gas or in the case of oil development, reinjecting that carbon dioxide (CO_2) back into the ground.

Mr. REGULA. Would that be reinjected after the burning process?

Mr. GEE. That, too. It would be capturing the carbon at the point of burning and finding ways to use that carbon. You can actually use it in an industrial process. Oil and gas development capturing the CO_2 at that time, reinjecting it into the ground for lifting purposes. And then, thirdly, another way we are looking at sequestration is through biological means, perhaps genetic research that would lead to creating what are known as sinks that would simply absorb the excess CO_2.

METHANE HYDRATES

Mr. REGULA. You mentioned that there is an enormous supply of methane hydrates. Tell me about it. What is it? How do you get it? Where do you get it?

Mr. GEE. Methane hydrates as I understand it, and I am not a geologist or a chemist, are methane molecules that are trapped in ice formations located generally in deep sea beds. It is estimated that if those methane sources could be tapped, in both an economically rational as well as a safe means, so as not to disturb the sea bed, it could yield potentially 5,000 times the volume of proven known reserves that we have of all natural gas.

We are beginning the process of trying to characterize the reservoirs that are generally within our domain to see what is the potential. Ultimately, obviously, it would require more intensive analytical research into how best to get that methane out of those sea beds.

Mr. REGULA. So, no one is doing it at the moment?

Mr. GEE. That research is already being conducted in part.

Mr. REGULA. You mean there is no production.

Mr. GEE. No, that is correct. It is not a commercially viable method being used by industry today, correct.

Mr. REGULA. Is it in deep water? Or is it too deep to drill with today's technology?

Mr. GEE. I believe it is located in—if we turn to our geologist—it is located offshore generally in some of the deeper sea beds. Now, whether that would be a certain distance from the Outer Continental Shelf I probably would have to defer on that to some of our experts.

Mr. REGULA. I wonder if any other countries like the UK or Norway, are researching the same thing?

Mr. GEE. It is my understanding that this is of keen interest internationally. Australia, I know, has already sensed the potential in developing their methane hydrates.

Mr. REGULA. Would they come out of the reservoir in a gaseous form?

Mr. GEE. I believe they are locked in ice crystals that are in the sea bed. So, the method is to try to find a way to get it out without it migrating to the surface without being captured, so that you can capture sufficient volumes and also so that you do not lose a lot of that methane in the production process because that could have a destabilizing effect on ocean craft, who would be in the process of trying to develop it.

Mr. REGULA. The experimentation you would be doing is going to be pretty much fully government funded. Could you get a match? Is the private sector interested enough to match on this kind of a program?

Mr. GEE. I think as the program begins to develop—and as I understand right now we are proposing a modest increase in our budget at this time—as it progresses closer to a fuller research effort, I do believe that there will probably be significant interest from the private sector to cost share.

Mr. REGULA. You are in a pioneering stage?

Mr. GEE. Correct. Right now, we are just in the process of spending a little money to characterize some of our reservoirs on the Outer Continental Shelf and elsewhere both in the Arctic as well as off our lower 48 coastline to see what is out there.

Mr. REGULA. It sounds fascinating.

Mr. GEE. I think it has tremendous potential if it can be done in a commercially feasible way and also so as not to disturb the sea bed.

Mr. REGULA. Do the Norwegians and/or the British share with you or are they on their own? It seems you should not both be reinventing the wheel.

Mr. GEE. I do not know if there has been any discussion thus far of any consortium.

Mr. REGULA. Is there any sharing of research?

Mr. GEE. Bob, do you know if——

Mr. KRIPOWICZ. We actually are in a program with the Japanese. They are extremely interested because they have no indigenous resources of their own. So, they have a healthy R&D program and we have actually been involved with them and the Geological Survey in a well in Canada in the permafrost looking at hydrates.

The Indians are also interested in it and we have had discussions with the Government of India that have been disturbed somewhat by the hiatus in our relations for a while but they also are interested in methane hydrates.

We have not had much work at all with the Europeans because evidently the North Sea has plenty of gas resources right now and, so, they are not concentrating on that.

CLEAN COAL

Mr. REGULA. Two additional questions. I notice you want to defer an additional $256 million from the Clean Coal Program. We deferred $40 million last year. And, yet, you say coal is the fuel of choice, will be for the foreseeable future, at 50-plus percent, and that your goal is to reduce emissions.

Now, there seems to be an inconsistency. How do you explain that?

Mr. GEE. The $246 million that we have asked deferral for relates to two projects out of the 40 projects that were originally authorized and appropriated. The other 38 have already been fully funded and, in fact, 23 of those 40 are now complete and final reports are being written for the final three. Nine of those 23 are in operation. I think seven are in the construction stage and one is under construction.

The two projects, for which the costs are being deferred, do not need the appropriations for this coming budget year because they are in a situation where they are setting up teams right now in a very early stage.

Mr. REGULA. You can defer them without prejudice?

Mr. GEE. Correct.

Mr. REGULA. And the two of those total $256 million?

Mr. GEE. Correct. $246 or $256, whatever that number is, yes.

Mr. REGULA. We have some additional questions on that for the record.

OIL RECOVERY

Mr. REGULA. The last question at the moment is that you were talking about enhancing the recovery of oil. You mentioned that for every barrel we have extracted there are two in the ground. And that you would hope that this process would help the smaller companies because they obviously do not have the capital to do the technological development. Do you feel optimistic about being able to get some of those additional barrels and recover them?

Mr. GEE. Yes, we do, because based upon the experience we have had thus far where we have engaged in research on 3–D and 4–D seismic research to help characterize reservoirs more cheaply and more effectively, finding ways to lower the lifting costs through advances in modern technology and bringing that to the field and informing those small operators that with those continued efforts we can do two things.

One is keeping our domestic oil industry financially afloat during these lean times; secondly, finding ways to characterize the outstanding reservoirs that are before them and do it in a way which is more time efficient finding them, and developing those fields and reservoirs more quickly and getting them on-stream. Through all of these efforts, we think that we are optimistic that we can continue to maintain our domestic production capacity.

Mr. REGULA. I notice that there is a decrease in funding for the reservoir class revisit program in fiscal year 2000 and that does not quite reconcile with what you just told me.

Mr. GEE. I think our reservoir class visit program began when was it, back in 1992, 1993? The overall class program. And what we are doing now, I believe, is we are reopening a number of the classes that had—the program had already expired as I understand it, and they did a first cut of a number of reservoirs.

They are going back now to see what other additional wells and reservoirs should be included in the original program. So, that the amount of funding, while it may be smaller than the historic levels, is simply an effort to try to go back.

Mr. REGULA. If you had additional funding there, the program could utilize it effectively. Would that be a fair statement?

Mr. GEE. I would have to be honest, I certainly would not turn away additional funding, Mr. Chairman.

Mr. REGULA. The honest man.

Mr. GEE. Right. We would find a way to use it, Mr. Chairman.

Mr. REGULA. Thank you.

Mr. Moran.

METHANE HYDRATES

Mr. MORAN. Thank you, Mr. Chairman.

Our phenomenally astute minority staff here, Mr. Del Davis, tells us that one major limiting factor to methane hydrates is that to get the product to market it would probably be gasified in Alaska's North Slope and would require construction of a gas pipeline to Valdez at an estimated cost of around $15 billion.

That probably means that it is cost prohibitive right now. Do you want to address that? I assume this is completely accurate information?

Mr. KRIPOWICZ. It is accurate in what it says but it does not give you the context and that is the fact that most of the methane hydrate resource is not in Alaska but it is in the offshore areas of the United States. Secondly, there is considerable effort going on in the Department on gas to liquids technology that would convert gas, such as the gas that is already on the North Slope that is not transportable, to an economic fuel that could be put in the existing Trans-Alaskan Pipeline.

And that technology is also underway and would be completed well before we actually had commercial production of methane hydrates.

ELECTRIC RESTRUCTURING

Mr. MORAN. That is interesting.

Mr. Chairman, there are three things that come to mind in this subject area. One of them is that with electric restructuring there is less incentive for any single power company to really make the investment in research and development. So, increasingly, it is going to fall to the Federal Government to be making that kind of investment because we are not going to have the resources concentrated in as many firms that would have the financial luxury of making R&D investments.

You can comment on this issue if you would like, but I gather the answer is, yes. That is a concern with deregulation and restructuring of the electricial industry.

The second thing is that there is a fascinating process that we came into contact with that involves biological agents being used to convert coal to methane. Basically termites are used to change the coal into methane gas through a process that obviously is environmentally benign and is very low cost. Have you ever heard about this process?

I have actually seen it on a small scale.

Mr. GEE. Let me address Congressman Moran's question first the point on electric restructuring, and then I am going to turn to Mr. Kripowicz, our expert, to see what he knows about using termites to convert coal.

Mr. MORAN. Well, let us just say biological agents because some people may think it is goofy to talk about termites. But, you know, I do not think we are close to using this process on a commercial scale yet.

Mr. GEE. In terms of the effect of electric restructuring on the private sector's willingness to continue long-term research and development you are absolutely correct. What we found in our discussions with the industry is that the industry members are now less willing to commit to long-term research because of the competitive pressures of keeping their rates competitive against their neighbors. So, this is something that we know will grow and continue to be of concern to have sufficient research for long-term purposes.

Short-term, obviously, if it is to their commercial advantage they will do what they need to do to survive as a competitive business. Long-term is a problem. That is the role that the government can play.

Let me turn to Mr. Kripowicz and see what he knows about the other subject.

BIOPROCESSING

Mr. KRIPOWICZ. In bioprocessing of coal we have a small program, roughly a million dollars in 1999, increasing somewhat to $1.4 million in fiscal year 2000. And it has looked at a variety of concepts on a small scale including both our national laboratories and some industrial firms.

And the technology is basically in its infancy and, you know, we continue to look at it but we have not found anything that we consider, at this point, a breakthrough that would push us to a larger scale. But we continue to look at it.

CASPIAN OIL RESERVES

Mr. MORAN. Thank you.

There is one last thing, if I could, Mr. Chairman.

If I am not mistaken, Mr. Gee worked extensively on the Caspian oil pipelines and he has quite a bit of knowledge on the Caspian oil reserves. I would just like to get your comments, since you are an expert. It seems to me that largely because of internal political considerations we have made Azberbaijan a political pariah in terms of foreign policy in order to, show our support for Armenia.

But in the process we have cut ourselves out of being a major role player in the development of the Caspian Sea reserves, despite the fact that it may be one of the largest reservoirs of oil and could have a profound influence upon the distribution of wealth and influence in that part of the world.

Where the pipeline goes, who has control over it, who benefits primarily from it, these are all major issues that will affect the long-term use of fossil supplies and their affordability.

Could you address what is happening with the Caspian Sea oil reserves and our role in the development and distribution of it?

Mr. GEE. Congressman Moran, our position in the Caspian has been that we think that there is a significant potential for those reserves to play a role in contributing to the worldwide supply of crude oil that is going to be necessary over the next 20 to 30 years. It is estimated that those reserves could be roughly equivalent to the volume that is found in the North Sea. And it would be important, certainly, to stabilizing the worldwide price of oil.

The reasons why the United States is interested in developing those reserves along with our companies is three-fold. The first is obviously energy security. Diversification of additional sources of supply. Not to the detriment, I may add, to our own domestic industry which is important, but to the extent that we need to find more oil abroad just to maintain a more stable source of supply for worldwide price stability purposes.

The second reason we are involved is geostrategic. And that is because Azerbaijan as a newly independent State, along with some of the other former members of the Soviet Union, needs the hard currency that the oil sales could provide to stabilize their economies and bring about further democratization of their regimes.

And then, finally, and no less important, obviously, is commercial and that is to see that U.S. companies have a piece of the business opportunities in Azerbaijan and elsewhere, both to develop those

reserves and to build infrastructure particularly the pipelines, as well as the wells that are being spotted to develop those reserves.

We continue to press forward to meet those three objectives, and we continue to support a Trans-Caspian Oil Pipeline that would connect Kazakhstan with Azerbaijan and go all the way down to the Southern port of Turkey in Ceyhan. We also support a Trans-Caspian Gas Pipeline that would connect the Kazaki gas reserves to Azerbaijan and also provide gas to Turkey as the ultimate end-use market. We are hopeful that those infrastructure projects will move forward in a constructive way eventually.

Obviously, right now, with the worldwide price of petroleum you have to factor that into the economic equation. The timing of the building of the pipelines may be moved back from what I understand. I am not visiting this issue on a day-to-day basis any more. That was in my prior job but I am keeping abreast of what is going on.

I understand that the thinking now is that there could very well be an announcement on the site of the pipeline, the oil pipeline, some time by the end of the year.

With respect to our relationship with Azerbaijan, as you know, our assistance to Azerbaijan is restricted by, I believe, it is Section 305 of the Freedom Support Act which basically prohibits U.S. assistance in various forms. Our Administration is supportive of the repeal of that so that we can remove shackles and help us provide greater assistance to Azerbaijan because we do believe that they are a significant player and of vital strategic importance to the United States.

Mr. MORAN. It is a very informed answer.

Thank you, Mr. Gee.

Thank you, Mr. Chairman.

Mr. REGULA. Mr. Cramer.

UNIVERSITY COAL RESEARCH PROGRAM

Mr. CRAMER. Thank you, Mr. Chairman.

Would you comment further on your university research programs, the initiatives. How many participated in those and what you hope to accomplish?

Mr. GEE. Let me turn to Mr. Kripowicz, who knows the details of your answer, Congressman.

Mr. KRIPOWICZ. The specific dollars for our University Coal Research Program which is not the only area in which our universities participate, but the University Coal Research Program is about a $3-million-a-year program, which is very highly competitive. I cannot give it to you now, but I can provide you some more detail for the record. But there are a considerable number of universities that participate in this.

[The information follows:]

UNIVERSITY COAL RESEARCH PROGRAM

Under the University Coal Research Program (UCRP), the Office of Fossil Energy conducts an annual competition to select and fund the best coal science and technology research proposals from the nation's academic institutions. Focused in the highest priority areas of Fossil Energy, the research projects must involve at least one student and a teaching professor as part of the university research team.

The involvement of professors and students has been an essential element in the success of the UCRP. The participation of students is valuable because it serves two functions: it promotes the influx of fresh ideas and ensures a future supply of trained scientists and engineers.

Proposals are evaluated by reviewers from universities, industry, and DOE, and the most meritorious proposals are selected for non-renewable grants of from 1 to 3 years duration. The fiscal year 1999 solicitation contained two subprogram areas: the Core and the Innovative Concepts Programs. The Core Subprogram solicited research in focus areas that will emphasize long-term, high risk research capable of identifying breakthrough technologies for the next century. Proposal applications were accepted from individual universities or university teams with at least one industrial partner. The Innovative Concepts Subprogram sought high risk, revolutionary ideas that can result in significant technology innovation or new breakthrough technologies.

Currently there are 45 active projects in the UCRP. These were awarded in fiscal years 1996, 1997, and 1998.

In fiscal year 1996, the following institutions shared $3.7 million of UCRP funds which were distributed through the competitive program solicitation. These institutions provided non-federal cost sharing totaling $1.0 million.

FY 1996 UCRP Awards

University of Arkansas	Pennsylvania State University
University of Illinois	Oklahoma State University
University of Pittsburgh	Northwestern University
University of Utah	North Dakota State University
University of Michigan	Iowa State University
University of Rochester	Hampton University
Rice University	Brown University

The UCRP distributed $2.8 million through its fiscal year 1997 program solicitation to the following institutions. These institutions provided non-federal cost sharing totaling $0.8 million.

FY 1997 UCRP Awards

Brown University
University of Arizona
University of Iowa
University of Utah
University of Pennsylvania
University of Cincinnati
Clark Atlanta University
Virginia Polytechnic Institute & State University
University of Delaware
North Carolina State University
Michigan Technological University
University of Kentucky
Iowa State University
University of Connecticut

In fiscal year 1998, $2.7 million in federal funds were awarded and those institutions provided non-federal cost sharing totaling $0.7 million. Research was solicited with the potential of overcoming barriers in technology development and accelerate the identification of solutions for energy and environmental problems. The solicited research was to contemplate high efficiency power generation with the co-production of fuels or chemicals and with the ultimate goal of closing the carbon cycle, that is, no net carbon dioxide emissions by the year 2015. Sixteen projects were awarded in response to the annual call for proposals; they are as follows:

FY 1998 UCRP Awards

University of Akron
Arizona State University
Brigham Young University
Brown University
University of Colorado
Hampton University
Iowa State University
University of Kentucky
Lehigh University
University of Michigan
University of New Mexico
State University of New York at Buffalo
University of Pittsburgh

Information concerning awards made in fiscal year 1999 should be available in May 1999 after final selections of proposal applications for awards are completed.

Mr. CRAMER. Participate or compete or both?

Mr. KRIPOWICZ. They compete. Both. We do multiple awards, usually for a two or three year period. So, we probably at any one time have 20 or 25 universities participating in the program.

Mr. CRAMER. What have you accomplished through that program?

Mr. KRIPOWICZ. We have done some research in the gas to liquids area that I know started in the university program. We have also done some catalyst research that has been applicable to the coal program and some gas cleanup research. I can provide you with some specific examples of projects that have gone forward and then been picked up by the main program and moved into the commercial arena.

HISTORICALLY BLACK COLLEGES AND UNIVERSITIES

Mr. CRAMER. I would appreciate that. And if you would, either now or later, also, talk to me about your growing emphasis on increasing research activities at HBCUs.

Mr. KRIPOWICZ. We have a very active program with Historically Black Colleges and Universities (HBCUs), which are funded at approximately $1 million a year. It has not really increased. It has been about at that level.

Mr. CRAMER. It has not increased?

Mr. KRIPOWICZ. No, sir. It has been at about that level give or take $100,000 for quite some time. What we have been trying to do is work with the HBCUs and other minority institutions—it has been expanded to more than just HBCUs—to establish an expertise and program so that we can develop trainees in those areas that can work for both government and industry.

In addition to the research that they do, we have an internship program also where they come and work for the government for summers and we have also started a program with industry so that the students work with industry in the summers in order to allow them to get the experience to move into the private sector.

Mr. CRAMER. Approximately how many colleges and universities participate in those programs?

Mr. KRIPOWICZ. There are over 100. And, again, I can get you the exact number. They are all eligible to participate. There are some, obviously, that have better programs than others, but probably at any one time in the program we would have a dozen or so active participants.

Mr. CRAMER. I would like more information on that.

Thank you, Mr. Chairman.

[The information follows:]

HISTORICALLY BLACK COLLEGES AND UNIVERSITIES AND OTHER MINORITY INSTITUTIONS

To further expand its support of academic research, the Office of Fossil Energy has established a research, education, and training program at the Nation's Historically Black Colleges and Universities and Other Minority Institutions (HBCU/OMIs). Each year, Fossil Energy solicits advanced coal, natural gas, and oil research proposals from these institutions. Candidate projects typically involve at least one student and a teaching professor working together to carry out the advanced research project. As in the University Coal Research Program, the Office of Fossil Energy has encouraged partnerships between HBCU/OMIs and private companies.

There are about 550 HBCU/OMIs in the United States. Of those, about 345 have the technical potential to participate in this grant award program. Typically, the Office of Fossil Energy selects from five to nine university-proposed projects that are considered to have the best potential for advancing fossil energy-related technologies. Winning projects receive grants of up to $200,000 for projects lasting up to 3 years. Some Faculty/Student Exploratory grants of up to $10,000 are also awarded.

The program has been directly funded at approximately $1 million annually. However, additional funds have been provided by other Fossil Energy programs and industry.

Current participants in the program are listed below.

In FY 1996, awards were given to:
- NC A&T State University ($200k)
- Clark Atlanta University ($200k)
- Xavier Univ of Louisiana ($200k)
- Prairie View A&M University ($189k)
- Wilberforce University ($110k)
- Virginia State University ($10k)

In FY 1997, awards were given to:
- Hampton University ($199k DOE + $43k cost shared = $242k)
- Clark Atlanta University ($200k)
- University of Maryland Eastern Shore ($199k)
- New Mexico Highlands University ($199k)

In FY 1998, awards were given to:
- Tuskegee University ($199k DOE + $42k cost shared = $241k)
- University of New Mexico ($197k)
- North Carolina A&T State University ($199k)
- Prairie View A&M University ($199k)
- Hampton University ($15k)

FY 1999 proposals are currently being reviewed. Selections are scheduled to be made in May.

Mr. REGULA. Mr. Hinchey.

Mr. HINCHEY. Thank you, Mr. Chairman.

I can recall back in the 1970s thinking that the Clean Coal Technology Project, both from a strategic point of view as well as an environmental point of view made a great deal of sense. And it may be that at some point in the future it makes a great deal of sense again. But at this particular moment, one is hard pressed to see that. I see that the Department has asked for, I believe, it is $247 million in deferred spending on clean coal.

Is that the entire amount that is deferred in that category or is it a larger number?

CLEAN COAL

Mr. GEE. Congressman, that is the entire remaining amount that we need to complete two of the remaining 40 projects that already have been fully funded and we are committed to completing those two projects. We do not need the money for this coming budget year, for fiscal year 2000 because as I understand it, those two projects, one of which is an integrated gasified combined cycle plant, I believe in Illinois, and another one is a combined electric steel making plant in Utah, neither of them require appropriations for the forthcoming year because they are in a very preliminary stage of planning and trying to get assembled teams to work on the project.

We do anticipate, because of our commitment to see the fruition and completion of those two projects, coming back in subsequent budget years for the remaining balance of the funding of our original Clean Coal Technology Program.

Mr. HINCHEY. Now, a number of those projects have been deferred for some period of time. I know there is a Lakeland Project, does that fit into that category?

Mr. GEE. That may be another project.

Mr. HINCHEY. Lakeland 4–A and Lakeland 4–B?

Mr. GEE. Bob, do you know which——

Mr. KRIPOWICZ. Yes, sir. Both of those projects are at one site in Lakeland, Florida, at the municipal utility there and they are doing the environmental impact statements right now and then they have a final agreement with Foster Wheeler, the technology vendor to construct the plant. And all they have to do is finish the environmental work and they will be started.

All of that money is obligated to the project, however.

Mr. HINCHEY. I know those projects have been around for a long time; one about a decade, the other six years or so, is that correct, something like that.

Mr. KRIPOWICZ. They have been around for a while; I do not know the exact number of years, but, yes.

Mr. REGULA. Will you yield?

Mr. HINCHEY. Yes.

Mr. REGULA. We have rescinded about $400 million where projects were proposed and for whatever reason did not go forward. So, that has been rescinded over the past several years.

Mr. HINCHEY. Thank you, Mr. Chairman.

There is a project in Utah, could you describe that project, the Utah Project?

CPICOR

Mr. KRIPOWICZ. Yes, sir. That is the CPICOR project, so-called. It is a——

Mr. HINCHEY. What is it called.

Mr. KRIPOWICZ. CPICOR. That is Geneva Steel is the company that is using a technology called Hismelt which will essentially allow the direct use of coal in the steel-making process without having to go through the coke-making process, which can be very polluting and also it is not very energy efficient. And it would produce the raw steel as well as producing significant quantities of gases that will be used to generate electricity.

This has not been done on a large scale; it has been done on a pilot scale in other countries. And that is what this particular project would do.

Mr. HINCHEY. What is the energy source for that project?

Mr. KRIPOWICZ. Coal.

You mix coal with the iron ore and rather than having to go through the coke making and blast furnace process, it is a direct reduction of the iron ore to make raw steel. It is not a finished steel at that point but then it can be refined.

Mr. HINCHEY. I understand it now, thank you, very much.

The discussion you had a few moments ago with Mr. Moran on the Caspian Sea is a very interesting one. Although I think it does not specifically come under our jurisdiction. To some extent——

Mr. REGULA. Oil is oil.

Mr. HINCHEY. I love that attitude, Mr. Chairman, thank you.

[Laughter.]

Mr. REGULA. So, go ahead.

CASPIAN OIL RESERVES

Mr. HINCHEY. Information that I have seen indicates that the quantity of known reserves in the Caspian Sea is greater than that in Saudi Arabia, in the Arabian Peninsula.

Could you comment on that?

Mr. GEE. I am not aware of that particular estimate. It depends on—there are a number of experts who are trying to evaluate what they think could be in the ground and all of it is really just, if I may say, somewhat conjectural. Wells are being drilled, exploratory wells are being drilled as we speak today to try to characterize the reservoirs in that entire area. And more will be known over the next few months about what the total magnitude of those reserves could be.

The number I have heard is roughly equivalent to the North Sea. Saudi Arabia is in a universe of its own. It has so much potential and it is also significantly lower in cost to produce, which makes it somewhat unique.

With the Caspian Sea, as I understand it, there are costs associated with lifting that production out of the ground. They are probably not as high as you would find here, in the United States, because of the fact that we are now going through a secondary and tertiary recovery process. But I do not believe that the costs associated with the Caspian Sea are as cheap as we know they are in Saudi Arabia, which puts Saudi Arabia sort of into a class of its

own, both because of the magnitude of the reserves as well as the cost of production.

Mr. HINCHEY. What is the best source of information on potential reserves in the Caspian Sea?

Mr. GEE. I would like to say probably our Energy Information Administration. Their numbers are largely taken, however, from industry estimates but they take in all the totality of what is known in the community, certainly. They talk to the experts and we will be happy to provide you with sort of the numbers that they have come up with based on their discussions with the various private sector experts.

Mr. HINCHEY. I would appreciate that very much.

Mr. GEE. Okay.

[The information follows:]

CASPIAN SEA OIL AND GAS RESERVES

The latest data is contained in the report, "Caspian Sea Region," published in December 1998 by the Energy Information Administration (EIA), the independent statistical and analytical agency within the U.S. Department of Energy.

EIA reports that: "Most of the oil and gas reserves in the Caspian region have not been developed, and many areas of the Caspian region remain unexplored. Most of Azerbaijan's oil resources (proven as well as possible reserves) are located offshore, and perhaps 30%–40% of the total oil resources of Kazakhstan and Turkmenistan are offshore as well. Proven oil reserves for the entire Caspian Sea region are estimated at 16–32 billion barrels, comparable to those in the United States (22 billion barrels) and the North Sea (17 billion barrels)."

EIA's report also states that: "The prospect of potentially enormous hydrocarbon reserves is part of the allure of the Caspian region. Besides the 16–32 billion barrels currently proven, the region's possible oil reserves could yield another 163 billion barrels of oil if they become proven. This is roughly equivalent to a quarter of the Middle East's total proven reserves (however, the Middle East also has it own vast possible reserves)."

The December report is not based on an independent engineering review by EIA, but depicts a range of reserve estimates based on published and commercial sources. The range of reserve estimates are large due to the uncertainty over the economics of oil development in the region and discrepancies in the reserve estimation methodology between those methods accepted by Western experts and the system that was employed during the Soviet era.

Mr. HINCHEY. Thank you.

Mr. GEE. Thank you.

Mr. REGULA. Thank you.

Mr. Peterson?

Mr. PETERSON. Good morning.

DOMESTIC OIL MARKET

I come from Pennsylvania where the energy issue started. In my district, five miles from my home, was Drake Well, where the first oil well was discovered at 68 feet, dug by hand. A lot of people do not know that but oil was oozing out of the ground all the time and they started digging and hit oil, which has changed the world.

But I guess as we talk I am sure there has been an oil producer in Pennsylvania that has closed up shop. Where do you see the market place? You know, I am from the Penn Grade Crude, which is really Ohio, New York, Pennsylvania, West Virginia. And then, of course, you get over into the other States, Oklahoma, Louisiana, Missouri, where we know that they are shutting up shop by the thousands.

Where do you see the market price over the next year or two?

Mr. GEE. Right now, I think that West Texas Intermediate and I think Brent is somewhere hovering between $14 and $15 per barrel. And it is coming up. I think it just went up about 60 cents just yesterday. There were some recent discussions between some of the OPEC countries on an agreement on output cuts. I think that, if I recall, our Energy Information Administration, which usually does these projections of where they think the price is going to go, I think their projections show that it still is going to remain at or around that level for the next couple of years.

What that means for our domestic industry is that they still will not have sufficient cash flow in order to preserve some of the marginal wells that are now being shut in as we speak, with a significant loss not only to our productive capacity but also the human resource impact; people that are simply leaving the oil sector and moving on to other occupations, which in the long-term is not good for us because you simply cannot get those people back, even if you could reopen some of the shut-in wells and try to get some of that production out.

We are working intensively within the Department of Energy to try to find ways to do a number of things to help our domestic industry, including trying to find ways to lower their production costs. We are working with the Department of Interior to try to find ways to ameliorate some of the royalty burdens that they now face.

We are working with Treasury talking about the tax burdens. We had an excellent meeting that some of you may know about between the industry and the White House staff earlier this week with Secretary Richardson and Secretary Rubin and Chief of Staff John Podesta, and the Chairman of the National Economic Council, Gene Sperling, to talk with the industry about the problems they have been having. Secretary Richardson was happy to announce just yesterday, I believe, that there will be the formation of an interagency task force to look at the problems of the industry to see what this administration can do.

It is of deep concern to us because of the impact on our domestic national energy security.

Mr. KRIPOWICZ. We have for you the United States security demand in a global context.

Mr. PETERSON. We also have, in Pennsylvania, I know that the hundreds of thousands of orphan wells, where they have just been abandoned because people went broke, so there is nobody to go back on. And they are just abandoned.

But I had an interesting contact two weeks ago at a major university, research university came in with a couple of their people and they have a new concept. They tried to get a grant last year through Energy Department but were unsuccessful, where they use ultrasonic sounds and they feel they have it down to where all they need is a field demonstration to prove this, that the high ultrasonic sounds would clean the bore and get rid of all that often keeps oil from coming out and how they corrode up and would clean the bore. Then the low ultrasonic sounds would release the oil from the sands and they feel it will be far more effective than if we went to hydro-facking, which again, got another part of the oil that we did not get when we just originally shot a well.

Mr. GEE. Right.

Mr. PETERSON. So, how can we help them in the Energy Department get funded because they said it would work in all the fields, not just the paring field.

Mr. GEE. Bob, would you like to answer that? Mr. Kripowicz, is our technology man. So, rather than my trying to stumble through an answer, I think he can probably give you a sharper answer.

Mr. KRIPOWICZ. We have two procurements that have just been released currently. One is on revisiting our class program to which this technology might be applicable. We also have a small program to help independent producers, which this may also fit under. I would also suggest that they could contact us and talk to our people, and also our office to see if there are any other procurement mechanisms available and talk to them about the technology.

I can give you the specific information about the procurements.

[The information follows:]

DOE TECHLINE
Fossil Energy
Issued on February 16, 1999

DOE Offers Funding for Technology Solutions To Help Keep U.S. Oil Fields Flowing

Citing his pledge to move forward on initiatives that can prevent vital U.S. oil reserves from being prematurely abandoned, Energy Secretary Bill Richardson today announced two programs for as much as $19 million in federal funding to help move better technologies into the nation's oil fields.

With expected private sector cost-sharing, the two initiatives could exceed $50 million in new projects that would give oil producers access to improved, lower cost tools to keep thousands of domestic oil wells flowing.

For more information:
- **Download solicitation** - Click on Solicitation
- **Class Revisit Program - Background**
- **Technology Assistance to Independents**

The first initiative Richardson announced is that the Energy Department is reopening its *Reservoir Class Revisit Program*, an effort begun in 1992 that has encouraged many domestic oil producers to test and adopt new techniques for prolonging the life of some of the nation's most endangered oil fields.

Richardson also said that the department will begin a second initiative, *Technology Development with Independents*,

targeted at providing federal funding specifically to small, independent oil operators who are facing production problems that might be overcome by applying innovative field technologies.

"We are determined to enhance our energy security by keeping our domestic oil fields in production. There may be specific situations where improved technologies can spell the difference between continued production or premature shut-in. These two new efforts are meant to give our domestic producers the financial means to develop and deploy these technologies to help keep a valuable national resource in productive use," Richardson said.

Richardson said that both programs are part of an overall package of initiatives being developed in coordination with his Emergency Oil Task Force. Richardson established the task force to examine ways the federal government might respond to the impacts of low oil prices on domestic production.

In both competitions, federal funding will provide only a portion of the overall project costs, ranging from an average of 35 percent for the *Reservoir Class Revisit Program* to 50 percent for the targeted technology program for small independent producers.

Reservoir Class *Revisit* Program

In the *Reservoir Class Revisit Program*, DOE will offer up to $18 million for cost-shared projects that could extend over the next five to six years. Proposals are due May 20, 1999. From 10 to 20 projects could be funded.

Proposals will be accepted from producers operating in three major types of geologic classes of oil reservoirs which represent about half of the nation's unrecovered oil. The three classes - fluvial dominated deltaic reservoirs (Class I),

shallow shelf carbonate reservoirs (Class II), and slope and basin clastic reservoirs (Class III) - contain large amounts of unproduced crude oil but much of the oil could be abandoned in the next five years. The threat of abandonment has intensified recently as oil prices, on an inflation-adjusted basis, have dipped to their lowest levels since the 1930s.

The program will be open to both light and heavy oil producers, including those operating in Alaskan fields. The new program will build on the success of many of the earlier cost-shared field projects with a strong emphasis on transferring successful technologies to other producers. These earlier projects gave producers the opportunity to apply a host of new or untried technologies, including the first-ever application of 4-dimensional seismic modeling, along with other advanced imaging techniques, the expanded use of horizontal drilling, and innovative methods to enhance the flow of crude oil from aging reservoirs.

The *Technology Development with Independents* Program

Technology Development with Independents will provide as much as $1 million targeted to small oil operators with less than 50 employees. Generally, financial assistance will be $75,000 or less per project to be at least matched by the producer. Projects will last from six months to two years. Oil field operators will be able to apply for funding by completing a simplified, 6-page form.

The program will focus on solving specific production problems faced by smaller, independent operators in every aspect of oil field production, from characterizing the reservoir to managing production and environmental compliance. DOE will accept proposals by four closing dates: March 31, May 31, August 30, and November 30, 1999.

More Information

Both solicitations are available at *www.fetc.doe.gov* [Choose Solicitations]. Information on the *Reservoir Class Revisit Program* can also be obtained from Keith Miles at DOE's Federal Energy Technology Center, 412-892-5984, e-mail: *kmiles@fetc.doe.gov*. Information on the *Technology Development with Independents Program* can be obtained by contacting either Jim Barnes at 918-699-2076, e-mail: *jbarnes@npto.doe.gov* or Herb Tiedemann at 918-699-2017, e-mail: *htiedema@npto.doe.gov*, both with the National Petroleum Technology Office in Tulsa.

Mr. PETERSON. We thought there were some weaknesses in their original submission. They did not make the cut last year, but they are reworking it and I should have it in a week or two. Shall I get a copy over to you to see if they are doing it right? I am not sure they knew how to do it to get into the stream. But it really did sound exciting, and I mean this is something that they have been tinkering with for a long time, and they feel pretty confident that it would help stripper wells all over to release more oil than has been released by any other process. And also it had another factor of releasing contaminants from soil. Where you have contaminated soil and chemicals you could get those to separate from the soil so this technology could also be utilized in waste cleanup.

So, I mean I just thought it was an exciting thing that we ought to be taking a look at.

Mr. GEE. If it is a novel technology that has multiple uses and can be done cost efficiently, then I think it is something we ought to take a look at, certainly.

Mr. PETERSON. We will share that with you.

Mr. REGULA. There are a lot of stripper wells out there.

Mr. PETERSON. Oh, there sure are, both in your State and mine.

Mr. REGULA. Right.

Mr. Nethercutt.

Mr. NETHERCUTT. Thank you, Mr. Chairman.

Welcome, gentlemen.

Mr. Secretary, I took an interest in your comments about Central Asia and the political situation that exists there relative to allowing our country to deal more forcefully and forthrightly and beneficially with Azerbaijan. I hope that the administration will continue to push that policy position relative to changing the law. I think it makes sense.

FUEL CELL RESEARCH

I have an interest in fuel cells and I noticed that in your budget request you go down roughly $4.5 million in fiscal year 2000 on fuel cell research. And I see the benefit of fuel cell research and the implementation of fuel cell technology in the West, in rural areas like my own. And I am wondering why the reduction? To what extent is this going to interrupt an existing partnerships that I think have great potential for energy production in my part of the world, as well as around the country.

Mr. GEE. Let me state first, that although the number shows a slight reduction, it does not signal any lessening of our commitment to plumb that technology as a future fuel resource to make it commercially feasible and fully deployed in multiple uses. In particular, a lot of our research, I believe the predominant focus of our research is on utility size fuel cell research that can be used for utility generation purposes.

It is a highly efficient environmentally benign technology that merits the full commitment on our part. And notwithstanding the slight reduction in funding that we are seeking for this fiscal year, we hope that it does not signal any lessening of our commitment to explore that.

Let me turn to Mr. Kripowicz and he can give you a little more detail about how we got the numbers.

Mr. KRIPOWICZ. In actuality there is $5 million in fuel cell-related research that has been moved to the coal program under the gasification program because one of our fuel cell contractors is working on hybrid gas turbine fuel cell technology that would be applicable to coal gases. And, so, we have identified a portion of that research in the coal-related budget rather than in the gas-related budget in fuel cells.

If you take that $5 million it essentially means that we are funding the three major contractors that we have at the same levels as last year.

Mr. NETHERCUTT. In a restructured electricity market, would you say that fuel cells would be competitive? How would you rank the competitiveness as an alternative or as a consequence, shall we say, of restructuring the electricity?

Mr. GEE. I would say as of today, as a stand-alone technology, it is probably not competitive just because it is at the point where it is not at what I would consider a commercially feasible stage to be competitive one-on-one with other fuel sources. Over time, obviously, as the technology becomes more widely deployed and the economies of scale are realized and the costs of manufacturing come down, it can be made to become competitive as the market begins to absorb it more and more.

In terms of how the electric sector is being restructured, I think it has significant potential because of its ability to provide for distributed generation. So, that you can meet electric power demands in outlying areas without having to build large 345–KV transmission lines and without having to build a large central station power plant to serve particular communities, particularly in rural communities or areas where it just does not make sense to build new capacity.

And I think that it has some significant potential to meet the challenges because we know that customers are ultimately going to want to choose their source of supply. And I think distributed generation is going to play a significant role in that and fuel cells as part of the distributed generation market, I anticipate would play a significant share of that.

TURBINE RESEARCH

Mr. NETHERCUTT. Are you doing any research on hydro-power turbine generation? In other words, I know you are doing some advanced turbine research.

Mr. GEE. Right.

Mr. NETHERCUTT. But does it apply at all to hydro power?

Mr. GEE. The hydro research is being done by our Office of Energy Efficiency and Renewable Energy and I believe they are doing some hydro-turbine research to try to make it what they call a fish-friendly turbine. So that it does not chew up as many fish.

Mr. NETHERCUTT. Right. We need it desperately out West.

Mr. GEE. We want to be able to help you save the fish stock so that you can use it for other purposes, obviously.

Mr. NETHERCUTT. It will generate power and not tear down dams.

Mr. GEE. Right. I think that is the core of their research effort in the hydro sector from what I understand.

CARBON SEQUESTRATION

Mr. NETHERCUTT. Let me ask one quick, final question. I sit on the Agricultural Appropriations Subcommittee and there is a substantial amount of research that is going to carbon sequestration. And I see it is in your budget request as well. And as one who advocates a production oriented research rather than necessarily a global warming type of research, how are you coordinating with USDA, if you are, or other agencies that might be doing the same thing that are comprising a substantial amount of the budget numbers through the administration?

Mr. GEE. I believe, and I am going to turn it over to Mr. Kripowicz to give you more details, we are very closely coordinating our efforts with USDA, particularly, I believe, in terms of the research that relates to development of sequestration opportunities in the form of what we call, sinks, or particular soils that can be cultivated so that they would absorb greater volume of carbon dioxide.

Now, let me turn to Mr. Kripowicz, to see if he can give you some more details.

Mr. KRIPOWICZ. We are in the process of putting a comprehensive document together that assesses all of the things that you need to do for carbon sequestration. And we are doing that with our Office of Science. And in that process we have talked to all of the other agencies and had workshops with all of the other agencies. Once we get this document put together we are going to put it out for review, not only by the other agencies, but also by the total scientific community. And the idea is to put this thing together on a coordinated basis so that we do not do the same things that the Department of Agriculture does or the Geological Survey does.

Mr. NETHERCUTT. When will that be forthcoming and when it is forthcoming, would you provide a copy to this subcommittee?

Mr. KRIPOWICZ. Yes, sir. We expect to be able to have that working document released within the next week or so. When we first started talking about carbon sequestration, a year or so ago, we had very little detailed information about what we were really after. Now, we have a very comprehensive look at it which includes all of the other government agencies.

Mr. NETHERCUTT. Thank you very much.

Thank you, Mr. Chairman.

Mr. REGULA. Will there be an executive summary on that? I would like to put it in the record if it is not too copious.

[The information follows:]

EXECUTIVE SUMMARY

Predictions of global energy use in the next century suggest a continued increase in carbon emissions and rising concentrations of carbon dioxide (CO_2) in the atmosphere unless major changes are made in the way we produce and use energy—in particular, how we manage carbon. For example, the Intergovernmental Panel on Climate Change (IPCC) predicts in its 1995 "business as usual" energy scenario that future global emissions of CO_2 to the atmosphere will increase from 7.4 billion tonnes of carbon (GtC) per year in 1997 to approximately 26 GtC/year by 2100. IPCC also projects a doubling of atmospheric CO_2 concentration by the middle of next century and growing rates of increase beyond. Although the effects of increased CO_2 levels on global climate are uncertain, many scientists agree that a doubling of atmospheric CO_2 concentrations could have a variety of serious environmental consequences.

One way to manage carbon is to use energy more efficiently to reduce our need for a major energy and carbon source—fossil fuel combustion. Another way is to increase our use of low-carbon and carbon-free fuels and technologies (nuclear power and renewable sources such as solar energy, wind power, and biomass fuels). Both approaches are supported by the U.S. Department of Energy (DOE) and are not the focus of this report.

The third and newest way to manage carbon, capturing and securely storing carbon emitted from the global energy system (carbon sequestration), is truly radical in a technology context. The development of today's fossil energy-based system is rooted in the Industrial Revolution. For over 200 years, the development of energy technology has been focused on lowering costs through increased efficiency to support economic growth. Because of their abundance, availability, and high energy content, coal, oil, and natural gas have proved to be attractive energy sources to produce electricity, run industrial processes, propel transportation vehicles, and provide energy for residential and commercial applications. As fossil energy use increased and adverse environmental effects became apparent, energy technology also evolved to minimize them. However, all of this enormous technology development has assumed that the free venting of CO_2 to the atmosphere was environmentally harmless. Only recently has the increasing concentration of CO_2 in the atmosphere been considered to represent a serious environmental problem. The consequence is that we have developed an intricate, tightly coupled energy system that has been optimized over 200 years for economy, efficiency, and environmental performance, but not for the capture and sequestration of its largest material effluent, CO_2.

The goal of this report is to identify key areas for research and development (R&D) that could lead to an understanding of the potential for future use of carbon sequestration as a major tool for managing carbon emissions. Under the leadership of DOE, researchers from universities, industry, other government agencies, and DOE national laboratories were brought together to develop the technical basis for conceiving a science and technology road map. That effort has resulted in this report, which develops much of the information needed for the road map.

This report identifies the R&D topics necessary to understand and develop critical options for the capture, transport, conversion, and sequestration of carbon. It addresses known sources of carbon (industrial sources, power plant flue gases, preprocessed fossil fuels before combustion); carbon forms for sequestration (CO_2, elemental carbon, and minerals that contain carbon); and options for sequestration sinks—oceans, geologic formations, soils and vegetation (see Chaps. 3 through 7).

THE ROAD MAP VISION AND GOALS

The vision for the road map is to

Possess the scientific understanding of carbon sequestration and develop to the point of deployment those options that ensure environmentally acceptable sequestration to reduce anthropogenic CO_2 emissions and/or atmospheric concentrations. The goal is to have the potential to sequester a significant fraction of 1 GtC/year in 2025 and 4 GtC/year in 2050.

The purpose of carbon sequestration is to keep anthropogenic carbon emissions from reaching the atmosphere by capturing them, isolating them, and diverting them to secure storage and/or to remove CO_2 from the atmosphere by various means and store it. Any viable system for sequestering carbon must be safe, environmentally benign, effective, and economical. In addition, it must be acceptable to the public.

Why is carbon sequestration important? Given the magnitude of carbon reductions needed to stabilize the atmosphere, capture and sequestration could be a major tool for reducing carbon emissions to the atmosphere from fossil fuels; in fact, sequestration may be essential for the continued large-scale use of fossil fuels. It will allow greater flexibility in the future primary energy supply. In addition, it could offer other benefits such as the manufacture of commercial products (e.g., construction materials and plastics); improved agricultural practices that could reduce soil erosion, conserve water, and increase the sustainability of food production; the restoration of wetlands, which would help preserve wildlife and protect estuaries; increased biodiversity; enhanced recovery of oil and methane (from coal beds); and the development of exportable technologies to help the U.S. economy.

THE GLOBAL CARBON CYCLE AND FOSSIL FUELS

Most anthropogenic (human-activity-related) emissions of carbon to the atmosphere result from combustion of fossil fuels for the economical production of energy. If the demand for energy continues to increase, it is possible that the only way that fossil fuels can be used for large-scale energy production is through the development and implementation of carbon capture and sequestration options.

Given the magnitude of carbon emission reductions needed to stabilize the atmospheric CO_2 concentration, multiple approaches to carbon management

(i.e., improved energy efficiency and clean energy systems) will be needed. All potentially important technical options should be explored.

SCIENTIFIC AND TECHNICAL NEEDS FOR CARBON SEQUESTRATION

STRATEGIC ISSUES

Following are the general recommendations of the report addressing strategic issues regarding a comprehensive carbon sequestration program.

- Sequestration R&D could expand the world's future options for dealing with greenhouse gases.
- Many carbon sequestration options are particularly amenable to improving existing activities—such as CO_2 injection during secondary oil recovery—and often provide important secondary benefits, such as improving ecosystems during reforestation.
- Some carbon sequestration options, such as improved agricultural practices, are available practically immediately. Examining ongoing, field-scale sequestration investigations in terrestrial, geological, and ocean systems can provide critical experience for designing the necessary environmental research programs.
- Some carbon sequestration options that have limited capacity or relatively short carbon residence times could nonetheless make important near-term contributions during a transition to other longer-term carbon management options. Other carbon sequestration options can provide significant long-term contributions.
- For carbon sequestration to be a viable option, it needs to be safe, predictable, reliable, measurable, and verifiable; and it needs to be competitive with other carbon management options, such as energy-efficient systems and decarbonized energy technologies.
- Carbon sequestration is an immature field, so multiple fundamental R&D approaches are warranted and significant breakthroughs can be expected. The federal government is an appropriate sponsor of carbon sequestration R&D.
- Integrated analyses of the carbon sequestration system should be periodically updated to evaluate the potential contributions, costs, and benefits of various carbon sequestration options.
- The information from the R&D program should be provided to policy makers to aid them in developing policy and selecting the most efficient and effective solutions to the issues of climate change.

Separation and Capture of CO_2 from the Energy System

Several currently available technologies can be used to separate and capture CO_2 from fossil-fueled power plant flue gases; from the effluents of industrial processes such as iron, steel, and cement production; and from hydrogen production by reforming of natural gas. However, these technologies have not been applied at the scale required to use them as part of a CO_2 emissions mitigation strategy. CO_2 can be absorbed from gas streams by contact with amine-based solvents or cold methanol. It can be removed by adsorption on activated carbon or other materials or by passing the gas stream through special membranes.

Geologic or ocean storage sequestration options that use a concentrated source of CO_2 require low-cost carbon separation and capture techniques to be viable options. The scale of the industrial system required to process gigatonnes of carbon warrants investigation into new solvents, adsorbents, and membrane separation devices for either pre- or post-combustion separation.

Advanced methods might include adsorbing CO_2 on zeolites or carbon-bonded activated carbon fibers and separating it from flue gases or process gases from industrial operations using inorganic membranes. The use of commercial CO_2-removing processes that scrub gases with amine-based solvents is projected to raise the cost of producing electrical power from coal-fired power plants using existing technology. Capture and sequestration could increase the cost of electrical power generation from coal by as much as 20 to 30 mills/kWh. Thus, although CO_2 separation is done routinely, dramatic improvements are necessary to make the process economical (Chap. 2). Techniques will be needed to transform the captured CO_2 into materials (1) that can be economically and safely transported and sequestered for a long time or (2) that can be used to make commercial products (e.g., construction materials) that could offset the costs of separation and capture.

There are numerous options for the separation and capture of CO_2, and many of these are commercially available. However, none has been applied at the scale required as part of a CO_2 emissions mitigation strategy, nor has any method been demonstrated for all the anthropogenic sources considered in this R&D map. Many issues remain regarding the ability to separate and capture CO_2 from anthropogenic sources on the scale required, and to meet the cost, safety, and environmental requirements for separation and capture. In our assessment of the scientific and technological gaps between the requirements for CO_2 separation and capture and the capabilities to meet these requirements, many explicit and specific R&D needs were identified.

- A science-based and applications-oriented R&D program is needed to establish the efficacy of current and novel CO_2 separation processes as important contributors to carbon emissions mitigation. Important elements of such a program include the evaluation, improvement, and development of chemical and physical absorption solvents, chemical and physical adsorbents, membrane separation devices with selectivity and specificity for CO_2-containing streams, molecular and kinetic modeling of the materials and processes, and laboratory-scale testing of the selected processes.

- Field tests are needed of promising new CO_2 separation and capture options in small bypass streams at large point sources of CO_2, such as natural gas wells and hydrogen production plants.

Sequestration in the Oceans

The ocean represents a large potential sink for sequestration of anthropogenic CO_2 (Chap. 3). Two methods are proposed for the sequestration of carbon in the ocean: (1) A relatively pure CO_2 stream that has been generated by a power plant, decarbonized fuel production system, or industrial facility could be injected

The ocean provides a large potential reservoir. Active experiments are already under way in iron fertilization and other tests of enhanced marine biological sequestration, as well as deep CO_2 injection. Improvements in understanding marine systems will be needed before implementation of major marine sequestration campaigns.

directly into the ocean. The injected CO_2 may become trapped in ocean sediments or ice-like solids, called hydrates. (2) The net oceanic uptake from the atmosphere could be enhanced through a method such as iron fertilization. These approaches will require better understanding of marine ecosystems to enhance the effectiveness of applications and avoid undesirable consequences.

- Field experiments of CO_2 injection into the ocean are needed to study the physical/chemical behavior of the released CO_2 and its potential for ecological impact.
- Ocean general circulation models need to be improved and used to determine the best locations and depths for CO_2 injection and to determine the long-term fate of CO_2 injected into the ocean.
- The effect of fertilization of surface waters on the increase of carbon sequestered in the deep ocean needs to be determined, and the potential ecological consequences on the structure and function of marine ecosystems and on natural biogeochemical cycling in the ocean need to be studied.
- New innovative concepts for sequestering CO_2 in the ocean need to be identified and developed.

Sequestration in Terrestrial Ecosystems

The terrestrial biosphere is a large and accessible reservoir for sequestering CO_2 that is already present in the atmosphere. Natural carbon fluxes are huge, so that even small forced changes resulting from R&D advances would be very significant. It will be important to address the consequences of altering the natural flux.

Terrestrial ecosystems, which are made up of vegetation and soils containing microbial and invertebrate communities, sequester CO_2 directly from the atmosphere (Chap. 4). The terrestrial ecosystem is essentially a huge natural biological scrubber for CO_2 from all fossil fuel emissions sources, such as automobiles, power plants, and industrial facilities. Computer models indicate that terrestrial ecosystems—forests, vegetation, soils, farm crops, pastures, tundras, and wetlands—have a net carbon accumulation of about one-fourth (1.5 to 2 GtC) of the 7.4 GtC emitted annually into the atmosphere by fossil fuel combustion and land use changes. If there were an increased focus on practices to enhance the natural carbon cycle, the potential for terrestrial ecosystems to remove and sequester more carbon from the atmosphere could be increased by, for example, improving agricultural cultivation practices to reduce oxidation of soil carbon and enhancing soil texture to trap more carbon, and protecting wetlands.

- The terrestrial ecosystem is a major biological scrubber for atmospheric CO_2 (present net carbon sequestration is ~2 GtC/year) that can be significantly increased by careful manipulation over the next 25 years to provide a critical "bridging technology" while other carbon management options are developed. Carbon sequestration could conceivably be increased by several gigatonnes per year beyond the natural rate of 2 GtC per year, but that may imply intensive management and/or manipulation of a significant fraction of the globe's biomass. However, those potentials do not yet include a total accounting of economic and energy costs to achieve these levels. Ecosystem protection is important and may reduce or prevent loss of carbon currently stored in the terrestrial biosphere. The focus for research, however, should be on increasing the rate of long-term storage in soils in managed systems.

- Research on three key interrelated R&D topics is needed to meet goals for carbon sequestration in terrestrial ecosystems:

  — Increase understanding of ecosystem structure and function directed toward nutrient cycling, plant and microbial biotechnology, molecular genetics, and functional genomics.

  — Improve measurement of gross carbon fluxes and dynamic carbon inventories through improvements to existing methods and through development of new instrumentation for in situ, nondestructive below-ground observation and remote sensing for aboveground biomass measurement, verification, and monitoring of carbon stocks.

  — Implement scientific principles into tools such as irrigation methods, efficient nutrient delivery systems, increased energy efficiency in agriculture and forestry, and increased byproduct use.

- Field-scale experiments in large-scale ecosystems will be necessary to understanding both physiological and geochemical processes regulating carbon sequestration based upon integrative ecosystem models. Such carbon sequestration experiments are needed to provide proof-of-principle testing of new sequestration concepts and integration of sequestration science and engineering principles.

Sequestration in Geologic Formations

> Limited geological sequestration is being practiced today, but it is not yet possible to predict with confidence storage volumes and integrity over long time periods. Many important issues must be addressed to reduce costs, ensure safety, and gain public acceptance.

Three principal types of geologic formations are widespread and have the potential for sequestering large amounts of CO_2. They are active and uneconomical oil and gas reservoirs; aqueous formations; and deep and unmineable coal formations. About 70 oil fields worldwide use injected CO_2 for enhanced oil recovery. CO_2 sequestration is already being practiced in a sub-seabed reservoir in the North Sea of Norway. The United States has sufficient

capacity, diversity, and broad geographic distribution of potential reservoirs to use geologic sequestration in the near term (Chap. 5). The primary uncertainty is the effectiveness of storing CO_2 in geological formations—how easily CO_2 can be injected and how long it will remain. Only through experience will enough knowledge be gained to assess the ultimate sequestration potential of geologic formations.

- Fundamental and applied research is needed to improve the ability to understand, predict, and monitor the performance of sequestration in oil, gas, aqueous, and coal formations. Elements of such a program include multiphase flow in heterogeneous and deformable media; phase behavior; CO_2 dissolution and reaction kinetics, micromechanics and deformation modeling; coupled hydrologic-chemical-mechanical-thermal modeling; and high-resolution geophysical imaging. Advanced concepts should be included, such as enhancement of mineral trapping with catalysts or other chemical additives, sequestration in composite geologic formations, microbial conversion of CO_2 to methane, rejuvenation of depleted oil reservoirs, and CO_2-enhanced methane hydrate production.

- A nationwide assessment is needed to determine the location and capacity of the geologic formations available for sequestration of CO_2 from each of the major power-generating regions of the United States. Screening criteria for choosing suitable options and assessing capacity must be developed in partnership with industry, the scientific community, and public and regulatory oversight agencies.

- Pilot-scale field tests of CO_2 sequestration should be initiated to develop cost and performance data and to help prioritize future R&D needs. The tests must be designed and conducted with sufficient monitoring, modeling, and performance assessment to enable quantitative evaluation of the processes responsible for geologic sequestration. Pilot testing will lay the groundwork for collaboration with industrial partners on full-scale demonstration projects.

Advanced Biological Processes

Advanced biological techniques may produce options too radical to predict. Some biologic processes can sequester carbon products at low cost. New carbon sequestration options could become feasible and others could be improved using advanced biological techniques.

Advanced biological processes (Chap. 6) could be developed and implemented to limit emissions and capture and sequester carbon from both relatively concentrated utility and industrial combustion gases, as well as from dispersed point sources. Bacteria and other organisms could be used to remove carbon from fuels and to recycle carbon from man-made waste streams. In addition, crop wastes and dedicated crops could be used as feedstocks for biological and chemical conversion processes to manufacture fuels and chemicals. Advanced crop species and cultivation practices could be designed to increase the uptake of atmospheric CO_2 by terrestrial and aquatic

biomass and decrease CO_2 emissions to the atmosphere from soils and terrestrial and aquatic biomass.

The 21st Century has been referred to as the "Century for Biology." Indeed, many new molecular tools have been developed that will aid in new discoveries and assist in providing solutions to key problems facing humankind and the planet. The difference that advanced biological techniques can make will be evident when they are integrated with land, subsurface, and ocean management practices. The following recommendations will promote cost-effective and stable biological solutions to carbon sequestration.

- Research should be initiated on the genetic and protein engineering of plants, animals, and microorganisms to address improved metabolic functions that can enhance, improve, or optimize carbon management via carbon capture technology, sequestration in reduced carbon compounds, use in alternative durable materials, and improved productivity.

- The objectives and goals of the advanced biological research should be linked to those specific problems and issues outlined for carbon sequestration in geological formations, oceans, and soils and vegetation so that an integrated research approach can elucidate carbon sequestration at the molecular, organism, and ecosystem levels.

- Short-, mid-, and long-term goals in advanced biological research should be instituted so that scale-up issues, genetic stability in natural settings, and efficacy in the field can be assessed.

Advanced Chemical Approaches

Most carbon sequestration options rely on chemical reactions to achieve benign, stable, and inert products. Studies to enhance the relevant chemistry almost certainly will reduce the costs or increase the effectiveness of these options. Results from R&D on advanced chemical topics also may make it possible to generate useful and marketable byproducts.

Many of the sequestration technologies described in this document depend on chemistry. Improved methods of separation, transport, and storage of CO_2 will benefit from research on and development of advanced chemical techniques to address sequestration via chemical transformations (Chap. 7). Any viable sequestration technique must store vast amounts of carbon-rich materials, so environmental chemistry will be valuable to determine whether these materials will be stable when sequestered. Many issues pertaining to aqueous carbonate/bicarbonate chemistry are relevant to sequestration of carbon in oceans, geological formations, and groundwater. Carbonate chemistry in very basic solutions may lead to a method for extracting CO_2 from air. Clathrates, compounds that can enclose molecules such as CO_2 within their crystal structure, may be used to separate CO_2 from high-pressure systems. Learning clathrate properties may be important to understanding chemical approaches to ocean storage of carbon, and subsurface arctic and

marine hydrate formations may also be evaluated as geologic sequestration options.

- The proper focus of R&D into advanced chemical sciences and technologies is on transforming gaseous CO_2 or its constituent carbon into materials that either are benign, inert, long-lived and contained in the earth or water of our planet, or have commercial value.

  — Benign by-products for sequestration should be developed. This avenue may offer the potential to sequester large (gigatonne) amounts of anthropogenic carbon.

  — Commercial products need to be developed. This approach probably represents a lesser potential (millions of tonnes) but may result in collateral benefits.

- The chemical sciences can fill crucial gaps identified in the other focus areas. In particular, environmental chemistry is an essential link in determining the impact and consequences of these various approaches. Studies to address the specific gaps identified in Chap. 7 should be conducted to ensure that other focus areas meet their potential.

DEVELOPING A CARBON SEQUESTRATION ROAD MAP

An emerging science and technology road map seeks to identify the scientific and technological developments needed to achieve a specific policy goal. The process of identifying the needed science and technology must be focused by developing a concept of the technological system (Chap. 8). This task is particularly difficult in the case of carbon capture and sequestration because the understanding necessary to design such a system is still immature.

Today, carbon is emitted to the atmosphere from many sources that were not designed to capture, let alone sequester, these emissions. There are many ideas for, and even demonstrations of, technology to capture and sequester carbon from fossil fuel combustion. Many of the requisite new energy production technologies are already under development at DOE. However, the current energy system probably must be modified significantly to make an economical capture and sequestration system possible. Thus, the emerging technology road map for carbon capture and sequestration cannot be constructed apart from consideration of current and emerging energy technologies. It will involve an iterative process to connect this road map with others being developed by DOE for various parts of the energy technology system.

This report is a significant first step toward the development of an emerging technology road map for carbon capture and sequestration. We start from a bold vision of having the scientific and technical knowledge to make carbon sequestration a major carbon management option by 2025. Guided by this vision, each of the technical focus chapters (2–7) identifies key areas for scientific and

technical development, including new areas outside traditional energy technology development.

We have begun the process of exploring the mutual relationships and interdependencies of the scientific and technological developments in all these fields by building a series of road map linkages. This process has illuminated how progress in one area affects the total system. However, R&D priorities and performance requirements have not yet been defined. Nor has the phasing of potential R&D schedules been considered. Developing linkages has allowed us to eliminate overlaps to some extent, but gaps in the technology needs have not yet been examined. Before proceeding much further, much more work must be done on specifying the economic constraints and technology needs of the integrated carbon capture and sequestration system. The road map outline presented in this document, especially the research needs delineated in chapters 2–7, provides the sound basis for taking these next steps toward a fully realized program in carbon sequestration. This report should be used as a framework in organizing a wider examination by diverse stakeholders of the science and technology required for carbon capture and sequestration.

Mr. KRIPOWICZ. I believe there is. You know, there are executive summaries and then executive summaries. But I believe that——

Mr. REGULA. Would you coordinate and let us know if it is practical to put it in the record.

Mr. KRIPOWICZ. Yes, we will get it to you.

Mr. REGULA. Mr. Dicks.

Mr. DICKS. Well, I want to welcome our witnesses. I regret I was unable to be here earlier. I have some questions for the record from Mr. Mollohan that I would like to have inserted.

Mr. REGULA. Without objection, these will be submitted.

[The questions of Mr. Mollohan follow:]

QUESTIONS SUBMITTED BY CONGRESSMAN MOLLOHAN

Fossil Energy's Budget

Question: Fossil Energy's proposed budget for the Coal and Power research and development program was severely cut in the fiscal year 2000 OMB passback -- from $228 million to $133 million. Following appeal, OMB restored the budget to $214 million. Oil and Gas program funding followed similar scenarios. Why, in your opinion, did OMB cut and then partially restore the budget for fossil energy research and development?

Answer: The Administration must sort through many funding priorities to keep within the budget caps. It is entirely normal for budget numbers to fluctuate during the budget.

Question: What actions will you take in the fiscal year 2001 budget process to ensure that this scenario doesn't repeat?

Answer: The scenario to which you refer is an entirely normal part of the budget process. The Department, therefore, will not take any special actions in advance of the fiscal year 2001 budget process to alleviate it.

Methane Hydrates

Question: Methane hydrates are a potentially enormous natural gas resource. Japan is heavily engaged in developing and patenting technologies for extracting hydrates from the seabed. The requested funding for hydrates research is $2 million in 2000 -- yet the President's Committee of Advisors on Science and Technology (PCAST) recommended initiating funding at $5 million, with outyear budget increases to levels of over $10 million per year. What degree of importance does Fossil Energy place on methane hydrates research?

Answer: The importance that the Office of Fossil Energy places on Methane Hydrate Research and Development is shown by the fact that this is the only budget item to be significantly increased in fiscal year 2000 within the Natural Gas Supply program. The Fossil Energy Office has been working for over a year with key stakeholders in industry, academia, and government to design a long-term program to address the national needs in methane hydrate. Based on the results of this planning as well as early program results, funding needs, and future budgets will be revisited in fiscal year 2001.

Question: Would you please project future research and development funding requirements necessary for the U.S. to gain the technological know-how and patents for achieving maintaining world dominance in this area?

Answer: The Department, based on stakeholder input and implementation planning (in progress), estimates, on a very preliminary basis, that between $150 and $200 million would be required over a decade or more to develop the knowledge and technologies necessary for commercial production of methane from hydrates.

Fuel Cells

Question: Fuel cell technology is emerging as a revolutionary, ultra-clean energy source for distributed power applications. However, in spite of federal investments and private-sector cost sharing, the U.S. still lags behind Europe and Japan in funding of fuel cell research. What is your opinion regarding the value of fuel cells in the U.S. energy portfolio?

Answer: U.S. developers are the world leaders in fuel cell technology. To best serve the marketplace, the U.S. energy portfolio must contain a mix of options to meet customer (consumers of electricity) expectations and public benefits (clean environment, strong economy). Fuel cells have the potential to provide a wide range of economic benefits while providing significant public benefit and, therefore, is a valuable technology needed to maintain a balanced U.S. energy portfolio.

Fuel cells are a revolutionary electric power generation option which is gaining acceptance in stationary, transportation and distributed generation markets. Fuel cells unique attributes of high efficiency, even at part load, minimal environmental emissions, and ease of siting make them a superior option for future energy needs. The emerging deregulated electric marketplace will require technologies with superior environmental performance, ease of siting/permitting, high power quality, low cost, and many other factors which we have not yet recognized. Fuel cells are a superior technology that can address these requirements.

The prospect of harvesting these public benefits has enabled the establishment of an aggressive research and development program at the Department of Energy that is designed to assist U.S. developers bring the technology to market through advances aimed at driving down costs so that fuel cells can compete with current and future alternatives.

Question: How does the Department plan to accelerate the development of this technology?

Answer: The Department is accelerating the development of fuel cells technology by continuing focused technology development efforts that are underway to resolve the remaining technical issues, accelerate efforts to drive down costs, and by creating market interest through successful demonstrations and other technology transfer initiatives.

Question: How can the Department help create markets to stimulate U.S. fuel cell manufacturing and to develop domestic fuel cell suppliers?

Answer: The Department has been trying to create markets, stimulate manufacturing, and develop domestic suppliers by continuing to collaborate with the Department of Defense in fuel cells buy-down programs that accelerate the deployment of 200-kilowatt PAFCs and other types of fuel cells; by attempting to provide a stable funding atmosphere for current energy technology development efforts that lead to more competitive products; by conducting successful demonstrations; and by keeping the public and potential domestic and international customers aware of the benefits of fuel cells.

Clean Coal Technology Program

Question: For several years now, the Department has moved funds from the Clean Coal Technology (CCT) program into Energy Efficiency and Renewable Energy programs. While these programs warrant investment, they should not be increased at the cost of the CCT program. As a spokesman for Fossil Energy, how do you propose to stop the trend of reductions in Clean Coal Technology funding?

Answer: Clean Coal Technology funding has only been reduced when available and not needed for on-going projects. To date, $441 million has been rescinded. The current budget proposal delays funding; but no reductions are proposed.

Question: What was Fossil Energy's request to OMB for the CCT program?

Answer: The Department's fiscal year 2000 budget request to OMB for Clean Coal Technology was a deferral of $59 million.

Fossil Fuel Usage

Question: It is clear that fossil fuels will be used well into the future, even if the Kyoto Protocol is implemented in the U.S. Industry estimates fossil fuels will make up 90 percent of the U.S. energy portfolio by the year 2030 (most of which would be natural gas, but with a strong coal component). However, there appears to be a clear bias against coal usage in Administration policy. What is the Department doing to develop technologies for improving the efficiency, lowering the cost, and reducing emissions of existing and next-generation, coal-fired power plants?

Answer: The Low Emission Boiler Systems (LEBS) is a next generation technology, approximately 3 to 5 years away, being readied for commercial application. The LEBS will have higher efficiency, lower emissions, and more competitive costs then today's coal-fired power plants. Currently we have in place programs to reduce the emissions from plants, including NOx, PM 2.5 and Mercury.

We are planning for the future through Vision 21. Vision 21 is planned as a program that will result in significant improvements in efficiency, control of emissions and cost of electricity by integrating together several technologies into hybrid systems. Vision 21 plants will combine high-performance subsystems with smart systems-integration techniques; use feedstocks that include fossil fuel; be a net electricity or fuel producer; and have high efficiency, low emissions, and competitive costs. Vision 21 plants may incorporate modular subsystems and components using standardized designs; utilize "opportunity" feedstocks; deliver opportunity products; and capture CO2 for sequestration.

Question: Although there have been many technologies developed at facilities like the Federal Energy Technology Center (FETC), it would appear that these technologies are simply not being used in this country. Why is that?

Answer: Many technologies developed by DOE, working in partnership with industry, have been widely deployed. These technologies include fluidized bed combustion, coal cleaning, gasification, flue gas desulfurization systems, and various nitrogen oxide control technologies. Advanced large scale power systems have generally not been widely deployed. The reasons for this lack of deployment are twofold.

First, there is very little demand for baseload power generation in the United States at this time due largely to successful efforts by industry to become more efficient in its operation and a shift to less energy intensive industries.

Second, successful research to lower the cost of finding and producing natural gas have made natural gas powerplants a more economical choice for the immediate future. Natural gas fired powerplants have about one-half the capital cost of coal-fired powerplants, making them especially attractive during this period of transition to a more competitive electricity generation sector. We expect widespread deployment of both advanced coal and natural gas powerplants in the 2020 time frame, when the current fleet of powerplants will be retired, and economic growth will mandate additional baseload power.

Question: What are your plans to increase usage?

Answer: The Energy Information Agency projects that by the year 2020, the United States will have added 36 gigawatts of coal-fired capacity to its fleet of electrical power plants. We believe that many of the technologies being developed today will be represented in these new additions. There is an even much larger market outside the United States. The Coal Utilization Research Council (CURC) has proposed several financial incentives to the incentivise the early deployment of clean and efficient coal technologies. We have been reviewing the merits of their proposed incentives approach.

Most of our programs are focused on high efficiency, low emissions, and low cost technology to compete for future plants. For added emphasis, we created Vision 21. The primary goal of Vision 21 is to develop the technology basis for ultra-clean integrated energy plants that will be deployed early in the 21st century. These plants will utilize advanced technology modules that can be integrated and configured to create power generation systems tailored to specific energy markets. In a Vision 21 setting, advanced turbines, gasifiers, fluidized beds, high-temperature combustion systems, or fuel cells would be used to generate power. Early versions of these technologies have entered the commercial market; DOE-funded research will accelerate the advancements needed for Vision 21 applications.

Because Vision 21 plants could be customized, they could better respond to specific needs of local markets. For example, one plant may be equipped to produce electricity utilizing low-cost opportunity fuels. Another plant may be tailored to co-produce electricity along with low-priced chemical feedstocks in regions where there is a market demand for a specific feedstock for chemical processing plants.

Critical Infrastructure Protection (Natural Gas and Electricity)

Question: Apparently, Fossil Energy has been assigned the responsibility for protecting the "critical infrastructures" of natural gas and electricity. To date, there have been no proposals for this work. Does Fossil Energy plan to put forth any plans for protecting the "critical infrastructure" of natural gas and electricity?

Answer: Yes. On May 22, 1998, President Clinton signed Presidential Decision Directive 63 (PDD-63) directing a major national effort to protect the Nation's critical infrastructures: "...those physical and cyber-based systems essential to minimum operations of the economy and Government" from physical threats (physical threats to tangible property), or cyber threats (threats of computer-based or radio-frequency attacks on information or communication facilities that control critical infrastructure). The PDD-63 designates the Department of Energy as the lead agency for the Energy Sector (Electric Power and Oil and Gas Production and Storage). The Department of Energy created the Office of Critical Infrastructure Protection (OCIP) to plan, facilitate, and monitor the implementation of infrastructure activities within the Department. The Office of Fossil Energy is working with OCIP in the development of the National Infrastructure Assurance Plan for the Energy Sector and has played a key role in the preparation of an Energy Sector Infrastructure Research and Development Plan.

Question: If so, why were these plans not included in the 2000 budget? When might we see such plans?

Answer: We cannot answer with a definite time line. However, the Department continues to examine research and development alternatives for critical infrastructure.

Mr. DICKS. Thank you very much, Mr. Chairman.

Let me ask you, I hope you did not get into this too heavily, but I would like to ask you: The President's Committee of Advisors on Science and Technology in the past report on Federal Energy Research and Development for Challenges in the 21st Century include the following observations: While the challenges looming in the energy future of the United States and the world have been growing in recent years, expenditures on R&D have been declining. The most recent systematic study of energy industry R&D trends found that the industry spending for R&D fell 40 percent in real terms between 1985 and 1994. The R&D spending of the 112 largest U.S. operating electric utilities fell 38 percent between 1993 and 1996 alone, and the R&D of the four U.S. oil firms with the largest research efforts, approximately, halved between 1990 and 1996. Japan however, increased its public sector energy R&D spending from about $1.5 billion in 1974 to $4.2 billion in 1980, by 1995, the figure was $4.9 billion, about twice as high as DOE's energy R&D spending.

The PCAST paints a bleak picture. How long can these trends continue without a calamity or major energy restructuring? Or do you think there is a problem?

Mr. GEE. I think that you have highlighted a very significant challenge for our government and for our private sector, Congressman Dicks. In particular, in Japan, there is a much larger commitment on the part of their government, frankly, to work in a unique way with their private sector to provide them with the backbone for R&D which would make their energy private sector competitive, particularly in exporting technologies, energy technologies that would be deployed in the developing world.

We believe the reason why we are here today is to support a research budget within our budget limitations that would make a contribution to the efforts that our industry needs. I cannot represent to you that that is going to fill the gap though. Obviously we are at a crossroads where our private sector, particularly in the electricity utility industry, is shaving back as we have indicated on their commitment for long-term R&D.

Mr. REGULA. Will the gentleman yield?

Mr. DICKS. Yes, I will yield.

Mr. REGULA. I think you are touching on an extremely important subject that affects the future, since energy is key to everything. You mentioned the Japanese numbers. Now, many of our projects have a private match which would—and I wonder if those numbers that you are using, Mr. Dicks, reflect that and those cases is 100 percent of their research Government funded? Because that would change the relationships.

Mr. DICKS. Most of what we are talking about is done by the private sector, right? Yes, the Japanese number is all Government funded. But our number was Government and private sector.

Mr. GEE. Was that a combined number?

Mr. DICKS. Well, I guess we mentioned here, energy industry spending for R&D fell 40 percent in real terms. I do not think we

have the Government spending in our figures. These are all industry numbers.

Mr. REGULA. I was just trying to get apples and apples in terms of the effort.

Mr. DICKS. Yes. Because I am sure they have some private sector numbers that we do not include here. But the question I'm asking is this because of low oil prices, energy prices? Does the R&D effort kind of fall off when energy is so plentiful?

Mr. GEE. Well, one reason is market pressure. In an environment when you have low crude oil prices, in the private sector or in any business, for that matter, the first place you cut is your long-term R&D just as a matter of strategic business survival. So, it is true that our oil firms are lessening their effort in R&D simply because they do not have the money.

The same holds true, obviously, for the electric sector where they are moving towards a more competitive market both for now in the wholesale markets and ultimately in the wider retail markets. And they are not able to carry those R&D budgets that were financed in a monopoly arrangement they used to have with their customer base.

And, so, that is where that pressure is coming from. And that means that the challenge is to find and sharpen and justify government as hopefully an entity through which a lot of these long-term R&D efforts can be maintained.

Mr. DICKS. Thank you very much.

I regret that I cannot stay but I have a meeting with the Democratic leader.

Mr. REGULA. Thank you.

DOMESTIC OIL MARKET

I have a couple of questions and then I will go back to either of you before we adjourn. And this fits with your interest, Mr. Peterson. The question: You have proposed a preferred petroleum upstream management program for $500,000. And you have had the discussion with Mr. Peterson on the decline in domestic oil production. I note that you asked for $5 million in your initial request, and I presume OMB cut you back to $500,000.

Well, it does not make sense if we are going to have a program to deal with domestic oil production because I heard you using the numbers of 60 and 70 percent of our oil petroleum consumption would be from offshore sources, and it seems that creates an enormous dependency in the event of world turmoil. I would like your comments.

Mr. GEE. Obviously, as you have indicated, we could have used more and we have had to tailor our request within a smaller budget number. From our Departmental standpoint, that does not signal any lessening of the commitment, as you know, about the importance of this program. What it does is it provides for the transfer of known technology to a lot of the small operators so that they can find ways to incorporate these better practices in their operations to reduce their costs and to keep them operating through this difficult period.

It is a very successful program that we already have underway in terms of talking with our independent industry and we are going to use the money as best we can.

Mr. REGULA. $500,000, though. You are going to have to downsize that program, are you not?

Mr. GEE. Well, we are going to have to make more with less.

Mr. REGULA. Does the domestic industry (and they have oil and gas associations in Ohio and I assume in Pennsylvania, where there are a lot of the stripper wells) offer to participate in research, or is it pretty much 100 percent Federal money?

Mr. GEE. I believe it is 100 percent federal in this regard. We have worked with and we have a network of different organizations that we work very closely with so that they act as the information conduit. The trade associations and the regional associations work very closely with us to spread the word on how to get these technologies deployed out into the field. Let me turn to Mr. Kripowicz for a moment and he can tell you a little bit more.

Mr. KRIPOWICZ. Yes. Our R&D program is very highly cost-shared. Our work with the oil associations we do not actually do any of our funding through the oil associations but a lot of our information gets spread through those associations and through the Petroleum Technology Transfer Council. And even the Petroleum Technology Transfer Council is partly cost-shared by the industry.

There is no direct contribution from the associations but the individual companies do end up putting money into the programs.

Mr. REGULA. Mr. Hinchey, any further questions?

Mr. HINCHEY. Thank you, Mr. Chairman.

Just a couple of things. I know that we are increasingly dependent upon foreign sources for our energy supplies, particularly petroleum. And I think that is now around somewhere in the neighborhood of 50 percent of our petroleum is imported from other places in the world.

LONG-TERM ENERGY OUTLOOK

And I was reading in your testimony that natural gas which is in abundant supply begins tapering off by the year 2015. And if we were talking about Social Security or Medicare that would be cause for great alarm. I am wondering what your view is of our long-term energy situation? I am saying, you know, let us say, by into the middle of the next century, where our energy is going to be coming from, how much energy are we going to be using? Those questions, I think, are questions that are on people's minds vaguely, but not clearly enough.

Mr. GEE. Let me offer a comment. Every time we have done a projection on how we are consuming, what volume we are going to consume over the next 20 to 30 years and at what price, we are almost always wrong. But, notwithstanding that, let me try to jump in and be responsive to your question, Congressman.

The number that you have noted in terms of the volume of contribution of natural gas is what we have also heard. What that means though is that we need to find ways to characterize a larger number of our existing reservoirs to get the gas out of the ground more effectively, to go after those reserves that we think have not yet been found and get them out of the ground.

Also, as we have indicated, methane hydrates is a potential for new gas reserves and we have just scratched the surface there. So, the use of natural gas as a fuel source could change over time, over the next 15 to 20 to 30 years, depending upon how successful we are in moving forward on those technologies.

But you are quite correct, there is only a finite amount of natural gas in the ground, proven and known and discoverable in reserves at the moment. So, our projections can only incorporate that to find out exactly what role that plays.

It also means that we are going to have to diversify our fuel resources over the long-term going into the middle of the next century. There is no question about that. As we have indicated, coal will continue to play a significant role. We want to find a way to make it more cost effective through higher rates of efficiency; to make it more environmentally benign so that it can continue to be used as a vital fuel resource. It means we need to continue our R&D efforts on natural gas. It means we also need to continue our R&D on other sources of generation, such as renewables.

I think that what I can say is that we look to having a diversified portfolio of fuel resources sometime around the middle of the next century. That is most expert projections, sort of arm-chair thoughts of where this market is going. But it does not mean we are going to exclude any particular resource or that there is going to be a diminution of the role that fossil fuels are playing.

We anticipate that fossil fuels will continue to probably have the lion's share under most reasonably foreseeable economic scenarios.

Mr. HINCHEY. I appreciate how difficult these projections are. I can recall back in the 1970s, Government agencies, including the Central Intelligence Agency, suggesting that the price of oil today would be about $100 a barrel, when we know it is quite different from that.

Mr. GEE. In 1978, when Congress passed the Natural Gas Policy Act, again, using numbers provided by the experts, I think they anticipated that in 1985 natural gas was going to be sold at a price equivalent to about $100 for a barrel of oil and that was a number from 12 years ago or 13 years ago.

Mr. REGULA. We both can remember when they said nuclear will be almost free.

Mr. GEE. Right. Too cheap to meter.

Mr. REGULA. Too cheap to meter.

Mr. HINCHEY. Nuclear power, too cheap to meter.

Mr. GEE. Yes, right.

Mr. HINCHEY. Yes, I remember that, Mr. Chairman.

Mr. REGULA. I have not found that meter, yet. [Laughter.]

STRIPPER WELLS

Mr. REGULA. Mr. Peterson?

Mr. PETERSON. Yes. I am meeting with the Pennsylvania Oil and Gas Independent Producers at 3 o'clock and could we kind of click down through. You talked about efforts you want to do to help the immediate industry, especially the stripper wells. But what all are we doing to assist them? What can I tell them?

Mr. GEE. Let me see if I can tell you off the top of my head some of the things we are doing and then I can turn to Mr. Kripowicz who has got something he can read from, as well.

One of our objectives is to lower the cost of production. And what we are doing is we are working with the industry to try to find ways, as we indicated, to bring about and to make known existing technology that they can now deploy out in the field that would reduce their lifting costs, simply through better management practices using new technology or existing technology rather.

Secondly, we have a program with the National Association of State Energy Officials to try to find ways to work with the electric utilities to lower the electric utility bills. The lifting costs that a lot of our operators experience, electricity makes up 30 to 40 percent or so of the lifting costs. If we can find a way to just cut that in half that would make a tremendous difference in improving the economic survival of these operators who have these stripper wells.

We are also working with our sister agencies to try to find a way to help ameliorate some of the regulatory burdens that they face both in terms of royalty levels, perhaps trying to postpone the imposition of them, particularly royalties on certain categories of production. We are trying to find a way to ameliorate that. I believe Interior already has the authority to grant royalty holidays on a case-by-case basis in hardship cases. So, we are working with Interior to try to find ways to ameliorate that.

We are also working to try to find ways to bring about better and more streamlined regulatory procedures. We are working with our sister agencies, such as Interior, to try to find ways to simplify some of their regulatory burdens so that it could lower the costs of compliance. We have an on-line permitting project with some state agencies, such as the Texas Railroad Commission, to try to find ways to have permits granted for production now on an on-line electronic system, rather than through paper.

And we anticipate that that could yield a tremendous volume of cost savings to our industry just by filing for permits electronically.

Let me turn to Mr. Kripowicz and see if there are other things he might want to add.

Mr. KRIPOWICZ. Well, I think those items, plus our R&D program which we had previously discussed. We also did sign a memorandum of understanding with the SBA for them to promote their loan program for small businesses in the oil industry. They have not been active in doing that before. So, now we are working with them.

Plus, setting up the interagency group to continue to look at ways that we can assist the industry that the Secretary just announced, I think, is very important. And part of that will be looking at the possibility of some sort of tax relief and in that area we will also be working very closely with Congress, I assume.

INTERSTATE OIL AND GAS COMPACT COMMISSION

Mr. PETERSON. May I make a suggestion?

I, coming from an oil State, would seem to me if you—I think I made the same suggestion to Interior when they were here, to bring together the oil producing States, you know, and have someone represent the administration or Governor and maybe who runs

the oil regulatory part. And see if collectively, because we are kind of, you know, the Federal Government is pretty far removed from the little producer that is down in the woods. And you cannot really reach out and touch them like the State can. The State people are out there and if we could work something out rather quickly with the oil regulators at the State level where you developed a common approach of how to help.

Because I want to tell you, they are rolling over and dying as we talk. I mean it is just—and they are going to go broke, they are broke. And we are just going to have these hundreds of thousands or millions of orphan wells and that is going to be another whole problem if we let this industry collapse.

Mr. REGULA. Go ahead.

Mr. GEE. Congressman, we appreciate your concern and your suggestions. We have a very vigorous dialogue with the state officials through the Interstate Oil and Gas Compact Commission which is comprised of the oil and gas producing states, both at the governor level as well as the Secretary of Energy level, with the various states. They are very active. We have communication with them virtually on a day-to-day basis now to try to assess what the conditions are and things that we can do to help them out. And those efforts will continue.

Mr. PETERSON. Thank you.

Mr. REGULA. I think it is a good idea and I am glad to hear you are doing it. I was just going to suggest we try to put it together, but apparently you are ahead of us on this one.

Mr. PETERSON. Could you keep us posted though?

Mr. GEE. Yes, we will.

Mr. REGULA. We have the same problem in Ohio, just identical.

One last question. You are deferring $256 million in Clean Coal Program, $21 million in NPR previous funds, $35 million in two other programs. That is about $300 million in deferred programs. How are you going to restore that into the base budget in the future? In effect, you are using these programs as a bank for your other programs. And that is an interesting concept, but you have to put money back in the bank.

Mr. KRIPOWICZ. Yes, sir, you do have to put money back in the bank. [Laughter.]

And we will request that. [Laughter.]

NAVAL PETROLEUM RESERVE

Mr. KRIPOWICZ. The $256 million is an actual deferral. I think that what we are doing in the Naval Petroleum Reserve is using prior year obligations because we had extra funding.

Mr. REGULA. Do you have any unobligated balances? Are you using that here?

Mr. KRIPOWICZ. That is what we are using to offset the funds in the Naval Petroleum Reserve, for example, and to some extent the fossil energy budget, yes, sir.

But it is only one deferral. The others have the same effect.

Mr. REGULA. But you do understand that it has got to be replaced——

Mr. KRIPOWICZ. Yes, sir.

Mr. REGULA [continuing]. At some future time.

I had another question, but I will save it.

Okay.

Mr. GEE. We fully appreciate the money is going to have to come from somewhere. That message is not lost on us.

Mr. REGULA. Thank you, very much.

It has been a good hearing. I think that we do not pay enough attention to energy because we have plenty. And as Jim Wright said, he was advised by one of his constituents when we had the big energy shortage, that well, there is no problem, you just use more electricity because all you need is a switch to get that.

I think that for the foreseeable future fossil is going to be a key player. And you are it, and I am glad that you are sensitive to that.

Thank you for coming.

Mr. GEE. Thank you.

Mr. REGULA. The Committee is adjourned.

[Additional Committee questions follow:]

ADDITIONAL COMMITTEE QUESTIONS

Clean Coal Technology

Question: Last year, the Congress agreed to defer $40 million in Clean Coal Technology funding. This year you propose to defer an additional $256 million. What is your total remaining commitment to ongoing projects under the Clean Coal Program?

Answer: Only two projects have remaining funding commitments. The two projects are the *Clean Energy Demonstration Project* -- an IGCC planned for Illinois and the *Clean Power From Integrated Coal/Ore Reduction (CPICOR)* project -- a combined steel making and power generation project planned for Utah. The remaining commitment for the *Clean Energy* project is $179 million. The remaining commitment for the CPICOR project is $141 million. The total remaining commitment to ongoing projects (excluding program direction costs) is $320 million. No funding commitments are scheduled for either project until fiscal year 2001.

Question: If we agree to a quarter billion dollar deferral this year and spend those funds on other energy programs, what will you reduce in future years when the deferred funds need to be restored to your budget?

Answer: The Department does not plan on specific reductions in future programs to fund the remaining commitments of the CCT Program. The request includes a schedule for returning the funds that will enable the Department to meet existing funding commitments with our industry partners.

Question: Over the past few years, Congress has rescinded $424 million in clean coal funding. What projects have been terminated and what savings have been realized toward achieving those rescissions?

Answer: Since 1995, a total of five projects have ended prior to completion due primarily to changing market conditions. These projects are as follows:

- Toms Creek IGCC Demonstration Project
- Innovative Coke Oven Gas Cleaning System for Retrofit Applications
- Combustion Engineering IGCC Repowering Project
- PFBC Utility Demonstration Project
- Warren Station Externally Fired Combined-Cycle Demonstration Project

Savings resulting from projects that ended prior to completion and savings resulting from project restructuring have enabled the Department to achieve all of the $424 million rescinded from the Clean Coal Technology Program. The Department has sufficient funds to meet all remaining project commitments.

Question: How many clean coal projects are currently in process and how many of those do you expect to be carried through to completion? Please explain.

Answer: There are currently 17 projects in process in the Clean Coal Technology Program. Of these, nine are in the operation phase, one is in construction, and seven are in the design phase. To date, 20 projects have successfully completed all requirements and three additional projects have completed operation and are preparing final reports.

Of the nine projects currently in the operation phase, only the Custom Coals project is anticipated to have any difficulty completing remaining activities. Following bankruptcy, the Custom Coals' processing facility was recently sold at auction and the new owner of the facility has approached the Department about completing the CCT project. The Coal Diesel in Fairbanks, Alaska, is the only project in construction and is expected to be carried through to completion.

A total of seven projects are in the design and permitting phase. Three of these projects have experienced some delays due to protracted contract negotiations between the project participants and the technology suppliers. The Department believes the arrangements between the team members have been established and the projects will be moving forward in the near future. There is no reason to believe that these projects will not be carried through to completion. Two additional projects were recently granted extensions to allow for restructuring activities. While these projects are early in the design and permitting phase, the Department believes these projects are on track to begin construction activities within two years. The two remaining projects are the ThermoChem project in Baltimore, Maryland, and the NOxSO project. The ThermoChem project was recently granted approval to proceed with a reduced-scale project and the project is ready to initiate construction activities. The participant for the NOxSO project is in Chapter 11 Bankruptcy. A suitable host site and participant financing is required for this project to continue.

Question: When do you expect to complete the remaining projects?

Answer: There are currently 17 projects in design, construction, or operation. Nine projects are in the operation phase, one is in construction, and the remaining seven are in the design phase. All of the projects that are currently in operation are scheduled to be completed by the end of 2001. The only project in construction, the coal-fired diesel project, is scheduled for completion in mid-2002.

Five of the seven projects in the design phase are advanced electric power generation projects. These five projects are scheduled to complete operation in the 2004 to 2006 time frame. The other two projects in design are the ThermoChem and NOxSO projects. The ThermoChem project was recently granted approval to proceed with a reduced-scale project and is scheduled for completion in 2000. The completion date for the NOxSO project is uncertain, as the participant is in Chapter 11 Bankruptcy. A suitable host site and participant financing is required for this project to continue.

Naval Petroleum and Oil Shale Reserve

Question: The budget request for the Naval Petroleum and Oil Shale Reserves is $21.2

million, which is offset fully through the use of prior year funds. Why do you have so much carryover that you can pay fully for NPR operations in fiscal year 2000 with no new appropriated dollars?

Answer: A number of activities that were planned for the Elk Hills oil field during fiscal year 1996 and fiscal year 1997 were curtailed once the decision to sell the field had been made. Further, the fiscal year 1998 budget provided funding to operate the oil field for several months beyond the anticipated sale date in the event that the sale was somehow delayed. Fortunately, no delay occurred and the sale to Occidental Petroleum was closed on February 5, 1998. These two factors are the primary cause of the large unobligated balances.

Question: What unobligated balances did you have for NPR at the end of fiscal year 1998?

Answer: About $34.2 million, calculated as follows:

NPR-1 and NPR-2 Operations and Maintenance	$ 20,086,100
NPR-3 Operations and Maintenance	65,200
Naval Oil Shale Reserves	7,496,100
Program Direction (Including Equity/Divestment Activities)	6,562,400
Total NPR	$ 34,209,800

Question: What unobligated balance are you projecting for the end of fiscal year 1999?

Answer: About $21.2 million, calculated as follows:

End of FY 1998 carryover	$ 34,210,000
Plus FY 1999 appropriation	14,000,000
Less anticipated FY 1999 obligations	-27,000,000
Anticipated end of FY 1999 carryover	$ 21,210,000

Question: If you use unobligated balances to pay for your operations in 2000, how much will need to be restored to your base budget for NPR funding in 2001?

Answer: Similar to the fiscal year 2000 budget, we hope to fund the fiscal year 2001 NPR budget from unobligated balances. If this works out, then no funds will need to be restored to the NPR base fiscal year 2001 funding.

The unobligated balance for use in fiscal year 2001will be created by de-obligating money

from a variety of contracts originally put into place to support operations at the Elk Hills oil field or its divestment. Earlier this fiscal year, we began the process of identifying how much money currently found on NPR contracts could be considered "excess" and redirected for use in other areas of NPR's operations. We have not yet completed that analysis, but we believe that as much as $25 million might be available: $5 million from "inactive" contracts, $3 million from revenues generated from the sale of natural gas from Naval Oil Shale Reserve No. 3 (which is transferring to DOI on May 1, 1999, for leasing), and perhaps as much as $17 million from the former Elk Hills oil field management and operating contractor. If we are able to de-obligate $20 to $25 million, then NPR may not need any money restored to its base until fiscal year 2002, as illustrated by the following table:

Estimated Funding Requirements	
Estimated unobligated balance, end of FY 1999	$ 21,210,000
Obligated balances redirected	$ 25,000,000
Estimated balance available, beginning FY 2000	$ 46,210,000
FY 2000 anticipated obligations	$ -21,240,000
Estimated remaining balance, end of FY 2000	$ 24,970,000
FY 2001 anticipated obligations	$ -17,800,000
Estimated remaining balance, end of FY 2001	$ 7,170,000
FY 2002 anticipated obligations	$ -11,700,000
Estimated remaining balance, end of FY 2002	$ -4,530,000

There are a number of "imponderables" which will affect the funds available in fiscal year 2001 and beyond. First, there are numerous lawsuits against the former Management and Operating contractor arising from Elk Hills operations that DOE may be responsible for paying. This may prevent DOE from de-obligating the full $17 mlllion estimated above. Second, as required by several agreements associated with the sale of Elk Hills, some environmental assessment and cultural resource activities are underway. Depending upon the findings, DOE may have to perform some environmental remediation work, thus increasing planned expenditures. Finally, the finalization of equity with Chevron is an exacting and contentious process that, if further delays ensue, could require funding above currently planned levels.

Question: What work are you still doing at Elk Hills and why are you continuing to work there if it has been sold?

Answer: To meet the legislated two-year deadline for the divestment of Elk Hills, DOE committed to continue work on a number of tasks associated with the sale after the February 5, 1998 settlement date. These commitments were formalized in several agreements between DOE, Occidental Petroleum, Chevron, and the State of California, and pertain primarily to settling

equity ownership issues between DOE and Chevron, and completing certain environmental and archaeological work required under federal, state, and local laws and regulations. In addition, it is necessary to complete a number of post-sale business activities in order to close out the government's ownership in NPR-1 in accordance with DOE and government closeout requirements. There also is a need for DOE to conclude a number of lawsuits related to the operation of NPR-1 that have been brought by third parties against the government and/or their contractors. It is anticipated that the bulk of the work required under the various agreements will be completed during fiscal years 1999 and 2000.

Question: What do you plan to do with Reserve No. 2 in Kern County, California, and Reserve No. 3 in Casper, Wyoming?

Answer: Consistent with section 3403 of the Strom Thurmond National Defense Authorization Act for fiscal year 1999 (P.L. 105-261), NPR anticipates continuing to manage the NPR-2 leases under 10 U.S.C. Chapter 641. NPR-2 generates about $1.5 million annually in royalties which are deposited into the U.S. Treasury. (Annual costs to oversee NPR-2 are about $300,000.) Until the Secretary makes a determination to abandon oil and gas operations in NPR-2 in accordance with commercial operating practices. P.L. 105-261 gives the Secretary the discretionary authority, after abandonment, to transfer the property to the Department of the Interior. Just when abandonment of NPR-2 might occur is hard to say since its future largely depends upon the actions of the lease-holders.

Section 3404 of PL 105-261 allows the Secretary to continue operating NPR-3 under 10 U.S.C. Chapter 641, until he makes a determination to abandon oil and gas operations in accordance with commercial operating practices. The NPR program operates NPR-3 directly and sells produced oil and related hydrocarbons in the open market, generating approximately $3 million in revenues annually. The program currently anticipate NPR-3 will remain economically feasible through about fiscal year 2003, at which time the program will abandon operations. P.L. 105-261 allows the Secretary to competitively sell or lease NPR-3, or to transfer it to any other federal agency, after it has abandoned operations.

Question: To what extent are you still involved with the oil shale reserves?

Answer: Naval Oil Shale Reserves Numbered 1 and 3 (NOSR-1 and NOSR-3) are adjacent properties located in northwest Colorado. NOSR-1 and the undeveloped portions of NOSR-3 were transferred to DOI upon enactment of the 1998 Defense Authorization Act (PL 105-85) which required the transfer of the Colorado properties.

The developed portions of NOSR-3 have been leased by the Department of the Interior, effective May 1, 1999. Consistent with P.L. 105-85, DOE will still be responsible for environmental remediation work which was identified in conjunction with the Department of the Interior. This work will be paid for by revenues, including royalties generated from the leasing activities and collected by DOI. The DOI, in turn, will make a portion of those funds available to DOE in order to complete its environmental work. DOE will no longer be involved with the Colorado oil shale reserves after completion of the agreed upon environmental work.

Regarding Naval Oil Shale Reserve Numbered 2 (NOSR-2), located in northeastern Utah: DOE will work with the Ute Indian Tribe (who own 40 percent of the surface rights), the Department of the Interior and other interested parties to ascertain the best use of the land as well as its future disposition. P.L. 105-261 authorizes the Secretary of Energy to transfer NOSR-2 to the Secretary of the Interior.

Offsets for Fossil Energy Research

Question: You offset some of your fossil energy requirements by using $24 million from the Biomass Energy Development Account. Why are these funds available?

Answer: This account was created to provide loan guarantees for the construction of biomass-to-ethanol facilities, as authorized under Title II of the Energy Security Act. All of the loans guaranteed by this account went into default. The guarantees have been paid off, and the assets of all but one of the projects have been liquidated. The one remaining project, the New Energy Company of Indiana, continues to make payments to this account at Treasury on their loan, which the government acquired after paying off the guarantee.

In fiscal year 2000, $25 million of the balances remaining in this account is proposed to be transferred to the Department of Energy (DOE) Energy Conservation account and $24 million is proposed to be transferred to the DOE Fossil Energy Research and Development account in order to partially fund the requirements of those programs.

Question: You further offset some of the budget by using $11 million in prior year balances within the fossil energy program. Where, specifically, are these savings coming from?

Answer: These carryover funds resulted from two types of actions. First, through the contract closeout process, approximately $4.0 million has been recovered from contracts that are no longer active. Second, as a result of delays in the procurement process, various amounts from Coal, Oil, and Gas programs were not obligated by the end of fiscal year 1998. However, these funds will be obligated during fiscal year 1999. We expect that additional procurement delays, will occur in fiscal year 1999, and that additional contracts will be closed out, to make sufficient funding available at the end of fiscal year 1999 to cover this offset.

Question: What assurances have you received from the Department and from the Office of Management and Budget that these funds, the Clean Coal deferred funds and the NPR funds will be restored in the future?

Answer: The appropriations language submitted in the budget specifically provides for the funds to become available in the future years.

Question: What would be the impact to your programs if these offsets resulted in a permanent reduction to your base budgets for Clean Coal, Fossil Energy Research and Development, and the Naval Petroleum Reserve?

Answer: If the offsets proposed in the fiscal year 2000 budget were to result in a permanent reduction to our base budgets for Clean Coal Technology, Fossil Energy Research and Development, and Naval Petroleum Reserves, the impact would be devastating. A permanent reduction would give all of Fossil Energy a budget level of $317 million; $36 million is required for the Elk Hills School Lands and a minimum of $160 million is needed to operate the Strategic Petroleum Reserve. Thus, only $121 million would be available to basically shut down the Fossil Energy program. DOE will have to begin terminating many of the 197 federal employees at headquarters and 547 federal employees in the field, and most of the 500 on site contract employees in the field. The reduction would cause termination of the Coal, Oil, and Gas programs.

Cost Sharing for Fossil Research

Question: What percentage of your research contracts are cost-shared with industry?

Answer: At the present time, we receive the most cost sharing in our Clean Coal Technology program. By law, all projects must be at least 50 percent cost shared. We currently have about 66 percent industry funding and 44 percent government funding.

In our Fossil Energy Research and Development program, cost sharing varies by program. In the early stages of research, like our Advanced Research and Technology Development program there is little or no cost sharing. In our Advanced Clean Fuels and Power Systems programs the cost sharing is in the 20 to 50 percent range. In our Oil Class program, we receive at least 50 percent cost sharing, and in our Turbines and Fuel Cell programs we are in the 30 to 50 percent range.

Question: Are there circumstances under which you would not cost share? Please explain.

Answer: It is the Department's policy to seek cost sharing whenever possible. It is difficult however, to get companies to cost share on projects that are in the infant stage of development. The closer you get to commercializing a technology, the greater cost sharing you can elicit from industry partners. It is also difficult to get cost sharing from universities. These colleges and minority institutions do not have access to funding that would allow them to match funding. By taking all of these factors into account, and through compliance with laws that govern the Fossil Energy programs such as the Energy Policy Act or the specific appropriation language; we seek to find the maximum cost sharing possible.

Strategic Petroleum Reserve

Question: What is the current capacity of the Strategic Petroleum Reserve (SPR)?

Answer: The capacity of the SPR is 700 million barrels. This is a recent revision from 680 million barrels due to enlargement of caverns that occurred during operational movements of oil.

Question: How many barrels of oil are currently in the reserve?

Answer: There are currently 561 million barrels of oil in the reserve.

Question: How many days of oil import supply protection does that represent?

Answer: The current SPR inventory of 561 million barrels represents 60 days of oil import supply protection.

Question: How much excess capacity is there now?

Answer: There are currently 139 million barrels in excess capacity.

Question: What is our commitment to our international allies with respect to the level of oil supply to be maintained in reserve?

Answer: Our commitment is to have 90 days of inventory protection in storage. The Strategic Petroleum Reserve and U.S. private company inventory protection is 155 days, which more than meets our IEA commitment.

Question: When will you begin placing royalty oil in the SPR and when will it be completed?

Answer: The program is being conducted in two phases. Phase I will take up to 50,000 barrels per day of oil from a small number of large Gulf Outer Continental Shelf producers. Negotiations with those companies were recently completed and oil started moving on May 1, 1999. Phase II will be an open competition for up to 100,000 barrels per day. The first bidding will take place in mid-May and if necessary a second round will take place in mid-June. Deliveries will start at the end of Phase I -- around August 1, 1999. The program should be complete by April 2000.

Question: How many barrels will you take in lieu of royalties?

Answer: We will take up to 28 million barrels of oil in lieu of royalties.

Question: What does that represent in terms of days of import supply protection?

Answer: The 28 million barrels in royalty oil represents approximately 3 days of import supply protection.

Question: What are you doing to commercialize underused SPR facilities?

Answer: The Department has leased a number of SPR underutilized distribution facilities. The Big Hill crude oil pipeline was first leased to Texaco Pipe Line, Inc., on May 15, 1996, and then under a second lease on October 15, 1997. The St. James Terminal was leased to

Shell Pipeline Company on January 31, 1997. The Bayou Choctaw crude oil pipeline was leased to Shell Pipeline Co. on May 1, 1997. The Department also awarded two leases on the Bryan Mound crude oil pipelines in 1998 -- a short term lease (6 months) to Seaway Pipeline Co. on December 11, 1998, and a long term lease to Exxon Pipeline Company on January 14, 1999. In addition, we are offering the Big Hill site for storage of private oil. In addition, the Weeks Island pipeline was sold to Louisiana Interstate Gas on August 22, 1997, and is no longer part of the SPR systems.

Question: What revenues have been generated from these commercialization efforts?

Answer: As of December 31, 1998, a total of $23,409,498 in revenues has been generated from these commercialization efforts. These revenues include $575,415 in 1996, $22,836,983 in 1997 and $883,535 in 1998. We expect revenues to be in excess of $2,000,000 per year beginning in 2000.

Question: What new commercialization opportunities will you explore in fiscal year 2000 and what revenues do you expect to achieve through these opportunities?

Answer: The Department is currently evaluating proposals to store oil in the future in unused SPR caverns at the Big Hill site. Payment for this commercial opportunity would be in oil. The Department has not conducted an evaluation of revenues expected from any other new commercial opportunities.

Petroleum Account

Question: How much money is left in the SPR petroleum account and how are you using that money?

Answer: The balance in the SPR Petroleum Account at the end of fiscal year 1998 was $33,018,989. A small portion is used to pay the Defense Fuel Supply Center for non-emergency drawdown and sales support. The balance in the Account is the financing to initiate and sustain a full emergency drawdown in advance of receiving sales revenues to continue drawdown and sales. The estimate to sustain a full 6-month drawdown capability is $60.5 million. With an immediately deployable $33 million, the SPR is financially ready to initiate emergency drawdown operations at the direction of the President. The Account is also the source of funding for acquisition, transportation and injection of oil into the Reserve. If marginal transportation expenses are incurred for the initiative to transfer royalty oil from the Department of the Interior to the Department of Energy, they will be paid from the Petroleum Account.

Question: You have asked for a $5 million appropriation for the SPR petroleum account. You say you need these funds in the event that you have an emergency drawdown of the SPR. Please explain.

Answer: The estimate to sustain a full 6-month drawdown capability is $60.5 million. The current balance of $33 million provides only 55 percent of the incremental costs of a 6-

month drawdown. The additional funding will improve that capability to approximately 4 months of full drawdown operations.

Question: What is the total cost associated with a drawdown and why can't you accommodate it within the existing SPR budget?

Answer: The estimate to sustain a full 6-month drawdown capability is $60.5 million. This incremental cost is over and above the current SPR budget. A maximum rate drawdown requires staff augmentation in New Orleans and the sites, an increase in maintenance workload, additional posting hours for security subcontractor personnel, and significantly higher power costs at the sites. Additionally, terminalling/throughput charges are required for pipeline and marine deliveries.

Question: Rather than providing additional funding for the SPR petroleum account, what would need to be done to provide authority for you to use available funds on an emergency basis, with the commitment that those funds would be replaced with the proceeds of oil sales from a drawdown of the SPR?

Answer: If an emergency drawdown of the SPR became necessary and there were insufficient funds available, balances in other DOE accounts could be transferred to the SPR oil account, but DOE recommends specific authorization for this purpose and for reimbursement to accounts from which the funds might be advanced. The following language is offered for this purpose:

Administrative Provision

> The Secretary of Energy may transfer to the SPR Petroleum Account such funds as may be necessary to carry out drawdown and sale operations of the Strategic Petroleum Reserve initiated under section 161 of the Energy Policy and Conservation Act (42 U.S.C. 6241) from any funds available to the Department of Energy under this act: *Provided*, that all funds used pursuant to this authority must be replenished as promptly as possible from oil sale receipts in the SPR Petroleum Account into accounts from which the funds were transferred.

Life Extension

Question: The SPR has a 7-year life extension program to replace or upgrade major systems that are reaching the end of their design life. The program should extend the life of SPR facilities to the year 2025. Please describe what you have done to date on the life extension program for the Strategic Petroleum Reserve.

Answer: The life extension program has been underway at four Strategic Petroleum Reserve (SPR) storage sites since 1994: West Hackberry and Bayou Choctaw in Louisiana, and Bryan Mound and Big Hill in Texas. At Bryan Mound and West Hackberry, approximately

95 percent of life extension projects are completed or underway. At Bayou Choctaw and Big Hill, approximately 84 and 93 percent, respectively, of the projects are completed or underway.

At West Hackberry and Bryan Mound, heat exchangers have been installed, and site and cavern piping, control systems, and electrical systems have all been upgraded; and new drawdown systems, including water intake and injection pumps, were completed and tested in 1998. Upgrades to the crude oil refill and metering systems at those two sites are underway. Heat exchanger installation and site piping upgrades have been completed at Bayou Choctaw, with control system upgrades, cavern piping reconfiguration, and crude oil and brine system upgrades underway. At Big Hill, heat exchangers have been installed, and upgrades to the control system, site piping, crude oil system and electrical system are underway. Overall, of the program's $328 million total estimated cost, about $300 million, has been obligated.

Question: Fiscal year 2000 is the final year of the 7-year SPR life extension program. What remains to be done and how much is included in the 2000 request for life extension work?

Answer: Virtually all Life Extension work is either complete or underway at the end of fiscal year 1999. Life extension work remaining to be done at the beginning of fiscal year 2000 includes system testing, clean-up, and installation of meters at Sun Terminal. The request includes $6 million for this activity.

Question: When will the program be completed?

Answer: The 7-year life extension program, which began in 1994, is about 90 percent complete overall, and will be completed by the end of fiscal year 2000.

Question: Will you require any additional funding for life extension in 2001? If so, please explain.

Answer: The 7-year life extension program is scheduled to be completed on time in fiscal year 2000 and no funding requirements beyond fiscal year 2000 are anticipated.

Question: For the record, please provide a brief description by year of the life extension program at each SPR facility, along with cost estimates.

Answer: The following list indicates life extension projects by year and by site, which support the fiscal year 2000 budget request:

Bryan Mound Life Extension Projects -- $84,333,000

1994 -- $12,386,000
- Procurement and installation of heat exchangers (20 units)
- Procurement of flow control valves
- Procurement of new site control system

1995 -- $17,237,000
- Installation of new site control system
- Procurement of new pumps/motors, cavern instrumentation and isolation valves
- Installation of new cavern piping and instrumentation
- Installation and reconfiguration of pipe racks and cable trays

1996 -- $21,908,000
- Replacement of drawdown pumps/motors
- Replacement and reconfiguration of site piping
- Upgrading of site electrical systems
- Replacement of brine pond (with steel tank)

1997 -- $16,976,000
- Modification of crude oil pump systems
- Automate seal flush / bearing cooling system
- Installation of new raw water intake pumps

1998 -- $9,776,000
- Installation of new slop oil system
- Close existing brine pond

1999 -- $5,377,000
- System testing

2000 -- $673,000
- System testing
- Clean-up

West Hackberry Life Extension Projects -- $104,355,000

1994 -- $10,548,000
- Procurement and installation of heat exchangers (6 units)
- Procurement of flow control valves
- Procurement of new site control system

1995 -- $24,240,000
- Installation of new site control system
- Procurement of new pumps/motors, cavern instrumentation and isolation valves
- Installation of new cavern piping and instrumentation
- Installation and reconfiguration of pipe racks and cable trays
- Lining of brine disposal pipeline to disposal wells

1996 -- $35,117,000
- Replacement of drawdown pumps/motors
- Replacement and reconfiguration of site piping

- Upgrading of site electrical systems
- Upgrading of RWIS pumps and motors
- Replacement of brine pond (with steel tank) and flush water system.

1997 -- $17,269,000
- Modification of crude oil pump systems
- Replacement of electrical system to RWIS
- Automate seal flush/bearing cooling system

1998 -- $11,785,000
- Construct subsidence mitigation
- Close existing brine pond

1999 -- $4,742,000
- System testing

2000 -- $654,000
- System testing
- Clean-up

Bayou Choctaw Life Extension Projects -- $29,400,000

1994 -- $3,186,000
- Procurement and installation of heat exchangers (2 units)
- Procurement of flow control valves
- Installation of cable trays and duct bank system (A)

1995 -- $3,047,000
- Replacement of deteriorated on-site piping
- Lining of brine disposal pipeline to disposal wells
- Installation of cable trays and duct bank system (B)

1996 -- $1,284,000
- Replacement of uninterruptable power supply

1997 -- $4,394,000
- Procurement of new site control system
- Automate seal flush/bearing cooling system
- Procurement of new cavern instrumentation and isolation valves

1998 -- $14,871,000
- Demolish leach and alum injection systems
- Installation of new site control system
- Modification of crude oil pumping system
- Upgrading of site electrical systems

- Upgrading of raw water intake pumps
- Reconfiguration of cavern piping
- Upgrading of raw water injection pumps
- Upgrading of brine disposal system

1999 -- $2,354,000
- Demolition work
- System testing

2000 -- $264,000
- System testing
- Clean-up

Big Hill Life Extension Projects -- $47,725,000

1995 -- $1,829,000
- Procurement of flow control valves

1996 -- $2,113,000
- Procurement of new site control system
- Procurement of new cavern instrumentation and isolation valves

1997 -- $28,795,000
- Installation of new site control system
- Installation of new cavern piping and instrumentation
- Upgrading of site electrical systems
- Replacement of uninterruptable power supply
- Automate seal flush/bearing cooling system
- Installation of brine disposal injection wells
- Installation of heat exchangers
- Modification of crude oil pumping system
- Upgrading of raw water injection pumps
- Upgrading of brine disposal system
- Installation of new cavern flush system

1998 -- $5,717,000
- Installation of automatic monitoring system on Big Hill-Sun Terminal pipeline

1999 -- $7,956,000
- Installation of meters at Sun Terminal
- Demolition work
- System testing

2000 -- $1,315,000
- System testing
- Clean-up

Total Construction (4 sites):	$265,813,000
Design:	62,270,000
Total Cost:	$328,083,000

Fuel Cells

Question: How many fuel cell contracts are assumed in your fiscal year 2000 budget request?

Answer: Three major fuel cell development contracts were considered in the fiscal year 2000 budget request. They are Energy Research Corporation, MC Power Corporation, and Siemens-Westinghouse Power Corporation.

In addition to these contractors, there are other contracts that will be in place but funded with prior-year funds (fiscal year 1999) and funds from other agencies (DOD). These include contracts in support of the DOD fuel cell buy-down program and awards from two competitive solicitations issued by the Federal Energy Technology Center. It is anticipated several (three to four) small research projects will result from a Program Research and Development Announcement (PRDA) issued in March 1999. Also, contracts will be awarded under a Broad Agency Announcement (BAA) for multi-layer ceramic fuel cell manufacturing. No fiscal year 2000 funds are planned for these awards; fiscal year 1999 funding ($2 million) appropriated for this specific technology will be utilized to support this work.

Question: You have moved a portion of your fuel cell program to the coal research area. Why does it make sense to fund this program under two different budget categories?

Answer: Fuel cells technology is being developed to enable gas-fired distributed generation applications, and as a building block technology for Vision 21 plants. The distributed generation applications are expected to begin to occur in 2003. Vision 21 applications will require the solution of significant integration issues to utilize fuel cells in coal gasification/combustion applications. This will be addressed under the High Efficiency Integrated Gasification Combined Cycle program area, because the expertise for doing so lies in that area.

Question: Would you have a strong objection on programmatic grounds if the committee were to retain the fuel cell program under a single budget activity? If so, what specifically is your objection?

Answer: No, as long as we had the flexibility to address both gas fueled fuel cell development and fuel flexible fuel cells and hybrid systems in both central and distributed

generation applications.

Question: What is the likelihood that you will downselect from three to two fuel cell contracts this year or next?

Answer: The program funds the development of three alternative approaches aimed at different market applications. Good technical progress is being made by each of the major contractors. If we downselect, we arbitrarily terminate opportunities for current and future U.S. developers in a potential major market segment, risk allowing the capture of a significant market share by foreign developers, and create significant adverse impacts on the financial stability of one of our development partners. The impact of down selection might also adversely affect the other two developers, because it may be viewed in the financial community as a sign of lost confidence in fuel cells technology.

We do, however, continuously re-evaluate the progress of each fuel cell developer. If progress of any developer becomes unsatisfactory or if any developer is not able to provide a significant cost share, that would trigger a determination of their eligibility to continue.

Question: What success have you had in the fuel cell program to date?

Answer: Phosphoric acid fuel cell development was supported until 1992, when 200-kilowatt units developed by International Fuel Cells, and manufactured and marketed by ONSI Corporation, entered the marketplace. More than 175 units have been sold in the United States, Japan, and Europe. Thirty units have been successfully demonstrated by DOD in combined heat and power (CHP) applications, where the economic criteria was for each application to generate $25,000 per year in energy savings which would cover annual maintenance costs.

Molten Carbonate

- Distributed Generation (DG): In fiscal year 1997, the world's first integrated megawatt class molten carbonate fuel cell system was field tested at Santa Clara, California. The system achieved full output for 4000 hours supplying the Santa Clara Electric grid. An Energy Research Corporation (ERC) improved design and first product building block 250-kilowatt stack testing is underway at their Danbury site. Upon completion of tests in fiscal year 2000, this will further enable commercial prototype systems to be demonstrated and ensure market entry for DG applications in the 250-kilowatt to 4-megawatt range by 2003.

- CHP (MC Power): An integrated 250-kilowatt fuel cell system was field tested in fiscal year 1997 at the Miramar Naval Air Station in San Diego, California. It delivered electric power and heat to the Station for 2350 hours. M-C Power improved design and is preparing to test, in conjunction with the California Energy Commission, a 75-kilowatt commercial scale submodule that can be integrated into a commercial prototype. The successful testing will lead to a follow-on design and durability testing of a prototype 200-kilowatt stack. The durability test will be followed by a set of 330-kilowatt fuel cell total system demonstrations for CHP at three to four host sites in 2001.

Solid Oxide

• A field test of a 100-kilowatt integrated system began operation in late 1997 and successfully operated for over 4,000 hours. An additional 12,000 hours of testing is underway. The 100-kilowatt fuel cell generator employs advanced technology cells and is a repeating building block element for a multi-megawatt size CHP system. This should provide foundation for future commercial sales as an early CHP product.

• The world's first fuel cell (200 kilowatts) + turbine (50 kilowatts) hybrid system will begin testing at the end of this fiscal year at the National Fuel Cell Research Center. This effort is expected to conclude in 2003 with fuel cell/gas turbine combined cycle field test in multi-megawatt size for DG applications.

Advanced Research

• The Advanced Research (AR)-supported developers have successfully worked closely with the major developers. There has been great deal of success integrating the AR developers work (Argonne National Laboratory, University of Missouri, Pacific Northwest National Laboratories, Northwestern's Industrial Research Lab) with our major developers. The Argonne National Laboratory has worked on molten carbonate fuel cell cathodes, the Industrial Research Lab at Northwestern University has worked on coatings, and the Pacific Northwest National Laboratories has worked on lower sintering temperature interconnect materials.

Question: When will this program be finished?

Answer: The Energy Research Corporation, MC Power Corporation and Westinghouse Electric cooperative agreements are estimated to be completed in the 2002 to 2003 time frame with the commercialization of the molten carbonate and tubular solid oxide fuel cell technologies. As with many first-of-a-kind technologies, the first generation of commercial fuel cells (phosphoric acid fuel cells) have encountered significant hurdles competing with low cost, albeit less environmentally pristine, conventional technology. The next generation (molten carbonate and solid oxide) fuel cells ought to be more economically attractive, but significant cost reduction will be needed to enable the capture of major market shares. DOE is currently assessing the need for an advanced program focused on major reductions in cost for fuel cell and balance of plant components.

Question: For the record please provide a year-by-year analysis of past, present, and estimated future spending for each of the current fuel cell projects.

Answer: The development of the tubular Solid Oxide Fuel Cells (SOFC) technology has been supported by the Department of Energy since 1980 through a variety of funding instruments (contracts and cooperative agreements). The tubular SOFC technology was invented by Westinghouse Electric Corporation and has been heavily cost-shared by Siemens-Westinghouse and other non-federal organizations.

The progress to date for developing a commercially viable tubular SOFC system has been good. Processing steps have been eliminated and scale-up has occurred in 1996 and 1997. The largest SOFC generator ever constructed was manufactured on 1997. It has accumulated over 4,000 hours of operation. Performance to date has been exceptional with greater than 100 kilowatts being supplied to the grid and by-product cogeneration heat being used. Under funding instruments prior to 1998, the Department of Energy had provided nearly $140 million, while Westinghouse and others contributed nearly $92 million. Costs projected by Siemens-Westinghouse to complete the tubular SOFC development by year from 1997 are as follows:

Fiscal Year	DOE ($million)	Non-DOE ($million)[2]
1997	3.1	1.3
1998	12.9	8.2
1999	15.7	6.6
2000[1]	14.4	17.3
2001[1]	13.1	23.3
2002[1]	11.5	10.4
2003[1]	11.5	10.4
2004[1]	0	14.1
2005[1]	0	14.1
Total	82.2	105.7

[1] Outyear estimates

[2] $8.4 million additional (in-kind) cost share will be provided by Siemens-Westinghouse during the project

Upon completion of the current cooperative agreement Siemens-Westinghouse will have demonstrated a 1.3-megawatt, pre-commercial unit with an unprecedented overall system efficiency of greater than 70 percent; and constructed a commercial SOFC manufacturing plant in the United States with the capacity to produce 100 megawatts per year of SOFC's.

Molten Carbonate Fuel Cell (MCFC) technology is being developed to meet the emerging distributed generation and light industrial/commercial markets sectors. Two approaches are being pursued which will lead to multi-megawatt class and multi-kilowatt class systems. Processing steps have been eliminated, simplification occurred, and scale-up has occurred in 1996-1997.

To date, two demonstration projects were completed in 1997. The Santa Clara demonstration evaluated an atmospheric 2-megawatt MCFC system manufactured by Energy Research Corporation (ERC) in a distributed generation application. Results from this demonstration have enabled ERC to define fuel cell stack capable of meeting commercial performance and cost targets. These refinements to ERC's technology will be verified in a pre-commercial demonstration of a megawatt class system and the completion of their current project.

A demonstration of a pressurized 250-kilowatt cogeneration MCFC system was conducted by MC Power at the Mirimar Naval Air Station. This test enabled MC Power to identify improvements to their technology which will be demonstrated in commercial cogeneration systems at the completion of their project. Under funding instruments prior to 1998, the Department of Energy had provided $341 million to MCFC developers. Energy Research Corporation's projected costs to complete their MCFC program from 1995 are as follows:

Fiscal Year	DOE ($million)	Non-DOE ($million)[2]
1995	12.4	9.0
1996	22.0	12.4
1997	18.5	8.0
1998	16.4	6.0
1999	12.2	8.3
2000[1]	19.5	10.5
2001[1]	19.9	2.5
2002[1]	9.4	7.4
2003[1]	2.0	2.2
Total	132.3	66.3

[1] Outyear estimates

[2] $18.4 million additional (in-kind) cost share will be recognized at the beginning of the contract

MC Power Corporation's projected costs to complete their MCFC program from 1995 are as follows:

Fiscal Year	DOE ($million)	Non-DOE ($million)
1995	5.6	0.2
1996	18.2	0.6
1997	13.4	0.1
1998	10.0	1.0
1999	10.1	17.8[2]
2000[1]	13.5	25.5
2001[1]	11.5	6.6
2002[1]	4.8	2.2
2003[1]	TBD	TBD[3]
Total	87.1	54.0

[1] Outyear estimates

[2] $8.388 million provided through February 1999 for fiscal year 1999

[3] Pending decision to proceed and negotiations on budget period 4 (final phase)

Upon completion of the ERC and MC Power cooperative agreements pre-commercial units will have been demonstrated for distributed generation and cogeneration applications. Integrated manufacturing facilities, capable of meeting market entry demands, as well as distribution and sales organizations will be established to sustain commercialization of the MCFC technology.

Vision 21

Question: Your budget talks of a "Vision 21" fleet of new power and energy plants. What exactly is Vision 21?

Answer: Vision 21 is a government-industry-academia collaboration to develop technology that will effectively remove all environmental concerns associated with the use of fossil fuels for producing electricity and liquid transportation fuels. The approach is to develop technology modules that respond to key public needs (for example, the production of clean burning transformations fuels, clean, efficient, affordable, electricity generation from all of our fossil fuels, and alleviating municipal waste issues by using this waste as a feedstock) and can be integrated into a variety of configurations to meet specific market needs in multiple applications; that is, electricity generation, fuels/chemicals coproduction, cogeneration. Vision 21 builds on a portfolio of technologies already being developed, including clean coal combustion and gasification, turbines, fuel cells, and fuels synthesis, and adds other critical technologies such as membrane gas separation, advance combustion technologies, alternative fuel utilization technologies, and system integration and control techniques.

Vision 21 is the Department of Energy's role in helping to maintain our nation's economic prosperity by ensuring a future supply of affordable, clean energy. The specific performance targets, costs, and timing for Vision 21 plants are as follows:

Efficiency-Electricity Generation	60 percent for coal-based systems (based on fuel higher heating value (HHV); 75 percent for natural gas-based systems lower heating value (LHV) with no credit for cogenerated steam
Efficiency-Combined Electricity/Heat	Overall thermal efficiency above 85 percent; also meets above efficiency goals for electricity
Efficiency-Fuels Only Plant	When producing fuels such as H_2 or liquid transportation fuels alone from coal, 75 percent fuels utilization efficiency (LHV)
Environmental	Near zero emissions of sulfur and nitrogen oxides, particulate matter, trace elements, and organic compounds; 40-50 percent reduction in CO2 emissions by efficiency improvement; 100 percent reduction with sequestration

Costs	Aggressive targets for capital and operating costs and Reliability, Availability, Maintainability (RAM); products of Vision 21 plants must be cost-competitive with market clearing prices when they are commercially deployed
Timing	Major benefits (e.g., improved gasifiers and combustors, gas separation membranes) begin by 2006 or earlier; designs for most Vision 21 subsystems and modules available by 2012; Vision 21 commercial plant designs available by 2015

Question: What have you done with the funds we provided for Vision 21 programs in fiscal year 1999?

Answer: In fiscal year 1999, Vision 21 activities were supported by the Integrated Gasification Combined Cycle (IGCC), Indirect Fired Cycle (IFC), and Advanced Research and Technology Development (AR&TD) programs. The fiscal year 1999 IGCC program Vision 21 activities include: advanced oxygen, hydrogen, and carbon dioxide separation technologies; advanced gas cleaning technologies for fuel cell application; advanced IGCC/fuel cell system studies; experimental investigation on co-firing fuels. In fiscal year 1999 the IFC program funded advanced heat exchanger work and combustion studies for Vision 21. The AR&TD will redirect research in fiscal year 1999 to support Vision 21 critical work such as the Virtual Demonstration Plant and will initiate a solicitation to support breakthrough concepts to develop materials for gas separation. The AR&TD program will also initiate a competitive solicitation to develop critical enabling technologies for advanced power and fuel systems in support of Vision 21.

Question: How do the various Vision 21 programs interrelate?

Answer: Vision 21 builds on a portfolio of technologies already being developed in the Coal and Power Systems, Natural Gas, and Fuels programs. These technologies include clean coal combustion and gasification, turbines, fuel cells, and fuels synthesis. To these, the Vision 21 program adds other critical or "enabling" technologies such as membrane gas separation, advance combustion technologies, and alternative fuel utilization technologies. The focus of the Vision 21 program is on developing flexible components and subsystems from a broad spectrum of advanced power and fuels technologies that are the building blocks of future Vision 21 plants. Vision 21 program elements include systems analysis, enabling technologies, supporting research and development, systems integration, and plant design. The enabling technologies and supporting research development are guided by the system concepts. Integration technology addresses how these technology blocks will link synergistically in potential plant designs which in turn are driven by cost, performance and reliability targets.

One example of a Vision 21 system (and there are many others) uses an advanced Pressurized Fluidized Bed Combustor (PFBC) integrated with a solid oxide fuel cell, an advanced turbine, and an ultra super critical steam cycle. To meet cost and efficiency targets, and to provide a concentrated carbon dioxide stream for sequestration, this Vision 21 system uses

an air separation membrane to provide oxygen for the PFBC. In this approach, oxygen and steam are used instead of air throughout the system. This not only improves the efficiency of the system but also provides a flue gas which contains mostly carbon dioxide and water vapor.

Question: Your budget largely consists of program decreases, but you have an increase of nearly $11 million proposed for Vision 21 programs. Why is that and what specifically will you get for that investment ($18 million in 1999, $28.8 million in 2000)?

Answer: The investment in the Vision 21 effort will result in the development of essentially zero emission powerplants, which will also operate at close to double the efficiency of currently operating coal plants. Budgets tend to dip in areas where programs are nearing their successful completion and to rise where new activities are beginning. An example of this is the completion of funding for the work by DB Riley under the Low Emissions Boiler Program and the initiation of work in on membrane technology for the Vision 21 Program. The Vision 21 funding for each program area for fiscal year 1999 and fiscal year 2000 is given in the following table:

Program	FY 1999 (in thousands)	FY 2000 (in thousands)
IGCC	$ 14,000	$ 16,250
PFBC	0	1,600
Fuel Cells	0	5,085
IFC	1,000	1,000
ATS	0	800
AR&TD	2,990	3,457
ACF	0	575
Totals	**$ 17,990**	**$ 28,767**

Elaborating on the preceding table, the Vision 21 funds in fiscal year 2000 support the following activities in each of the program areas: The Integrated Gasification Combined Cycle (IGCC) fiscal year 2000 higher funding level for Vision 21 activities will be used to progress co-firing investigations from the feasibility study stage to experimental investigation. The increase also includes increased levels of effort in advanced gas separation, gas cleaning, and fuel cells integration. In Pressurized Fluidized Bed Combustion (PFBC) the increase supports work in co-firing coal with carbon neutral fuels, cycle studies which examine carbon dioxide recycle, oxygen enrichment, and integration of fuel cells and other components. In the fuel cell program, the fiscal year 2000 Vision 21 funds support efforts which are focused on performance enhancement and cost reduction of fuel cell hybrid systems. The Indirect Fired Cycle (IFC) will focus on high temperature furnace and high temperature heat exchange work along with other Vision 21 components. Vision 21 fiscal year 2000 Advanced Turbine Systems (ATS) program funds support fuel flexible and high efficiency turbine work. In the Advance Research and Technology Development (AR&TD) program, work on advanced materials for hydrogen and oxygen separation membranes progresses from the initial solicitation stage of fiscal year1999 to working on breakthrough concept in fiscal year 2000. In the Advanced Clean Fuels (ACF)

program funds will be used to study options for incorporating fuel and chemical modules in Vision 21 plants and conduct research on fuel and chemical production aspects of Vision 21 technologies.

Question: To what extent will these programs result in demonstration projects with large outyear commitments?

Answer: The Vision 21 program strategy is to focus on the development of technology modules and systems integration issues. Demonstration plants would be primarily supported by industry. The program includes the development of subsystems, components, and design tools, and the concomitant modeling, analysis, and experimental work. The scale of the latter activities will range from laboratory-, bench-, and pilot-scale, up to and including scales needed to obtain data for demonstrating feasibility for prototype- and commercial-scale plants. Some of the facilities which may be used to demonstrate the technologies include: the Power Systems Development Facility in Wilsonville, Alabama; the Coal Fired Flow Facility in Tennessee; the PFBC Advanced Concepts Facility in Livingston, New Jersey; the B&W Systems Development Facility in Alliance, Ohio; the FETC Flue Gas Cleanup Research Laboratory in Pittsburgh, Pennsylvania; the Gasification Process Evaluation Facility in Schenectady, New York; the LaPort Liquid Phase Alternative Fuels PDU in LaPort, Texas; the FETC Syngas Generator and Transport Reactor in Morgantown, West Virginia; and the Idaho National Engineering and Environmental Laboratory facility in Idaho. Construction of Vision 21 commercial-scale plants is not currently a part of the Vision 21 program strategy. These activities, the exact timing of which will depend on prevailing economic conditions and market forces, will be left primarily to private industry.

Question: What are the outyear requirements for the various elements of the program?

Answer: The Department will issue a solicitation later this year requesting industry to develop innovative systems to meet the goals of the Vision 21 program. The results of this solicitation will strongly influence what the outyear funding requirements for each of the elements of the Vision 21 program are . However, on the basis of stakeholder input received to date, the projected funding needs for the Vision 21 program are estimated at $1.5 billion from fiscal year 2001 through fiscal year 2010, assuming no major technological setbacks.

High Performance Power Systems

Question: Your budget request for high performance power systems includes a $1 million increase as part of the Vision 21 program? What exactly would you do with those funds?

Answer: We have identified activities in HIPPS that support the goals and objectives of the Vision 21 program. Some of these efforts will be supported by the additional $1 million. For example, development of the pyrolizer and the high temperature air furnace, studies of ultra-high efficiency indirect fired cycles and plants, analysis of systems that use oxygen and carbon dioxide recycle, and addressing system integration issues associated with the use of multiple technologies.

Question: You currently have two contract for HIPPS research. What does your budget assume for those contracts in fiscal year 2000 as compared with 1999?

Answer: For the two contracts for HIPPS research we have assumed funding as follows:

	($ million)	
	FY 1999	FY 2000
Foster Wheeler Development Corporation (FWDC)	2.454	2.500
United Technology Research Center (UTRC)	2.454	2.500

Question: Please provide funding and programmatic details for the record.

Answer: Programmatic funding is as follows:

	($ million)	
	FY 1999	FY 2000
Advanced Combustion HIPPS	$ 4.909	$ 4.000
Vision 21		1.000
FETC In-House	1.526	1.526
Power System Development Facility (Wilsonville, AL)		0.414
Other	0.065	0.070
Total	$ 6.500	$ 7.010

Planned Accomplishments -- Fiscal Year 1999

- Finish testing the 500 lb/hr pyrolyzer in bubbling configuration at the John Blizard Research Center in Livingston, New Jersey
- Char combustion tests in the 2500 lb/hr combustor in the Combustion and Environmental Test Facility (CETF) in Dansville, New York, using arch-firing configuration (which is known to facilitate the combustion of low-volatile fuels)
- Complete the design for a HIPPS integrated system in the Power Systems Development Facility (PSDF) in Wilsonville, Alabama
- Complete the Radiant Air Heater testing of the High Temperature Air Furnace (HITAF) at the 3 MMBtu/hour facility at UNDEERC
- Complete Convective Air Heater design of the HITAF
- Complete Radiative Heater design
- Continue slag screen design for capture efficiency and long life
- Initiate HIPPS repowering design concept

Planned Accomplishments -- Fiscal Year 2000

- Char combustion testing in the CETF using a wall-firing configuration; if successful, this would provide a less expensive construction for commercial equipment
- Testing the pyrolyzer at Livingston in circulating mode, which can be scaled more readily than the bubbling mode
- Complete the integrated RAH-CAH testing of the High Temperature Air Furnace (HITAF) at

the pilot-scale (3-5 million Btu/hour) facility at UNDEERC
- Obtain necessary design, engineering, and scale-up data from the pilot-scale facility for scaling-up HITAF as part of Vision 21
- Finalize slag screen design for capture efficiency and long life
- Formulate plans for product development in by-product market using slagging ash
- Model temperature profile for flue gas re-circulation before SNCR
- Compete advanced combined cycle analysis and optimization studies and integration of gas turbines with complex cycles
- Complete HIPPS re-powering design

Question: What is the funding profile by year (past, present, and future) for this program and how does it differ from the project plan originally envisioned?

Answer: Beginning in fiscal year 1997 the anticipated funding profile for the Indirect Fired Cycle Program is as follows (dollars in millions):

FY 1997	FY 1998	FY 1999	FY 2000 Request
$10.005	$4.927	$6.500	$7.010

In 1992, the project plan projected three phases with the following estimated costs and cost sharing (contractor share-government share) requirements as follows:

Phase I	Concept Definition (0%-100%)	$ 10 million
Phase II	Engineering Development and Testing (25%-75%)	$ 70 million
Phase III	Construct and Operating a Prototype HIPPS facility (50%-50%)	$100 million

Due to budgetary constraints and the size of the government cost-share, $50 million, associated with Phase III, in 1997 the Department began to re-scope the Indirect Fired Cycle program. Phase III was eliminated and Phase II re-focused on those activities that support the goals and objectives of Vision 21. We also anticipate that some HIPPS technology development will be pursued as part of the Vision 21 program.

High Efficiency Integrated Gasification Combined Cycle

Question: You plan to refocus your integrated gasification combined cycle program in the context of your Vision 21 program. What will you be doing differently?

Answer: Previously, the primary focus of the IGCC program was on utility power generation applications with air blown gasification, hot gas cleanup, and advanced turbine technology. Utility power generation applications with oxygen blown gasification were demonstrated within the Clean Coal Technology Program.

Over the past 2 years, the IGCC Product Team has invested considerable effort in refocusing the IGCC program to make it more responsive to industry's needs while maintaining its goals of lower cost and improved system and environmental performance. This effort has

resulted in a much more diversified portfolio of projects that seek to achieve both near- and long-term program goals. Although rooted in the IGCC program, many of the technologies being developed are considered the "building-blocks" of the Vision 21 program. Such technologies include feedstock-flexible gasification, advanced gas separations, gas purification, high-temperature material development, and co-production of some combination of electricity, steam, hydrogen, chemicals, and transportation fuels. Today's IGCC program is focused on multiple energy products, including power, and numerous applications to be responsive to the future needs of the utility, industrial, and transportation sectors. The successful development of these technologies will not only help to achieve the performance goals of IGCC but will be key to the realization of the Vision 21 concept.

Question: What impact will this change in focus have on existing programs and contracts?

Answer: The IGCC program will continue to concentrate on enhancing gasification performance, developing the transport gasifier, improving hot gas desulfurization sorbents for the utility market, and conducting engineering and market analyses. As such, our current contractors and existing facilities such as the Power Systems Development Facility and those at the Federal Energy Technology Center will continue to be actively involved in the IGCC program. What this change in focus will do, however, is enhance and expand the efforts of current activities while simultaneously increasing our stakeholder base through new industry driven program areas such as gas separations, co-production of power, fuels, and chemicals, and alternative feedstocks for co-feeding applications.

Advanced Turbines Program

Question: What is the status of the advanced turbine program being conducted with General Electric and Westinghouse?

Answer: General Electric will initiate their full speed no load test of the 7H (60 hertz) ATS turbine in fiscal year 1999 and complete the test runs in fiscal year 2000. Siemens-Westinghouse progress has been slowed due to purchase by Siemens. Siemens-Westinghouse is scheduled to complete the full speed no load test of their Advanced Turbine System (ATS) machine in 2001. Both General Electric and Siemens-Westinghouse will be actively marketing their ATS products and are planning a full scale demonstration of their ATS machines at a customer's site. The first of these demonstrations could occur as early as 2002 with additional commercial installations following soon there after. These demonstrations will be funded by industry.

Question: What are you doing to ensure the Westinghouse turbine program remains a domestic technology now that Siemens has bought Westinghouse?

Answer: We have made certain that Siemens-Westinghouse is in compliance with the provisions of "Section 2306 of the Energy Policy Act," which requires, among other criteria, substantial manufacturing in the U.S. of technologies developed under this contract. Siemens-

Westinghouse, under both the ATS and Fuel Cell programs, agreed to promote U.S. manufacture and continuing technology development in the United States. Under both programs, they have agreed to actively solicit U.S. component part suppliers wherever economically feasible.

Question: What are the outyear requirements associated with each of these contracts?

Answer: General Electric will require $28 million in fiscal year 2000 and no additional dollars in fiscal year 2001 to complete phase 3 (which is now the final phase) of the ATS program. Siemens-Westinghouse will require $4.6 million in fiscal year 2000 and $8.4 million in fiscal year 2001. However, Siemens-Westinghouse is modifying their program and they have notified the Department that they will request an extension which may affect the funding distribution (but not the total amount of dollars) in fiscal year 2000 and fiscal year 2001.

Question: You have asked for $800,000 to begin looking into a "next generation" turbine program is fiscal year 2000. How would this differ from the current program?

Answer: The $800,000 in fiscal year 2000 will fund the initiation of advanced cycle concepts studies, and determine enabling technology needs to support Vision 21. An early derivative of this work is expected to be the 30- to 150-megawatt size Flexible Gas Turbine System (FGTS) which will be fuel flexible, have high efficiency, and low emissions. The FGTS will provide the basis for the next generation of intermediate load power generation systems.

The current utility ATS program, which will be successfully completed in fiscal year 2001, has helped industry develop the technology needed to build utility scale (400+ megawatt) combined cycle plants that are 60 percent efficient, produce less than 9 p.p.m. NOx, and are cost competitive. A small amount of work is being done under this program to investigate alternative fuel options. Under the proposed High Efficiency Engines and Turbines (HEET) program, a program which will support Vision 21 heat engine development, additional work will be done to integrate fuel flexibility technologies into the utility ATS machines.

Question: I understand that this new program would extend until the year 2015. Why should we start another long-term effort in the turbines areas before we even complete the current effort?

Answer: While significant gains and progress have been made under the ATS program (which will conclude in fiscal year 2001), there are still key public needs that can be satisfied by further advances in turbine technology. Next-generation turbine systems will provide significant public benefits through near- and long-term reduction of CO2, NOx, and other emissions; increased reliability and superior performance; and reduced cost. Because next-generation systems will be fuel flexible, they will expand the options for high-efficiency conversion of domestic fuels into electric power. In the near term, next-generation turbine systems will be suitable for deployment as new capacity systems, to repower older fossil units, in combined heat and power applications, and as efficiency enhancement units for existing fossil-fueled steam plants. In the long term, next-generation systems will be adapted and integrated into Vision 21 fossil-fueled plants. Inherent superior performance and reliability will serve as a new and more

robust element in the security and reliability of next-generation power systems.

The Flexible Gas Turbine System (FGTS) will be the first turbine product to become available from the Next Generation Turbine program. It is envisioned to be in the 30- to 150-megawatt size range, a size which is not covered under the current ATS Program, and will be commercially available by 2007. In their 1998 *Annual Energy Outlook*, the DOE Energy Information Administration projected that up to 342 gigawatts in new power generation capacity in the United States will be supplied by simple-cycle and combined-cycle gas turbine systems and fuel cell/gas turbine hybrid systems between the years 1996 and 2020. There are more than 120 gigawatts of aging oil-fired and natural-gas-fired cycling steam plants in the United States that will need to be replaced in the post-2000 time frame. The potential market for FGTS technologies, including replacement/repowering of inefficient steam units and new capacity, is 160 gigawatts in the 2005 to 2015 time frame. With the FGTS efficiency of 47 to 50 percent (simple cycle), as compared with 36 to 42 percent for current technology, and a cost in dollars per kilowatt closer to that of a large, simple-cycle gas turbine than to a combined-cycle system, the FGTS is likely to capture a large percentage of this market. Expanded use of FGTS technology could, by 2015, reduce carbon dioxide emissions by 52 million tons, sulfur dioxide by 1.5 million tons, oxides of nitrogen by 280 thousand tons, and save 4,900 trillion Btu of fuel.

Question: What is the total estimated cost of the proposed new effort?

Answer: The new turbine effort has both a near and long term focus. In the near term, the Flexible Gas Turbine System (FGTS) is aimed at revolutionary advancements in intermediate size gas turbine systems. FGTS technology will have very high efficiency, very low cost of energy, low emissions, and are targeted at the intermediate and peaking markets. This market is currently dominated by low efficiency, high emissions, steam plants. The FGTS can also be integrated into mid-sized clean coal technology plants to boost efficiency and reduce cost, and may also be integrated into early entry Vision 21 systems. The FGTS is expected to be commercially available in 6 to 8 years. A base technology program will support the development of the FGT as well as focus on the longer term development of turbine and engine enabling technologies for coal, natural gas, and alternatively fueled Vision 21 systems. The new turbine effort builds on the advances made under the Advance Turbine Systems (ATS) program and will continue to drive future improvement in ATS class machines. The new turbine effort will cost an estimated $30 to $40 million per year. A $10 to $20 million per year base technology component is included in this $30 to 40 million estimate.

Advanced Research and Environmental Technologies

Question: What have you done to date in the area of carbon sequestration research?

Answer: Prior to fiscal year 1998, research in this area consisted primarily of exploratory research and assessments focused on identifying potentially promising research pathways. This included participation in the International Energy Agency's Greenhouse Gas Research and Development Programme (IEA/GHG). In fiscal year 1998, the program issued a solicitation for exploratory research on breakthrough technologies, and 12 novel concepts were selected for the

first phase of multi-phase research activities. In May 1999, six of these projects were selected for continuation into the second phase (see table below). During fiscal year 1998 further research needs assessments and studies were carried out, and a number of Workshops were conducted to determine the research opportunities and needs and industry interest in research in this area. In fiscal year 1999, these stakeholder outreach workshops are continuing with various industry and research community participants. In addition, over the winter of 1998-1999, a series of focused meetings and workshops were convened by the Department of Energy's Office of Fossil Energy and Office of Science. This process, which included other government agencies and the private sector, successfully crafted a "roadmap" or research agenda for carbon sequestration. This roadmap will become a basic tool for planning and coordinating future sequestration research and development.

Drawing upon the information from our existing program we plan to conduct new solicitation during fiscal year 1999. This solicitation will seek multi-phase projects which could establish proof-of-concept for science-based, cost-effective greenhouse gas capture, separation, storage and reuse, and for breakthrough ideas to cost effectively sequester carbon.

Sequestration "Novel Concepts" Projects				
No.	**Project Name**	**Research Organization**	**Selected for Phase 1**	**Selected for Phase 2**
1	PH-Neutral Concrete for Attached Microalgae and Enhanced Carbon Dioxide Fixation	Louisiana State University	X	
2	Large-Scale CO_2 Transportation and Deep Ocean Sequestration	McDermott Technologies, Inc.	X	X
3	Recovery of Carbon Dioxide in Advanced Fossil Processing Using a Membrane Reactor	Research Triangle Institute	X	X
4	Low Cost Bioscrubber for Greenhouse Gas Control	Michigan Technological University	X	
5	Novel Systems for Sequestrating and Utilizing CO_2	University of North Dakota Energy and Environmental Research Center	X	
6	Sequential Carbon Dioxide Removal from Stack Gases and Sequestration Using Coal Seams	Northwest Fuel Development, Inc.	X	
7	Optimal Geological Environments for Carbon Dioxide Disposal in Saline Aquifiers in the U.S.	The University of Texas at Austin	X	X
8	Experimental Evaluation of Chemical Sequestration of Carbon Dioxide in Deep Aquifier Media	Battelle	X	X

No.	Project Name	Research Organization	Selected for Phase 1	Selected for Phase 2
9	CO_2 Capture from Industrial Process Gases by High-Temperature Pressure Swing Absorption	Air Products and Chemicals, Inc.	X	
10	The Removal and Recovery of Carbon Dioxide from Syngas and Acid Gas Streams in an IGCC Power Plant for the Reduction of Greenhouse Gases	Tampa Electric Company	X	
11	A Novel CO_2 Separation System	TDA Research, Inc.	X	X
12	Landfill Operation for Carbon Sequestration and Maximum Methane Emission Control	Institute for Environmental Management, Inc.	X	X

Question: You have requested a $3.2 million increase for carbon sequestration research. What do you propose to do with these funds?

Answer: The total fiscal year 2000 budget request for carbon sequestration is $9.1 million. Sixty percent ($5.5 million) will go for capture and separation technologies (to eliminate CO2 from power plant emissions) and disposal in geological formations such as depleted oil and gas reservoirs or deep underground saline reservoirs, or the ocean. The rest ($3.6 million) would go in relatively equal amounts to enhancing natural sinks of CO2 (for example, increasing carbon stored in soil, vegetation, or ocean sediments, $1.6 million); and advanced sequestration concepts ($1.2 million) like artificial photosynthesis, and modeling and assessment studies of sequestration technologies ($0.8 million).

Research objectives are to establish that the sequestration techniques work; ensure no harm to the environment; minimize the cost of the technology (below $10 per ton carbon); provide multiple benefits to the nation, such as enhanced production of oil and gas; and low cost reduction of traditional pollutants. We anticipate that the additional funds ($3.2 million) will be spent in roughly the same proportion as previously described, and that this level of funding is the minimal amount necessary to continue to advance toward our program objectives.

Question: How much of this effort is directly related to ongoing research and how much involves program expansions or new program starts?

Answer: The budget request for fiscal year 2000 for carbon sequestration is $3.2 million more than the $5.9 million budgeted for this activity in fiscal year 1999. Most of the funding requested for fiscal year 2000 will be for the same type of activities being pursued in fiscal year 1999; for example, searching for new ideas on carbon sequestration, performing modest "paper studies" on potential sequestration approaches, and contributing supporting funding to projects primarily funded by other parties or international organizations. However, with the additional money requested for fiscal year 2000, funds will be sufficient to begin gathering field data and to conduct a limited number of small scale experiments. The areas explored by such studies will be

derived from current work and limited budget paper studies. Hence, it is anticipated that the bulk of the increase would be better characterized as a program continuation, rather than a new program start.

Question: What do you see as the role of Fossil Energy in this field of research?

Answer: DOE is actively involved in the Administration's Climate Change Technology Initiative, which includes the development of more efficient supply and demand side technologies across the entire agency. Fossil Energy (FE) is involved in two aspects of this initiative: increased efficiency of electric power generation, and carbon sequestration. Another FE program which addresses climate change is more efficient use and production of natural gas. The FETC has the responsibility of implementing all of the FE programs. The FE has the lead for DOE's applied research in carbon sequestration.

Another role for FE and the FETC is to provide leadership in forming government/ industry/university research and development partnerships in this field, in close coordination with DOE's Office of Science and other agency elements, as well as with other federal agencies with sequestration-related research programs. We also envision this research and development leadership role extending to international partnerships though the International Energy Agency's Greenhouse Gas Research and Development Programme (IEA/GHG), and other bilateral and multi-lateral agreements.

PM 2.5 Monitoring and Control

Question: What are you doing with the funds provided by the Congress for data monitoring and for development of cost effective control technologies for dealing with EPA's PM 2.5 air quality regulations?

Answer: The fiscal year 1998 Congressional funding was used to initiate DOE's PM 2.5 data monitoring and control technology development research program aimed at addressing the technical and scientific uncertainties associated with the 1997 fine particulate (PM 2.5) National Ambient Air Quality Standards and their potential impact on fossil-fuel based power systems. Specifically, funds were used to support ambient fine particulate monitoring directed at both the PM 2.5 NAAQS and visibility issues in the Upper Ohio River Valley, the Great Smoky Mountain National Park (GSMNP) in Tennessee, the Big Bend National Park in Texas, in Atlanta, Georgia, and at the FETC Pittsburgh site.

The bulk of the fiscal year 1999 Congressional funding is being used to continue development of appropriate, cost-effective PM 2.5 control technology. In addition, funding will be used to establish a PM 2.5 monitoring station in the southeast (Birmingham, Alabama) and to continue collaboration with EPA and EPRI on PM 2.5 and regional haze activities. The following table shows the project-by-project breakout of the fiscal year 1998 and 1999 PM 2.5 budget:

Project	Site	Capital (3)			Operating (4)			Total DOE ($) (thru FY99)	FY00	Other Participant Share ($)	Total Project Cost ($)
		Prior Year	FY99	FY00	Prior Year	FY99	FY00				
ATS - UORVP (1) (4 DOE sites)	Pittsburgh, PA	25K	350K	25K	0	550K	475K	2,000K	2,000K	$0	TBD
	Holbrook, PA	25K	350K	25K	0	550K	475K				
	Athens, OH (2)	0	25K	200K	0	50K	300K				
	Morgantown, WV (2)	0	25K	200K	0	50K	300K				
TVA Interagency Agreement (2 sites) (piggyback)	Atlanta, GA (5)	500K	100K	TBD	350K	450K	TBD	150K	TBD	4,350K	4,500K
	Look Rock, Smoky Mountains, TN (6)	100K	25K	TBD	200K	150K	TBD	150K	TBD	435K	585K
BRAVO (piggyback)	Big Bend National Park, TX (7)	0	1,000K	TBD	0	1,500K	TBD	300K	TBD	5,700K	6,000K
Southern Research Institute (piggyback)	Birmingham, AL (8)	0	1,250K	TBD	0	750K	TBD	750K	TBD	7,300K	8,050K

Question: To what extent is EPA cooperating with you on this program?

Answer: DOE and EPA have established excellent lines-of-communication and cooperation in the area of PM 2.5. The EPA is an active participant on DOE's Technical Advisory Committee for the ambient monitoring program in the upper Ohio River Valley region. DOE regularly exchanges ideas and discusses issues with EPA related to ambient monitoring, including the Agency's supersites program, and control technology development. Both DOE and EPA are members of the North American Research Study on Tropospheric Ozone (NARSTO) and the Air Quality Subcommittee in which coordination of federally sponsored air quality research is a major objective. In addition, DOE is working with EPA on a regional haze/fine particulate monitoring project in the Big Bend National Park in Texas (the BRAVO project) and at a PM 2.5 ambient monitoring site in Atlanta, Georgia (which is currently an EPA supersite). DOE is also interacting with EPA in providing ambient and source emissions PM 2.5 samples for the Agency's on-going human-health research.

Question: Are other agencies involved? If so, which ones and what is their involvement?

Answer: Yes. Through several jointly funded projects, DOE is working with the Environmental Protection Agency, the National Park Service, and the National Oceanic and

Atmospheric Administration on PM 2.5-related projects. A breakout of DOE's cooperation with other federal and state agencies follows:

Project/Activity	Agency	Involvement
Upper Ohio River Valley Project (UORVP) -- Ambient monitoring in the upper Ohio River valley region	USEPA PADEP WVDEP OHEPA	Advisory In-kind In-kind In-kind
BRAVO -- Visibility assessment in the Big Bend National Park in Texas	USEPA NPS NOAA TNRCC	Co-funding In-kind In-kind In-kind
Great Smoky Mountains National Park -- Ambient monitoring/visibility assessment	NPS TNDEP	In-kind In-kind
Atlanta, Georgia -- Ambient monitoring	USEPA	Co-funding

USEPA = U.S. Environmental Protection Agency
NPS = National Park Service
NOAA = National Oceanic and Atmospheric Administration
PADEP = PA Department of Environmental Protection
WVDEP = West Virginia Division of Environmental Protection
OHEPA = Ohio Environmental Protection Agency
TNDNR = TN Department of Natural Resources
TNRCC = TX Natural Resources Conservation Commission

Question: What do you assume with respect to funding PM 2.5 programs in fiscal year 2000, as compared with fiscal year 1999?

Answer: It is anticipated that the funding level for fiscal year 2000 will be at a higher level than fiscal year 1999 to reflect the needs for ambient monitoring, source emissions characterization, and control technology development. See the table that follows for more detail.

Question: For the record please provide project level details and funding information for PM 2.5 work in fiscal years 1998, 1999, and 2000.

Answer: The table that follows provides project details and funding for PM 2.5 projects:

Project/Activity	FY 98	FY 99	FY 00
Advanced Technology Systems - Upper Ohio River Valley Project (UORVP) $PM_{2.5}$ monitoring in the upper Ohio River valley	$1.5M		$500K
TBD - Ambient monitoring and data analysis	$0	$0	$2.0M

Project/Activity	FY 98	FY 99	FY 00
TBD - Source emissions characterization	$0	$0	TBD
TVA Interagency Agreement - $PM_{2.5}$ monitoring in the Great Smoky Mountains and in Atlanta, Georgia, and plume chemistry studies	$450K	$150K	
Brookhaven National. Lab - $PM_{2.5}$ monitoring as part of the BRAVO visibility study	$150K	$150K	
Southern Research Institute - $PM_{2.5}$ monitoring in Birmingham, Alabama	$0	$750K	
McDermott Technology - Fine particulate formation, characterization, and control in coal-fired boilers	$500K	$0	
Pacific Northwest National Lab - Development of real-time, single-particle mass spectrometer for $PM_{2.5}$ measurement	$0	$150K	
$PM_{2.5}$ Control Technology Development	$300	$1.5M	$2.25M
Ohio University - Statistical analysis of UORVP monitoring data	$0	$50K	$0
FETC Inhouse - Ambient $PM_{2.5}$ monitoring	$100K	$0	$0
Total	**$3.0M**	**$2.75M**	**$4.75M**

Natural Gas Research/Methane Hydrates

Question: You propose to start a program on methane hydrates. What are methane hydrates and what exactly will this program involve?

Answer: Methane hydrates are methane-bearing, ice-like materials that occur in abundance in marine and Arctic sediments and store immense amounts of methane. They are clathrate (for cage) compounds in which water molecules enclose the gas molecules, allowing high methane concentrations. One unit volume of methane hydrates can contain over 160 volumes of gas and less than one unit of water at surface pressures and temperatures.

As much as 200,000 trillion cubic feet of methane may exist in hydrate systems in the U.S. permafrost regions and surrounding waters. This is over a hundred times greater than the estimated conventional U.S. gas resource. The volume that may be economically producible is unknown. However, these enormous resources, if proven, have significant implications for U.S. energy security and global environmental issues, particularly global climate change. In addition, because the bulk of these methane hydrates are located on federal lands, gas production would provide significant resources via royalties and leases.

A large, long-term research and development effort will be required to turn this potential resource into gas reserves, while developing technologies to assure safe petroleum operations in

hydrate areas, and to understand the role of methane hydrates in global climate change. DOE proposes to conduct, in partnership with industry, academia, and other government organizations, a 10-year science and technology program that will produce the knowledge and products necessary for commercial production of methane from hydrates by 2015 and will address associated environmental and safety issues.

Question: When would you expect actual methane hydrate production to begin?

Answer: DOE's Methane Hydrate Research and Development program aims to develop the technologies necessary for methane production from hydrates by 2015. However, the timing of actual production of methane from hydrates is also dependent on a number of external factors:

- The demand for natural gas may increase more rapidly than expected due to electricity and natural gas deregulation and possible future restrictions on CO2 emissions,
- The cost of production of methane from hydrates may be significantly reduced by innovative production technologies,
- Availability of special "niche" markets where lack of other inexpensive fuel options will encourage earlier production (for example, remote areas of Alaska), and
- The development of advanced utilization technologies such as gas-to-liquids could facilitate Arctic or remote production.

Question: Where do you expect these resources to be produced?

Answer: Commercial production of methane from hydrates can be expected from offshore Gulf of Mexico because of the existing natural gas production and transportation infrastructure including pipelines. Arctic production, except for special local utilization, will depend on commercial gas-to-liquids technology or a gas pipeline system to bring this gas to market.

Question: Would this be similar to the offshore oil and gas leasing program managed by the Minerals Management Service (MMS)? If so, how would the MMS be involved?

Answer: Yes. The MMS has determined that methane hydrates are covered under Outer Continental Shelf oil and gas. The MMS is authorized to manage any future development of methane from hydrates much as they would manage conventional oil and gas.

The MMS conducts research that directly supports the needs of its Offshore Oil and Gas Program to ensure the safe and environmentally sound development of offshore energy resources. Consistent with these goals, MMS currently conducts methane hydrate research directed toward the safety and flow assurance aspects of existing oil and gas development activities. In areas where MMS goals coincide with the Department's Methane Hydrates Program (environmental and geotechnical consequences to the seafloor from hydrate production), we will do cooperative research and development. The MMS will also participate in the Management Steering Committee for DOE's Methane Hydrate Program.

Question: Why does the Department of Energy need to be involved?

Answer: DOE's Office of Fossil Energy is the only government agency that conducts applied research that promotes the efficient and environmentally sound production of natural gas. The methane hydrate program fits under that mission. The Office of Fossil Energy also has experience in conducting multi-agency methane hydrate research and development. The Morgantown Energy Technology Center (now the Federal Energy Technology Center) supported a 10-year program of methane hydrate research and development starting in 1982 that was instrumental in developing a foundation of basic knowledge about the location and thermodynamic properties of methane hydrates.

Question: How much is included in your request for the program in fiscal year 2000?

Answer: The fiscal year 2000 budget request for methane hydrate research and development is $1,985,000.

Question: What can be accomplished for such a modest investment?

Answer: While specific procurement plans will not be finalized until appropriations have been approved by the Congress, DOE anticipates allocating the funding as follows:

- Approximately 50 to 55 percent would be used for characterizing methane hydrate reservoirs. This will involve geologic, geochemical, microbiological, and thermodynamic studies of hydrates, the development of a data base documenting hydrate locations and research results, and collection and analysis of Arctic and marine hydrates.

- Approximately 20 to 25 percent will be used for laboratory tests and to develop models of the ways hydrates disassociate. This research would be a precursor to developing specific production technologies.

- Approximately 15 to 20 percent would go to developing sensors and monitoring subsea hydrate sites to determine what role hydrates may be playing in the release of methane that could contribute to global climate change.

- Approximately 15 to 20 percent would be used for seismic and well logging to evaluate subsea hydrate zone structure and strength. This will be important information to assess safety and seafloor stability issues.

Funding recipients have not yet been determined but will almost certainly include industrial partners; other Government organizations (such as the Naval Research Lab, U.S. Geological Survey, the Ocean Drilling Program, National Science Foundation, and Minerals Management Service); national laboratories; academic and oceanographic institutions, including university consortia; the Federal Energy Technology Center; and the Rocky Mountain Oilfield Test Center. This is consistent with the draft Methane Hydrates Act of 1999, which encourages "partnerships among government, industry and institutions of higher learning."

Question: What did you originally request of the Department for this program and what would you have done with those funds? Please provide a side-by-side comparison for the record at the $2 million funding level and at a $10 million funding level.

Answer: Although various funding levels were considered in preparing the fiscal year 2000 budget, the administration determined that $1.985 million, a significant increase over the fiscal year 1999 level, is appropriate. The following is a comparison of the two funding levels:

Proposed $2 million funding level	At a $10 million funding level
• Initiate databases of hydrate locations and research results • Collect samples and conduct geologic/geophysical studies to define the location and quantities of naturally occurring hydrates • Conduct laboratory and modeling studies of hydrate dissociation • Initiate preliminary seismic evaluation of subsea hydrate structure and strength • Monitor subsea hydrate sites • Most of the funding would be used to leverage existing methane hydrates expertise at DOE and other government agencies. No competitive solicitations are planned.	• Initiate databases of hydrate locations and research results • Conduct laboratory studies of the geologic, geochemical, thermodynamic, and acoustic properties of hydrate • Expand this work to include the correlation of field samples with geologic, geophysical and geochemical data • Build on these studies by developing predictive models of hydrate formation and dissociation • Initiate preliminary seismic evaluation of subsea hydrate structure and strength • Monitor subsea hydrate sites • Site selection and test design for onshore production test • Develop preliminary production process models • Monitor dispersed hydrate sites and the geologic record relative to methane release • Assess methane hydrate storage options • The program would issue competitive solicitations for work by academia, national labs and industry. Multiple approaches would be pursued and varied sites would be studied, which would accelerate achievement of program goals.

A specific funding breakdown will be available after the Management Steering Committee meets in mid-summer 1999 to define the program's priorities. The Methane Hydrates Research and Develop Act of 1999 states that DOE will develop this program in consultation with the Departments of the Interior and Defense and the National Science Foundation, all of whom have representatives on the steering committee.

Gas to Liquids

Question: Why is there a $1.5 million reduction in the gas to liquids budget?

Answer: Congress increased the fiscal year 1999 gas to liquids budget by $1.5 million to complete federal funding requirements for a 2-year cost-shared, public-private university research effort in support of an alternative ceramic membrane approach ("Oxygen Transport Membrane") to synthetic gas generation for gas conversion under development by an industrial alliance led by BP-Amoco researchers. The fiscal year 2000 gas to liquids budget request is believed sufficient to cover annual funding requirements of cost-shared work on the "Ionic Transport Membrane" concept of syngas generation being undertaken by a competitively-selected, industry/national laboratory team led by Air Products and Chemicals, Inc.

Question: What does your budget assume with respect to continuing the gas to liquids project in Alaska? If no funds are included, please explain.

Answer: The gas-to-liquids program currently has one project under contract in Alaska, a study of transportation of prospective gas to liquids products from the Alaska North Slope to market via the existing Trans Alaska Pipeline System from Prudhoe Bay to Valdez. This is a 3-year project with the University of Alaska-Fairbanks, and $175,000 of the proposed fiscal year 2000 budget for the gas-to-liquids program is planned to continue this project.

A second project directed to oxygen transport ceramic membrane university studies is also expected to be awarded to the University of Alaska-Fairbanks in the spring of 1999. No additional fiscal year 2000 funds for this new effort are needed, as fiscal year 1998 and 1999 gas-to-liquids program funds sufficient to complete this work were earmarked by the Congress in legislation; $1 million dollars of fiscal year 1998 and $1.5 million of fiscal year 1999 gas-to-liquids program funds have been allocated, as directed by the Congress, to cover the federal cost share of university studies to be done in support of an alternative oxygen transport membrane process to make syngas, an intermediate gas subsequently used to make hydrocarbon liquids. The University of Alaska-Fairbanks will be the lead contractor in this effort. Award date for the university cooperative agreement is early April 1999.

Effective Environmental Protection/National Laboratory Partnership

Question: You propose to eliminate the natural gas portion of the National Laboratory Environmental Forum. With the Department-wide emphasis on increasing programs with the national labs, why are you eliminating this program?

Answer: DOE's budget reduction target for fiscal year 2000 required a decrease in the natural gas Effective Environmental Protection Research program. Given the combination of ongoing projects (including national laboratory projects) that must be funded, and short-term, high impact environmental issues to be addressed, it was decided that the National Laboratory Environmental Forum was a lower priority within the overall budget allocation.

Question: What funding would need to be restored to your request to continue the national lab partnership at the fiscal year 1999 level?

Answer: $400,000 would be necessary to restore funding for natural gas research in the

area of Effective Environmental Protection to the fiscal year 1999 funding level and continue the work under the National Laboratory Environmental Forum at its present level.

Gas Upgrading/Coal Mine Methane

Question: What have you done with the $500,000 provided in fiscal year 1999 for the coal mine methane program?

Answer: All of the funds are to be obligated to the five competitively-selected industry teams to complete their Phase II coal mine methane utilization design studies. These designs are to be submitted to DOE by the end of 1999. Upon evaluation of the designs and individual plans to build and operate prototypical coal mine methane recovery and utilization demonstrations, and after Congressional authorization of the fiscal year 2000 budget request for coal mine methane funds, one or two plans will be selected to proceed with a Phase III cost-shared demonstration.

Question: How much is included in the fiscal year 2000 request and what, specifically, would you do with the funds?

Answer: $500,000 is requested for the fiscal year 2000 coal mine methane program activities. These would complete initiation and early tasks of the Phase III cost-shared demonstration selected in fiscal year 1999 after completion of Phase II demonstration designs.

Question: What are the outyear requirements associated with this program?

Answer: Outyear budget estimates for the 50-percent cost-shared program to completion are estimated at $1.0 million for each fiscal year from 2001 through 2003; this will allow the completion of no more than two projects.

Oil Technology

Question: The Secretary of Energy recently announced a program to help the struggling oil industry. A centerpiece of the program is the recovery field demonstrations this Committee has been supporting for years. I notice there is a decrease in funding for the Reservoir Class Revisit program in fiscal year 2000. How does that reconcile with Secretary's recent announcement?

Answer: The Reservoir Class Revisit program will not be affected because it includes funds from fiscal years 1998 and 1999. The total funding will be $18 million, including $8.7 million from fiscal years 1998 and 1999, and $6.6 million in fiscal year 2000.

Question: You have proposed a Preferred Petroleum Upstream Management program for $500,000. You say it will help slow the decline in domestic oil production. How will it do that -- what exactly will you do with these funds?

Answer: The $500,000 will allow us to initiate a program to help slow the decline in

domestic oil production. It will start an on-line permitting project to enable states and industry reduce permitting costs and speed response time. It will also conduct limited technology transfer of best practices for production and environmental compliance.

Question: $500,000 seems like a very small investment for such a large effort. What was your original request to the Department and, if larger, what more would you do if you got that larger amount?

Answer: The original request to OMB was $20 million. The original goal of the Petroleum Upstream Management Program (PUMP) was to stop the decline in domestic production by 2005, an objective of the Comprehensive National Energy Strategy. Through the involvement of the nation's oil technology experts in industry, government, and academia, the program was designed to supplement existing DOE mid- and long-term research and development. The program would focus on the following:

- Best practices to lower costs and improve efficiency;
- Environmental problem solving and regulatory constraints;
- Integrated application of advanced technologies through targeted field demonstrations; and
- Data management efforts, including on-line permitting.

Strategies are threefold:

- Use known technology transfer mechanisms;
- Regional approaches; and
- Integrated solutions to technology, regulatory, and data constraints.

Question: Please provide a side-by-side comparison.

Answer: The following is a side-by-side comparison of the activities under the PUMP program for the $0.5 and $20 million funding:

$0.5 million	$20 million
Conduct limited technology transfer of best practices for production and environmental compliance ($0.2 million)	Identify best practices to lower costs and improve efficiency; employ proactive technology transfer mechanisms to get operators to implement them in the field ($3 million) Conduct targeted field demonstrations to encourage operators to implement improved technology ($10 million) Do environmental problem solving and regulatory streamlining targeted to addressing key regional constraints to the use of PUMP advanced oil recovery technology ($2 million)

$0.5 million	$20 million
On-line permitting project to enable states and industry reduce permitting costs and speed response time ($0.3 million)	Conduct data management efforts aimed at providing geologic, engineering, production, and environmental information to oil producers quickly and easily in a user-friendly form. This includes on-line permitting ($3 million) Focus on regional solutions to stimulation of stripper wells and revitalization of fields on the verge of abandonment ($2 million)

Program Direction

Question: Why do you need an increase of $400,000 for contracts to provide computer and management services at headquarters -- that's a 30-percent increase?

Answer: The funding request for headquarters contract services is $1,750,000, a $400,000 increase from the $1,350,000 appropriated in fiscal year 1999. The increase includes $200,000 for contractual services which support the entire Fossil Energy program, both at headquarters and the field. This increase will support the increasing costs associated with the use of year 2000 compliant software which has an ongoing maintenance expense, support to maintain and continually update internal financial and data management systems, and support related to the increased usage of the internet/intranet to publicly disseminate information on Fossil Energy programs.

The request also includes a $200,000 increase for the support of the Fossil Energy LAN and e-mail systems. In the current year, Fossil Energy is migrating from an older, obsolete e-mail software platform to a more modern e-messaging system which will meet year 2000 requirements. This new software will enhance communications capabilities to include scheduling calendering, and task monitoring in addition to basic e-mail. The increase in costs associated with this migration are due to expanded licensing costs and technical support to the enhanced capabilities of e-messaging.

Question: You've also asked for a $50,000 increase (21 percent) in funding for computer timesharing at headquarters. Please explain.

Answer: DOE is implementing various administrative corporate systems to replace duplicate systems maintained by individual elements of DOE. Examples of such corporate systems are CHRIS (Corporate Human Resources Information System), BMIS (Business Management Information System), and EIS (Executive Information System). The cost of ongoing maintenance of these systems is the responsibility of the program offices within DOE. Therefore, additional funding is requested to cover the expenses associated with Fossil Energy's share of the costs and maintenance of these corporate systems. In the long term, DOE expects these systems to reduce overall agency costs by eliminating the numerous smaller redundant systems currently being maintained by individual program offices.

Question: Why is funding for the National Petroleum Technology Office increasing by 10 percent?

Answer: National Petroleum Technology Office's (NPTO) salary request is increasing from $2.310 million to $2.520 million. This increase is partly due to the pay raise of 3.6 percent this year and the addition of 4 FTE's, who were transferred from the Elk Hills Oil Field when the field was sold. These employees were transferred to help handle the increased workload as a result of the privatization of the National Institute of Petroleum Energy Research (NIPER). Those workload costs were previously in the oil technology subprogram. Overall, we are saving $5.0 million yearly from privatizing NIPER, which more than offsets the increase here.

Cooperative Research and Development

Question: Why is funding for the Cooperative Research and Development program in Wyoming and North Dakota decreasing by $1 million?

Answer: The fiscal year 2000 funding request for Cooperative Research is the same as the fiscal year 1999 budget request of $5.836 million. In fiscal year 1999, Congress added an additional $1.0 million.

Question: What impact would such a reduction have on those programs in fiscal year 2000?

Answer: Since the majority of projects undertaken by these two organizations are cost shared, it is possible that fewer projects would be undertaken or that increased cost sharing could be requested to make up any difference.

SynGas Program

Question: What is the status of the ITM SynGas program? Please describe this program for the record.

Answer: Now that all major negotiations between the Department and Air Products and Chemical, Inc., (APCI) -- the prime contractor for the approximate $86 million effort -- and most of the prime-sub negotiations and prime-national laboratory arrangements have been worked out, the work pace is accelerating. Furthermore, APCI believes its early work in the critical areas of ceramic composition, ceramic fabrication and metal-ceramic seals to be sufficiently encouraging that it believes, it not only will meet its Phase I deadline of March 30, 2000, but can accelerate Phase II work (assuming a go-ahead by DOE) and recover to its original timetable (Phase II completion by December 31, 2003).

The ITM Syngas project is a three-phase, $86-million, 8-year, competitively-selected effort directed to the development and demonstration of selected ceramic membranes to separate oxygen from air and enable the precise partial oxidation of natural gas within a single reactor to make a "synthetic gas" (syngas), which then can be converted to a liquid in a second reactor. In

simplest terms, high pressure natural gas will flow along one side of the membrane (coated with a catalyst) where it will combine with oxygen molecules migrating through the membrane from low-pressure air flowing along the other side of the membrane. As the oxygen is "consumed" by the natural gas to make a carbon monoxide and hydrogen mixture called syngas, its consumption will act to "pull" more through the membrane. Temperatures will approach 1,000 degrees Celsius; ceramic/metal piping joints and seals will be technologically challenging.

Nonetheless, DOE and APCI remain optimistic the effort will be successful, thereby enabling as much as a 25-percent reduction in capital investment requirements for converting natural gas to desirable diesel and other liquid fuels and feedstocks. The one-step syngas generation using the "Ionic Transport Membrane" (ITM) will replace current separate steps of cryogenic separation of oxygen from air, and a separate burner/reactor fed with pure oxygen and natural gas.

The research is being carried out in three phases: Phase I (50 percent cost shared) entails membrane material and reactor component design and development, and is to be completed in mid-2000. Phase II (55 percent cost shared) will include testing of a 12,000 cubic feet per day experimental unit and a subsequent sub-scale engineering prototype able to process 500,000 cubic feet per day of gas, and should be completed by late 2003. Phase III (78 percent cost shared) will entail further scale-up to a 15 million cubic feet per day, pre-commercial at APCI's industrial gas complex in LaPorte, Texas, or other suitable location.

DOE costs are being shared by the Office of Fossil Energy (75 percent) which is managing the effort through its gas to liquids program at the Federal Energy Technology Center, and by the Office of Energy Efficiency and Renewable Energy's (25 percent) hydrogen program which sees the ITM-Syngas process as a prospective, inexpensive way to make hydrogen in the high volumes needed to introduce significant use of hydrogen as a fuel option. The DOE/APCI contract also contains a "repayment" plan, whereby upon commercialization of the ITM Syngas process, a portion of realized commercial revenues will be returned to the federal government until the DOE contract funds are fully reimbursed.

The ITM Syngas research team includes: APCI, Allentown, Pennsylvania; Babcock and Wilcox, Alliance, Ohio; Cerametec, Salt Lake City, Utah; Eltron Research, Boulder, Colorado; Pacific Northwest National Laboratory, Richland, Washington; ARCO, Plano, Texas; Chevron, Richmond, California; Statoil, Norway; University of Alaska-Fairbanks, Alaska; Penn State, State College, Pennsylvania; and University of Pennsylvania, Philadelphia, Pennsylvania.

Question: What funds are included in the fiscal year 2000 budget for continuing this program?

Answer: The gas-to-liquids program has budgeted approximately $2 million (completion of Phase I and start of Phase II) of its fiscal year 2000 request of $5,302,000 to support continuation of the ITM Syngas Program.

Question: What additional amount would be required to fund Phase II of this program

and what, specifically, would it involve?

Answer: Phase II total costs are currently estimated at $33,626,000, of which DOE costs are estimated at $15,130,000. These costs are anticipated to be incurred over the fiscal year 2000 to 2003 timeframe and, in accordance with DOE program and ITM-Syngas contract agreements, are to be shared with Fossil Energy's (FE) gas-to-liquids program responsible for 75 percent of DOE costs and Energy Efficiency and Renewable Energy's (EE) hydrogen program responsible for 25 percent of DOE costs. Accordingly, FE's Phase II overall share will approximate $11,350,000, EE's share $3,800,000. Approximate Phase II budget schedules for the 3 and one-half year work period for FE and EE are estimated as follows:

	FE	EE	Total
		($ million)	
FY 2000 (part-year)	$ 1.300	$ 0.500	$ 1.800
FY 2001	4.000	1.500	5.500
FY 2002	3.500	1.000	4.500
FY 2003 (part-year)	2.550	0.780	3.330
Total	$ 11.350	$ 3.780	$ 15.130

Note: Actual funding requirements will be adjusted by work underruns/overruns, project acceleration/slippage, working capital for spending peaks.

Fossil Fuels

Question: Because of the constraints we are operating under this year, the question has been asked at many of our hearings: What would be your top priority within your budget? I would also like to ask what priority you would accord to your different research programs. For example, would you assign protecting the unobligated Clean Coal technology funds the same priority as your Coal Research and Development programs, or would you rank them differently?

Answer: It is rather difficult to identify any single top priority within our budget because our strategy has been, and continues to be, the pursuit of an integrated, balanced portfolio of fossil energy technologies to meet the energy needs of our nation. This approach allows us the best opportunity, with manageable risk, to gain maximum public benefits consistent with our overall energy policy for addressing the environmental concerns associated with the use of fossil resources, ensuring the nation's energy security, and creating sustained opportunities for economic competitiveness through the efficient use of low cost fossil energy. We believe that these priority policy issues are reflected in the budget request allocation for our current portfolio of technologies. The Clean Coal Technology program is also part of the integrated technology portfolio and is of major importance in our program as it provides the technological foundation and building blocks upon which the advanced technological program goals are based. The Clean Coal Technology program also provides near-term opportunities to demonstrate and deploy clean, efficient U.S. technologies globally. We will be more than willing to discuss our program strategy in more detail at your convenience.

QUESTIONS SUBMITTED BY CONGRESSMAN WAMP

Vision 21

Question: During this testimony, and in previous testimony before this subcommittee, the Department has given high priority to the President's Committee of Advisors on Science and Technology report recommending the Vision 21 initiative and to "invest more aggressively in a focused advanced-research program." Are there existing facilities that can be utilized in this program, or does the department plant to build new ones?

Answer: The Vision 21 program covers a broad spectrum of technologies which will have to be tested at appropriate scales to validate their performance. Existing facilities will be used to validate these systems and components wherever it is cost effective to do so. Some examples of facilities which may be considered during the development of Vision 21 systems are: the Power Systems Development Facility in Wilsonville, Alabama; the Coal Fired Flow Facility in Tennessee; the PFBC Advanced Concepts Facility in Livingston, New Jersey; the B&W Systems Development Facility in Alliance, Ohio; the FETC Flue Gas Cleanup Research Laboratory in Pittsburgh, Pennsylvania; the Gasification Process Evaluation Facility in Schenectady, New York; the LaPort Liquid Phase Alternative Fuels PDU in LaPort, Texas; the FETC Syngas Generator and Transport Reactor in Morgantown, West Virginia; and the Idaho National Engineering and Environmental Laboratory facility in Idaho.

University of Tennessee Space Institute

Question: The University of Tennessee Space Institute (UTSI) has been maintaining the Department of Energy's Coal-Fired Flow Facility at Tullahoma for use in future DOE programs. Does the Department feel an obligation to support this facility and continue to use these resources for research on innovative concepts?

Answer: The UTSI was a prime contractor under Fossil Energy's magnetohydrodynamics (MHD) program in which the Coal-Fired Flow Facility (CFFF) played an important role in developing MHD technology. When Congress decided not to fund the MHD program then Fossil Energy began to conclude its work at all facilities under the MHD program. As the Department continues its other research programs, it will evaluate the most cost-effective approaches that use the capabilities and resources of each and every facility available to it based on competitive merits.

Question: The Department has invested over $20 million in its Coal-Fired Flow Facility at the University of Tennessee Space Institute. This facility was designed to conduct research in technologies that utilized high temperature, high pressure components operating with enriched oxygen–many of the characteristics that are critical to the success of Vision 21. Does the Department plan to take advantage of this facility and the previous work to develop these new concepts?

Answer: There may be a number of facilities across the country that could be used in the

Vision 21 program. The implementation of the Vision 21 program will be a competitive process in order to obtain the best value for the taxpayer. The Coal-Fired Flow Facility would be among the facilities considered if the University of Tennessee Space Institute chooses to compete for this work alone or partner with private industry.

QUESTIONS SUBMITTED BY CONGRESSMAN MORAN

The Green Scissors Report

Question: The Green Scissors report calls for the termination of the Clean Coal Technology Demonstration program and funding for the Coal Research and Development program saving more than $1.2 billion over the next 5 years. If this research is important enough to the industry, the private sector will fund it. Needless to say, the Fossil Energy program had a bad reputation among environmental groups. Could you explain why federal taxpayer funds are needed to support this research? What are the potential environmental benefits of this research might yield?

Answer: Advanced, long-term research can be very expensive, and with payoffs that are potentially very large but far in the future. Private industry no longer spends much money on long term, advanced research because:

- Increasing competitive pressures demand near-term and relatively certain profits on research and development;

- There are fewer regulated monopolies, which previously could pass research and development expenses onto consumers (examples are: reductions in EPRI and GRI funding as the electricity and gas industries transition to competition, and decreased long-term, basic research at Bell Labs, which has transitioned towards applied research and development after AT&T was deregulated);

- Public goods, such as clean air and water, benefit most citizens, but people and businesses don't normally pay an entity for voluntarily cleaning pollution at its own expense;
- Prior to regulation of a pollutant, a private firm can't benefit from research and development to clean the environment because people don't pay firms for voluntarily reducing pollution; and
- If government expects a pollutant may become regulated, cost-shared federal research and development for pollution reduction can help reduce costs of meeting future regulation;

Some say the mere threat of regulation should be enough to induce private research and development. However, the mere threat of regulation doesn't usually promise enough certainty of return for a company to invest millions in pollution-control research and development. Others say that regulation should be adequate to guarantee research and development for pollution control. After regulation, costs will be minimized, given the technologies at hand. But with substantial research and development in advance of regulation, the technologies at hand will be less expensive: for instance, the cost of controlling NOx with low-NOx burners (developed with joint federal/industry research and development) is very low. Even after regulation, federal research and development (and demonstration), cost-shared with industry, can lower the cost of pollution control beyond what industry would do on its own. The federal share will reduce the effective cost of private industry research and development, thus incentivizing more of it.

Simply passing a regulation, however, is not sufficient to achieve an environmental goal, if technologies are not available, or if the costs of the technologies are too high. If electric cars were available at costs approximating those of conventional cars, Los Angeles would probably be in compliance with federal air quality standards for ozone today. But consumers continue to buy gasoline powered cars because they can't afford today's electric cars. Federal research and development is helping bring the costs of electric cars down.

CO2 Emissions

Question: I note that your fiscal year 2000 budget supports research on advanced methods for capturing and permanently disposing of greenhouse gases. I have some concerns about this effort. I understand you have a set goal achieving CO2 reduction at a cost of $10 per ton of CO2. According to some energy experts, this goal would cost up to $24 billion on a $200 billion utility industry. This added cost is certain to cause a ripple effect on our economy. Can you share with us any promising results that have the potential of lowering the cost of reducing CO2 emissions? Are you familiar with the research of converting coal into methane with the use of biological agents?

Answer: Our program goal is $10 per ton of carbon, not carbon dioxide, which makes the goal both more difficult to attain, but also of lesser impact on consumers if it can be attained. For example, if the entire annual emissions from fossil fuel-fired powerplants were controlled by sequestration at $10 per ton, the total cost would be $5.5 billion per year (550 million tons of carbon per year x $10 per ton = $5.5 billion per year). This would increase the average cost of electricity by a little over a fourth of a penny per kilowatthour. There are some attractive sequestration technologies which generate products that partially or even fully offset the cost of sequestration, such as using carbon dioxide for enhanced oil recovery, or enhanced methane production from unmineable coal seams. In addition, some sequestration approaches which enhance natural sequestration processes have promise for greatly reduced costs, such as reforestation, increasing soil carbon content, and enhancing carbon uptake by the oceans. Finally, we are optimistic that current sequestration costs for approaches which capture and store carbon dioxide from major emission sources can be dramatically reduced when combined with new energy cycles which facilitate carbon dioxide capture.

We are also familiar with at least one technology which uses microbes to convert coal to methane and humic acid. The humic acid could be used in agriculture and environmental cleanup efforts and could have the potential to store large amounts of carbon. We understand that this technology was submitted to the Federal Energy Technology Center under a 1997 solicitation for "novel concepts" to reduce greenhouse gas emissions, but the proposal was not selected. It should be emphasized that all of the technology options which we are considering at this time require much more research to ensure that they work and do not inadvertently harm the environment, and we think it is far too early to begin identifying "winners and losers".

Question: Could you discuss your strategy for disposing of captured CO2 into reservoirs and creating CO2 sinks? How would you safeguard against past efforts that caused serious environmental damage and even fatalities?

Answer: We envision three basic types of sequestration: One would involve the capture and disposal of CO2 from power plants and other industrial sources into the ocean and geological formations such as depleted oil and gas reservoirs, saline formations and deep, unmineable coal seams. Some of this type of sequestration is already occurring as a result of CO2 flooding for enhanced oil recovery. The second would involve enhancing natural processes that extract CO2 directly from the atmosphere into soils and vegetation. The third approach would involve potential revolutionary breakthrough sequestration concepts that are well beyond the current state of the art.

While we are aware of a natural CO2 release which occurred as a result of a turnover of a lake, we are not aware of any man-made carbon sequestration effort which has caused any environmental damage. DOE's vision is to make carbon sequestration a major carbon management option. In order to achieve that vision, our research objectives are to establish that the sequestration options work, ensure no harm to the environment, minimize the cost of the technology, and provide multiple benefits to the nation, such as enhanced production of oil and gas, and low cost reduction of traditional pollutants.

Clean Coal Technology

Question: The $246 million for two Clean Coal Technology Demonstration programs that DOE has asked to be deferred is a large sum of money. Is this $246 million unobligated?

Answer: As of the end of February 1999, $417 million was the total available Clean Coal unobligated balance. However, all but $13 million of these funds are committed to either existing projects or program direction.

Question: Is this the sum total of all unobligated balances in the Clean Coal program?

Answer: The $246 million proposed deferral for the Clean Coal program is currently available as committed but unobligated funds.

THURSDAY MARCH 25, 1999.

DEPARTMENT OF ENERGY

WITNESS

DAN W. REICHER, ASSISTANT SECRETARY OF ENERGY FOR ENERGY EFFICIENCY AND RENEWABLE ENERGY

Mr. REGULA. Good morning. We'll get this hearing started. We're pleased to have the Department of Energy represented here this morning. Mr. Reicher, I see you have your team with you, so if we have any tough questions, you'll have backups, kind of like solar energy, a good backup.

Mr. REICHER. It's a bright team, too. [Laughter.]

Mr. REGULA. Your full statement will be put in the record, and if you'll summarize for us.

OPENING STATEMENT

Mr. REICHER. Thank you, Mr. Chairman.

A year ago I first testified before the subcommittee, and I told you my goals and plans for the Office of Energy Efficiency and Renewable Energy. I also committed to put our financial house in better order.

Mr. Chairman, one year later, I believe we've made a great deal of progress. In the next few minutes, I want to do three things. First, briefly describe our management improvements, highlight some of the results we've achieved and explain the important benefits of our fiscal year 2000 budget.

At the outset, I want to dispel the notion that our work on energy efficiency is just some green alternative to the real business of energy. Given that over 90 percent of the energy we use in this country comes from fossil and nuclear fuel, we must use these sources as efficiently as possible as we develop new clean power options.

I also need to stress that despite a lot of current rhetoric, our work is driven by much more than climate change. In fact, if there had never been concern about greenhouse gas emissions, or if Kyoto had never entered the environmental lexicon, we would still be advocating the budget we do today, to cut our nation's energy bill, to fight air pollution, to enhance national security, and to improve U.S. competitiveness.

A year ago, I committed to improve the way we manage our office, particularly the way we spend precious taxpayer dollars. We've met that commitment, although I'm the first to admit that we can do even better. We've increased competition for our funds and broadened the range of entities receiving support. For example, there were more than 400 competitors for a recent solicitation for

funding of information dissemination and public outreach, much of which was previously awarded on a sole source basis.

Today, I'm pleased to announce 15 awards selected from 38 proposals in one transportation area. These awards will support, for example, work related to natural gas vehicles, alternative fuel vehicles for airports, and medium and heavy duty trucks.

Mr. REGULA. Do most of these projects have a public or private match?

Mr. REICHER. Many of them have a cost share, yes. That's what we strongly encourage.

Mr. Chairman, we've also cut our uncosted balances substantially, office-wide by more than 58 percent since the beginning of fiscal year 1996, and we're continuing to bring them down. We are making better use of the Government Performance and Results Act and peer reviewed measures of our progress.

We have developed, at your urging, closer working relationships with state and tribal organizations, including the Association of State Energy Research and Technology Transfer Institutions, the California Energy Commission, the New York State Energy Research and Development Agency, and the Council of Energy Resource Tribes.

With encouragement from the subcommittee, we are also working with the National Academy of Public Administration on our financial management practices. I've also established a management improvement team to insure that our management reforms take root. Of course, Mr. Chairman, better management does not mean much if we're not also delivering results, real results, for the American taxpayer. I'm proud to say we're doing just that in all of our sectors.

In our buildings program, we've made terrific progress toward developing new energy efficiency standards for key appliances, standards that are technologically feasible, economically justified, and good for consumers. We're showing through our Building America program that developers across the country can build homes that are 30 to 50 percent more efficient at no extra cost. And I really emphasize that last point.

Through our Rebuild America program, we're helping cities, towns, school districts, Indian reservations, and small business owners renovate hundreds of millions of square feet of existing buildings in an energy efficient manner. This year we will cut the annual energy bill of another 60,000 low-income American homes by about $200 through our weatherization program.

In our transportation program, the Partnership for a New Generation of Vehicles is producing solid results that gives us confidence that an 80-mile-per-gallon family sedan will be on the road in the middle of the next decade that will be affordable, safe, and environmentally friendly, and that will be built by U.S. workers. I need to stress that despite recent breakthroughs highlighted intensely by the press, we still have a good distance to go in developing technologies and driving down costs so we can put these 21st century vehicles, lots of them, on the road.

In the meantime, we're helping to put hundreds of thousands of alternative fuel vehicles, cars, trucks, and buses on the road in

scores of cities across the nation, operating on clean natural gas, ethanol, and electricity.

In our industry program, we are helping to slash energy bills, cut pollution, and increase productivity in our nation's most energy-intensive industries: from steel, aluminum, chemicals, mining, and agriculture to glass, forest products, metal casting, and most recently, oil. Across these industries, we advance technological development and deployment in efficient electric motor systems, steam, compressed air, sensors, controls, combustion, materials, and many other vital areas.

I'm proud to say that in our advanced turbine work we've delivered what we promised, high efficiency economic natural gas-fired turbines for energy; work we are now ramping down in our budget to make room for other high priority activities.

Mr. Chairman, our efforts to reduce the federal government's own $8 billion energy bill are also bearing fruit on behalf of U.S. taxpayers. As of this month, we now have in place a stable of pre-selected energy service companies and $5 billion in contracting authority. This will allow federal building managers to simply access billions of private sector dollars to pay for energy retrofits of our 500,000 federal buildings, and share the resulting savings between the agency and the energy service company.

To date, we have close to 200 delivery orders in the works under these contracts on behalf of agencies ranging from NASA, the National Park Service, and the Navy to the Coast Guard, the National Gallery, and GSA. One recent delivery order for NASA buildings in Texas will involve tens of millions of dollars of investment by Johnson Controls, one of our pre-selected companies, and save NASA almost $2 million annually at this particular facility.

Mr. Chairman, we've accomplished a great deal in the past year, but the opportunities and the challenges of the next decade loom large. Our fiscal year 2000 budget, including our requested increases, are carefully designed to seize these opportunities and confront these challenges: by helping the U.S. steel industry compete against foreign imports by radically reducing energy costs; by helping the U.S. oil industry confront historically low oil prices by cutting energy use and costs in oil production and refining; by helping U.S. agriculture, which is in crisis in many parts of the nation, to find new outlets for its crops and waste, to produce power, fuels, and chemicals; by helping the U.S. forest products industry, which is facing crippling foreign competition, to turn its wastes into clean energy to power its mills and sell the excess to the electricity grid; by helping the U.S. automobile industry and its workers lead the world in the production of high efficiency, low emissions cars, trucks, mini-vans, and sport utility vehicles; by helping the natural gas industry find new uses for this clean and abundant energy source in buildings, industry and transportation; by helping U.S. appliance and equipment makers build more efficient, consumer-friendly products; by helping the construction industry, which is facing boom times in parts of our country, build and renovate tens of thousands of energy-smart schools and millions of energy efficient homes and businesses that cost no more up front and save big dollars to operate; and finally, by helping American taxpayers save billions of dollars in operating federal buildings.

All of these benefits we can deliver. Cost savings, pollution reduction, productivity gains, and energy security require significant investment from both government and industry in research, development, and deployment. We realize we make our request for a budget increase in the face of tight caps in the Federal budget.

We commit to working with you, Mr. Chairman, Mr. Dicks and members of the subcommittee, to outline our top priorities. At the same time, we will continue to press the case for the importance of our programs and the budget which supports them to the American people.

In conclusion, Mr. Chairman, I believe we've done what we said we would do. We have put our financial house in order and delivered real results. Now we look to the subcommittee to help us help American industry deliver even more benefits to the nation.

Thank you.

[The statement of Mr. Reicher follows:]

Statement of Dan Reicher
Assistant Secretary for Energy Efficiency and Renewable Energy
Department of Energy
Before the
House Committee on Appropriations
Subcommittee on Interior and Related Agencies

March 25, 1999

INTRODUCTION

Mr. Chairman and members of the subcommittee, I am pleased to have the opportunity to appear before you to present the Department of Energy's Fiscal Year(FY) 2000 budget request for the Office of Energy Efficiency and Renewable Energy (EERE).

Our FY 2000 budget is designed to help our nation meet the tremendous energy, economic, and environmental challenges that the new century brings. Over the next few years, we will witness the complete restructuring of U.S. electricity markets; we will confront the challenge of global climate change; we anticipate sweeping new federal and state clean air requirements; and we will encounter an increasingly volatile global energy market. In the face of these challenges, our goal is to develop a diverse set of energy sources and use them efficiently. The plain fact is that 92% of the energy we consume today comes from fossil and nuclear fuel. So we must advance energy efficiency technologies in order to make better use of conventional energy sources while we make progress in new energy supply technologies.

Research and development (R&D) is a key driver of long-term economic development. In fact, the ability to innovate, develop and deploy new technologies in a wide range of fields has been a key reason for the remarkable success of the U.S. economy in the last fifty years and will likely continue to drive our economic development over the next fifty years. Sustained commitment to R&D in both private industry and the federal government has produced these results. However, corporate downsizing, increased competition, financial pressures and other factors have drastically cut the level of private investment in R&D in the energy sector. In the face of the energy and environmental challenges of the next century and the declines in private sector R&D, the role of the federal government is critical. Without a substantial federal energy technology R&D effort -- in collaboration with industry -- many advanced technologies will likely be delayed and our nation will suffer the resulting economic and environmental losses.

The investments in energy efficiency made by this committee have had a profound effect on economic development. They have produced real results that are helping U.S. industries cut costs and more successfully compete in the increasingly tough global marketplace. In industries facing severe international competition - from steel to forest products to chemicals - EERE technologies are being used to lower production costs - helping to keep these vital industries competitive. In the automobile sector, EERE technologies will not only result in the 80 mile-per-gallon family sedan and a more competitive domestic auto industry in the next decade, but have contributed to

the efficiency and competitiveness of many models on the road today. In buildings, EERE technologies in lighting, windows, building design, heating, cooling and materials have increased the efficiency of U.S. buildings from California to Connecticut. And as our nation embarks upon a new construction boom, these technologies will position builders to offer even greater efficiency in both new construction and renovation of homes, offices and schools. For example, the 6,000 new schools to be built and tens of thousands of schools to be renovated in the next decade present a key opportunity for energy savings - which can mean more money for teachers and textbooks. Finally, in federal energy management, technology and deployment investments have enabled the federal government to make remarkable progress toward meeting the goal of 30% less energy use in our 500,000 buildings.

The FY 2000 budget request for EERE calls for increases to support additional research, development, and deployment of advanced energy efficiency technologies. These efforts, building upon past accomplishments, will result in energy cost savings to consumers, enhanced industrial competitiveness, lessened dependence on foreign oil and a healthier environment. To ensure market acceptance of these technologies and responsible investment of taxpayer dollars, EERE relies on cost-shared partnerships with the private sector. Our work with states and localities, including critical weatherization assistance to low-income families, also plays a key role in reducing U.S. energy consumption and improving environmental quality.

ACCOMPLISHMENTS

Our programs have a compelling record of success - made possible by the support of this committee. In transportation, we are meeting our industry/government partnership goals and are on schedule to meet the goal of the ten-year Partnership for a New Generation of Vehicles (PNGV): the 80 mpg production prototype family sedan. In addition, the PNGV effort has led to significant engine and materials technologies being incorporated into current vehicle models. Also, we have built prototype diesel engines for small trucks that could be twice as efficient as current sport/utility vehicle engines with very low emissions. Finally, our work has helped make possible large-scale deployment of alternative fuel vehicles - such as natural gas cars and buses.

Through the Industries of the Future program, we are working with the most energy intensive U.S. industries to develop technologies that cut their energy requirements, emissions and production costs and thereby improve their competitiveness. For example, in the steel industry, we have developed and demonstrated a portfolio of technologies that likely will save over $8 million per year at Bethlehem Steel's Burns Harbor, Indiana, plant and could save nearly $200 million per year if implemented industry-wide. We have also developed a wide range of crosscutting technologies that are being applied across many industries, for example, efficient motor and steam systems and advanced materials. Finally, we have nearly completed the development of our revolutionary high-efficiency, low-emissions natural gas turbine for industrial applications. These technologies cut production costs in the industries America needs to stay competitive - such as petroleum production, forest products, agriculture and mining.

In buildings, EERE has supported technologies that have saved consumers literally tens of billions

of dollars to date in energy costs. However, we know that the subcommittee has some strong concerns about the management of this program. In response, we have reorganized the buildings office and are using the Industries of the Future model to develop industry-driven technology visions and roadmaps to better serve our customers and use our resources more wisely. We are delivering more for each dollar invested. In Building America, we have demonstrated to builders from Pittsburgh to Los Angeles that they can build 50% more efficient houses without increasing their construction cost. Through Rebuild America we have partnered with communities across the nation to continue energy efficiency retrofits in 400 million square feet of commercial buildings that will save over $140 million per year in energy costs. We have developed a revolutionary natural gas chiller that significantly increases building cooling efficiency. Finally, we have reinvented the appliance efficiency standards process to increase coordination -- and the likelihood of consensus --with industry and other affected stakeholders.

In the federal sector, we have had remarkable success in reducing federal building energy costs - saving taxpayers more than $800 million per year as a result of efficiency and renewable energy projects. However, we are now at a critical juncture. To move the remaining distance to meeting our 30% federal energy efficiency goal, we have put into place large regional super Energy Savings Performance Contracts to bring private sector energy efficiency financing into the federal infrastructure. This strategy is proving successful, with more than 190 "delivery orders" under these contracts now in the works, with total potential value in the hundreds of millions of dollars. A recent single order from NASA facilities in Texas is valued at approximately $43 million. However, we will not be able to effectively meet this great demand without adequate federal resources to manage this work across all federal agenices.

IMPROVED MANAGEMENT

When I became Assistant Secretary seventeen months ago, I realized that EERE faced many management challenges and committed to fix them. We have listened -- to Congress, industry, and our DOE colleagues and other partners -- and we have delivered. Let me highlight some of our accomplishments.

Competition: Concerns were expressed that EERE was relying too heavily on non-competitive mechanisms to disburse funds. We listened and we have delivered a dramatic reduction in our use of non-competitive funding mechanisms. On December 3, 1998, my office released a competitive solicitation for its information dissemination and outreach activities, including some work previously performed by industry associations on a noncompetitive basis. More than 400 applications have been received by the Department under this solicitation, and many new entrants have competed, including leading universities. These applications all have been subjected to objective merit review and awards are being processed by Headquarters Procurement Services. On March 2, 1999, I issued guidance to all organizational elements on competition for EERE sponsored financial assistance agreements for information dissemination and outreach. The purpose of this guidance is to affirm the commitment of the Office of Energy Efficiency and Renewable Energy to competition and objective merit review in discretionary financial assistance.

Uncosted Balances: This Subcommittee expressed concerns about the level of EERE's uncosted balances. Again, we listened and we delivered. Across all of EERE, we have reduced uncosted balances by more than 58 percent since the beginning of FY 1996. And we are continuing to reduce these balances further. Concerns were expressed about the use of support service contractors. We listened and significantly reduced the proportion of funding directed to support service costs and established more streamlined procurement and business practices.

Management Practices: While we are proud of the progress we have made, we realize that our work to improve the management of EERE is by no means complete. For example, I have just established a new Management Improvement Team composed of senior managers from across the various EERE sectors as well as representatives from our National Laboratories, the Golden Field Office, and various DOE Offices to improve our corporate management processes and procedures. We expect recommendations from this team will increase our ability to award even more funding in FY 2000 on a competitive basis. Also, with encouragement from this Subcommittee, we are working with the National Academy of Public Administration to undertake an independent review of our financial management and procurement practices. This review should be completed in late October.

Planning and Evaluation: We are also developing smarter strategies and carefully measuring progress in meeting our goals. We are developing a new office-wide strategic plan and using technology "roadmaps"-- jointly developed with industry -- to ensure we are in step with the needs and goals of the marketplace. We are making greater use of the Government Performance and Results Act and peer-reviewed measures of our technology progress. These tools and practices will help provide the data and analysis necessary to help make smart -- and sometimes difficult-- management choices. Finally, just as any business must do to stay competitive, as part of the Department's Workforce 21 initiative, we are working to ensure we have the right training, skills, and human resources available to fulfill our challenging and changing missions.

Program Integration and Expanded Partnerships: One of our major management challenges is breaking through the "stovepipes" that often separate our various missions. This is important because the solutions to many of our renewable energy and energy efficiency challenges cross technology and market lines. For example, in the biomass area both the private sector industries (i.e., fuels, electric power, and chemical products) as well as our own power, industrial, and transportation programs have traditionally operated separately from each other. Leading initiatives designed to better integrate our work include those in Bioenergy and EnergySmart Schools.

Biomass represents a tremendous, untapped, domestic resource for our energy future, particularly as an alternative to imported oil. By investing in a bioenergy industry today, we can cultivate and harness renewable biomass resources to fuel our cars, power our homes and businesses, and supply our chemical needs in the 21st Century. The Department of Energy, along with private partners and other federal agencies, is launching a national partnership to develop an integrated bioenergy industry to produce power, fuels, and chemicals from crops, trees, and wastes. By making a "ton of biomass" a viable market competitor to a barrel of imported oil, this initiative

will help grow the U.S. economy, strengthen U.S. energy security, protect the environment, and revitalize rural America. This effort will integrate the work from existing DOE R&D in transportation biofuels, biomass power and programs with the forest products and agriculture industries, including gasification. It is only through the integration of these efforts that biomass will be an effective competitor to imported fossil fuels.

The EnergySmart Schools initiative is an EERE-led partnership that brings together public and private sector resources to reduce the $6 billion in annual energy bills of our nation's schools and redirect the savings to our children's education. EnergySmart Schools will help to reduce energy consumption and expand the use of clean energy technologies in new and existing schools, improve the learning environment, and increase awareness of energy-related issues. It is estimated that this initiative -- which will coordinate and build on the work of existing EERE programs such as Rebuild America, the State Energy Program, Clean Cities, and Energy Star -- will help schools save up to $1.5 billion in energy costs and lower carbon emissions by 10 million metric tons by 2010 as they incorporate state-of-the-art energy efficiency and renewable energy technologies. Through the EnergySmart Schools partnership, we will provide technical assistance, demonstrate renewable and energy efficiency technologies, and offer guidance on financing and building design.

Another challenge we are pursuing is to better leverage our resources and facilitate technology deployment by expanding partnerships with Federal, State, industry, and other entities. These partnerships involve other Offices within the Department of Energy including the Office of Fossil Energy (FE) and the Office of Science, as well as other Federal agencies including the Department of Defense, NASA, the U.S. Department of Agriculture, the Department of the Interior, and the Environmental Protection Agency. For example, we work with FE in fuel cell development and turbine development.

At the State and regional level, we have developed closer working relationships with State and tribal organizations including the Association of State Energy Research and Technology Transfer Institutions (ASERTI), the California Energy Commission (CEC), the New York State Energy Research and Development Agency (NYSERDA), and the Council of Energy Resource Tribes (CERT). For example, a recent energy efficiency program conducted with California is a partnership between the DOE and the California Building Industry Association to launch a comprehensive training program for builders on how to comply with energy efficiency standards in order to build more energy efficient housing. A total of 1,269 participants from 191 builder companies have participated in the training during this project to date, affecting 48,000 homes. We are using our closer relationship with States not only to identify and implement joint projects, but initiate a joint planning process for the FY 2001 budget.

Of course, in addition to using our National Laboratories, we will also continue to leverage resources and ensure market acceptance of the technologies we develop by pursuing cost-shared partnerships with the Nation's industries, universities, utilities and other power providers, and other leaders in the energy field.

FY 1999 BUDGET REQUEST AND MAJOR GOALS

The FY 2000 Energy Conservation budget request is $837 million - up from $691 million in FY1999. This request will enable EERE to progress further in meeting the following goals:

- by 2004, develop production prototypes of family sedans getting 80 miles per gallon and two-third reductions in emissions, with no compromises in safety, comfort, performance or cost -- through the Partnership for a New Generation of Vehicles -- and cut new light truck energy use by 35 percent by 2002;
- by 2010, improve the efficiency per unit output of the nation's most energy intensive industries and cut energy-related emissions and waste by 25 percent relative to projections;
- by 2010, improve the energy efficiency of the nation's new homes by 50 percent; new commercial buildings by 30 percent; and existing buildings by 20 percent; and
- by 2005, cut energy use in Federal buildings by 30 percent from 1985 levels.

The following sections briefly explain our request.

INDUSTRIAL TECHNOLOGIES

In FY 2000, the budget request for industrial technologies is $171 million–a 3% increase over FY 1999. The proposed increase is targeted at Industries of the Future (specific), and is largely counterbalanced by a proposed reduction in Industries of the Future (crosscutting), primarily in the Advanced Turbine System program.

For the Industries of the Future industry-specific program we have submitted a budget request of $74 million–a $16.5 million increase. About 75% of the proposed increase will support two key objectives: (1) projects in support of the forest products industry strategic vision, specifically the Bioenergy and Black Liquor Gasification Initiative, that will substantially reduce energy use and emissions; and (2) projects in support of the aluminum industry's technology roadmap that target replacing the consumable carbon anodes at the core of its manufacturing process with non-carbon anodes that would substantially cut the industry's energy use and emissions. Almost all the remaining requested increase will support R&D projects aligned with the mining, agriculture and petroleum refining industry recent visions and roadmaps.

In the Industries of the Future Crosscutting area, the budget request is $87.6 million–a $12.4 million decrease attributable to the planned successful completion of the Advanced Turbine System program. In response to strong interest from our industry customers, we will expand selected efforts to accelerate the deployment of key technologies across industries. Hence, we are proposing a $3.2 million increase to provide technical assistance, information and showcase demonstrations intended to improve the energy efficiency of the motor, steam, compressed air, and combined heat and power systems at 100 energy-intensive U.S. industrial facilities. We are also proposing a $2.8 million increase in the crosscutting area to expand the number of combustion and sensors/controls multi-industry projects. This will enable this program to help

reduce energy use and emissions in all the most energy-intensive industries.

TRANSPORTATION TECHNOLOGIES

In FY 2000, the budget request for Transportation Technologies is $252.1 million, reflecting an increase of $50.0 million from the FY 1999 budget. Transportation Technology activities are focused in six areas: Vehicle Technologies R&D ($168.1 million); Fuels Utilization R&D ($23.5 million); Materials Technologies ($33.0 million); Technology Deployment ($17.7 million); and, Management and Planning ($9.8 million).

The Vehicle Technologies R&D program supports the development of technologies that will produce substantial improvements in fuel economy for automobiles and trucks without sacrificing performance, emissions and affordability. The FY 2000 budget request (up $42.1 million) emphasizes research and development of advanced combustion engines, emissions control, fuel cells, hybrid propulsion, electronics, more efficient heavy vehicles, and electric vehicles. Activities range from developing cutting-edge technologies, such as advanced fuel-flexible processors for fuel cell applications; and advanced emission control technologies for gasoline and diesel-fueled direct injection engines.

In FY 2000, we expect to reach the second milestone of the PNGV program -- the unveiling of concept cars which demonstrate the technical feasibility of the most promising technologies. However, we still have major technical hurdles to overcome before 80 miles per gallon mid-size sedans, with performance and price equivalent to today's Lumina, Concorde and Taurus, can be offered for sale in large numbers. With current fuel prices providing scant incentive for efficiency, the government has a critical role in pushing the fuel economy envelope through cooperative R&D programs such as PNGV. With several of the world's auto manufacturers making announcements about bringing advanced technology vehicles to market, some are wondering why the government should continue its support. While making a technological step forward, the vehicles announced to date are not expected to be built in large numbers and will fall far short of our PNGV goals for performance, size and cost. Our efforts have spearheaded government-industry collaborations leading to development of the technologies that will make PNGV-type vehicles a major force in the market in the next decade. In FY 2000, we will focus on the key technologies, such as integrated power modules, high power energy storage devices, pollution control equipment, fuel cells, and compression ignition direct injection engines; needed to make the 80 miles-per-gallon mid-size automobile a reality. Additional resources for these priority technologies will allow for both PNGV's success and the application of new technologies to significantly improve the fuel economy of sport utility vehicles, minivans, and pickup trucks. Continued support is critical to ensure that these technologies mature to a level where industry will proceed to employ them in commercially available vehicles.

In combination with advanced powerplants and new exhaust treatment technologies, new fuels are vital to simultaneously achieve high fuel economy and low emissions. The FY 2000 budget request of $23.5 million for the Fuels Utilization R&D program (up $5.7 million) will enable the identification, development, and testing of new fuel formulations for use by advanced automotive

and truck engines developed in the Vehicle Technologies R&D program.

The Technology Deployment budget request is $17.7 million - up $4.7 million from FY 1999. We will continue to facilitate the deployment of alternative fuel vehicle technologies and begin similar efforts for fuel-efficient advanced technology vehicles. We will expand grants to States and Clean Cities to demonstrate these vehicles, support innovative refueling infrastructures, and provide other information and technical assistance.

BUILDING TECHNOLOGY, STATE AND COMMUNITY PROGRAMS

In FY 2000, the budget request for Building Technology, State and Community Programs(BTS) is $335.9 million - up $73.7 million from FY 1999. The R&D, appliance standards, and technology assistance (nongrants) portion of this request is $129.6 million - an increase of $46.5 million from FY 1999.

The FY 2000 budget request places greater emphasis on industry-driven collaborative RD&D, peer reviews, competitive solicitations, and on working with industry, State and community partners to transfer research results to the residential and commercial sectors.

The request for the Technology Roadmaps and Competitive R&D program is $7.5 million - an increase of $1.1 million from FY 1999. The road-mapping process helps private and public sector partners reach consensus on future R&D direction. The increase in funding will be used for the competitive R&D program which will focus on technologies identified by the completed roadmaps as well as new and innovative R&D topics not covered by the roadmap process.

The request for the Residential Buildings Integration program is $13.5 million - an increase of $3.9 million from FY 1999. This program works with the homebuilding industry and States to jointly fund, develop, demonstrate, and deploy housing that integrates energy-efficient technologies. The increase supports efforts to double *Building America* partners for residential buildings to 200. The ACEEE's recently released report on BTS's *Successful Initiatives of the 1990's* concluded "that the *Building America* program has demonstrated that it can influence the home building industry broadly." The study went on to state that the program "successfully leveraged a relatively small federal effort into a much larger investment in energy efficiency on the part of the builders involved in the programs. DOE's funding is important in providing design expertise and testing that the builders would not invest in otherwise."

The request for the Commercial Buildings Integration program is $6.3 million - an increase of $3.8 million. This program works to realize the energy-saving opportunities during the construction and major renovation of commercial buildings. Most of the increase will be used for a competitive solicitation to fund activities identified in the Commercial Buildings Roadmap. In addition, the increase will be used to support the upgrade of voluntary (model) building energy codes.

The request for the Equipment, Materials, and Tools program is $60.8 million - an increase of $17.8 million from FY 1999. This program conducts R&D on building components, building envelope technologies, and design tools; particularly those identified in roadmaps. It also issues standards and test procedures for a variety of appliances and equipment. The funding increase supports additional research for innovative lighting, advanced space conditioning and refrigeration, cogeneration, and analysis tools and design strategies that increase the energy efficiency of buildings and improve building performance. The increase will be used in part to fund competitive solicitations that support the lighting and HVAC roadmaps as well as new fuel cell activities. The increase will also support the acceleration of the lighting and appliance energy efficiency standards program to realize even greater reductions in energy, consumer energy costs, and air emissions. An increase in funding for desiccants will allow us to expand upon the monitoring effort recently documented by our partners, Simco and Trane, which showed that desiccants improved on air quality as well as the energy efficiency in schools. An increase for the generator absorber heat exchanger (GAX) technology will support an expansion of our partnership with the gas industry to monitor and evaluate the energy savings that can be achieved in residential gas heat pumps. One activity would be at Village Green, a *Building America* site, where GAX chillers are currently being evaluated.

The request for the State Energy Program is $37 million - an increase of $4 million from FY 1999. This program provides grants that enable States to tailor energy efficiency programs to local needs and leverage non-Federal resources. The increase supports the States' energy program priorities and enables them to increase their work with other public and private sector entities, including schools and hospitals. Together they achieve widespread adoption of energy efficiency and renewable energy technologies that benefit all sectors of the States' economy.

The request for the Weatherization Assistance Program is $154 million - an increase of $21 million from FY 1999. This program extends the benefits of energy efficiency technologies and practices to low-income families who can least afford them. The increase supports weatherization of 9,600 more homes than the 67,300 weatherized in FY 1999. Priority will be given to households with elderly members, persons with disabilities, and children. We are also exploring ways to better leverage weatherization investments to advance key building technologies, cut pollution and reduce housing costs.

The request for the Community Partnerships program is $35.4 million - an increase of $16.6 million from FY 1999. This program responds to requests from communities, towns, and cities to improve energy efficiency and sustainable building design and operations. This results in energy savings, economic growth, job growth and a better environment both locally and nationally. The funding increase will:

- bolster the deployment of energy-efficient and renewable energy technologies in commercial, institutional and apartment buildings by increasing *Rebuild America* community partnerships to 330, concomitantly supporting our EnergySmart Schools initiative,
- fund competitively selected projects that support public/private community partnerships to design energy-efficient and renewable energy programs and

projects that save energy, and benefit the environment and the community.
- provide assistance to States to update and implement complex commercial building codes by simplifying approaches to code use and enforcement, and training approximately 10,000 code officials, designers, and builders.

The request for the Energy Star Program is $6.0 million - an increase of $3.3 million from FY 1999. This program, in collaboration with EPA, increases consumer awareness of benefits and cost savings of energy-efficient appliances and products. The increase will be used to expand the program to new residential and commercial appliances and products, such as dryers and boilers and to encourage consumers to retire inefficient appliances.

FEDERAL ENERGY MANAGEMENT PROGRAM

The Federal Energy Management Program is our smallest program in budget size but one that is having a very large impact. In FY 2000, the budget request for the Federal Energy Management Program (FEMP) is $31.9 million - up $8.1 million from FY 1999. This program leads the Federal government's effort to improve energy efficiency and reduce its $8 billion annual energy bill. To help federal agencies meet this challenge, FEMP has developed broad, streamlined Super Energy Savings Performance Contracts (ESPCs). These contracts provide a way for the private sector to invest its capital in energy efficiency improvements in federal buildings and make a profit through a share in the savings in energy bills. The ESPCs will attract billions of dollars in private capital investments and are causing a revolution in energy efficiency investments in the Federal government. However, bringing about this revolution will require expansion of FEMP services and funding in FY 2000.

On the first of March, DOE awarded two contracts to complete our super ESPC coverage of the entire nation. Federal facility managers nationwide are now able to "order" energy efficiency from a stable of pre-selected energy service companies. In the 28 months since we awarded the first of the new Super ESPCs, we have counted more federal facilities working with energy service companies than we saw in the preceding 10 years of contracting using the old approach. We recently helped NASA award a $42 million order under one of these contracts and we know of 200 facilities in 39 States that are interested in using these contracts. In order to manage these contracts and provide the necessary levels of technical and information assistance, FEMP must significantly expand its services. In essence, we must spend a little more money in this process to reap enormous cost savings.

With the guidance of this committee, FEMP has instituted another innovation in funding energy management within the Federal government: reimbursement of FEMP by agencies using its services. FEMP has already received over $200,000 and has agreements for the receipt of an additional $250,000 from agencies that accept FEMP's energy and cost savings services.

We will be spending these funds, as directed, only on delivering greater cost savings across all agencies. The funds sought in the FY 2000 request will accelerate receipt of the reimbursements from other agencies and with those funds lead to further savings to taxpayers. As these reimbursements are received, there will also be less need for appropriations to support some of FEMP's activities, assuming we secure our full FY 2000 request now.

Specific activities that will be funded by the FY 2000 request include: assisting agencies in the development and award of delivery orders under the ESPCs; providing technical assistance in auditing and project design that will enable Federal facility managers to negotiate the most beneficial projects through ESPC task orders; developing projects in each region to increase awareness of this alternative energy efficiency financing method throughout the Federal sector; and preparing training materials and conducting workshops to prepare agency technical, contracting, budget, legal, administration, and management personnel to use the ESPCs. In addition, the ESPC process will be expanded (contingent on authorizing legislation) to cover water conservation, mobile equipment, and leased space for buildings -- opening up large new opportunities to further lower Federal government operating costs.

Mr. Chairman and Members of the Subcommittee, I believe that our FY 2000 budget request is based on carefully defined priorities and a commitment to realize even greater benefits from our investment of taxpayer dollars. We have made substantial progress in advancing energy efficiency throughout our economy but we need your continued commitment to realize the benefits of our investment. I look forward to working with you and the Members of the Subcommittee throughout the coming year.



Department of Energy
Washington, DC 20585
Dan W. Reicher

Dan W. Reicher was nominated by President Clinton and confirmed by the U.S. Senate as Assistant Secretary of Energy for Energy Efficiency and Renewable Energy in 1997. Prior to this position he was Senior Policy Advisor to Secretary of Energy Federico Peña (1997), Chief of Staff of the Department of Energy (1996-1997), Acting Assistant Secretary of Energy for Policy (1995-96), Deputy Chief of Staff and Counselor to Energy Secretary Hazel R. O'Leary (1993-95) and Special Assistant to Secretary O'Leary (1993). Mr. Reicher was a member of the Clinton-Gore Transition Team (1992-93). From 1985 to 1992 he was a Senior Attorney with the Natural Resources Defense Council.

Mr. Reicher has more than 20 years of experience with environmental and energy policy and law. He was a staff member of President Carter's Commission on the Accident at Three Mile Island and worked in the Hazardous Waste Section of the U.S. Justice Department. He was an Assistant Attorney General in Massachusetts where he focused on environmental and energy matters and a law clerk to federal District Court Judge David Nelson in Boston. Mr. Reicher also served as a member of the National Academy of Sciences Board on Radioactive Waste Management and an adjunct professor of environmental law at the University of Maryland Law School.

At DOE, Mr. Reicher has been engaged in policy development and implementation in many areas, including energy efficiency, renewable energy, climate change, electric utility restructuring, clean air, environmental cleanup, nuclear waste management, contract reform, privatization, fossil energy, nuclear power, nuclear nonproliferation, and land conservation. In the international arena, he has been involved with the Department's extensive energy, environmental and national security work in Russia, India and with the International Atomic Energy Agency.

Mr. Reicher's work at the Natural Resources Defense Council focused primarily on the Department of Energy's environmental, energy and defense programs. He enforced federal environmental laws at the Department's facilities and worked to enact legislation to improve DOE's environmental performance and increase U.S. energy diversity.

Mr. Reicher is a graduate of Stanford Law School and Dartmouth College and also studied at Harvard's Kennedy School of Government. Mr. Reicher's articles have appeared in such publications as the New York Times, the Bulletin of the Atomic Scientists, and the Stanford Law Review. He co-edited a book entitled Controlling the Atom in the 21st Century (Westview Press) and wrote a chapter for the environmental law treatise Sustainable Environmental Law (West Publishing).

In 1985, Mr. Reicher was a member of the first expedition on record to kayak the Yangtze River in China and, in 1977, the first expedition to navigate the entire 1888-mile Rio Grande. He is married to Carole L. Parker, who works in the Office of Environmental Security, U.S. Department of Defense. Carole and Dan have a young daughter, Haley Katherine Reicher.

October 1998

Printed with soy ink on recycled paper

Mr. REGULA. Thank you.

I wonder why you mentioned consolidating and streamlining your operations, but your budget request has a $148 million increase. It would seem to me that efficiency should result in a decrease.

Mr. REICHER. Mr. Chairman, we have consolidated, we have streamlined, but we are also facing new challenges and new opportunities. We have eliminated various projects and programs. But there are a lot of new issues, a lot of new opportunities, and a lot of new challenges in a host of areas. So I think that is in fact why we've made this budget increase.

We're working with a new set of industries; for example, oil, mining, and agriculture. We're trying to accelerate our development of appliance standards and to accelerate our work in developing the next generation of automobiles. All of those programs do in fact cost more to do.

Mr. REGULA. Last week we had the fossil energy program people here. They have requested decreases, and yet you have increases. Why in your judgment is funding for research in your area more important than in fossil energy? Even you mention the fact that you have developed different techniques for burning fossil fuels more efficiently.

Mr. REICHER. The work in fossil energy is extremely important, and we work closely in a variety of areas. We work in natural gas, we work in turbines, and we work in fuel cells. There's a lot of crossover between the two programs.

I think our increase is justified for a number of reasons, one of which is that ultimately the best way to improve energy security in this country, the best way to cut air pollution, and one of the best ways to improve competitiveness is actually to use energy more efficiently, to use fossil and nuclear energy more efficiently. It's often the cheapest investment one can make to improve the outlook for the environment and economics in this country.

So that is in fact why we think that working closely with the Fossil Energy Office, taking advantage of what they're able to do to produce more natural gas and to develop clean coal technologies, we can take that the next step and take the energy that's produced by fossil energy and use it in the most highly efficient way possible, in transportation, in buildings, and in industry.

Mr. REGULA. It would seem to me that at a minimum, they should be equally important, but the budget numbers submitted by the Department do not reflect that.

Mr. REICHER. One thing I do want to stress is that a large component of our budget is actually very much fossil fuel oriented. We have, for example, on the order of $100 million of our budget that is for natural gas work. We have parts of our budget that directly support work on coal; for example, coal firing, coal and biomass, and mixing them together.

As I've also mentioned, we're doing new, and I think very important and exciting, work with the oil industry. So I think if you disaggregate our budget, look at the fossil parts of that, combine it with what's going on in fossil, and indeed, even combine it with

some of the work going on in the Office of Science, I think you'll see that there's actually quite healthy support for both the production side of fossil and the end-use side of fossil-derived energy.

Mr. REGULA. You try to make sure you don't duplicate each other's work?

Mr. REICHER. Very important question. Each year that goes by, I think we're doing a better and better job of avoiding duplication. For example, they work on larger turbines, power generation turbines. We work on smaller, industrial and micro-turbines. They work on larger fuel cells; we work on smaller fuel cells.

We really are dividing this work up in, I think, a pretty smart way. And equally important, the relations are very good between the two offices.

Mr. REGULA. I notice there are many offsets from prior year funds in the Fossil budget. Would this not also work in yours?

Mr. REICHER. We did take a $25 million offset from the biomass energy account in our budget. The offsets there, I think, were in the clean coal area.

Mr. REGULA. They were in petroleum and oil shale reserves, too.

Mr. REICHER. There were some deferred dollars there.

Mr. REGULA. Of course, the biomass offset is not from unobligated balances. I don't think you took any offsets from your unobligated balances.

Mr. REICHER. We did not take them from those balances, but we did take them from the bioenergy account.

As I said in my opening statement, we've come down very substantially in these uncosted balances. We're continuing to bring them down. There will be disruption to our programs if we were to take those uncosted balances.

GLOBAL WARMING

Mr. REGULA. Global warming, I have some questions on that. A report in the March 11 issue of "Nature" magazine states that carbon dioxide levels did not remain constant up to the onset of the Industrial Revolution as previously thought. Instead, while average global temperatures stayed stable, carbon dioxide levels fluctuated considerably.

How will this finding be factored into the climate change work you are doing?

Mr. REICHER. I don't know that specific study. I can supply some information about it for the record. What I can say is that, in recent times in the history of man, what is inescapable is the fact that carbon dioxide levels in the atmosphere have gone up substantially. There is pretty widespread agreement that that increase or much of that increase is the result of man-induced activities, particularly the use of fossil fuels.

Mr. REGULA. I don't think the article in Science quite agrees with that. Also the paper in the March 12 issue of Science contradicts the belief that atmospheric carbon dioxide levels increase before global temperatures increase. Instead, the study found that temperature rise comes first, followed by a carbon dioxide increase 400 to 1,000 years later. So the correlation is called into question by this scientific paper.

Mr. REICHER. Yes. I wasn't making that case. I was simply making the case that carbon dioxide emissions have gone up in the last few hundred years quite substantially. The reason that the Administration is spending literally hundreds of millions of dollars each year on the science of climate change is to get at that very question that you are asking, and that has been raised about the relationship between the inescapable fact that we're putting a lot of carbon dioxide into the atmosphere, and the impacts of that on temperature.

The bulk of the scientific opinion is that temperatures will rise. The question is by how much. Then the question is what the impacts will be to the globe with those temperature rises. I am the first to admit that there is still a lot more work to be done on the science of climate change. Our point today is that separate from that issue, what we are doing and what we propose to have supported in the fiscal year 2000 budget, is very good for traditional air pollution, for energy security, for U.S. competitiveness, separate from the impact, the very positive impact, it can have on reducing carbon emissions.

Mr. REGULA. According to Jean Lynch Stieglitz of Columbia University, one can conclude from the findings published in the journal, "Nature," that we can expect that as the climate warms, the terrestrial biosphere will probably be capable of holding more carbon than it can today. How do you respond to that?

Mr. REICHER. Again, that's exactly the issue that this scientific work we're very heavily supporting looks at. NOAA is doing work, DOE is doing work, and EPA is doing work. At Interior and Agriculture, there's a very carefully put together integrated program to look exactly at that question. For example, what will forests do to pull carbon dioxide out of the atmosphere? What will be the impacts of agriculture on that? What will the impacts of this increasing temperature be on the cycling of carbon?

Lots of open questions. I think the key though is that the bulk of the scientific community believes that these increases in carbon dioxide will have some impact on global temperatures.

Mr. REGULA. Well, you've asked for a 23 percent increase in funding for the climate change technology initiative. That translates into $121 million of the $146 million increase in your budget. Yet in your testimony you said you're not focusing on climate change as such, but to put $121 million out of $146 million on climate change, it would seem to me that there is a disconnect here.

Mr. REICHER. Mr. Chairman, let me first say, we in fact are focusing in part on climate change. One of the reasons is that it's an important element, it's an important driver for our budget.

I think there's something that's too often not recognized, and that is virtually all of our budget, with the exception of weatherization, is accounted for as under the Climate Change Technology Initiative. Because all of what we do in efficiency and clean power technologies can reduce, will reduce, carbon emissions. So all of it is accounted for, except the weatherization program.

So the increase that we've requested is simply an increase that reflects the fact that most of that budget is climate related. What's not accounted for are the weatherization dollars.

But to go back to the point, well beyond what this can do down the road to deal with climate, it can have major impacts today on key challenges that we face in this country. I'll just stress one, which is traditional air pollution, sulfur emissions, nitrogen emissions, particulates, and ozone. One of the cheapest, most effective ways to cut air pollution is to increase the efficiency of the use of fossil fuels and to develop clean power technologies.

Mr. REGULA. Isn't that Fossil Energy's primary mission?

Mr. REICHER. No, we focus in many regards on the end-use technologies. We're developing the advanced turbines, we're developing fuel cells, and we're developing renewables, a whole host of things, both fossil and non-fossil related.

The fossil program, as I explained earlier, is also working on some of those end-use technologies. For example, the large power generating turbines. So we've split up the territory in a way that makes a lot of sense, and we're working well together.

PARTNERSHIP FOR A NEW GENERATION OF VEHICLES (PNGV)

Mr. REGULA. One last question, PNGV. It sounds good, and you've been at it for five years. Yet the statistics clearly indicate that Americans like the big cars. The Ford Excursion is a classic example, and obviously market research indicates there is a market for the larger vehicles. I see that SUVs, including pickups, are better than half, 50 percent of the market. If you get this 80 mile per gallon vehicle, how are you going to make the public use something that they don't want to use?

Mr. REICHER. First of all, let me say that we're very cognizant of the dilemma you've just pointed out. That's in fact why our budget is directed at developing this 80-mile-per-gallon sedan which will seat five or six passengers. Also, we're very focused on greatly increasing the fuel efficiency of light trucks, mini-vans, and sport utility vehicles. That's why we're working with the diesel manufacturers on improved diesel engines that can improve the fuel efficiency of sport utility vehicles.

We're actually taking a lot of what we learned in PNGV in terms of engine technology, lightweight materials, and control systems. We're going to be able to transfer that knowledge, and are transferring that, into the work on sport utility vehicles and light trucks. So there's a lot of interplay, and we really are addressing this dilemma.

Mr. REGULA. You're saying the technology you gain from PNGV can be translated into better efficiency on the heavier units?

Mr. REICHER. Correct. In fact, you can both move up from the sedans to the heavier units; you can also move down from the very heavy trucks and some of the things you learned there to the lighter trucks.

The other thing I wanted to say, Mr. Chairman, is that there is no doubt that gas is quite cheap today. But if gas were to become more expensive, $3 and $4 a gallon as in Europe and other parts of the world today, buying habits will change here. They have changed in the past, and if gas goes up, they will change again.

What we want to be able to do is have those vehicles in place, first, to meet the market that exists today. It still is a very large percentage of the market that is oriented towards sedans.

Secondly, if fuel prices go up, we want to make sure American companies and American workers are building fuel efficient vehicles.

Mr. REGULA. Are you factoring in affordability in this study?

Mr. REICHER. Absolutely. In fact, if there is one hallmark of this government-industry partnership, which in many ways perhaps distinguishes it from other government industry partnerships, it is that affordability is at the top of the list. We know how to produce an 80-mile-per-gallon car. In fact, I was at the American Museum of History this past weekend, and I saw a 300-mile-per-gallon vehicle.

Mr. REGULA. Do you push it?

Mr. REICHER. Pretty close. So 80 miles per gallon, technically, we can build those vehicles. The issue is, can we build it affordably, will people want to buy it, will it be comfortable, and will it have the performance characteristics. Essentially, will they walk into a showroom and not know any difference between that and what they would otherwise have bought, except for the fact that it will get 80 miles per gallon and put out radically less pollution. That is the hallmark of this program.

That's in fact why it's a lengthy program to get there. It took 5 years into a 10-year program. We've met every major milestone we've set for the program. I have every reason to believe that if we push on, we will get there. The American public and the American workers in the automobile industry and other industries will be the beneficiaries.

Mr. REGULA. Mr. Dicks.

Mr. DICKS. Thank you, Mr. Chairman.

Mr. Secretary, nice to have you here again.

Mr. REICHER. Thank you.

NORTHWEST ALLIANCE FOR TRANSPORTAITON TECHNOLOGIES

Mr. DICKS. For the past 2 years, the Department of Energy has been supporting the Northwest Alliance for Transportation Technologies, which is a partnership among lightweight materials industries, universities, and the Pacific Northwest National Laboratory, to sustain efforts within the partnership for a new generation vehicles program, to develop an automobile for the 21st century that will triple its fuel efficiency without compromising safety or comfort. This program, which I am very excited about, is already showing tremendous benefit.

Unfortunately, I note in your budget for the fiscal year 2000 that the materials technologies program was reduced from the enacted level last year. Can you tell me why the agency sought a reduction to this program?

Mr. REICHER. Mr. Dicks, one of the judgments we have to make across all of our programs, particularly in the vehicle program, is where to put our dollars. Part of that decision depends on the research and development requirements in a given area. One of the things that we've looked at is that in materials technology, we've made a great deal of progress. For example, in the use of aluminum in automobiles, to the extent there are now commercial vehicles out there that use aluminum in significant ways.

With limited dollars, we made a judgment that that area of the budget could be reduced in order to put those dollars into higher risk technologies and challenges, for example, hybrid vehicles. So we have decided in our request to reduce the materials budget. But it is still a healthy budget, and in fact, we are still very supportive of the Northwest Alliance for Transportation Technologies and doing a substantial amount of work with them in aluminum, in plastic sheet composites, in automotive glazing, for example, window glass, a whole host of things that bring together the industries in your region to support these big advances in automobile technology.

FUEL CELLS

Mr. DICKS. I think it's a good program and I'm pleased to hear that you're still supporting it. Let me go on here.

Fuel cells, as you know, could offer the automobile industry near zero emission vehicles with long range, good performance and rapid refueling. Because fuel cells do not have a combustion process, they do not generate airborne pollutants.

I understand that neither market drivers nor financial returns attributable to transportation cells exist yet, and that collaboration will be needed to provide a primary path for commercialization of this technology.

Can you tell me what the Department is doing to further the collaboration with private industry and move the technology forward?

Mr. REICHER. Absolutely. The Partnership for a New Generation of vehicles, both the industry side and the government side, are very committed to the development of fuel cell powered vehicles. The big challenge with fuel cells is to develop a technology and to radically bring down the cost of putting fuel cells on board a car. We are working with fuel cell makers, we are working with automobile manufacturers, and we are working with various suppliers to get us to a point where fuel cells can be a cost effective power source on board an automobile.

A couple of weeks ago, as you know, Daimler-Chrysler made an announcement of a fuel cell powered vehicle, a concept vehicle, which has shown some good advances with respect to fuel cells. What, of course, was pointed out and what they clearly admitted was that the price of the fuel cell on board that car, which was in the $30,000 range, was simply for the fuel cell system. We need to make some great progress in bringing down those prices if we're going to make this sort of affordable 80-mile-per-gallon car that we are striving for in the PNGV.

So we've come a long distance, but we have a long distance to go in fuel cells.

Mr. DICKS. In terms of the economics?

Mr. REICHER. In terms of both the technology and the economics, correct.

Mr. DICKS. I would also be curious if your agency has any information on research about foreign auto makers developing and using fuel cell technology and how close they are to bringing this to market versus where we are in the United States.

Mr. REICHER. There is a race going on across the globe for the technologies of the vehicles of the next decade. There is a race with

respect to fuel cells and there is a race with respect to the so-called hybrid vehicles that link electric motors and either gas or diesel engines. So we are doing well in this country. There are also foreign manufacturers that are investing heavily. We hope that our program, in collaboration with the automobile manufacturers and the major suppliers, will put those vehicles on the road in the middle of the next decade in a cost effective way, and we will have a big share of the world market.

WEATHERIZATION ASSISTANCE PROGRAM

Mr. DICKS. Weatherization assistance program again this year has a large increase requested in the budget. How much funding is devoted to weatherization in the low income home energy assistance program funds through the Department of Health and Human Services?

Mr. REICHER. Mr. Dicks, I don't know the LIHEAP numbers. I know they are larger than the weatherization dollars. They support fuel assistance to low income people, among other things.

What the weatherization program does is directly improve the energy efficiency of 60,000 to 70,000 American homes every year. There is a backlog of 24 million homes of low income Americans that have not been weatherized. We've shown great gains in the success of this program, to the extent that we're saving annually for low income homeowners about $200 in energy bills. For a low income individual, that's a lot of money to be saved annually.

So we're very proud of this program. We want to do more with it, and we're going to continue to push up its cost effectiveness.

Mr. DICKS. How do you decide who gets the benefit of this program?

Mr. REICHER. There are a variety of criteria that the local agencies which do the weatherization work use: income, elderly, and disabilities. There's a whole host of factors that are used, but these tend to be very poor people, the elderly and disabled.

FEDERAL ENERGY MANAGEMENT PROGRAM

Mr. DICKS. You mentioned the program to reduce energy consumption in the federal government buildings, etc. Tell us again, how is that doing?

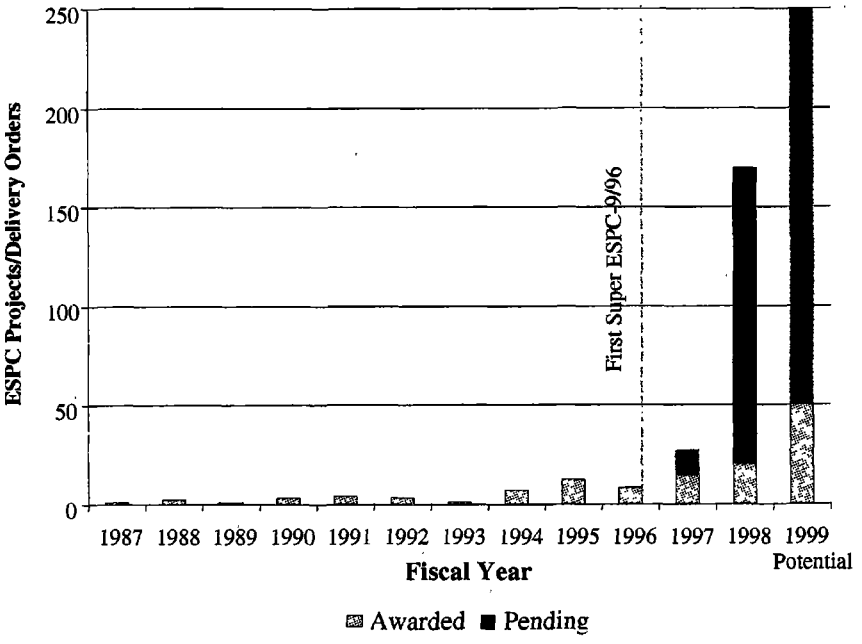
Mr. REICHER. It's doing well. We put in place a much more simplified mechanism, beginning about 2 years ago, that made it very simple for a federal building manager to find a private energy service company willing to invest its own dollars in retrofitting the federal building. It made it quite simple.

I can provide this for the record, Mr. Chairman.

Mr. REGULA. Without objection, it will be made a part of the record.

[The information follows:]

Increasing ESPC Projects



Energy Savings Performance Contracts

Mr. REICHER. We were virtually doing no performance contracting with federal buildings around the country up until a couple of years ago. As you can see, we are close to 200 projects now in the works.

Mr. DICKS. That's a tremendous accomplishment and I'm very supportive of your efforts. The committee put some language in I think that helped you in getting this off the ground.

Mr. REICHER. Not only did the committee put in language, but we actually got some increased funding. What we do is actually help these other agencies, from the Navy to the Park Service to the Coast Guard, get up the learning curve, so they know how to contract with these pre-selected companies and get them in and do the work and begin to benefit from the savings.

Mr. DICKS. Do you have any estimates about how much we're saving because of this program?

Mr. REICHER. Well, let me give you what we project through improved performance contracting. We project we can be saving in excess of $1 billion a year in powering the federal government through the implementation of performance contracts. We're also seeing savings as a result of the work of individual utilities in their own regions, going into federal buildings, which is another approach that we're also very supportive of.

What we've essentially been able to do, Mr. Dicks, is replace the federal taxpayers dollars which used to be used to retrofit federal buildings; those dollars have gone down and they're close to zero now. What we've been able to replace them with is private sector investment, where these companies share in the savings to pay themselves back and make a profit. I think it's a great example of privatization.

Mr. DICKS. Well, I commend you on that, keep that one going. Also, anything we can do to encourage other agencies to do the same, because I think it's a tremendous way to save a lot of money all over the country in all these federal facilities.

Mr. REICHER. Well, I would say there are some impediments. We are going to be sending up some suggestions in the near future about how we can get over some impediments.

For example, I'll just give you one. Where there's a contract in excess of $750,000 to do this kind of work, there actually has to be Congressional notification given, often having to go through the cabinet secretary's office in a particular agency before the work can begin. We'd like to raise that level to about $10 million.

Mr. DICKS. Even though the private sector is spending the money?

Mr. REICHER. Correct.

Mr. DICKS. Maybe we can help you on that, too. Thank you, Mr. Chairman.

WEATHERIZATION ASSISTANCE PROGRAM

Mr. REGULA. Following up, what do you think of requiring the States to cost share in weatherization and in these projects such as you've outlined?

Mr. REICHER. In weatherization, various states do provide various weatherization dollars. It depends.

Mr. REGULA. Not as a cost share though. They do it on their own, is what you're saying?

Mr. REICHER. As part of the total weatherization dollars in a state. In my recent visit to Ohio, when I was there with you a couple of weeks ago, I visited a home. Actually within this specific home, different parts of the weatherization were paid for out of different accounts, some federal, some state, and some local. So these are put together in different fashions in different states.

But we coordinate very closely with the state and local weatherization providers. In the next month or two, we are going to send you some ideas about how we could make further improvements in the weatherization program to improve the coordination, to reduce some of the barriers, and to increase flexibility in weatherization, so we can get even more for the dollars that you appropriate.

Mr. REGULA. I don't think States appropriate money. They may get money in by various means but I don't believe there's any requirement that the States appropriate money to match the Federal money.

Mr. REICHER. Oh, no, I'm in no way suggesting that. What I'm saying is that individual states, particularly cold weather states and some of the high air conditioning usage states, provide their own weatherization dollars. What the weatherization providers do, working with us and working with the state energy offices, is coordinate the use of those dollars to maximize them.

FUNDING PRIORITIES

Mr. REGULA. As you know, if you've been reading the news, we may have cuts in our allocation, so I hope you'll be prepared to tell us if requested as to what priority-wise you would most like to see cut. That's a poor way of phrasing it, perhaps. [Laughter.]

Mr. REICHER. I can definitely tell you what we'd least like to see cut. But seriously, we worked with members and staff last year to outline priorities. We know what you're facing. At the same time, as I said in my opening statement, we will be vigorous proponents of the importance of these programs. But we also very much will cooperate.

Mr. REGULA. We'll communicate with you, because we want to be sensitive to your priorities. We also want to be sensitive to the best use of the perhaps limited resources.

Mr. Wamp?

Mr. WAMP. Thank you, Mr. Chairman.

Four quick points, Mr. Assistant Secretary. Welcome back. First, progress on uncosted balances. I want to acknowledge that you're making progress and encourage you to continue making progress. From GAO to your reports, we see progress being made. But you're still not down there yet where you need to be. You can't really take it to zero without disrupting existing contracts. We understand that.

But keep making progress. I want to encourage you to work with the committee closely in the coming months, so that we all are aware of which contracts may be placed in jeopardy as you keep declining your uncosted balances down to something that's more normal. Obviously when we started this analysis, you were abnormal, and you're heading toward normalcy, so keep going.

Secondly, this climate change-global warming issue continues to be discussed here. At times, I see it like the old Texas two-step, and you have to do a lot of dancing. Climate change research was ongoing prior to the Kyoto talks, but the Kyoto talks have caused committees in both the House and the Senate to be concerned with how much of this is Kyoto-driven.

I want to say, even though climate change research is carried out in my district, I want to make sure we do not get in a position of heading towards Kyoto protocol enactment in a roundabout way. That is, I think, the major concern, that we are sensitive to how climate change research must continue, but that there's not any kind of concerted effort to head in the direction of global warming regulations or initiatives, when the science, as you said a few minutes ago, is not conclusive on some of this climate change research, which I think we all agree should continue.

You said earlier there's a carefully put together integrated plan to pull together Ag, Interior, NOAA, etc. I also serve on Commerce, Justice, State and Judiciary where NOAA is funded. All of a sudden you show up at several of these committees and you see initiatives that are supposedly well put together and integrated taking place, and they're all asking for money, and you just wonder, well, where do they meet, when do they meet and who's in charge of those meetings, and where are they going.

Sometimes I think an agency or an administration might say, well, the best way to do this is everybody split up, we all know what we're doing but they won't know what we're doing because we're all split up. I just say all that because I think it's important that we continue to separate the Kyoto protocol from the issue of climate change research.

Do you want to comment on that before I keep going?

Mr. REICHER. No, go ahead. I'll respond to your points.

Mr. WAMP. Number three, on PNGV. I want to encourage the committee, Democrats and Republicans, to recognize, as you said earlier, that oil prices certainly seem to be now going back up and could continue to go up. It's kind of like investing in military technology when you're at peace. That's the time to do it, so that when you're at war, you're ready for whatever. Same thing applies here, frankly. We must continue to make progress.

Then on the flip side, I want to encourage DOE to recognize that we shouldn't be funding applied technology initiatives once they are ready for the marketplace. So you all have got to keep the pressure on the private sector. I think there's going to be a public debate, Detroit versus DOE or however it shakes up.

I think reason needs to set in, but please again recognize the difference between our basic research investment in emission-less, more efficient vehicles, and the applied technology of the marketplace which says it's got to be market driven and the marketplace needs to be brought along. I think both sides at times have a tendency to try to stretch the truth or make their case. We just need to find reason, as a committee, in the middle of all that.

The fourth issue is kind of a new issue. The GAO report says this. About 90 percent of DOE's training, according to a departmental estimate, is not mandated by laws and/or regulation. The

DOE has not developed criteria on the type of non-mandatory training that is appropriate.

As a result, DOE offers a wide range of non-mandatory training courses such as a course on determining social styles in the work place, and one on employees facing mid-life questions. From Secretary O'Leary—as you know, I'm involved in DOE daily; with Secretary O'Leary, there's a lot of diversity stuff. I think a lot of that is very good. She was big on diversity and it led to some good things.

However, I mentioned to Secretary Richardson when he was first confirmed some of the followup to that might not be considered by average citizens. I had quite a few complaints in Oak Ridge about the use of Government space, Government time for alternative lifestyles, etc. I would just say that your training budget is actually higher than the average Federal agency as well, according to the GAO study. Some of it is not mandated.

I would just encourage you to take a look at that and be careful. Because what people do in their private life is absolutely their business. But what they do on Government time with Government resources and where some of this training may end up day to day without careful oversight might not be acceptable.

I would just say that carefully, but just throw that out there as a recommendation that you all internally take a look at this on a day to day basis. Those are my four points.

Mr. REICHER. Thank you, Mr. Wamp.

On uncosted balances, let me just say I appreciate your support for the direction that we're headed. I would say that in a sense, there are no contracts in jeopardy, per se, as we bring the uncosted balances down. The situation we would face is if these uncosted balances were applied to next year's budget. It would be at that point that we could see some jeopardy in terms of existing contracts, either slowing them down or terminating them.

But we will work with you and we will work with the subcommittee to bring those balances down and keep you informed.

CLIMATE CHANGE

On Kyoto, the Administration has said on many occasions, and I will reiterate it here, we are not in the business of implementing the Kyoto treaty. What we are doing is both advancing the science of climate change, figuring out these interactions between carbon dioxide and temperature and all those very complex things, and advancing the technologies that could address climate change.

But as I stressed to the chairman, these very technologies are the same technologies that can well address issues like traditional air pollution, U.S. national security, economic competitiveness, take advantage of restructuring of the electricity industry, and a whole host of reasons, as I said in my opening statement, that we would be doing the very same work we are doing today if there was no climate issue, if there was no Kyoto discussion. We would be doing it, we would be advocating the very same budget. Because it makes sense for lots of other reasons.

How is climate change science coordinated? There actually is a coordinating mechanism through the Office of Science and Technology Policy. There is a regular research plan that's put out on an

annual basis. There are regular meetings. I am not part of that, because my office does not work on the science of climate change, we work on the technologies that could help us address it.

But I will give you some confidence; I can't tell you that it's a perfect coordinating system, but there is a coordinating system in place.

PARTNERSHIP FOR A NEW GENERATION OF VEHICLES (PNGV)

On PNGV, I thank you for your support. We are very mindful of the issue of when technologies develop to a point where they are no longer high-risk, where commercialization is eminent, and where private industry can take over the work. That's what we need to do. In fact, Mr. Chairman, if I could show you one device here. This is an example of a technology that if we're going to get anywhere with these next generation of vehicles, for example, diesel-electric hybrids, gas-electric hybrids, this is where we have to go.

This is what the so-called electronic brain of one of these cars is going to have to look like if we're going to put them on the road in substantial numbers and in a cost effective way. Today, in the concept vehicles that you read about in the paper that are being built one at a time, you're looking at something that's much larger, that's extremely expensive, and is simply not ready for commercialization.

What we're doing, working with a variety of companies, large and small, working with the national laboratories, is to move to a point where this electronic brain that will tell the electric motor, allow the electric motor and the gas or diesel engine essentially to talk to each other, this is where we've got to get to. We know we're close to this in terms of the technology, in terms of size. Even getting rid of the heat of something this dense, which all this electronics, generates. We've got to figure out an efficient way of getting rid of the heat so the thing doesn't melt.

So there's a long distance to go. And it's work like this that is really where government, industry and labs can work together very effectively.

Mr. REGULA. What does Honda do? They have this vehicle that's good back and forth.

Mr. REICHER. Yes.

Mr. REGULA. Have they accomplished already what you're talking about in the future?

Mr. REICHER. Let me tell you about the Honda and indeed the Toyota vehicles. They are vehicles that, in the case of the Honda, it's a two passenger vehicle getting probably 50 miles per gallon, not 80 miles per gallon. It has a pretty serious cost penalty associated with it, or a subsidy provided for its sale. We think it's a great step forward, I'm the very first to admit that what Honda and Toyota have done is a big step forward.

But they are not to a point where they need to be, and nobody is, in terms of the electronic module bringing down the cost of this, shrinking the size so you don't take up a good part of the trunk with the electronic brain of these cars.

So again, there are vehicles that are coming out which are part of the way there toward the PNGV goal. But it's that next push,

the 80 miles per gallon, and true affordability and true equivalence of performance, safety and emissions, where we've got to get. We have a good distance to go.

I know it's confusing to people, because when you read that Honda is putting a vehicle on the road or Toyota is putting a vehicle on the road, or Daimler-Chrysler is announcing its fuel cell vehicle, there is this tendency to think that we're already there. But if you look carefully at the numbers, the passengers, the milage, the costs, the performance, we've got a long way to go.

Mr. WAMP. Thank you, Mr. Chairman.

Mr. REICHER. I'm sorry, I didn't answer your question on training. I apologize.

Could I take one moment?

Mr. REGULA. Sure.

Mr. REICHER. I also wanted to say that on training, I am mindful of training and I actually recently looked at the training numbers in my office. The real guts of training is to train people in management, to train them in finance, to train them in the incredible complexities of procurement and all the things that it takes to run a complicated government office or government agency.

Mr. Wamp, I'm very mindful of what you say about being careful how we spend this money and we will look even more carefully at our dollars.

CLIMATE CHANGE

Mr. PETERSON. Good morning. I wanted to go back just for a moment to the climate change issue. I just wanted to share with you an observation and let you react to it. You were talking about the science of it. I think we're all very comfortable that we have our scientists continuing to monitor and determine where we're at, to work with climate change if it's a fact.

But many of us have the opinion that this Administration has jumped beyond the science some time ago. It amazes me how many departments have a budget to deal with climate change. I guess we've looked at it as a mass marketing tool, number one, convince the American public that the climate has changed and that we must do many things to deal with that.

So I guess my comment is that I don't think any of us are uncomfortable with the scientific assessment of where we're at. If the scientists and the science is really where we're at. But I think we're in the PR business, of selling climate change. I notice it's been very quiet in March, a colder month than normal. I haven't heard anybody talking about climate change.

But last fall, when we had some extremely warm months, we had many of our national leaders talking about the tremendous climate change, even though other parts of the world were having cold summers. The climate issue is a world issue, not just an American issue. So I'd like to have you react, is in fact a lot being done on this issue that's more or less selling it than it is a fact, rather than the science side?

Mr. REICHER. I don't believe so, actually. I think there is very good work being done on the science of the issue by government agencies, by national labs, and by the private sector. It is admittedly a complex subject. There's a great deal of data, there is in-

creasing scientific consensus. But we do need to go further in those terms.

I don't think that we're engaged in a PR campaign when it comes to the climate budget. In fact, the budget of the office I run is actually a substantial part of the climate change technology initiative. Our budget is designed to get at very practical things in terms of our economy, such as lowering the cost of energy use in industry, which by the way can help reduce carbon emissions. Lowering energy use in automobiles, which by the way can reduce carbon emissions. Increasing the energy efficiency of federal buildings, which also, by the way, can reduce carbon emissions.

So we're focused on work that we would be doing even if there was no climate issue, even if there was no Kyoto discussion. In fact, so much of our work precedes those discussions and is a continuation of work begun in previous Administrations, and in fact, well back into the late 1970s and early 1980s.

So I'm very comfortable with our approach to these technology issues. Ultimately what we're doing with respect to climate is putting in place those technologies that if in fact the science establishes what increasing number of scientists believe, and that is that the globe is warming and it will have deleterious impacts, we will be ready to respond, we won't be playing catch-up. I think that's important. It is in a sense an insurance policy against that eventuality.

But the wonderful thing is, even if you don't believe in the insurance policy as a basis for funding these technologies, we would want to be funding them anyway to reduce our reliance on foreign oil, to cut traditional air pollution, and to help U.S. companies compete globally.

Mr. PETERSON. I guess I would just urge you to check the numbers of scientists. You said a growing majority. I have not seen that evidence. I think a majority of scientists do not agree that the climate has changed measurably, or that there is evidence that it really has changed to the point of where it's a problem.

Mr. REICHER. I'm sorry, I didn't——

Mr. PETERSON. A majority is not the right word.

Mr. REICHER. I didn't, I talked about, there is a growing scientific view, a growing scientific consensus on a number of subjects, one of which is that we have increased carbon emissions in the atmosphere, and that there may well be impacts to the globe.

Mr. PETERSON. You changed what you said. But that's all right. Let's move on.

WEATHERIZATION ASSISTANCE PROGRAM

The chairman had brought up the weatherization issue. Have you seriously thought of requiring States to be partners? I'm from State government, and I think we serve best when we work as partners. Have you seriously thought of requiring States to, what would be your reaction if we would require States to have a match?

Mr. REICHER. I'm going to need some help from my colleagues. As I explained earlier, states are providing weatherization funds.

Mr. PETERSON. Sure, some are. But we don't require it. Do we? I wasn't aware we did?

Mr. REGULA. If you will yield.

Mr. PETERSON. Sure.

Mr. REGULA. Staff advises me that the funds that states do use are other Federal funds in other programs, they're not really State tax money. There are no appropriations on the state level at this point to match or cost share on weatherization. So I think that's an important element.

Mr. PETERSON [assuming chair]. What Pennsylvania used was the Exxon settlement for 10 years, or one of the other oil company settlements that they used, but it was not their money. I don't remember State tax dollars. We may have, but I don't remember it.

Mr. REICHER. Mr. Chairman, let me introduce Mark Ginsberg, who is our Deputy Assistant Secretary for our Buildings program, which is where the weatherization program resides.

Mr. GINSBERG. As a former state official who ran a weatherization program in addition to other energy efficiency programs, I know that there have been efforts in the past to try to require a match for the weatherization program. I think states have the same difficulty the federal government has of how do we allocate funds for these needs.

There are a few states that are providing some funds. Now, with utility restructuring, some of the states are providing some of their utility restructuring funds for weatherization. There are 35 million eligible households, so the needs are still very great.

I think if you were to require a match, you would see some very difficult realities on the state side that they would not have, typically, funds to provide that match. It sounds tempting, but states are facing the same constraints you are.

One of the sources I think we need to continue to push is in the utility restructuring, that these programs be allowed to fund the low income weatherization program. That may be a better alternative than requiring a match.

Mr. PETERSON. I might disagree with you on one point, I think States are financially pretty strong right now. I know of many States carrying huge surpluses. But I guess if a State matches it, it shows they have a commitment, they feel the need, the pressure is there. And I just think we serve well.

I guess I would urge you to toy with that idea.

HYDROGEN RESEARCH

Where are we with hydrogen research? What do you see as its potential?

Mr. REICHER. We are doing a substantial amount of hydrogen research. It is funded primarily over in the energy and water account within our office. We are very bullish about the potential for hydrogen. First of all, our research looks at lowering the cost of producing hydrogen and figuring out better ways to store it. For example, turning it into a hydride, more of a solid, as a more effective means of storing it, so we can use it in a larger variety of circumstances.

Hydrogen is obviously at the core of a fuel cell. What a fuel cell automobile or a fuel cell powered building needs in that fuel cell is hydrogen. So it has great relevance to where we head with fuel cell technology.

Ultimately, people talk about a hydrogen economy in which we've been able to lower the cost of producing hydrogen, for example, from renewable energy, by splitting water into hydrogen and oxygen, and using that to fuel fuel cells, using that to burn directly, essentially creating a situation where we have an inexhaustible supply of energy.

We're a long way away from that. But there are some near-term successes, fuel cells, fuel cell vehicles, are an example of where hydrogen is extremely important and where we're making lots of progress.

Mr. PETERSON. How much are we spending on hydrogen now?

Mr. REICHER. I think we're in the $30 million a year range. The 1999 appropriations, $22,250,000, fiscal year 2000 request, $28 million.

Mr. PETERSON. Okay. That will get the job done, for making progress?

Mr. REICHER. It will allow us to continue to make progress. There's huge research needs out there, and with more dollars, obviously, we could satisfy more of those. But we can continue to make good progress on both hydrogen production, hydrogen storage, creating hydrogen infrastructure, and experimenting with its use in a whole host of ways.

Mr. PETERSON. Is it really one of the long term bright spots, you might say?

Mr. REICHER. It has great long term potential, it truly does. Given that, if we could bring the costs down, that you could actually pull it out of water and use it as a fuel source, either to burn it directly or use in a fuel cell, it's quite interesting.

I heard an idea several months ago where hydropower dams where we create a lot of electricity, instead of sending that electricity through the grid, you could literally take the water behind that dam, use the electricity from the dam, electrolyze the water, that is, cut it into its hydrogen and oxygen molecules, and literally be creating hydrogen at these hydropower dams, which could then be used in transportation and buildings in an overall energy system.

Again, we're a long way away from a hydrogen based energy system. But it's definitely worth the investment, and it is quite a bright spot.

Mr. PETERSON. Thank you. I think I've more than utilized my time. Mr. Hinchey.

Mr. HINCHEY. Thank you, Mr. Chairman.

Mr. Reicher, good to see you.

Mr. REICHER. Nice to see you.

APPLIANCE STANDARDS

Mr. HINCHEY. You've requested in your budget some additional money for energy efficiency standards. I know that over the course of the last 20 years, the Department has made a substantial amount of progress in that regard, and the savings that have accrued to the Nation as a result of these energy efficiency standards have been quite substantial.

Can you tell us what you plan to use the additional funding that you're requesting for specifically, and give us some idea about how

the progress in energy efficiency standards has benefitted the country over the last couple of decades or so?

Mr. REICHER. The energy efficiency standards give us an opportunity for real savings in terms of energy use in this country. I think we've made a commitment to set good standards that are technologically feasible, that are economically justified, that do good things for consumers. We're moving in that direction.

Let me give you one statistic. By the year 2010, the cumulative national effect of standards for five appliances, refrigerators, dishwashers, clothes washers, clothes dryers and room air conditioners, will be 5.9 quads of primary energy savings. One quad is the amount of energy that 5.1 million homes use in one year. So this is, just these alone is about 30 million homes worth of energy. And $24 billion in savings to consumers, that's in 1997 dollars.

So you get extraordinary savings to consumers, you have extraordinary impacts in terms of environmental protection. Because you're reducing that much energy that otherwise would have to be produced or you're having to use it more efficiently.

Mr. HINCHEY. Could you translate that into energy power plants that would not have to be built?

Mr. REICHER. A large number. I would have to get you those statistics. I will supply those for the record. It's one of the very biggest elements of energy savings.

[The information follows:]

SAVINGS FROM APPLIANCE STANDARDS

The current rate of electricity savings from appliance standards implemented to date is roughly equal to the output of fourteen 600-megawatt coal plants. The rate of savings and associated number of avoided power plants. Continue to increase as more and more new appliances are purchased by consumers. These values do not include additional savings pertaining to gas appliances, which are currently about 25 percent of the total savings.

Mr. REICHER. You asked me a second question, which is, what would we do with these additional dollars that we've requested. We are embarked on a very important set of new appliance standards for clothes washers, water heaters, central air conditioners, and the ballast for electronic lighting. We are pushing to get three of them in the year 2000 and the fourth in 2001. They will also have extraordinary savings.

So the first thing we would use these extra dollars for is to move towards setting those standards.

Secondly, also under statute we are required to develop standards for commercial kinds of equipment, boilers and furnaces and those sorts of things in the commercial setting. One of the standard setting organizations called ASHRAE is about to set a new set of standards and again by statute, we have to update our standards to reflect what this standard setting body has done.

So the second thing we would spend these dollars on would be to update those equipment standards on the equipment side as well.

Mr. HINCHEY. Some of these savings can be translated into savings of tax dollars, for example, because the savings will accrue to public buildings, such as schools, things of that nature. Give us an idea about what the benefits would be in that arena.

Mr. REICHER. Absolutely. Both the typical home appliances, which have use in public housing, in schools, in a whole host of public settings, those can mean real savings to taxpayers who otherwise would have to fund those energy bills for those public institutions. Then over on the commercial side, the commercial equipment I talked about, obviously powers lots of activities in publicly-funded buildings. So again, there's a big taxpayer savings there as well.

TRANSPORTATION TECHNOLOGIES

Mr. HINCHEY. Most of the energy we consume in the United States goes for transportation. I know you've spoken a little bit about that already. Is there anything else you would like to say about ways in which we can save in the areas of transportation, as well as in that context addressing some of the hybrid vehicles that are being developed?

Mr. REICHER. Transportation is a big use of energy. I think there are really two focuses in our work. One is to increase the fuel efficiency of vehicles. That's what the Partnership for a New Generation of Vehicles is about, that's what our work with the diesel engine makers is about.

The second thing we're doing that I would really want to stress, is looking to make greater use of alternative fuels; natural gas, ethanol, electricity, methanol, and propane. There's a whole host of alternative fuels out there. We literally have about 400,000 vehicles on the road today in the United States that are alternatively fueled.

What we're trying to do is, with support from this subcommittee, increase the infrastructure that's available to fuel them, to improve the cost effectiveness of the fuels themselves. For example, in the area of ethanol, both on the energy and water account and this account, we're trying to improve our production of ethanol. In fact, making it from waste, from the forest industry, from agriculture, and from municipal solid waste, which would dramatically reduce the cost of a gallon of ethanol.

We are also working with the corn ethanol makers, to allow them to use the rest of the corn plant, the stalk, the cob, the leaves, and make that into ethanol as well as the starch in the small corn kernels. We've got some major technological breakthroughs now behind us. We've got a major plant being constructed in Louisiana that will demonstrate this. More plants we hope to go on-line in New York and California and other States, which will show how you can take waste and make it directly into ethanol. That would be a big step forward.

Mr. HINCHEY. You're also doing some work, aren't you, on hybrid energy sources for buses? I know there is a major manufacturer in New York that is engaged in some activity on that.

Mr. REICHER. Yes. There is a whole host of opportunities in larger vehicles, buses in particular: natural gas powered vehicles, fuel cell powered buses, and diesel electric hybrids. There are a variety of ways you can power buses and reduce the costs to the bus company and often to taxpayers who subsidize that, and actually cut pollution as well.

Buses actually are often great platforms for these advanced technologies, like the hybrid technologies, because they are big. You don't have to make all the progress you make putting it into a small automobile, in terms of some of the power systems that I was talking about before. You have a lot of room to work with, and you can do a lot of good.

And we've asked for, I'm told by one of my colleagues, $8 million for hybrid heavy vehicle work in our budget, to support that very work.

ENERGY SAVINGS TO STATES

Mr. HINCHEY. Good. Finally, I would ask about information you might have with regard to energy savings that have accrued to the various states and your ability to compile information in that way. I know I would be interested in that, I think some of the other members might be interested in having information as to the success or any savings that come about as a result of your activities in the various states.

Mr. REICHER. We would be happy to provide that kind of information, both the savings and also, I think it's interesting to look at what individual states spend on energy, and how much they produce in state versus how much they import from out of state, and what that means essentially to the state gross domestic product (GDP). It can have big, big impacts, the more states can produce in state, the more those dollars circulate with all the multipliers and the more it can do for the state GDP. We are looking at those numbers as well.

Mr. HINCHEY. And you'll be able to give that to me for New York and for the Chairman for Ohio and the others?

Mr. REICHER. Yes. They are complicated calculations, but we'll do our best to get you those, yes.

[The information follows:]

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR ALABAMA
(1995 Data)

Total Energy Expenditures (a)	$12 billion
Total Electricity Expenditures (a)	$5 billion
Input at Electric Utilities (b)	1,009 trillion Btu
Net Import Input for Electrical Utilities (c)	0.1 trillion Btu
Alabama Consumer Cost of a Million Btu	$8.77
State Ranking for Consumer Cost of a Million Btu	17
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	6.78%
Estimated State Energy Savings (e)	$1.0 billion

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*.
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR ARIZONA
(1995 Data)

Total Energy Expenditures (a)	$8 billion
Total Electricity Expenditures (a)	$4 billion
Input at Electric Utilities (b)	728 trillion Btu
Net Import Input for Electrical Utilities (c)	158 trillion Btu
Arizona Consumer Cost of a Million Btu	$11.30
State Ranking for Consumer Cost of a Million Btu	4
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	8.25%
Estimated State Energy Savings (e)	$982 million

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*.
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR GEORGIA
(1995 Data)

Total Energy Expenditures (a)	$15 billion
Total Electricity Expenditures (a)	$6 billion
Input at Electric Utilities (b)	1,064 trillion Btu
Net Import Input for Electrical Utilities (c)	734 trillion Btu
Georgia Consumer Cost of a Million Btu	$8.43
State Ranking for Consumer Cost of a Million Btu	25
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	8.02%
Estimated State Energy Savings (e)	$2.1 billion

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*.
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR NEW MEXICO
(1995 Data)

Total Energy Expenditures (a)	$3 billion
Total Electricity Expenditures (a)	$1 billion
Input at Electric Utilities (b)	309 trillion Btu
Net Import Input for Electrical Utilities (c)	0 trillion Btu
New Mexico Consumer Cost of a Million Btu	$8.94
State Ranking for Consumer Cost of a Million Btu	16
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	7.50%
Estimated State Energy Savings (e)	$384 million

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR NEW YORK
(1995 Data)

Total Energy Expenditures (a)	$31 billion
Total Electricity Expenditures (a)	$14 billion
Input at Electric Utilities (b)	1,162 trillion Btu
Net Import Input for Electrical Utilities (c)	368 trillion Btu
New York Consumer Cost of a Million Btu	$10.99
State Ranking for Consumer Cost of a Million Btu	7
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	5.65%
Estimated State Energy Savings (e)	$4.1 billion

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*.
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR NORTH CAROLINA
(1995 Data)

Total Energy Expenditures (a)	$14 billion
Total Electricity Expenditures (a)	$7 billion
Input at Electric Utilities (b)	964 trillion Btu
Net Import Input for Electrical Utilities (c)	540 trillion Btu
North Carolina Consumer Cost of a Million Btu	$9.64
State Ranking for Consumer Cost of a Million Btu	12
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	7.65%
Estimated State Energy Savings (e)	$1.6 billion

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*.
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR OHIO
(1995 Data)

Total Energy Expenditures (a)	$23 billion
Total Electricity Expenditures (a)	$10 billion
Input at Electric Utilities (b)	1,399 trillion Btu
Net Import Input for Electrical Utilities (c)	520 trillion Btu
Ohio Consumer Cost of a Million Btu	$8.50
State Ranking for Consumer Cost of a Million Btu	23
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	8.41%
Estimated State Energy Savings (e)	$2.5 billion

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*.
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR PENNSYLVANIA
(1995 Data)

Total Energy Expenditures (a)	$24 billion
Total Electricity Expenditures (a)	$10 billion
Input at Electric Utilities (b)	1,807 trillion Btu
Net Import Input for Electrical Utilities (c)	36 trillion Btu
Pennsylvania Consumer Cost of a Million Btu	$8.68
State Ranking for Consumer Cost of a Million Btu	20
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	8.28%
Estimated State Energy Savings (e)	$2.8 billion

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*.
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR TENNESSEE
(1995 Data)

Total Energy Expenditures (a)	$10 billion
Total Electricity Expenditures (a)	$4 billion
Input at Electric Utilities (b)	1,220 trillion Btu
Net Import Input for Electrical Utilities (c)	492 trillion Btu
Tennessee Consumer Cost of a Million Btu	$8.11
State Ranking for Consumer Cost of a Million Btu	29
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	7.94%
Estimated State Energy Savings (e)	$1.2 billion

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*.
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR VIRGINIA
(1995 Data)

Total Energy Expenditures (a)	$12 billion
Total Electricity Expenditures (a)	$5 billion
Input at Electric Utilities (b)	541 trillion Btu
Net Import Input for Electrical Utilities (c)	11 trillion Btu
Virginia Consumer Cost of a Million Btu	$8.77
State Ranking for Consumer Cost of a Million Btu	17
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	6.78%
Estimated State Energy Savings (e)	$1.6 billion

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*.
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

TOTAL ENERGY EFFICIENCY AND RENEWABLE ENERGY SAVINGS
FOR WASHINGTON
(1995 Data)

Total Energy Expenditures (a)	$10 billion
Total Electricity Expenditures (a)	$4 billion
Input at Electric Utilities (b)	948 trillion Btu
Net Import Input for Electrical Utilities (c)	17 trillion Btu
Washington Consumer Cost of a Million Btu	$7.55
State Ranking for Consumer Cost of a Million Btu	40
National Average Consumer Cost of a Million Btu	$8.28
Energy Expenditures as Percentage of Gross State Product (d)	7.94%
Estimated State Energy Savings (e)	$1.6 billion

(a) Data collected from EIA *State Energy Price and Expenditure Report 1995*.
(b) Data collected from EIA *State Energy Data Report 1996*.
(c) Data collected from EIA *Petroleum Supply Annual 1997*, *Coal Industry Annual 1997*, and *Natural Gas Annual 1997*.
(d) Gross State Product was taken from the Bureau of Economic Analysis web site.
(e) Based upon consumer savings from our buildings, communities, transportation, industry, and federal programs over their lifetime, roughly 20 years. The total cumulative savings nationwide are approaching $60 billion. State consumer savings are estimated based on the state's share of the nation's population.

Mr. HINCHEY. Thank you.
Mr. PETERSON. Mr. Cramer.
Mr. CRAMER. Thank you.

BLACK LIQUOR GASIFICATION

Mr. Reicher, welcome back to the committee. I'm sorry I missed some of your testimony. I think you might recall that I've asked you before, under the industries of the future, forest products section of your budget, the black liquor gasification project, where do we stand with that?

Mr. REICHER. Mr. Cramer, I'm actually pleased to announce that today we have made a decision to take a first step with respect to two of those projects, the Champion project in your State, where we've decided, subject to some further work on the actual agreements, to provide $1 million toward the first step in black liquor gasification.

In the case of the Georgia Pacific, we are going to undertake further negotiations with that company looking at their proposal. So we're making most of those announcements today with respect to black liquor gasification. We think it's a technology with great, great promise in the forest products industry, a way to deal with the black liquor waste that comes from kraft paper making, a much more efficient way to do it.

In an amazing way, we could turn paper mills from net users of energy to actual exporters of electricity to the grid. I was looking at numbers that go up into the tens of thousands of megawatts of power that these paper companies could be sending into the grid, particularly with electricity restructuring. Actually, that would flow right to the bottom line for these companies.

Mr. CRAMER. I'm pleased to hear that. As you know, I think that program and the demonstration projects that are carried on have amazing potential. I know you realize that as well.

FEDERAL ENERGY MANAGEMENT PROGRAM

Hearing the bells go off, I think you've already been asked by Mr. Dicks about the Federal Energy Management Program. How is your work going with NASA on that initiative?

Mr. REICHER. Very well. NASA is one of the major agencies taking advantage of these simple contracting vehicles that we've now put in place to get private sector investments. One example is in Texas. Recently, a major NASA agreement was negotiated under our standing contracts, to do energy retrofits to Johnson Controls, which is one of our preselected companies. They're going to invest tens of millions of their own dollars in a NASA facility in Texas that will result in savings of almost $2 million a year.

We're also doing work in your State with NASA on a whole host of projects, bringing this performance contracting mechanism to these facilities and basically being able to take the taxpayer and the appropriations subcommittees out of the business of having to pay for these up front.

Mr. CRAMER. I'm also glad to hear that. I want to thank you for the information that you've been able to give my office on the issues that we've expressed interest in.

Back to the Federal Energy Management Program, I hope the subcommittee will be able to support it at the requested funding level. Again, I think that's exactly what we need to be doing.

Considering the time, Mr. Chairman, I will forego further questioning.

Mr. PETERSON. I think we have a few minutes.

One quick question. What's the status of the financial and contract management study being conducted by the National Academy of Public Administrators?

Mr. REICHER. The work is underway. We've reached agreement on the scope of work and that's underway. I think we're expecting results from that in October. So we appreciate the subcommittee's encouragement of us to enter into this agreement. They are a good organization and we're going to learn a lot from them and further improve the operation of our office.

ALTERNATIVE-FUELED TRANSIT SYSTEM

Mr. PETERSON. In the east, I have one of the first communities that their transit system is going to be all natural gas, Penn State University and the town of State College, PA. Are there any, do you have any incentives for mass transit systems? Also once they prepare their fuel station, making it available to local industry and business, because it would seem to me there's a great opportunity with delivery trucks, with the service vehicles that are working in limited distances, that if there was a refueling station that was convenient.

Mr. REICHER. Mr. Peterson, that's exactly what we're trying to do in our program through what we call Clean Cities, where we're working with now almost 70 cities around the country to help them put the infrastructure in place for fleets like that, and to make that infrastructure available as widely as possible.

We do provide limited dollars for infrastructure support, for analysis, for essentially putting together a network that's big enough to actually support a natural gas infrastructure, for example, in a region. Then what's very exciting is we're getting to a point where there's enough of these we can actually begin to link them as corridors. One could actually travel in an alternative fuel vehicle from one area to another and have enough stations along the way to ensure the availability of fuel, whether it's natural gas or ethanol or one of the other sources.

So these are great projects, and it's a great way to move this along. Obviously, the more money we have to support this kind of infrastructure, the more we can do in these projects.

Mr. PETERSON. I want to commend you on that, because I think it has great potential. It's interesting, the manager of this unit was in to see me last week. For the last few months, natural gas was not the cheapest fuel he could buy, but I think we're back to maybe where that will equalize.

Mr. Hinchey has a quick question.

Mr. HINCHEY. Just one last thing. I was very interested, Mr. Reicher, in what you were saying before about the paper mills, how they could be net producers of electricity to the grid. I would like to see that information, if you would be kind enough to send it to me.

Mr. REICHER. Absolutely. As a former resident of upstate New York, I know about the paper mills. There is great promise in this technology.

I mentioned becoming net exporters of electricity. This will also have some major impacts in terms of cutting pollution and increasing the efficiency of those paper mills. Obviously with a forest products industry that's pretty challenged these days internationally, every way we can help is important.

[The information follows:]

FOREST PRODUCTS INDUSTRY
An Energy Sustainable Future

The forest products industry is working with the Department of Energy on advanced gasification technologies that, if proven successful, will allow paper mills to be net producers of electricity. Currently, the industry consumes approximately 6 gigawatts of electricity annually with a total energy demand of roughly 3 quads. Mills are able to meet 57 percent of their energy needs through efficient use of by-products and waste streams. It is anticipated that replacement of aging chemical recovery and power boilers with advanced gasification systems will provide an additional 30 gigawatts of electricity. This is enough to meet the needs of the industry while the surplus can be sold to the grid. An added benefit to an energy sustainable industry is that widespread adoption of gasification systems will reduce carbon emissions by approximately 30 million metric tons along with substantial reductions of NOx, VOCs, and particulates. The obstacle that is hindering implementation of these technologies is the risk associated with demonstrating a successful system. The Department and the American Forest and Paper Association are partnering to develop commercial scale systems to demonstrate multiple gasification technologies within existing mills. These demonstrations will provide a foundation for widespread adoption within the industry.

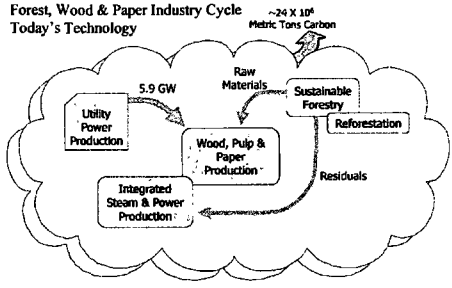
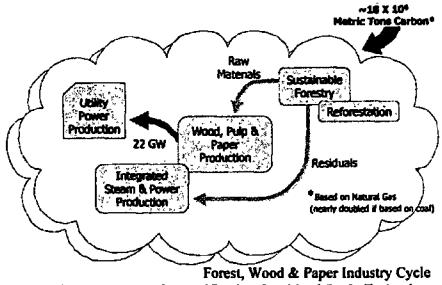


Figure I above illustrates the current state of the industry. Approximately 6 gigawatts are purchased from local utilities, which contribute roughly 24 million metric tons of carbon to the environment.



Forest, Wood & Paper Industry Cycle
Total Replacement with Gasification Combined Cycle Technology

Figure II illustrates the impacts of replacing conventional technology with advanced gasification systems. Using gasification technology will generate enough electricity to meet the demand of the industry with a surplus of 22 gigawatts that can be sold to the grid.

Mr. HINCHEY. Thank you.

CLIMATE CHANGE

Mr. REICHER. Mr. Peterson, just one last thing. You asked me about climate science, and I wanted to be clear about that. First of all, I am not a scientist, it is not my day to day work, climate science. I am the advocate for the technological solutions.

But let me tell you what I think we know in terms of scientific consensus. That is that the CO2 levels are rising in the atmosphere, in the last couple hundred years. Warming will likely happen. The warming would likely have net negative impacts.

Where there is not consensus is the timing of the impacts, and the level of the impacts. I just wanted to give you our view.

Mr. PETERSON. Thank you. The March 11 issue of Nature and the March 12 issue of Science, we urge you to read those. I recently participated in a conference and heard the other side of the story.

It's an interesting issue. I personally think we've jumped over the discussion that CO_2 is automatically going to increase temperatures. I think we've jumped over the science, that's my opinion. Or some people have, I haven't. And that we're already moving toward a solution, and we're selling the concept that it has happened, it's going to be detrimental. If you look back in the 1400s, there was a period of time when, for numbers of years, the temperature had risen seven degrees, and it was beneficial, actually, the agricultural belt increased. There was not a lot of detriment.

And I'm not saying that it's all conclusive on any side. I personally think this Administration has jumped over science and is trying to sell global warming as a fact, and that it's going to be catastrophic. I think that's a mistake, because I think we should be having a meaningful discussion with the scientists, because they are not in agreement.

Mr. REICHER. As I say, it's the timing of the impacts and the level of the impacts where we clearly do need greater work done. That's what's underway. I will close by saying, independent of science, what we're here today to ask you to support are things that would be good, even if there wasn't a climate issue.

Mr. PETERSON. We appreciate that. Thank you for your candor.

Mr. REICHER. Thank you.

Mr. PETERSON. The hearing is completed.

[Additional Committee questions follow:]

ADDITIONAL COMMITTEE QUESTIONS

Overview of the Budget Request

Question: The budget request for energy conservation is $837,515,000, nearly $146 million above the fiscal year 1999 level. That's a 21-percent increase in funding. What amount do you believe you could reasonably offset through the use of prior year funds?

Answer: The fiscal year 2000 request of $837,515,000 for all Energy Conservation programs does not reflect $25,000,000 from prior year balances in the Biomass Energy Development account to offset the request for the Energy Conservation account. Since these prior year funds are in a DOE account at the U.S. Treasury they are included as part of DOE's budget. If approved as part of the fiscal year 2000 Interior and Related Agencies appropriations bill, the funds would be utilized for Conservation programs. Currently, there are no other prior year funds that are available to offset the fiscal year 2000 request.

Global Warming

Question: Earlier this month two papers, supported by the National Science foundation, were published on global warming. The findings in these studies contradict some long-held theories on the issue of carbon in the atmosphere. A paper in the March 11 issue of *Nature* found that carbon dioxide levels did not remain constant up to the onset of the industrial revolution, as previously thought. Instead, while average global temperatures stayed stable, carbon dioxide levels fluctuated considerably. How will this finding be factored into the climate change work you are doing?

Answer: The *Nature* article will not affect the climate change work that DOE is doing, but it does serve to underscore the importance of the Department's efforts. Atmospheric scientists determined that atmospheric levels of CO2 were relatively stable over long periods of time prior to the onset of the industrial revolution. This must not be misconstrued as "remaining constant." Atmospheric scientists were among the first to realize that carbon dioxide levels do not remain constant, but rather fluctuate on daily, seasonal and annual cycles. Daily fluctuations in local concentrations of CO2 may be measured as plants transpire. Seasonal variability is clearly shown in the global record as plants are active during summer and dormant during winter.

Pre-industrial levels of atmospheric CO2 appear to be relatively stable, however, in the context of relatively recent and rapid increases in atmospheric concentrations of CO2 (from about 280 parts per million by volume (p.p.m.v.) in the late 1700s to the current level of around 365 p.p.m.v. today). That represents a change of 85 p.p.m.v. over a span of 225 years, or 1 p.p.m.v. every 2.6 years. The article in *Nature* clearly shows a rapid increase in the concentration of atmospheric CO2 from 315 p.p.m.v. in 1958 to 364 p.p.m.v. in 1997. This represents a change of 49 p.p.m.v. over a span of 39 years, or 1 p.p.m.v. every 9.5 months.

The article in *Nature* also finds "small variations of about 5 p.p.m.v. occurred during the pre-industrial part of the past millennium." This represents a change of 5 p.p.m.v. over a span of

775 years, or 1 p.p.m.v. every 155 years. The authors also find an increase in the concentration of atmospheric CO2 from 200 p.p.m.v. at 20,000 years ago to 270 p.p.m.v. at the beginning of the Holocene period about 11,000 years ago. This represents a change of 70 p.p.m.v. over a span of 9,000 years, or 1 p.p.m.v. every 128.6 years. Note that concentrations of atmospheric CO2 have not been constant, but change relatively slowly over long periods of time. The present concern is that current measured changes are more than 100 times faster than anything we have seen in the past 20,000 years.

Question: A paper in the March 12 issue of *Science* contradicts the belief that atmospheric carbon dioxide levels increase before global temperature increases. Instead, the study found the temperature rise comes first, followed by a carbon dioxide increase 400 to 1,000 years later. What does this mean from the standpoint of your research and development efforts?

Answer: The findings of the March 12, 1999, issue of *Science* serve to confirm the complexity of the planetary carbon cycle and the intricate relationship between planetary temperatures and atmospheric concentrations of CO2. The article in the March 12 issue of *Science* suggests that we should expand our efforts at understanding the complexities of the Earth-atmosphere system. This is particularly true in light of the fact that recent increases in atmospheric concentrations of CO2 are unprecedented any time in the past 270,000 years of the ice record examined by this study.

Anthony J. Broccoli of the National Oceanic and Atmospheric Administration's Geophysical Fluid Dynamics Laboratory in Princeton, New Jersey, indicated in the March 15th edition of *The Washington Post* that the "new findings are completely consistent with a 'positive CO2-temperature feedback' system in which changes in one prompt changes in the other."

On March 19th, Joseph Perkins, writing in the "Opinion" section of the *San Diego Union-Tribune* mis-characterized the findings of the study so badly that two of the authors of the original study felt compelled to write a rebuttal, as follows:

(Mis)understanding the Science of Global Warming
Martin Wahlen and H. Jesse Smith
(professors at the Scripps Institution of Oceanography)
The San Diego Union-Tribune
March 24, 1999, Wednesday
Copyright: 1999

Columnist Joseph Perkins, writing on these pages last Friday, claimed that our article in the March 12 issue of *Science Magazine* contradicts the premise that human consumption of fossil fuel is causing global warming. Perkins, however, has misunderstood our findings and wrongly used them to support an opinion about a completely different issue, which is not related to our data.

The basic problem with Perkins' argument is that he has misapplied our observation, that warming during the past three transitions from glacial (cold) to interglacial (warm) climate seems to have occurred before carbon dioxide (CO2) began to rise, to the question of whether or not fossil fuel burning by cars, industry and homes has caused, or may cause, an increase of global mean surface temperature.

The issue which our paper discusses, the warming that occurs during the transition from glacial periods to inter-glacial periods like the present, has little to do with the global warming that may result from the rise in atmospheric CO2, which has occurred over the past 250 years.

It has been known for decades that the growth and disappearance of glacial ice sheets are ultimately caused by changes in the orbit of the Earth around the sun. Simply put, the Earth warms when it gets more sun per year, and cools when it gets less, and this is what initiates the warming that causes deglaciation.

We know that other factors are involved in this type of global warming, though, since the difference in the amount of solar heating of the Earth between glacial periods and warm periods is much too small to produce the large temperature changes which are recorded in the geological record.

One of these factors is the concentration of CO2 in the atmosphere. CO2 is a greenhouse gas, which means that it acts to trap heat in the Earth's atmosphere in exactly the same way that the glass of a greenhouse traps heat. Higher concentrations of CO2 in the atmosphere cause more heat to be trapped there. Because of this, CO2 has amplified the warming occurring between glacial and inter-glacial climates, even though it apparently has not initiated warming. It is this property of CO2, its effectiveness as an atmospheric thermal blanket, that makes its increasing atmospheric abundance a global warming threat.

When fossil fuels such as oil, gas or wood are burned, CO2 is produced. There is no doubt that the concentration of CO2 in the atmosphere increased by approximately 25 percent, from 280 parts per million (p.p.m.) to 360 p.p.m., over the last 250 years, or that modern increases in atmospheric CO2 concentrations are the result of fossil fuel burning, as clearly demonstrated by the work of Dr. C. D. Keeling of the Scripps Institution of Oceanography.

This 80 p.p.m.v. anthropogenic CO2 increase is the same as that which occurred between the last glacial period, when there were continental ice sheets as much as two miles thick and extending as far south as the latitude of Washington, D.C., in the northern hemisphere, and the current warm period, when sea level rose by 400 feet because so much ice melted. Therefore, we should be concerned that as more and more fossil fuel burning produces more and more CO2, the result will be an increase in global temperature.

A growing body of evidence indicates that global warming is indeed happening already -- including observations of sea level rises, widespread melting of glaciers, increases in surface air temperatures and changes in the length of the growing season. These observations, coupled with an undeniable link between fossil fuel burning and atmospheric CO2 increase, and the physical properties of CO2, are compelling reasons for us to believe that the balance of evidence suggests a discernible human influence on global climates and that fossil fuel burning will cause further global warming.

This is one of the conclusions of the Intergovernmental Panel of Climate Change in 1995 which, using the contributions of approximately 2,000 scientists from 116 countries, 13 intergovernmental and 25 non-governmental organizations, has assessed the issue of global change and produced the Montreal Protocol (banning chlorofluorocarbons, which destroy stratospheric ozone), and the Kyoto and Buenos Aires protocols (to curtail greenhouse gas emissions).

Since the possibility of global warming is no longer in doubt, the real question now is how much warming will occur. That is an issue unrelated to the findings of our *Science* article, however, and we explicitly state in our paper that differences in the relationship between CO2 and warming over the past three deglaciations make it inappropriate to apply them literally for the prediction of future climate change.

By failing to understand the science behind the issue, Perkins has misapplied our study to support his opinion that the CO2 concentration of the atmosphere is irrelevant to the

phenomenon of global warming. The fact that the overwhelming majority of climate scientists believe that increasing atmospheric CO2 caused by human fossil fuel burning constitutes a real, global warming threat is based on a large and growing amount of direct and indirect evidence, not on some "global warming orthodoxy" used to protect their "investment in research grants, lectures, published papers" as Perkins asserts.

His characterization of those individuals as "global-warming alarmists" is no more than inflammatory rhetoric, and his statement that "questionable science" lies behind governmental efforts to develop policy aimed at mitigating the potential impact of human activities on the climate is simply, entirely wrong.

We strongly object to our research being used incorrectly and inappropriately to support a position that ignores the vast bulk of relevant scientific data. Perkins may agree or disagree with governmental policy regarding the consumption of fossil fuels, but he cannot argue against the clear, compelling science behind the study of the climate.

Question: According to Jean Lynch-Stieglitz of Columbia University, one can conclude from the findings published in the journal *Nature* that we can expect that as the climate warms, the terrestrial biosphere will probably be capable of holding more carbon than it can today. How do you respond to that observation?

Answer: The Scripps-Bern authors writing in *Nature* cite at least six classes of mechanisms that contribute to changes in atmospheric CO2. Their modeling results suggest that the observed atmospheric variations during the Holocene period were "caused by a combination of growth and decay of terrestrial biomass, and by an increase in global mean sea surface temperature, possibly with a contribution from the marine calcite cycle." The authors suggest a number of mechanisms for explaining changes in atmospheric CO2 over the past 11,000 years. They do not make the conclusion that, as the climate warms, the future terrestrial biosphere will probably be capable of holding more carbon than it can today.

The Lynch-Stieglitz statement is likely based on a presumption of active, photosynthetic biomass as an agent for sequestering carbon. While this may be a reasonable presumption during the period of the *Nature* study (up to 11,000 years ago), it is not a good presumption for the future. The human population is now in excess of 6 billion persons and we are deforesting at alarming rates and in the process, destroying the capacity of terrestrial biomass to absorb carbon from the atmosphere.

Global news accounts of deforestation are plentiful. A year ago, on March 8, 1998, Agence France Presse, carried an article regarding heavy rains in Argentina, where environmentalists and meteorologists warned of risks presented by clear logging. Claudio Bertonatti, head of the Wildlife Foundation blamed flooding on several factors, including deforestation of the states of Rio Grande and Santa Catarina in southern Brazil, and Misiones state in northeastern Argentina. "Forests and jungles act as sponges that absorb a great quantity of rainwater. "But this century 60 percent of Argentina's forests have disappeared, and more than 90 percent of the jungle has been devastated in southern Brazil" said Bertonatti. The Institute of Space Research in Brazil claims that clear-cut logging destroyed 60,000 square kilometers between 1995 and 1997, an area the size of Switzerland.

Agence France Presse, June 2, 1998, *International News* reported that lost forests put Mexico into the top five countries in the world for deforestation last year. Rain forests are normally wet enough that they will not burn. In 1998, forests were on fire, and at least 15 percent burned. ("Mexico ponders effects of fires' environmental catastrophe," *The Dallas Morning News*, May 31, 1998, Home Final Edition, News, Page 20A, by Brendan M. Case). In their closing paragraph, the Scripps-Bern authors state: "The rate of change of atmospheric CO2 concentrations over the Holocene is two orders of magnitude smaller than the anthropogenic CO2 increase since industrialization."

Question: According to the director of the U.S. Geological Survey's National Ice Core Laboratory, the carbon dioxide lag time finding indicates that past behavior might not be a good model for predicting the future. If so, doesn't that mean that the computer models you are using as a basis for climate change research are, at best, unreliable?

Answer: Current computer models provide an invaluable and important basis for understanding the dynamics of climate change, and they are constantly improving. The models are reliable because they model in great detail the many causal factors that increase or decrease atmospheric concentrations of greenhouse gas emissions. The models are not just simple extrapolations of past date, but rather detailed representations of the complex physics of the atmosphere and biosphere. Uncertainty remains because there are many factors that are not well understood, but much is well understood and incorporated into the models. Modeling efforts are independent and thus the results of the different teams taken together produce more reliable results.

The rate of the increase of atmospheric CO2 is more than 100 times greater than anything experienced on Earth during the past 270,000 years. The rate of deforestation is unprecedented and this will negatively affect the planet's ability to sequester carbon from the atmosphere. The rate of the increase of planetary population is unprecedented, with no known analog. For example, the U.S. population increased from 249.9 million people in 1990 to 263.0 million in 1995, a 13.1 million person increase. This represents a an increase of approximately 24 times the losses sustained by U.S. military forces over a similar 5-year period during World War II.

To minimize the "wild card" nature of the future, it is important that we invest wisely in technology today. We can make significant improvements through technology. For example, the energy intensity of refrigerators worsened by 6 percent per year from 1947 to 1974. Faced with an awareness of energy shortages, technologic improvements steadily improved the performance of refrigerators, averaging a 5.5 percent rate of annual improvement each year over the past 25 years.

Question: What is your single highest priority in the area of climate change and why?

Answer: Our highest priority is to support the nation's primary integrating program for cleaner and efficient technology, the Administration's Climate Change Technology Initiative. This is a priority because we believe that Climate Change Technology Initiative offers an appropriate mix of initiatives to meet short-term goals of improving local air quality, improving

the long-term competitiveness of our industries by saving money -- while simultaneously providing a good down-payment as an insurance policy against costs and upsets associated with climate change.

The Climate Change Technology Initiative is designed to support and encourage research, development and use of energy-efficient technologies, clean energy sources, and carbon sequestration. This initiative builds and expands upon an existing foundation of advanced science, basic research, and government-industry partnerships. It is increasing U.S. competitiveness, reducing U.S. dependence on foreign oil, maintaining U.S. leadership in energy technology, and reducing criteria air pollutants and greenhouse gas emissions at the same time.

The Climate Change Technology Initiative is comprised of a number of components that synergistically interact to promote investments in energy efficiency and renewable energy. New research and development investments over the next 5 years will improve major carbon-emitting sectors of the economy (buildings, industry, transportation, and electricity), and federal facilities. Cross-cutting analyses and research includes removal and sequestration of carbon from the atmosphere. Selected examples of the research and development effort include:

- Partnership for a New Generation of Vehicles, a government-industry effort to develop safe, affordable cars with up to three times the fuel efficiency of today's cars -- similar efforts are underway to develop cleaner, more efficient diesel engines for both light and heavy trucks;

- Partnership for Advanced Technologies in Housing, a partnership with the homebuilding industry to develop, demonstrate, and deploy housing technologies and practices that are inexpensive, highly efficient, and attractive to consumers -- goals are to build new homes that are 50 percent more energy efficient within a decade and to retrofit at least 15 million existing homes to make them 30 percent more energy efficient;

- Industries of the Future, research partnerships with energy-intensive industries focused on increasing energy and resource efficiency;

- Million Solar Roofs, promotes the President's goal of placing solar installations on 1 million roofs over the next 10 years and establishes partnerships with communities, builders, and other federal agencies to promote the use of solar systems;

- Bioenergy projects that will power industries by producing electricity with very low net greenhouse gas emissions while providing farmers alternative markets;

- Wind power developments and the next generation of wind turbines that will likely make wind energy cost-competitive with natural gas; and

- Tax credits over the next 5 years for purchases of energy-efficient and renewable energy technologies, including: fuel-efficient cars, rooftop solar systems energy-efficient new homes, energy-efficient building equipment, combined heat and power systems, and production of electricity from wind and biomass.

These initiatives combine with and support other Administration initiatives, including voluntary industry consultations and electric utility restructuring. Taken together, the synergistic effects of aggressive research and development, deployment programs, financial incentives, and the market transforming nature of the technology itself make the Climate Change Technology Initiative a high priority.

Transportation Programs Increase

Question: You have asked for a $50 million increase for transportation research and development. That's a 25-percent funding increase. How much of this increase is for new programs?

Answer: New programs account for $13.5 million of the increase; $8 will initiate a cost-shared research effort to help move hybrid developments from the light-duty program toward commercialization in medium and heavy trucks. The second initiative would apply $5.5 million to the cost-shared development of advanced engine technologies for heavy-duty truck applications that will reduce emissions to EPA 2002 standards while maintaining or improving their high thermal efficiency. Unless new emissions control strategies are developed, engine efficiency will be sacrificed to meet these regulations.

Question: How much of the increase is for the Partnership for a New Generation of Vehicles?

Answer: PNGV funding accounts for $15 million of the increase. All of this amount would be for continuation of ongoing programs.

Question: How much of the increase is for expansion of other programs?

Answer: The remaining $21.5 million is needed to continue ongoing programs and activities which are not part of the PNGV.

Alternatively Fueled Vehicles

Question: What has been done to ensure that alternatively fueled vehicles are incorporated into the federal fleets at the various federal agencies?

Answer: DOE has undertaken numerous efforts to bring federal fleets into compliance with the alternative fuel vehicle (AFV) acquisition requirements of the Energy Policy Act. DOE has been working with the General Services Administration to resolve problems in the procurement process that have hindered the acquisition of AFVs by federal fleets. In addition, DOE is continuing to provide technical assistance to federal fleets, and is now leading the Interagency Committee on Alternative Fuels and Low Emissions Vehicles. The goal of this committee is to ease the process of compliance through coordination and interaction between federal agencies, as well as between federal and non-federal groups.

Another area where DOE has focused significant resources has been Executive Orders. DOE was instrumental in the development of Executive Order 13031, which was signed on December 13, 1996. This order established a requirement that each federal agency must meet the AFV acquisition requirements of the Energy Policy Act within their own budgets, and they must submit a report on their compliance to the Office of Management and Budget annually with their budget submission. This reporting requirement raised the level of importance placed on AFV acquisitions within each agency. DOE is currently involved with the development of a new Federal Transportation Executive Order, which will further increase the importance of AFV acquisitions within each agency by requiring the head of each agency to report to the President by January 1 of each year on their agency's compliance. In the report, each agency head must provide information on the number and type of alternative fuel vehicles purchased in the previous fiscal year and AFV acquisition plans for the following 2 fiscal years..

Question: What does your budget assume with respect to funding for this program in fiscal year 2000 and how does that compare with fiscal year 1999?

Answer: The fiscal year 2000 budget assumes that DOE's level of effort for federal fleet activities will be the same as in fiscal year 1999, specifically $2.0 million for the EPACT fuels program. DOE will continue providing informational and technical support in assisting federal agencies in meeting their alternative fuel vehicle acquisition requirements. DOE also conducts testing and evaluation of electric and other alternative fuel vehicles to collect data needed by fleet managers to make informed AFV acquisition decisions. In addition, a portion of the budget request for testing and evaluation under the Technology Deployment area, $1.0 million, will be used to help defray the incremental cost of electric vehicles purchased or leased by federal agencies. This effort, which started in 1997 under Executive Order 13031, is at the same level as fiscal year 1999.

Question: What progress are other federal agencies making and who is monitoring that progress?

Answer: There were significant increases in numbers of alternative fuel vehicles in the federal fleet through 1998. Since the passage of the Energy Policy Act in 1992, more than 44,000 AFVs have been acquired by federal fleets. This fulfilled 91 percent of the federal fleet requirements established by the Energy Policy Act. To date, the government has relied on a few agencies to carry the rest of the federal fleet by acquiring more than the required number of AFVs. However, the number of agencies acquiring significant numbers of AFVs is increasing each year, as agencies gain experience in budgeting and planning for AFV acquisitions and the number of AFV models being offered by the automobile manufacturers increases.

The Office of Management and Budget and DOE both receive agencies' AFV acquisition reports; DOE has the lead on monitoring the federal fleet progress. Unfortunately, several agencies are experiencing difficulty in providing accurate reports as a result of the highly decentralized nature of their fleet operations. DOE has been assisting these agencies in overcoming their problems, but in some instances the lack of any defined enforcement authority in the Energy Policy Act has hampered these efforts.

Partnership for a New Generation of Vehicles

Question: We have been funding the Partnership for a New Generation of Vehicles program for 5 years. The automakers are announcing breakthrough technologies but their profits are from trucks and sport utility vehicles rather than energy efficient cars. What portion of the market do you expect to reach with PNGV cars?

Answer: The benchmark vehicles for Partnership for a New Generation of Vehicles (PNGV) are Taurus, Lumina, and Concorde sized sedans. These vehicles were selected by the PNGV partners as representative of a "middle range" for size and performance, with the objective of scaling successful technologies up or down to other vehicle classes. In 1998, these mid-sized vehicles accounted for about 44 percent of domestic car sales. The PNGV vehicle is aimed at this market segment. Auto industry representatives have recently indicated that most of the PNGV technologies are applicable to the rapidly growing sport utility segment of the market.

Question: If we are talking about a small, "niche market" for PNGV cars why should we continue to fund this program -- especially since the automakers seem to be doing it on their own to a large extent.

Answer: The size of PNGV market is 44 percent of the domestic car market. If we can deliver a vehicle that achieves three times the fuel economy of today's Taurus, Lumina, and Concorde, while providing equivalent performance, safety, and cost of ownership, we are confident that they can be sold in large numbers. While recent concept vehicles displayed by the automakers provide excitement and promise, there are many barriers relating to size, weight, performance and cost of ownership that must be resolved before an 80-mile-per-gallon, mid-sized sedan can realistically become a commercial reality. The technologies that DOE and its partners are investigating are those considered critical to overcoming these technical barriers. Most of these technologies can also serve other transportation needs, such as sport utility vehicles, pickups, and medium and heavy trucks, not just PNGV cars.

Question: How much of the PNGV funding goes to the national laboratories? Please provide details by lab and by subactivity and key activity for fiscal years 1998 and 1999.

Answer: In fiscal year 1998, the Office of Advanced Automotive Technologies (OAAT) provided $47.1 million to DOE national laboratories for in-house research and development activities associated with the PNGV program. This was approximately 40 percent of the total OAAT PNGV appropriation for fiscal year 1998. These funds do not include funds that were passed through the national laboratories to suppliers, universities and small/large businesses.

During fiscal year 1999, the OAAT expects to provide $53.4 million to the DOE national laboratories to support of PNGV research and development activities. This accounts for approximately 42 percent of the total OAAT PNGV appropriation for fiscal year 1999. These funds do not include funds that were passed through the national laboratories to suppliers, universities and small and large businesses. Details of these projects are provided in the tables that follow:

FY 1998 Department of Energy
Office of Transportation Technologies
PNGV Funding at National Laboratories

Program Area	Subactivity	Key Activity	Company	FY 1998 Funding
Fuels Utilization R&D	Alternative Fuels	Automobiles/Light Trucks	Argonne National Laboratory	$250,000
			National Renewable Energy Laboratory	$710,000
			Oak Ridge National Laboratory	$1,617,000
			Sandia National Laboratory	$250,000
Materials Technologies	Lightweight Materials Technology	Automotive Lightweight Materials	Ames National Laboratory	$65,000
			Idaho National Engineering and Environmental Laboratory	$450,000
			Lawrence Berkeley National Laboratory	$200,000
			Lawrence Livermore National Laboratory	$850,000
			Los Alamos National Laboratory	$300,000
			Pacific Northwest National Laboratory -- NATT	$2,390,000
			Oak Ridge National Laboratory	$4,783,000
			Sandia National Laboratory	$550,000
	Propulsion Materials Technology	Automotive Propulsion Materials	Lawrence Livermore National Laboratory	$340,000
			Oak Ridge National Laboratory	$1,955,000
Technology Deployment	Advanced Vehicle Competitions	Technology Competitions	Argonne National Laboratory	$607,000
Vehicle Technologies R&D	Advanced Combustion Engine R&D	Advanced Combustion Engine R&D	Argonne National Laboratory	$600,000
			Los Alamos National Laboratory	$637,000
			Oak Ridge National Laboratory	$1,345,000
			Pacific Northwest National Laboratory	$900,000
			Sandia National Laboratory	$2,412,000
	Fuel Cell R&D	Fuel Cell R&D	Argonne National Laboratory	$3,525,000
			Lawrence Berkeley National Laboratory	$450,000
			Los Alamos National Laboratory	$3,500,000
			National Renewable Energy Laboratory	$75,000
			Pacific Northwest National Laboratory	$450,000

Program Area	Subactivity	Key Activity	Company	FY 1998 Funding
Vehicle Technologies R&D (cont)	Hybrid Systems R&D	Advanced Power Electronics	Argonne National Laboratory	$300,000
			Lawrence Livermore National Laboratory	$120,000
			Oak Ridge National Laboratory	$2,000,000
			Sandia National Laboratory	$386,000
		Hybrid Systems R&D	Argonne National Laboratory	$5,130,000
			Idaho National Engineenng and Environmental Laboratory	$65,000
			Lawrence Livermore National Laboratory	$475,000
			Los Alamos National Laboratory	$280,000
			National Renewable Energy Laboratory	$5,460,000
			Oak Ridge National Laboratory	$3,482,000
			Sandia National Laboratory	$220,000
Total				$47,129,000

FY 1999 Department of Energy
Office of Transportation Technologies
PNGV Funding at National Laboratories

Program Area	Subactivity Name	Key Activity	Company	FY 1999 Planned Funding
Fuel Utilization R&D	Alternative Fuels	Systems Optimization	Argonne National Laboratory	$765,000
			Idaho National Engineering and Environmental Laboratory	$200,000
			Lawrence Livermore National Laboratory	$705,000
			Oak Ridge National Laboratory	$1,008,000
Materials Technologies	Lightweight Materials Technology	Lightweight Vehicle Materials	Albany Research Center ILA	$225,000
			Ames National Laboratory	$100,000
			Argonne National Laboratory	$425,000
			Lawrence Berkeley National Laboratory	$260,000
			Lawrence Livermore National Laboratory	$500,000
			Los Alamos National Laboratory	$235,000
			Oak Ridge National Laboratory	$4,615,000
			Pacific Northwest National Laboratory - NATT	$1,300,000
			Sandia National Laboratory (NM)	$350,000
		Propulsion Systems Materials	Argonne National Laboratory	$700,000
			Los Alamos National Laboratory	$200,000
			Oak Ridge National Laboratory	$1,075,000
			Sandia National Laboratory (NM)	$300,000
Technology Deployment	Advanced Vehicle Competitions	Technology Competitions	Argonne National Laboratory	$480,000
Vehicle Technologies R&D	Advanced Combustion Engine R&D	Advanced Combustion Engine	Argonne National Laboratory	$2,145,000
			Lawrence Livermore National Laboratory	$450,000
			Los Alamos National Laboratory	$650,000
			Oak Ridge National Laboratory	$2,340,000
			Pacific Northwest National Laboratory	$700,000
			Sandia National Laboratory (CA)	$525,000
			Sandia National Laboratory (NM)	$180,000
		Heat Engine R&D	Argonne National Laboratory	$500,000
			Lawrence Livermore National Laboratory	$400,000
			Los Alamos National Laboratory	$425,000
			Oak Ridge National Laboratory	$600,000
			Sandia National Laboratory (CA)	$1,450,000
			Sandia National Laboratory (NM)	$275,000

Program Area	Subactivity Name	Key Activity	Company	FY 1999 Planned Funding
Vehicle Technologies R&D	Fuel Cell R&D	Component R&D	Lawrence Berkeley National Laboratory	$550,000
			Los Alamos National Laboratory	$2,488,000
			National Renewable Energy Laboratory	$164,000
			Argonne National Laboratory	$300,000
		Reformer and Storage R&D	Los Alamos National Laboratory	$1,700,000
			Argonne National Laboratory	$2,650,000
			Pacific Northwest National Laboratory	$1,020,000
		Systems Development	Argonne National Laboratory	$1,150,000
	Hybrid Systems R&D	Advanced Power Electronics	Argonne National Laboratory	$300,000
			Lawrence Livermore National Laboratory	$1,000,000
			Oak Ridge National Laboratory	$2,000,000
			Sandia National Laboratory (NM)	$200,000
		High Power Energy Storage	Argonne National Laboratory	$2,918,000
			Brookhaven National Laboratory	$250,000
			Idaho National Engineering and Environmental Laboratory	$1,560,000
			Lawrence Berkeley National Laboratory	$710,000
			Los Alamos National Laboratory	$200,000
			Sandia National Laboratory (NM)	$2,015,000
		Hybrid Propulsion Systems	Argonne National Laboratory	$2,560,000
			Idaho National Engineering and Environmental Laboratory	$250,000
			National Renewable Energy Laboratory	$3,198,820
			Oak Ridge National Laboratory	$2,160,000
Total				$53,426,820

Question: How much of the PNGV funding goes to the automakers? Please provide fiscal year 1998 and 1999 details for the record similar to the above question.

Answer: In fiscal year 1998, the Office of Advanced Automotive Technologies (OAAT) provided a total of $11.6 million, or 10 percent, of the OAAT fiscal year 1998 PNGV appropriation for work conducted at Ford Motor Company, Chrysler Corporation, and General Motors Corporation. In addition to these funds, $15.7 million was provided by Ford, Chrysler, and General Motors to suppliers for supporting vehicle enabling technologies research and development. The total funds distributed to Ford, Chrysler, and General Motors during fiscal year 1998 was $27.3 million -- 57 percent of which was distributed to suppliers and other research organizations.

In fiscal year 1999, a total of $3.4 million (or 3 percent of the OAAT fiscal year 1999 PNGV appropriation) will be provided to Ford Motor Company and Daimler Chrysler Corporation for research and development under the Partnership for a New Generation of Vehicles program; the General Motors project was completed with fiscal year 1998 funding (see table that follows). In addition, $2.2 million will be passed through from Ford and Daimler Chrysler to suppliers including Delco Propulsion Systems, Detroit Diesel, FEV, Johnson Controls, and Mooradian Associates. Thus, the total funds distributed to Ford and Daimler Chrysler in fiscal year 1999 is $5.6 million -- 39 percent of which is being distributed to suppliers and other research organizations.

Department of Energy
Office of Transportation Technologies
PNGV Funding to the Major U.S. Automakers

Budget Area	Subactivity Name	Key Activity Name	Company	FY 1998 Funding	FY 1999 Planned Funding
Vehicle Technologies R&D	Hybrid Systems R&D	Hybrid Propulsion Systems	Chrysler Corporation	$2,500,000	$3,163,079
			Ford Motor Company	$7,111,357	$249,601
			General Motors Corporation	$2,020,682	$0
Total				**$11,632,039**	**$3,412,680**

Note Values reflect only funds provided to automakers Funds passed through to suppliers and other subcontractors are reported in PNGV Remaining Distribution tables.

Question: How is the balance of PNGV funding distributed; that is, other than to the national laboratories and the automakers? Please provide details for the record for fiscal years 1998 and 1999.

Answer: In fiscal year 1998, the Office of Advanced Automotive Technologies provided $46.8 million to research partnerships, other federal agencies, large businesses, small business, and universities. This amount represents approximately 40 percent of the total OAAT PNGV appropriation in fiscal year 1998. The balance of PNGV project funding during fiscal year 1999 ($54.4 million or 43 percent of the total PNGV appropriation managed by OAAT) will be provided for work entities other than national laboratories and the major U.S. automakers. Details can be found in the following tables:

FY 1998 Department of Energy
Office of Transportation Technologies
PNGV Funding Balance of Distribution

Organization Type	Program Area	Subactivity Name	Key Activity	Company	FY 1998 Funding
Consortia/Partnership	Materials Technologies	Lightweight Materials Technology	Automotive Lightweight Materials	US Advanced Materials Partnership	$1,100,000
	Vehicle Technologies R&D	Hybrid Systems R&D	Advanced Power Electronics	US Advanced Battery Consortium	$1,210,000
			Hybrid Systems R&D	US Advanced Battery Consortium	$190,000
Federal Agency	Fuel Utilization R&D	Alternative Fuels	Automobiles/Light Trucks	US Army / Southwest Research Institute	$481,000
	Materials Technologies	Lightweight Materials Technology	Automotive Lightweight Materials	US Department of Commerce - NIST	$25,000
		Propulsion Materials Technology	Automotive Propulsion Materials	Office of Naval Research	$1,900,000
	Vehicle Technologies R&D	Advanced Combustion Engine R&D	Advanced Combustion Engine R&D	U.S. Army - Fort Belvoir	$205,000
			Advanced Power Electronics	Office of Naval Research	$50,000
			Hybrid Systems R&D	US Department of Transportation	$70,000
Large Business	Materials Technologies	Lightweight Materials Technology	Automotive Lightweight Materials	Alcoa Technology Center	$2,395,000
				Electric Power Research Institute	$100,000
				Energetics	$42,000
		Propulsion Materials Technology	Automotive Propulsion Materials	Allied Signal Aerospace Systems and Equipment	$368,000
	Technology Deployment	Advanced Vehicle Competitions	Technology Competitions	American Society for Engineering Education	$170,000
	Vehicle Technologies R&D	Cooperative Research for	CARAT	SatCon Technology Corp	$149,989

Organization Type	Program Area	Subactivity Name	Key Activity	Company	FY 1998 Funding
		Advanced Technologies (CARAT)			
Large Business (cont.)	Vehicle Technologies R&D (cont.)	Fuel Cell R&D	Fuel Cell R&D	3M Corporation	$461,000
				A.D. Little	$285,000
				Allied Signal Aerospace Systems and Equipment	$2,612,000
				Institute of Gas Technology	$330,000
				International Fuel Cells Corporation	$2,112,000
				Plug Power, LLC	$3,600,000
		Hybrid Systems R&D	Hybrid Systems R&D	A D. Little	$28,966
				Abacus Technologies	$38,000
				Allied Signal Aerospace Systems and Equipment	$2,065,025
				Allison Engine Company	$1,485,796
				American Society of Engineering Education	$9,000
				Delco Propulsion Systems	$1,875,000
				Detroit Diesel Corporation	$3,437,500
				DuPont Lanxide	$450,000
				Energetics	$100,000
				FEV Engine Technology	$2,033,034
				GE Corporate R&D	$342,368
				General Motors Corporation	$2,020,682
				GNB Industry Battery Company	$514,707
				Johnson Controls Battery Group, Inc.	$161,788
				Southwest Research Institute	$1,420,000
				Teledyne Ryan Aeronautical	$2,198,672
				The Analytic Sciences Corporation	$326,875
Small Business	Vehicle Technologies R&D	Cooperative Research for Advanced Technologies (CARAT)	CARAT	Aspen Systems, Inc.	$149,454
				CeraMem Corporation	$83,534
				Energy Conversion Devices, Inc.	$150,000
				Giner, Inc.	$149,872
				Life Enhancement Technologies, Inc.	$74,954
				NexTech Materials, Inc	$100,000
				Physical Science, Inc.	$100,000
				Physical Science, Inc.	$83,533
				Visual Computer Systems	$150,000
				Visual Computing Systems	$150,000

FY 1998 DOE/EE PNGV Funding to Remaining (cont.)

Organization Type	Program Area	Subactivity Name	Key Activity	Company	FY 1998 Funding
Small Business (cont.)	Vehicle Technologies R&D (cont.)	Fuel Cell R&D	Fuel Cell R&D	Electrochem, Inc	$167,000
				Energy Partners, Inc.	$1,976,000
				Foster Miller, Inc.	$127,000
				Hydrogen Burner	$810,000
				Merurt, Inc.	$100,000
				Spectracorp, Ltd	$190,000
				Vairex Corporation	$600,000
		Hybrid Systems R&D	Hybrid Systems R&D	Aero Vironment Laboratories	$489,124
				Computer Systems Management Inc.	$385,000
				Mooradian Associates	$54,082
				Optima Advanced Technologies Inc	$572,329
				Stirling Thermal Motors, Inc	$432,069
University	Fuel Utilization R&D	Alternative Fuels	Automobiles/Light Trucks	Johns Hopkins University Applied Physics Laboratory	$600,000
	Materials Technologies	Lightweight Materials Technology	Automotive Lightweight Materials	University of Texas at Austin	$125,000
		Propulsion Materials Technology	Automotive Propulsion Materials	Cleveland State University	$75,000
	Vehicle Technologies R&D			Drexel University	$100,000
				Massachusetts Institute of Technology	$104,000
				Pennsylvania State University	$96,000
				Princeton University	$150,000
		Advanced Combustion Engine R&D	Advanced Combustion Engine R&D	University of Illinois	$100,000
		Cooperative Research for Advanced Technologies (CARAT)	CARAT	Illinois Institute of Technology	$100,000
				Iowa State University	$150,000
				Pennsylvania State University	$150,000
				Princeton University	$223,399
				Texas A&M University	$92,279
				Texas Engineering Experiment Station	$76,800
				University of Illinois at Urbana	$83,533
				University of Michigan	$117,000
Total					$45,800,364

FY 1999 Department of Energy
Office of Transportation Technologies
PNGV Funding Balance of Distribution

Organization Type	Program Area	Subactivity Name	Key Activity	Company	FY 1999 Planned
Consortia/Partnership	Materials Technologies	Automotive Materials Technology	Lightweight Vehicle Materials	US Advanced Materials Partnership	$3,100,000
	Vehicle Technologies R&D	Hybrid Systems R&D	High Power Energy Storage	US Advanced Battery Consortium	$1,356,000
DOE	Vehicle Technologies R&D	Hybrid Systems R&D	High Power Energy Storage	US DOE - Chicago Operations Office	$30,000
Federal Agency	Vehicle Technologies R&D	Hybrid Systems R&D	Hybrid Propulsion Systems	US Army	$350,000
Large Business	Fuels Utilization R&D	Alternative Fuels	Systems Optimization	Delphi Electronics	$300,000
				Southwest Research Institute	$1,471,000
	Materials Technologies	Automotive Materials Technology	Lightweight Vehicle Materials	Reynolds	$400,000
				Visteon	$400,000
				Delphi Automotive Systems	$450,000
				Hexcel	$600,000
				ALCOA Technology Center	$3,200,000
	Vehicle Technologies R&D	Advanced Combustion Engine R&D	Advanced Combustion Engine	Southwest Research Institute	$174,000
		Fuel Cell R&D	Component R&D	AlliedSignal Automotive	$2,945,000
				Energy Partners, Inc.	$175,000
				EPYX	$340,061
				International Fuel Cells	$318,139
				Plug Power	$352,800
			Reformer and Storage R&D	AlliedSignal Automotive	$95,000
				Energy Partners, Inc.	$1,396,000
				EPYX	$958,802
				International Fuel Cells	$1,111,398
				Plug Power	$940,800

Organization Type	Program Area	Subactivity Name	Key Activity	Company	FY 1999 Planned
Large Business (cont.)	Vehicle Technologies R&D (cont.)	Fuel Cell R&D (cont.)	Systems Development	AlliedSignal Automotive	$155,000
				Energy Partners, Inc.	$174,000
				EPYX	$1,074,136
				International Fuel Cells	$1,227,464
				Plug Power	$1,058,400
				3M	$481,000
		Hybrid Systems R&D	High Power Energy Storage	SAFT America, Inc	$257,000
			Hybrid Propulsion Systems	FEV Engine Technology	$7,341
				Johnson Controls, Inc.	$7,341
				Southwest Research Institute	$237,000
				Ricardo, Inc.	$350,000
				Delco Propulsion System	$759,868
				Detroit Diesel Corporation	$1,390,053
	Technology Deployment	Advanced Vehicle Competitions	Technology Competitions	American Society for Engineering Education	$158,000
N/A	Materials Technologies	Automotive Materials Technology	Lightweight Vehicle Materials	TBD - To Be Determined	$250,000
			Propulsion Systems Materials	TBD - To Be Determined	$170,000
	Vehicle Technologies R&D	Advanced Combustion Engine R&D	Advanced Combustion Engine	TBD - To Be Determined	$2,800,000
			Heat Engine R&D	TBD - To Be Determined	$2,700,000
		Advanced Power Electronics	Advanced Power Electronics	TBD - To Be Determined	$5,115,000
		Automotive Alternative Fuels	Systems Optimization	TBD - To Be Determined	$1,000,000
		Fuel Cell R&D	Component R&D	TBD - To Be Determined	$1,578,000
			Reformer and Storage R&D	TBD - To Be Determined	$1,488,000
			Systems Development	TBD - To Be Determined	$937,000
		Hybrid Systems R&D	High Power Energy Storage	TBD - To Be Determined	$1,041,000
			Hybrid Propulsion Systems	TBD - To Be Determined	$3,050,000
Small Business	Materials Technologies	Automotive Materials Technology	Propulsion Systems Materials	Industrial Ceramic Solutions	$200,000
	Vehicle Technologies R&D	Advanced Combustion Engine R&D	Advanced Combustion Engine	Computer Systems Management Inc	$25,000

FY 1999 DOE/EE PNGV Funding to Remaining (cont.)

Organization Type	Program Area	Subactivity Name	Key Activity	Company	FY 1999 Planned
Small Business (cont.)	Vehicle Technologies R&D (cont.)	Hybrid Systems R&D	High Power Energy Storage	Computer Systems Management Inc.	$125,000
			Hybrid Propulsion Systems	Computer Systems Management Inc.	$303,000
		Cooperative Automotive Research for Advanced Technologies (CARAT)	CARAT	CeraMem Corporation	$66,466
				NexTech Materials, Inc.	$50,000
				Physical Sciences, Inc	$116,414
				TIJ Technologies, Inc	$20,924
		Fuel Cell R&D	Component R&D	Electrochem, Inc	$279,000
				Foster Miller, Inc.	$217,000
				Institute of Gas Technology	$1,500,000
				Merrit	$95,000
				Vairex Corporation	$499,000
			Reformer and Storage R&D	Hydrogen Burner	$820,000
		Hybrid Systems R&D	High Power Energy Storage	PolyStor, Inc	$375,000
			Hybrid Propulsion Systems	Mooradian Associates	$2,716
University	Materials Technologies	Automotive Materials Technology	Lightweight Vehicle Materials	University of Texas - Austin	$200,000
				Michigan State University	$300,000
				Virginia Tech/Clemson University	$400,000
	Vehicle Technologies R&D	Advanced Combustion Engine R&D	Advanced Combustion Engine	Michigan Tech University	$20,000
		Advanced Power Electronics		University of Maryland - College Park	$40,000
		Cooperative Automotive Research for Advanced Technologies (CARAT)	CARAT	Illinois Institute of Technology	$49,998
				Princeton University	$76,600
				Texas A&M University	$261,842
				University of Illinois - Urbana	$65,912
				University of Miami	$47,425
				University of Michigan	$33,000
		Fuel Cell R&D	Reformer and Storage R&D	University of California - Davis	$70,000

FY 1999 DOE/EE PNGV Funding to Remaining (cont.)

Organization Type	Program Area	Subactivity Name	Key Activity	Company	FY 1999 Planned
University (cont.)	Vehicle Technologies R&D (cont.)	Hybrid Systems R&D	High Power Energy Storage	Pennsylvania State University	$70,000
				University of Maryland - College Park	$30,000
				University of Michigan	$100,000
Total					$54,388,900

Question: For the record please provide a funding history of all the projects in the PNGV initiative for fiscal years 1995, 1996, 1997, 1998, 1999, and 2000.

Answer: All PNGV projects supported by DOE's Office of Transportation Technologies, for fiscal years 1995, 1996, 1997, 1998, 1999, and 2000 are displayed in the table that follows:

Department of Energy
Office of Transportation Technologies
Partnership for a New Generation of Vehicles
(dollars in millions)

Budget Activity	Project	FY1995	FY1996	FY1997	FY1998	FY1999	Request FY 2000
Vehicle Technologies R&D	Hybrid Systems R&D: Light Vehicles Propulsion and Ancillary Subsystems	$34.7	$36.7	$38 0	$44.7	$22.7	$16.9
	Hybrid Systems R&D. High Power Energy Storage	$1 9	$8 1	$8.0	$9.0	$12.9	$15.0
	Hybrid Systems R&D. Advanced Power Electronics	$2 1	$3.0	$3.0	$4.5	$6.9	$9.0
	Fuel Cell R&D: Systems	$18.4	$13.8	$11.8	$4.1	$5.8	$7.6
	Fuel Cell R&D: Components	$3.4	$7.0	$4.5	$11 1	$13.5	$12.4
	Fuel Cell R&D. Fuel Processor	$0.9	$1.0	$4 5	$8.3	$14.5	$21.4
	Vehicle Systems R&D: Heat Engine R&D [1]	$7 3	$6.0	$4.8	$0.0	–	–
	Automotive Piston Engine R&D [1]	$4.5	$5.5	$7 6	$7.6	–	–
	Advanced Combustion Engine R&D: Hybrid Propulsion Systems	–	–	–	–	$6.9	$12.0
	Advanced Combustion Engine R&D: Combustion After treatment R&D	–	–	–	–	$12.9	$16.3
	Cooperative Automotive Research for Advanced Technologies (CARAT)	$0 0	$0.0	$0.0	$0 0	$1.5	$7.0
Fuels Utilization R&D	Alternative Fuels: Automobiles/Light Trucks	$0.0	$0.0	$0.0	$4 7	$6.9	$7.5
Materials Technologies	Automotive Materials Technology: Lightweight Materials	$10.0	$10 8	$13.6	$15.2	$19.8	$14.0
	Automotive Materials Technology: Propulsion Materials	$7.3	$7.9	$6 5	$6.5	$3.0	$3.0
Technology Deployment	Advanced Vehicle Competitions: Technology Competitions	$0 0	$0.0	$0 0	$0.9	$0.9	$1.0
Total OTT PNGV		**$90.5**	**$99.8**	**$102.1**	**$116.0**	**$128.0**	**$143.1**

[1] These projects reflect the FY 1998 budget structure

Natural Gas Vehicle Research and Development

Question: The Committee understands that the natural gas vehicle industry does not agree with the natural gas vehicle crosscut table you prepared for the budget. What are the key areas in which you have a difference of opinion?

Answer: The key areas where there is a difference of opinion are in Automobile/Light Truck Alternative Fuels research and development and Medium/Heavy Truck Alternative Fuels research and development. The Automobile/Light Truck Alternative Fuels research and development request for fiscal year 2000 includes $500,000 to complete a project on dimethyl ether, a liquid fuel derived from natural gas. The natural gas vehicle industry suggests that these funds are not being used for natural gas vehicles since this research does not support

development of vehicles which operate on compressed or liquefied natural gas. In addition, the natural gas vehicle industry is concerned that the fiscal year 2000 request for automotive natural gas related funding has been decreased from previous years. In DOE's view, the main barriers to the introduction of natural gas vehicles, infrastructure and tank cost, are not unique to light duty applications and can be addressed more efficiently in a single program. Therefore, this work has been consolidated under our Heavy Vehicle program, while keeping the total research and development budget consistent with last year's appropriation and realistic expectations.

In the medium/heavy truck area the budget request is for $10.6 million. The natural gas vehicle industry questions $1.625 million for emissions-related work at West Virginia University's testing facility, and research on ozone and particulate matter emissions. The industry believes only a portion of this work should be counted as related to natural gas, since combustion engines operating on other fuels could also benefit.

Question: For the record please provide a list, coordinated with industry, that includes 1999 and 2000 funding by key activity and by project. The list should clearly identify the $10 million specified for natural gas vehicles in the 1999 conference agreement. It should only include funding for materials technologies, fuel cells, and deployment to the extent projects are directly related to compressed natural gas vehicles and liquefied natural gas vehicles.

Answer: In the table that follows, key activities and projects are separated by fuel type -- CNG, LNG, and Natural Gas-Derived Fuels. For each major fuel type, three sub-categories are used to describe work related to the fuel. The table indicates the 1999 spending, and 2000 plans, for natural gas vehicle-related projects. Information in this table has been discussed with the natural gas vehicle industry representatives, who do not believe that natural gas-derived liquids should be counted as funding for natural gas vehicle projects.

Office of Transportation Technologies
Natural Gas Vehicle Funding
(dollars in thousands)

Key Activity/Projects	1999		2000	
	Light Duty	Heavy Duty	Light Duty	Heavy Duty
CNG				
Engine R&D	$491	$1,340		$3,550
Storage	$494	$583		$750
Infrastructure	$501	$244		$1,000
LNG				
Engine R&D		$2,626		$3,550
Storage		$498		$750
Infrastructure	$216	$1,125		$1,000
Natural Gas-Derived Liquids				
Engine/Fuel System R&D		$1,591	$500	

Key Activity/Projects	1999		2000	
	Light Duty	Heavy Duty	Light Duty	Heavy Duty
Test and Evaluation (Fischer-Tropsch and DMM)	$432	$0		
C-1 Research[1]	$1,000	$0		
Total	**$3,124**	**$8,007**	**$500**	**$10,600**

[1] $1 million added by Congress for the Consortium for Fossil Fuel Liquefaction Science, for C-1 chemistry research.

Fuel Cells for Transportation

Question: The Japanese are currently producing fuel cell cars, and U.S. automakers have made announcements of vehicles they plan to introduce. Why then do you propose an $8 million increase in fuel cell research?

Answer: The Japanese are not currently producing fuel cell cars. The Japanese, along with other automakers, have built fuel cell concept cars operating on direct hydrogen or methanol. While they are significant achievements, these concept cars cannot be refueled because of a lack of a widely available fuel infrastructure. In addition, cost is an order of magnitude higher than needed, and performance, especially durability, does not meet requirements.

An $8 million increase in fuel cell research is requested because critical technical barriers related to fuel processing and cost reduction remain. Fuel-flexible fuel cell systems that can operate on gasoline or an advanced petroleum-based fuel are necessary for early introduction of fuel cell vehicles. To date, no fuel cell developer or auto company has built an automotive-size integrated fuel cell system operating on gasoline. The key challenge is development of on-board fuel processing that can meet system efficiency, size, weight, start-up, and transient response targets. In addition, the cost of the automotive fuel cell system is currently 10 times higher than that needed to be competitive with the internal combustion engine. Research and development of low-cost, high-volume fabrication processes for fuel cell systems and components is critical to reducing cost. Integration of fuel processor, fuel cell stack, and balance of plant components is also necessary to address system level issues such as durability, freeze-thaw performance, and thermal/water management.

Question: What specifically would you do with these funds?

Answer: Increased funds will be used to focus on low-temperature, low-pressure partial oxidation reforming to allow ambient pressure fuel cell system operation, eliminating the need for air compression and reducing parasitic power loads. Emphasis will be placed on improving catalyst performance, durability, and reliability and reducing fuel processor size, weight, and cost. Low-cost, high-volume fabrication processes for fuel cell stack components will also be developed. Specific research and development projects include the following:

- Development of a 50-kilowatt low-temperature, low-pressure fuel processor including liquid fuel desulfurizer. Higher activity water-gas-shift catalysts will be developed because they are

responsible for most of the size, weight, and cost of the fuel processor. Alternative approaches to selective CO oxidation will be developed. Long term durability of fuel-flexible fuel processor under start/stop driving cycle operation and extreme ambient temperature conditions will also be demonstrated.

- Development of a low-cost, continuous processes for fabricating membrane-electrode assemblies (MEA) and bipolar plates in high volume. The MEA and bipolar plate are critical stack components. Projects will be initiated with key suppliers 3M and SwRI/Gore to develop MEA manufacturing processes to enable achievement of the $10 per kilowatt cost target. The Institute for Gas Technology will develop high-volume manufacturing processes to reduce the cost of bipolar plates to $10 per kilowatt.

Question: What amount of cost sharing is involved in your fuel cell program?

Answer: Industry partners funded by the fuel cell program contribute 20 to 35 percent cost share depending on the maturity of the component/system under development. The average cost share is 32 percent.

Question: How many different transportation fuel cell efforts do you have, and what are the differences in the various programs?

Answer: All work in support of transportation fuel cells is conducted under a single program. This program focuses activity on Proton Exchange Membrane fuel cells (the only fuel cell type considered practical for light-duty transportation applications). Within this program, there are a number of efforts that address different technical barriers to commercialization and include projects that develop specific components, as well as efforts that integrate those components into systems (17 cost-shared contracts, 3 national laboratory efforts). For example, our program with 3M Company is developing technology to allow high volume manufacturing of the proton exchange membrane, while a separate effort at the Institute of Gas Technology has addressed the development of low cost bipolar plates (the plates that separate individual fuel cells). There are also several cases where our performance targets are particularly difficult to meet, and where there is no consensus within the fuel cell community for a single technical approach. This research and development is considered high risk, and we have parallel projects that pursue distinct solutions. For example, we are now concluding three projects that pursued different paths to develop compressor/expander technology (scroll, turbo machine, and variable piston) to supply air to the fuel cell and fuel processor. In our recently concluded competitive solicitation, these alternatives were downselected to a single project for further development.

Clean Diesel Program

Question: What is the status of your program to develop a cleaner more efficient diesel engine for use in trucks and sport utility vehicles, which make up half of the new car sales market?

Answer: Two of the three industry teams have demonstrated the program's efficiency goal of improving the fuel economy of a sport utility vehicle by more than 50 percent relative to

the fuel economy of the equivalent conventional gasoline powered vehicle. They are directing their research efforts at meeting the very low EPA emission requirements anticipated in the Tier II rulemaking. The third team is focusing on the development of subsystems and components for advanced emissions and combustion technologies that will enable diesel engines to meet very low levels for oxides of nitrogen and particulate emissions.

Question: What is the goal for market penetration of this technology?

Answer: Clean diesel engines are expected to begin penetration in pickup trucks beginning in 2002, and in sport utility vehicles and minivans by 2004. It is projected that by 2010 approximately 20 percent of all sport utility vehicles and pickups, and 10 percent of all minivans, in the fleet will be powered by clean diesel engines.

Question: What specifically does the budget assume with respect to this program in fiscal year 2000 as compared with 1999?

Answer: The fiscal year 2000 budget request will fund research which will enable the timely introduction and penetration of clean diesel engines into the market place. Compared to the fiscal year 1999 appropriation, the fiscal year 2000 President's budget request seeks to put the program back on its original schedule for making clean diesel technology available to the light truck market in the 2002-2004 time frame.

Priorities within the Transportation Program

Questions: If funding for transportation programs is only available at the fiscal year 1999 level, how would you adjust your budget request? For the record please provide a list in priority order of what you would reduce to get to the fiscal year 1999 budget level.

Answer: Increased investments in transportation technology research, development and pre-commercial deployment are of critical importance to meeting the energy and environmental challenges of our times and of the next century. However, we recognize the existence of budget constraints and will work closely with the Committee staff to identify priorities.

Industry Research Programs

Advanced Gas Turbines

Question: What is the status of the advanced turbines systems program?

Answer: The Advanced Turbine Systems Program is currently in Phase III -- component development and demonstration. Solar Turbines is currently testing their ATS engine, Mercury 50 in a test cell at Solar Turbines Kearney Mesa Facility. Tests have been conducted at approximately 75 percent load producing about 3.2 megawatts of power. Tests will continue through the summer of 1999. In the fall of 1999, there are plans to demonstrate the Mercury 50 engine in partnership Rochelle Municipal Utilities at Rochelle Foods. Allison Engines will remain in Phase III of the program and will not demonstrate their advanced engine (formally

known as the 701K). Allison will focus on critical sub-component design and manufacture to meet the ATS goals. These systems will include advanced hot section ceramic components and low emissions combustion technology.

Question: What additional funds will be necessary in fiscal year 2001 for program completion?

Answer: With the increase in fiscal year 1999, DOE is planning on completing the ATS program in fiscal year 2000 and is not requesting any additional funds except to continue technology base support in the development of advanced ceramics for industrial gas turbines and low emissions technology development (about $4 million).

Question: What success have you had in the program and how has the success been reflected in market penetration of this technology.

Answer: The following examples highlight the program successes and market penetration:

- Solar Turbines is currently testing their ATS Engine, the Mercury 50, at their test cell in Kearny Mesa, California. This technology is well positioned in the marketplace with all of Solar's 1999 and 2000 engines available booked to customers.

- The program is working with the Oak Ridge National Laboratory (ORNL) and Solar Turbines and Allegheny-Ludlum Steel to improve the properties and temperature capabilities of the stainless steel alloy in Solar Turbines Recuperator. This was successfully accomplished and will be manufactured as a new material available for recuperated industrial engines.

- In fiscal year 1999, Pratt and Whitney will be demonstrating an advanced thermal barrier coating and, if successful, will be licensed to the coating suppliers.

- Howmet and PCI Airfoils have developed an in-melt desulfurization process to remove the sulfur from gas turbine components to extend lifetime and reduce cost. This process is currently being utilized by the suppliers for gas turbines. This technology is also being transferred to the aircraft industry.

- Ceramic Composite Combustor liners have been demonstrated for approximately 5,000 hours in an industrial gas turbine end-user site in California. Numerous engine manufacturers are interested in the capabilities of ceramics and composites for industrial gas turbine applications. Additionally, DOE and NASA Glenn Research Center are leveraging research to raise the efficacy in the aerospace market.

- Howmet and ORHowmet and ORNL have developed an improved core for gas turbine airfoils. Because of the success of this project, Howmet has expanded their Morristown, Tennessee, facility to produce new cores.

Motor Challenge

Question: Last year you expanded the motor challenge program to address steam and compressed air technologies. What specifically, have you done in this area?

Answer: Adding the steam and compressed air initiatives has expanded the level of resources the Office of Industrial Technologies (OIT) can provide to and through industry. A steam system efficiency steering committee has been formed that is made up of over 30 industry representatives. The committee's activities have included: beginning to assemble and develop best practices in steam system management; developing case studies on a variety of applications; working with DOE to distribute the steam pipe insulation software package, 3EPlus, that was developed by the National Association of Insulation Manufacturers; and producing and disseminating the Steam Efficiency Handbook as developed by the Council of Industrial Boiler Manufacturers.

The Compressed Air Challenge (CAC) involves 14 sponsors, including the OIT, trade associations, and several utilities and state agencies with over $1 million in leveraging. The initiative has issued a compressed air sourcebook and has developed a training curriculum that is intended for plant operations staff. Over 100 industry people have participated at various levels to develop the training curriculum. There will be over 50 training sessions conducted this spring that will train up to 2,000 people. The CAC is partnering with the OIT in developing the AirMaster software tool; in writing a special edition of OIT's Energy Matters newsletter on compressed air systems; in developing a network of technical expertise to assist end users; and in developing a video with the Compressed Air and Gas Institute on air compressor selection. The OIT has obtained a leveraging of at least 5 to1 through the CAC collaborative in developing and delivering the new training and information products.

Question: How long do you expect to continue the motor challenge program?

Answer: The Motor Challenge over the last 5 years has developed a wide range of resources for industry to manage and improve their motor-driven systems. Adding the steam and compressed air technologies to the OIT portfolio has added new resources which has gradually brought OIT to more of a total plant system perspective in the promotion and delivery of near-term energy efficiency opportunities. All three near-term OIT partnership initiatives (motor, steam, and compressed air) have developed innovative approaches to partnering with industry to develop new products and tools; and likewise, to leverage with the market to deliver the products more broadly than if DOE were to do it alone (for example, the Allied Partner model). These initiatives have reached over 30,000 people to provide them tools, information and training. The OIT estimates that between one-half to 1 million manufacturing plant staff have not yet been reached and could benefit from the unbiased and reliable OIT information.

The Industry of the Future Showcase Demonstration last year at the Bethlehem Steel Burns Harbor facility proved to be a great learning experience in how to bring together the integrated resources of OIT, including the demonstration motor, steam and compressed air system technology -- from technology best practices to new emerging technology. The OIT has learned how to better apply, integrate and promote the resources from the near-term energy

efficiency programs based on how any plant uses its energy. Accordingly, OIT will begin to transform programs like Motor Challenge, which are focused on singular technology application areas, to a broader strategy that encourages a system approach across an entire manufacturing plant. The OIT and industry desire to maintain the delivery of the valuable resources developed under programs like Motor Challenge, but efforts will be directed at accelerating the expansion and the delivery to a broader audience, and with a more comprehensive portfolio of technology, products and services that emphasizes a plant-wide system strategy. In this way, industry will be able to more effectively achieve energy savings using best available technology and the latest best practices that meets their needs.

Industries of the Future

Question: The "industries of the future" program historically focused on seven key industrial areas: 1) forest and paper products, 2) steel, 3) aluminum, 4) metal casting, 5) glass, 6) chemicals, and 7) petroleum refining. Last year you expanded the program to include mining and agriculture. What is the status of those two new efforts?

Answer: The Mining Industry of the Future is currently soliciting 50 percent cost-shared proposals from industry, academia, and national laboratories to address the needs identified in the "Mining Industry Roadmap for Crosscutting Technologies." This roadmap, available from both the National Mining Association and the DOE Office of Industrial Technologies, provides a prioritized list of needed technologies identified by both hardrock and coal mining industry partners in the United States. The funds appropriated in fiscal year 1999 will be directed to the national laboratories in order to start addressing these needs as soon as possible.

The new Agriculture Team has moved quickly to build a unique, broad-based coalition and help them develop long-term plans for critical research and development. With their partners in the agricultural, chemical and forestry communities, the strategic vision, "Plant/Crop-based Renewable Resources 2020 was unveiled in February 1998 at the "Commodity Classic" and a Compact was signed there by the Departments of Energy and Agriculture, and representatives of eleven private sector organizations. Three more companies or groups have signed since then and more have expressed interest recently. Our industry partners formed an Executive Steering Group in May 1998 to oversee the drafting of a technology roadmap and provide informal guidance to DOE. Two workshops held late last summer provided the foundation for the publication of a technology roadmap in February this year. After the first appropriation of funds for research and development efforts for the Agriculture Team this fiscal year, an open and competitive solicitation was issued, based on the priorities established by industry's roadmap; selections of projects will be made in June. Plans are being laid now for issuing a solicitation for the next fiscal year in July or August. The Team is also fully participating in the broader Bioenergy Initiative started by the Assistant Secretary for Energy Efficiency and Renewable Energy, Dan Reicher.

Question: This year you propose a $9 million increase for a gasification demonstration program in the forest and paper products area. Please explain the proposed program.

Answer: DOE is working with the forest products industry to develop energy efficient

and environmentally sound technologies through the Agenda 2020 process. Through this effort, demonstrations of black liquor and biomass gasification have been considered high priority areas. Multiple gasification technologies are necessary in order to meet the diverse needs of the industry and achieve the energy and environmental goals of the nation. The fiscal year 2000 President's budget request for Energy Conservation includes a $9 million increase for biomass and black liquor gasification; this funding will support the initial year of a competitive solicitation for multi-year field demonstrations.

Question: What are the outyear costs associated with the program?

Answer: To fully support the industry, approximately $260 million of funding is needed over a 5 to 8 year duration. Cost sharing from industry, government and a variety of other sources will be pursued.

Question: What is the cost share in the program?

Answer: The program will require a minimum of 50 percent cost share by industry.

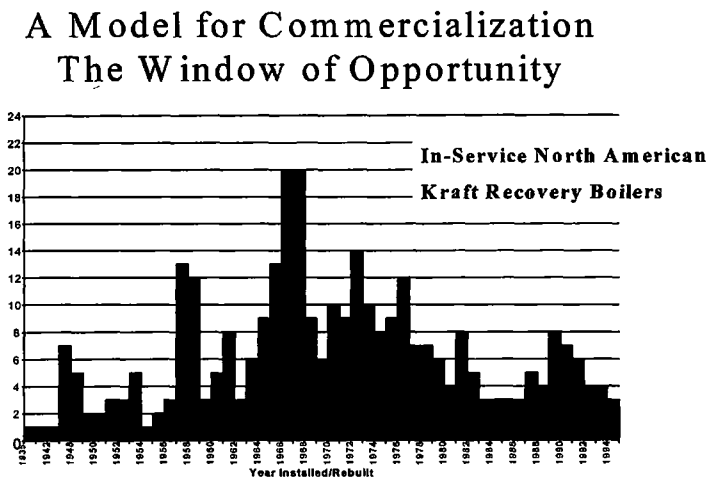
Question: The Fossil Energy program has traditionally been responsible for gasification research. Why do you believe you should be involved in this area?

Answer: Over the past 2 decades, the Office of Energy Efficiency and Renewable Energy (EERE) has been involved in bio-based gasification activities. The EERE is currently overseeing gasification efforts using feedstocks such as wood chips and alfalfa in order to generate power. The Office of Industrial Technologies has supported the development of black liquor gasification technologies since the mid-1980s. The demonstration projects are an extension of the prior work funded out of this office. Technical support will be needed to assist in successfully demonstrating these gasification systems. We will look to Fossil Energy and other national laboratories for their assistance and expertise.

Question: We have proved that we can gasify coal, but the technology hasn't been cost competitive in the market place. Why do we need further gasification technology demonstrations?

Answer: Although coal gasification has encountered economic barriers to compete in the market, biomass and black liquor gasification are considered viable technologies due to the capital investment cycle in the pulp and paper industry. There are a large number of chemical recovery and power boilers requiring replacement or major maintenance upgrades in the next decade (see figure that follows). Gasification technologies offer a cost effective alternative to replace existing equipment while providing significant energy and environmental benefits, as well as safer operations. However, once this window of opportunity passes, the capital replacement cycle will not come full circle for another 40-50 years. Although the opportunity is present, companies can not solely afford to implement these systems due to the inherent risk associated with scaling-up new and innovative technologies. Government assistance is necessary to verify successful demonstration and promote widespread adoption in industry. Successful demonstration of gasification technologies in the pulp and paper industry will create an

intellectual and manufacturing base in the United States, so that when natural gas prices eventually rise, coal gasification will be economical and widespread and rapid deployment can occur. In fact, supplier companies involved in organizing pulp and paper gasification projects have been heavily involved in the DOE investments in coal gasification.



Priorities within the Industry Program

Question: If funding for the Industries of the Future programs is only available at the fiscal year 1999 level, how would you adjust your budget request among the nine key industry areas?

Answer: Increased investments in industry technology research, development and pre-commercial deployment are of critical importance to meeting the energy and environmental challenges of our times and of the next century. However, we realize the existence of budget constraints and will work closely with the committee staff to identify priorities.

Question: Please provide the same information for the crosscutting programs, excluding the increase above last year's budget request for the turbine program.

Answer: Increased investments in industry technology research, development and pre-commercial deployment are of critical importance to meeting the energy and environmental challenges of our times and of the next century. However, we realize the existence of budget constraints and will work closely with the committee staff to identify priorities.

Microturbines

Question: What have you done with the funding provided in fiscal year 1999 for the microturbine program?

Answer: DOE initiated studies in fiscal year 1999 to assess the state-of-the-art in microturbine technology and the market in the industrial sector. A meeting was held in December 1998 with over 60 attendees representing microturbine suppliers, energy service companies, ceramic companies, consultants and state and federal government to identify the barriers facing microturbines and to define the future research, development and demonstration needs for the industry. This information will form the basis for future planning of the "advanced microturbine" -- a 40+ percent microturbine with emissions less than 10 parts per million NOx and CO at reduced cost and an equivalent reliability. The development of ceramic components for operation to temperatures approaching 2,300 degrees Fahrenheit will be required to achieve the 40 percent goal. Selected ceramic programs from the DOE Office of Transportation Technologies projects which will benefit advanced microturbines have been continued in fiscal year 1999 under the Office of Industrial Technologies funding. These programs include: materials testing and database development, ceramic processing and manufacturing, and non-destructive evaluation. Additionally, assessments were initiated to determine the material needs for high temperature microturbine recuperators and to determine the future needs for ceramic life prediction.

Question: What amount is requested for fiscal year 2000 and what will it support?

Answer: In fiscal year 2000, $2.5 million is requested to begin working with the microturbine suppliers for concept studies to perform preliminary system analysis and trade off studies to determine the parameters (temperature, pressure ratio) to meet the goals of an advanced (40+ percent), low emission microturbine. Additionally, $3.0 million is requested to continue funding supporting work in the area of advanced materials, including ceramics.

Question: Please provide a side-by-side funding comparison for fiscal years 1999 and 2000.

Answer: The following table provides a funding comparison for the microturbine program:

	FY 1999	FY 2000
Planning/ studies/ assessments	$ 450,000	$ 300,000
Program support	$ 200,000	$ 200,000
Design concepts	0	$ 2,500,000
Materials testing, database, and life prediction	$ 780,000	$ 900,000
Ceramic processing and manufacturing	$ 1,570,000	$ 1,600,000
Total	$ 3,000,000	$ 5,500,000

Buildings Programs

Question: You have asked for a $47 million increase for buildings research and development. That's a 51-percent funding increase. How much of this increase is for new programs?

Answer: The increase is not for new programs, but will strengthen current programs or replace earlier approaches with those that build upon and redirect the most successful aspects of past programs.

Question: How much of the increase is for program expansions?

Answer: Of the $47 million, $30 million will be used primarily to implement the industry-driven roadmaps in lighting, windows, commercial whole buildings and space conditioning work in heating, ventilation, air-conditioning, and refrigeration. All of these technology areas are currently being funded and will be strengthened through the roadmap directions and rigorous peer review. The other $17 million will be used to accelerate appliance standards, strengthen existing activities such as the Building America program with homebuilders, which is currently working in association with the Partnership for Advancing Technology in Housing, and increase the Rebuild America partnerships to 330, including Energy Smart Schools. While the Municipal Energy Management Program, which has operated through a grant to the Urban Consortium and a limited competitive approach, will end, the competitive approach will evolve and expand to a wider range of potential partners through Competitive Community Partnerships.

Question: What programs do you propose to eliminate in fiscal year 2000 and what was the funding level for each of those programs in fiscal year 1999?

Answer: The following programs will be completed in fiscal year 1999 and funds have not been requested for them in fiscal year 2000:

Program	FY 1999 Funding
Residential Energy Efficiency Program	$ 600,000
Home Energy Rating Systems	$ 1,535,000
Furnaces and Boiler/Combustion Research	$ 500,000
Urban Heat Island Research	$ 700,000
MEMP	$ 1,566,000
Volume Purchases	$ 500,000
Affordable Housing DOE-HUD	$ 600,000
Highly Reflective Surfaces	$ 122,000

Question: The descriptions in the key activities for the buildings program are difficult to track from year to year. In several instances the wording for a particular program does not change but the funding does. Also, many activities have been included in different categories for fiscal year 2000 and the comparison between 1999 and 2000 is not obvious to the reader. For the

record, please provide a project by project comparison of funding for fiscal years 1999 and 2000 using the fiscal year 2000 key activity structure. Also include contractor and national lab information by project; and, if the amount of funding changes, please provide rationale for each increase or decrease.

Answer: The table on the following pages provides funding information for the buildings program.

Hybrid Lighting

Question: What have you done in hybrid lighting with the funds provided in 1999?

Answer: Funding of $214,000 has been allocated to the hybrid lighting activity at Oak Ridge National Laboratory (ORNL). The distribution of these funds between ORNL and outside parties is being determined by ORNL. The ORNL is performing a comprehensive and independent analysis of the energy conservation potential of hybrid lighting. They will also perform a comprehensive analysis of the technological and market barriers to the hybrid concept. With this new information, DOE will be in a position to evaluate the recommendations made by ORNL and to compare these with the recommendations being devised in the industry-driven Lighting Roadmap. From this juncture, we will be able to prioritize future years' spending on this and other lighting technologies.

Question: What does the budget assume for the hybrid lighting program in fiscal year 2000 compared with 1999?

Answer: The ongoing industry-driven Lighting Roadmap and the analysis being conducted at ORNL will provide the guidance for prioritizing activities in this research area. It is anticipated that the final recommendations for meeting industry's vision will be complete and a competitive solicitation will be issued in fiscal year 2000 to fund the highest prioritized activities.

Lighting Research

Question: What have you done to comply with the Committee's direction to support cost-shared research on compact fluorescent lighting cost reduction?

Answer: DOE has several projects on cost reduction in compact fluorescent lighting. The largest is a multi-year cost-shared project with General Electric which will be completing its initial phase in fiscal year 1999. Several much smaller projects have been initiated at Lawrence Berkeley National Laboratory to examine specific technologies and/or research opportunities. These exploratory research efforts, often involving small business research and development firms, is expected to continue with limited cost sharing. Starting this year, DOE's participation in the Lighting Research Center's National Lighting Product Improvement Program (NLPIP) will begin to examine opportunities to reduce compact fluorescent lighting (CFL) costs. With industry input, the project will examine how to modify CFL cost/performance characteristics to

Building Technology, State and Community Programs

	FY 1999 Approp. (Thou $)	Contractor/Lab	Rationale for Increase/Decrease	FY 2000 Request (Thou $)	Increase (Thou $)	Contractor/Lab	Budget Page
A. BUILDING RESEARCH AND STANDARDS	**$61,025**			**$88,163**	**$27,138**		
1. Tech Road Maps & Competitive R&D	**$6,385**			**$7,500**	**$1,115**		370-371
a. Tech Road Maps & Competitive R&D		Competition in FY 99 will determine contractors for FY 99	The increase expands the funding of the competitive R&D solicitation to support the roadmaps as they are completed.			Competition in FY 99 and FY 00 will determine contractors for FY 00	
2. Residential Buildings Integration	**$9,582**			**$13,538**	**$3,956**		373-376
a. Research and Development	9,097	Integrated Building and Construction Solutions of Pittsburgh, Building Science Consortium, Consortium for Advanced Residential Building, the Hickory Consortium, NREL, LBNL, ORNL, National Association of Homebuilders' Research Center	The increase develops/tests cooling strategies, develops natural and hybrid thermal storage systems and reliable control systems; begins R&D for retrofit technologies; develops, validates, and adapts advanced technologies for modular retrofits; and expand the number of Building America partners from 100 to 200	12,863	3,766	Integrated Building and Construction Solutions of Pittsburgh, Building Science Consortium, Consortium for Advanced Residential Building, the Hickory Consortium, NREL, LBNL, ORNL, National Association of Homebuilders' Research Center, States $300	
Building America	5,662	See Above	See Above			See Above	
Energy Efficiency in Industrialized Housing	1,300	Competition in FY 99 will determine contractors for FY 99 and FY 00	See Above, in FY 00 included in Building America. However based on the competiton in FY 99 expect funding in FY 2000 to be ~$2k			Competition in FY 99 will determine contractors for FY 99 and FY 00	
Residential Energy Efficiency Program	600		Program Completed	0	(600)		
Home Energy Rating Systems	1,535		Program Completed	0	(1,535)		
b. Residential Building Energy Codes	485	PNNL	The increase begins developing improved residential energy code compliance tool and determines if upgraded voluntary residential code will save energy	675	190	PNNL	379-380
Formerly Analysis							
3. Commercial Buildings Integration	**$2,544**			**$6,325**	**$3,781**		
a. Research and Development	1,950	LBNL, PNNL, Honeywell Technology Center, National Science Foundation, University of Colorado	The increase funds R&D on advanced technologies identified in the Commercial Buildings Road Map supports tests and evaluation of BTS-developed technologies at 6 major real estate developments, and documents worker productivity gains from improved indoor environments.	5,500	3,550	PNNL, NREL, Honeywell Technology Center, University of Colorado, Advanced Buildings Systems Integration Consortium, Others TBD based on activities to implement road map.	381-383
Formerly Building Performance							
b. Commercial Building Energy Codes	594	PNNL	The increase determines if upgraded voluntary commercial code will save energy and develops a simplified compliance approach to assist States in implementation	825	231	PNNL	384-385
Formerly Voluntary & Federal Energy Codes							

Building Technology, State and Community Programs

	FY 1999 Approp. (Thou $)	Contractor/Lab	Rationale for Increase/Decrease	FY 2000 Request (Thou $)	Increase (Thou $)	Contractor/Lab	Budget Page
4. Equipment, Materials, and Tools	**$42,514**			**$60,800**	**$18,286**		
a. Lighting	**5,530**	GE, Fusion Lighting, LANL, LBNL, ORNL, Lighting Research Center	The increase will be used to support activities identified in the Lighting Road Map, tests final prototype sulfur lamps, and conducts field tests of mesopic street lights	**6,000**	**470**	GE, Fusion Lighting, LANL, LBNL, ORNL, Lighting Research Center, Others TBD	387-389
Formerly Lighting R&D							
b. Space Conditioning & Refrigeration	**11,250**	Phillips, Robur, Lennox, Energy Concepts, Rocky Research, ORNL, York International, Semco/Trane, ICC Technologies, American Institute of Learning, NREL, ORNL, BNL, National Institute of Standards and Technology, LBNL, University of Maryland, ASHRAE	The increase will be used to fund competitively selected projects to support the HVAC and Refrigeraton Road Map, field test GAX heat pumps, a prototype of the 450-ton DC chiller, and a rotary heat exchanger for a residential 3-ton chiller; and tests enhancement of liquid desiccants system prototype that significantly improves air quality	**15,457**	**4,207**	Phillips, Robur, Lennox, Energy Concepts, Rocky Research, ORNL, York International, Semco/Trane, ICC Technologies, American Institute of Learning, NREL, National Institute of Standards and Technology, LBNL, University of Maryland, Arthur D. Little, Others TBD	391-393
Residential Absorption Heat Pump	5,910	See Above	See Above	~6500		Individual elements now	
Desiccants and Chillers	2,480	See Above	See Above	~4500		integrated into Space	
Refrigeration	2,860	See Above	See Above	~4457		Conditioning & Refrigeration	
Furnaces/Boilers Combustion Research	500		Program Completed	0	(500)		
c. Cogeneration/Fuel Cell	**1,750**	International Fuel Cells, H2Burner Technologies, Energy and Environmental Research Corporation, Materials & Electrochemical Research, EIC Laboratories, ANL	The increase will be used for competitively selected proposals to develop fuel cell technologies, to accelerate research of high-temperature membrane materials and advanced catalysts, leading to a prototype methane reformer for the fuel cell	**5,500**	**3,750**	International Fuel Cells, H2Burner Technologies, Energy and Environmental Research Corporation, Materials & Electrochemical Research, EIC Laboratones, ANL, Others TBD	399-400
Formerly Fuel Cells for Buildings							
d. Appliances and Emerging Technology	**1,500**	ORNL, PNNL	The increase develops prototypes of high-efficiency laundry equipment and advanced heat pump water heaters	**2,100**	**600**	ORNL, PNNL, Others TBD	400-401
Formerly TIPS-Emerging Technology Intro							
e. Building Envelope R&D	**11,723**	ORNL, LBNL, NREL, GO, National Fenestration Rating Council, University of Massachusetts, Florida Solar Energy Center.	The increase will be used to support highest priority activities identified in the Windows Road Map and to initiate a program to evaluate blowing agents with the Polyisocyanurate Manufacturers Association.	**11,900**	**177**	ORNL, LBNL, NREL, National Fenestration Rating Council, University of Massachusetts, Florida Solar Energy Center	401-403
Competitive Solicitation	1,700	Competition in FY 99 will determine contractors	NA	~1700		Individual elements now integrated into Building Envelope R&D	
Thermal Insulation and Building Materials	3,094	See Above	Total for envelope technologies in FY 99 is $4,794 and includes the activities started as a result of the FY 99 competition ~ $5,500 (exlcuding windows)				

	FY 1999 Approp. (Thou $)	Contractor/Lab	Rationale for Increase/Decrease	FY 2000 Request (Thou $)	Increase (Thou $)	Contractor/Lab	Budget Page
Electrochromic Research	4,285	See Above	Total for all window technologies in FY 99 is $6,229 and in FY 00 ~ $6,400. All of the window elements will continue to be supported at levels similar to FY 99, however, the level of funding for individual elements in FY 00 will be based on the direction defined in the windows roadmap.			Individual elements now integrated into Building Envelope R&D	
Super Window Technologies	350		See Above				
Advanced Glazing	1,594		See Above				
Urban Heat Islands (LBL)	700		Program Completed	0	(700)		
f. Analysis Tools and Design Strategies	4,058	LBNL, NREL, ORNL, Passive Solar Industries Council, University of Illinois/CERL, University of Oregon	The increase accelerates the development of building analysis software tools and more accurately models energy use and provides strategies to cost-effectively lower energy use and improve building performance. New modules will be done through competitve solicitation.	6,500	2,442	LBNL, NREL, ORNL, Passive Solar Industries Council, University of Illinois/CERL, University of Oregon, Others TBD	411-413
Formerly Design Strategies							
g. Lighting and Appliance Standards	6,703	NIST, LBNL, PNNL, NREL	The increase issues three energy conservation standards. fluorescent lamp ballasts, water heaters, and clothes washers, reflecting a highly accelerated schedule and a greatly increased level of effort.	13,343	6,640	NIST, LBNL, PNNL, NREL	413-415
B. BUILDING TECHNOLOGY ASSISTANCE	**$187,525**			**$232,400**	**$44,875**		
5. State Energy Program	$33,000			$37,000	$4,000		
a. State Energy Program	33,000	50 States, D.C., and 5 Territories	The increase supports State energy program priorities and reinforces State infrastructure.	37,000	4,000	50 States, D.C., and 5 Territories	430
b. Special Project State Grants		OTT $2,700; FEMP $950; OIT $2,800; BTS $5,700, OPT $1,750				OTT $2,700; FEMP $950, OIT $2,800; BTS $5,700, OPT $1,750	
6. Weatherization Assistance Program	$133,000			$154,000	$21,000		
a. Weatherization Assistance	130,700	50 States, and D.C.	The increase supports weatherization of 9,615 more homes of low-income families.	151,700	21,000	50 States, and D.C.	432-433
b. Training and Technical Assistance	2,300	ORNL, States	No increase	2,300	0	ORNL, States	433

Building Technology, State and Community Programs

	FY 1999 Approp. (Thou $)	Contractor/Lab	Rationale for Increase/Decrease	FY 2000 Request (Thou $)	Increase (Thou $)	Contractor/Lab	Budget Page
7. Community Partnerships	**$18,801**			**$35,400**	**$16,599**		**434-438**
		LBNL, NREL, ORNL, PNNL, ANL, American Public Power Association, U S Conference of Mayors, Urban Consortium, Florida Solar Energy Center, Habitat for Humanity, National Congress for Community Development, Global Green USA, Southface Energy Institute	The increase bolsters the deployment of energy efficiency technologies in communities, increases Rebuild America partnerships to 330, awards a competitive solicitation for communities to improve energy efficiency, supports EnergySmart Schools & PATH and increases tech assistance & training to implement building codes			LBNL, NREL, ORNL, PNNL, ANL, American Public Power Association, U S Conference of Mayors, Florida Solar Energy Center, Habitat for Humanity, National Congress for Community Development, Global Green USA, Southface Energy Institute, American Forests	
Rebuild America	7,202	See Above	See Above	~11,100		Individual elements integrated into Community Partnerships	
PATH	0			~3000			
Energy Smart Schools	0			~3000			
Competitively Selected Community Projects	0			~5000			
Training and Assistance for Codes	7,793			~11,300			
Information Outreach	1,018			~2000			
MEMP	1,566		Program Completed	0	(1,566)		
Volume Purchases	500		Program Completed	0	(500)		
Affordable Housing DOE-HUD	600		Program Completed	0	(600)		
Highly Reflective Surfaces	122		Program Completed	0	(122)		
8. Energy Star Program	**$2,724**			**$6,000**	**$3,276**		**445-447**
		ORNL, PNNL, D&R, Southeast Manufactured Housing Alliance, LBNL, University of Minnesota, Florida Solar Energy Center, ASE	The increase expands the program to validate more appliances and products, encourages consumers to retire inefficient appliances, and increases consumer awareness	6,000		ORNL, PNNL, D&R, American Public Power Association, Southeast Manufactured Housing Alliance	
Consumer Education	1,924	See Above	See Above			Individual elements now integrated into Energy Star	
Superwindow Collaborative	800						
C. MANAGEMENT AND PLANNING	**$13,171**			**$15,318**	**$2,147**		
9. Evaluation, Planning & Analysis	**$5,321**			**$7,108**	**$1,787**		
a. Evaluation, Planning, and Analysis	**1,730**	PNNL, BNNL,NREL, LBNL	The increase supports expansion of the evaluation of all BTS programs and additional analysis to support portfolio management	**3,008**	**1,278**	PNNL, BNNL,NREL, LBNL	**453**
Technology & Sector Data	795	See Above	See Above			Individual elements now integrated into Evaluation, Planning & Analysis	
Modeling and Tools	290						
Analytical Studies and Planning Support	645						
b. Support for State and Local Grant Programs	**3,591**	ORNL, PNNL, States	The increase will be used for activities that support the Special Projects and preparation of a report on accomplishments of the Special Project State Grant activities	**4,100**	**509**	ORNL, PNNL, States	**455-456**
10. Program Direction (Salaries-Benefits-Travel)	**$7,850**		Increase supports on-board FTE	**$8,210**	**$360**		**456-456**
Totals	**$262,221**			**$335,881**	**$73,660**		

better meet consumer marketplace requirements. The NLPIP effort is about 50 percent cost shared by industry and also has significant cost sharing by the EPA.

Question: What does fiscal year 2000 budget assume with respect to continued funding for the compact fluorescent lighting effort?

Answer: DOE continues to believe that low-cost compact fluorescent lighting (CFL) is a major opportunity for near-term energy conservation. The ongoing industry-driven Lighting Roadmap will provide the guidance for prioritizing activities in this research area. It is anticipated the final recommendations for meeting industry's vision will be complete and a competitive solicitation will be issued in fiscal year 2000 to fund the highest prioritized activities. Approximately $600,000 has been proposed in the fiscal year 2000 budget to support continuation of these efforts on CFLs, exclusive of any new starts under the competitive R&D solicitation.

Question: What did you do with the additional lighting research funding provided in fiscal year 1999?

Answer: Of the $3 million of additional Lighting research and development funding, $2.2 million is currently available to FETC for lighting-specific awards under the competitive R&D solicitation entitled "Energy Efficient Building Equipment and Envelope Technologies." Award of several Cooperative R&D Agreements in lighting is anticipated in June. The distribution of awards by individual lighting technology is unknown at this time. In addition to the competitive R&D solicitation, $500,000 is being used for analyses needed for lighting standards and $300,000 supports additional lighting analyses, peer review activities, and the statutory requirement for the Small Business Innovation Research program.

Question: What does the 2000 budget assume compared with 1999?

Answer: The proposed fiscal year 2000 Lighting research and development budget assumes an 8-percent increase in funding to support ongoing and new research and development activities identified as high priority in the industry-driven lighting roadmap. The request also assumes some funds will be used to support the second year of lighting research activities initiated in fiscal year 1999 as a result of the competitive procurement for research and development. DOE considers the requested amount a minimum requirement to maintain the program's continuity with a significant portion of the work conducted through industry-driven, cost-shared, competitively-selected projects.

Exemplary Buildings Program

Question: What is the Exemplary Buildings program? Is it part of the Building America program?

Answer: There is no separate program called Exemplary Buildings. The work conducted on advanced very low energy research buildings, sometimes referred to as "exemplary buildings," provides lessons learned and technical input to the overall Residential and

Commercial Buildings Research Programs. The goal of this research is to enable 75 percent of the buildings' heating, cooling and lighting needs to be met with the most effective combination of "passive solar" and energy efficiency strategies resulting in buildings that perform more than 70 percent better than comparable ones built to meet existing standards. To undertake the research, we work with the building owner's design, construction, and operations team to develop design concepts using the building's components and systems to collect, store and distribute (or reject) solar resources for heating cooling and lighting. When the building is completed and commissioned, we measure its performance to determine if it performs as anticipated. If it does not, we determine why and what design changes are required. Needed changes are then tested in follow-on buildings. Often, the resolution of issues may come under the purview of materials research, design tools or other buildings systems research and development.

The advanced, very low energy residential buildings research was performed on several research buildings and the work feeds into and represents the vision of the Building America teams. In the longer term, as advanced designs become cost effective, Building America teams are expected to replicate these design strategies.

Question: The Committee understands that some Building America funding is being used for the Exemplary Buildings program. Is that true, and if so, what amount of funding is involved and why is it not reflected in the budget?

Answer: Research on advanced very-low energy buildings is an integral part of the Building America program. As such, it is integrated into the residential and commercial buildings research and development. In fiscal year 1999, the funding for research on very-low energy buildings is $500,000. The budget request for fiscal year 2000 references activities associated with these research buildings, including development and testing of "more-effective natural and hybrid cooling strategies and the means to integrate the auxiliary heating and cooling systems," and work with industry to develop lighter weight storage concepts and more reliable control systems. These are activities integral to the development of the know-how needed to achieve very-low energy buildings. Out of an fiscal year 2000 budget request of $13 million for Residential Buildings Integration research and development, it is estimated that $500,000 would be available for advanced very-low energy buildings research activities.

Question: The Committee further understands that the Exemplary Buildings program requires that 70 percent of the energy savings come from solar. If so, shouldn't the program be funded under the Energy and Water appropriation?

Answer: A whole-buildings design approach employing energy efficiency and passive solar strategies is required to achieve the goal of buildings that perform more than 70 percent better than comparable ones built to meet existing standards. Unlike other solar technologies, passive solar relies on the building design and how the building's components, materials and systems are used to capture, store and distribute heat, natural cooling and natural light. A passive solar building must integrate multiple efficiency measures before the so-called active solar technologies (photovoltaics, solar water heating) can be used to their full potential. Because it is

whole buildings/buildings systems focused, it is aligned with the kind of research funded by the Interior appropriation.

Priorities within the Buildings Program

Question: What is the status of your roadmapping effort in the buildings program?

Answer: Roadmaps have begun for lighting, windows and commercial whole buildings. Workshops were held last fall for each industry team to develop the vision of the industry for 2020. Subsequently, each industry group has held two roadmapping sessions to identify steps needed to achieve the vision. Those actions might include: joint industry-government research, barriers that need to be overcome, information and education, and deployment strategies. Follow-up workshops targeted to obtain additional information are being scheduled this spring. Analysis of the data and information gathered will lead to specific roadmaps for wider review by industry and others stakeholders over the summer with clearer joint industry-government plans in the fall. In addition, DOE has been working with the Air-conditioning Refrigeration Institute (ARI) on its roadmap, called 21CR. This follows on a highly successful earlier collaboration on lubricants and refrigerants, called MCLR. The ARI has invited related heating and cooling industries, such as natural gas, to participate and we anticipate recommendations that include multiple strategies. In all four roadmaps, several themes have emerged: the significant role of government and industry collaboration, and the importance of an integrated approach and the essential need for information and education for both industry and consumers. Later this year, we will launch a roadmap for building envelope technologies, beginning with insulation-roofs-and-walls.

Question: If funding for buildings programs is only available at the fiscal year 1999 level, how would you adjust your budget request?

Answer: Increased investments in building's technology research, development and pre-commercial deployment are of critical importance to meeting the energy and environmental challenges of our times and of the next century. However, we realize the existence of budget constraints and will work closely with the committee staff to identify priorities.

Question: For the record please provide a list in priority order of what you would reduce to get to the fiscal year 1999 budget level?

Answer: Increased investments in building's technology research, development and pre-commercial deployment are of critical importance to meeting the energy and environmental challenges of our times and of the next century. However, we realize the existence of budget constraints and will work closely with the committee staff to identify priorities.

Weatherization and State Grants

Question: The Weatherization Assistance Program, again this year, has a large increase requested in the budget. How much funding is devoted to weatherization in the Low Income Home Energy Assistance Program, through the Department of Health and Human Services?

Answer: The Weatherization Assistance Program requested increase of $21.1 million does represent a 16-percent increase in funding above the fiscal year 1999 appropriation. However, this funding request, if granted, would still represent only 72 percent of the actual fiscal year 1995 appropriation of $214.8 million. The LIHEAP regulations permit the states to use up to 15 percent of their LIHEAP appropriation for weatherization activities. Funding surveys of states' LIHEAP expenditures indicate that over the past 3 years, an annual average of $136 million has been spent for weatherization services. This figure represents an annual decrease of more than $20 million per year since fiscal year 1995 for weatherization by states using LIHEAP funds. With an estimated 30 million households eligible for weatherization assistance, the funding level is targeted to those most in need the elderly and the disabled.

Question: What amount of funding does each state appropriate for weatherization assistance?

Answer: Congress has never required states to provide state appropriations for weatherization assistance. However, in fiscal year 1999, eight states, Alaska, Arizona, Arkansas, Florida, Minnesota, New Mexico, Nevada, and Virginia, supplemented their weatherization programs by a total of $5 million.

Question: Given that all of the states are projecting a surplus for 1999, would you support a cost-sharing requirement for the weatherization program?

Answer: Mandatory cost-sharing has been considered in the past and both the Administration and the Congress have ultimately rejected it. Most states would need to have their state legislature pass legislation to provide cost share at least one year prior to the federal award date. Not all states are enjoying surpluses and some that are have developed plans to return those surpluses to their taxpayers. Any plan to consider cost-share would need to be fully discussed with the states and their stakeholders to determine the workability of requiring a match.

Question: What state cost share is there for the state grant program?

Answer: Congress requires a 20 percent cost share for the state energy program.

Question: Provide state-by-state information on cost sharing in the state grant program for the most recent year for which data are available.

Answer: The following table provides state energy program allocations and cost share for fiscal year 1998.

State/Territory	FY 1998 Formula Allocations	FY 1998 Match (cost share)
Alabama	$487,600	$97,520
Alaska	$233,500	$46,700

State/Territory	FY 1998 Formula Allocations	FY 1998 Match (cost share)
Arizona	$433,800	$86,760
Arkansas	$380,900	$76,180
California	$2,029,700	$405,940
Colorado	$484,400	$96,880
Connecticut	$471,800	$94,360
Delaware	$209,400	$41,880
District of Columbia	$200,100	$40,020
Florida	$1,045,800	$209,160
Georgia	$675,800	$135,160
Hawaii	$218,500	$43,700
Idaho	$242,900	$48,580
Illinois	$1,350,900	$270,180
Indiana	$762,800	$152,560
Iowa	$450,700	$90,140
Kansas	$402,300	$80,460
Kentucky	$511,200	$102,240
Louisiana	$592,700	$118,540
Maine	$285,400	$57,080
Maryland	$585,100	$117,020
Massachusetts	$727,300	$145,460
Michigan	$1,144,900	$228,980
Minnesota	$686,700	$137,340
Mississippi	$355,700	$71,140
Missouri	$626,700	$125,340
Montana	$230,900	$46,180
Nebraska	$304,800	$60,960
Nevada	$254,000	$50,800
New Hampshire	$265,000	$53,000
New Jersey	$929,500	$185,900
New Mexico	$278,200	$55,640
New York	$1,881,300	$376,260
North Carolina	$701,400	$140,280
North Dakota	$218,600	$43,720
Ohio	$1,273,800	$254,760
Oklahoma	$439,300	$87,860

State/Territory	FY 1998 Formula Allocations	FY 1998 Match (cost share)
Oregon	$405,100	$81,020
Pennsylvania	$1,293,600	$258,720
Rhode Island	$245,600	$49,120
South Carolina	$431,300	$86,260
South Dakota	$212,800	$42,560
Tennessee	$591,100	$118,220
Texas	$1,719,500	$343,900
Utah	$304,900	$60,980
Vermont	$213,900	$42,780
Virginia	$697,700	$139,540
Washington	$558,700	$111,740
West Virginia	$351,000	$70,200
Wisconsin	$712,900	$142,580
Wyoming	$201,600	$40,320
American Samoa	$150,200	$30,040
Guam	$156,300	$31,260
North Mariana Islands	$149,200	$29,840
Puerto Rico	$373,400	$74,680
Virgin Islands	$157,800	$31,560
Total	$31,300,000	$6,260,000

Federal Energy Management Program

Question: You've asked for a 34-percent increase in the Federal Energy Management Program ($23.8 million in 1999, $31.9 million requested for 2000). What have you done with the increase provided for this program in fiscal year 1999?

Answer: The increase from fiscal year 1998 to 1999 is being used as follows:

- $300,000 increase in program direction will be used for filling the critical headquarters positions of Deputy Director, finance team leader, and the FEMP Service Network Director in the field;

- $600,000 increase in planning, reporting and evaluation is being used to integrate FSN database and reporting systems; develop case studies for training and outreach purposes; increase support of alternative finance at regional support offices; support for state grants under the State Energy Program; increased support of annual awards process;

- $2 million increase in project financing is being used to accelerate the placement of delivery orders for FEMP Super-ESPCs, initiate FEMP Service Network operations, and increase support of utility financing options;

- $1.1 million increase in technical assistance is primarily being used to accelerate the development of Product Energy Efficiency Recommendations for the Procurement Challenge to initiate a pilot project to test whether federal purchasing power can commercialize new, more efficient technology. To date, the pilot project has determined a target product, has manufacturer interest, and is working on developing federal buyer interest. Funds are being used also to align this program with the DOE/EPA Energy Star program, to slightly expand direct assistance to projects, and to develop additional technical resources that include providing technical background to encourage ESPC projects.

The Energy Star labeling and Procurement Challenge programs share a similar goal of providing energy efficiency information to consumers to help them decide to purchase higher efficiency equipment. The customers and operating activities for each program have been very different. However, we have worked closely with the Energy Star labeling program on efficiency level setting activities, and in every case where we both cover the same product type the efficiency recommendations we make are the same. We also promote the Energy Star label in our recommendations and link to the Energy Star product lists from our Web pages. In an effort to reduce even more the confusion that has arisen, the proposed new executive order on Federal Energy Management requires the federal government to purchase Energy Star-compliant products and requires the Energy Star labeling and Federal Procurement Challenge to merge their rating systems. The details of this merger are still being worked out between the two programs, but FEMP expects to continue developing federal recommendations that, in time, will be included as Energy Star labeling programs. The FEMP will also still have the lead in promoting the purchase of energy efficient products to the federal sector (both Energy Star-compliant and FEMP-designated efficient).

Question: To what extent are the national laboratories involved in FEMP? Please provide details for the record.

Answer: National laboratories are an integral part of the FEMP team approach to achieving Federal Energy Management goals and objectives. The FEMP fiscal year 1999 allocation of funding to national laboratories is as follows:

	LBNL	NREL	ORNL	PNNL	SNL	Total
Project Financing	$955,000	$2,425,000	$1,460,000	$1,017,600	NA	$5,857,600
Technical Assistance	$1,027,000	$2,414,250	$146,500	$929,500	$120,000	$4,637,250
Planning, Reporting & Evaluation	NA	$710,000	$710,000	$990,000	NA	$2,410,000
Total	$1,982,000	$5,549,250	$2,316,500	$2,937,100	$120,000	$12,904,850

Question: What have you done to comply with the Committee's direction to make more use of the regional support offices and to increase staffing at those offices for administering FEMP?

Answer: There are currently 10 staff members supporting FEMP at regional offices. The FEMP continues to use the regional support offices as their front line contacts with federal facilities but the need to increase staffing to handle delivery orders for energy savings performance contracts is evident. The DOE and FEMP must quickly adjust staffing to provide the support that is expected. Toward that end, FEMP's Workforce for the 21st Century plan includes a request for those positions which are unique to the FEMP funding and hiring authorities and hires under the unique reimbursable authority. These latter positions are the ones that are in direct support of FEMP's role to assist other agencies through newly authorized cost reimbursement mechanisms. The positions are broken down by fiscal year for 1999 and 2000, in accordance with the projections of reimbursement revenue by FEMP that support the staffing levels. Utilizing reimbursed funds for these positions assures that increased staffing follows increased demand for services by agencies.

Natural Gas Research and Development

Question: The Committee cannot reconcile the natural gas research crosscut table in the budget with individual projects in the budget request for energy conservation. Please provide a revised crosscut table, coordinated with industry, that correctly identifies funding in fiscal years 1999 and 2000 for natural gas research.

Answer: The table on the following pages provides the crosscut funding for natural gas research.

Measuring Energy Consumption -- Source versus Site

Question: What have you done to ensure that a full cycle or source based approach is considered in measuring energy efficiency and emissions?

Answer: DOE has examined the way it measures energy efficiency and emissions to determine if the approach used is appropriate. The method used, source versus site, that is most appropriate depends on the way the result will be used. In most cases we have found that DOE's use of the two methods have been correctly applied.

Question: Please provide some program specific examples.

Answer: DOE has always believed that in evaluating the impacts of appliance standards, one must consider the full range of impacts, including consumer and national impacts. In the analysis of consumer impacts, DOE considers the energy directly consumed by the product at the point of use. The measures of energy efficiency and energy use are, for example, all based on the energy consumed at the point of use and these are the measures of energy use that are used in the consumer analyses (for example, life-cycle-cost). This, DOE believes, provides useful measures to consumers since it can be directly related to information readily available (that is, utility bills).

Energy Efficiency Natural Gas Utilization Programs

Summary		FY 1999 Appropriation (million $)	FY2000 Request (million $)	Request - Approp. (million $)
By Program Area:				
Combustion Systems		0.99	1 00	0 01
Heat Pumps (Heating and Cooling)		10 75	13.10	2.35
Gas Turbines		57.20	37.50	-19.70
Natural Gas Vehicles		17.17	19 70	2 53
Fuel Cells		8.55	13 78	5.23
Materials Technologies		6 50	6.21	-0.29
Other		12.15	12.42	0 28
By EE Sector:				
OIT		67 74	48 42	-19.31
OTT		28.47	31.19	2 72
OBT		14 10	18.60	4.50
OPT		3 00	5.50	2.50
Total Programs		**113.31**	**103.71**	**-9.59**

Category / Project	Office	FY 1999 Appropriation (million $)	FY2000 Request (million $)	Request - Approp. (million $)
Combustion Systems:				
Improved Comb. Eff - Sensors	OIT	0 99	1 00	0 01
Improved Comb Eff. - Equipment	OIT	0 00	0.00	0 00
Methane Cofiring / Reburn	OIT	0.00	0.00	0 00
Total Combustion Systems		**0.99**	**1.00**	**0.01**
Heat Pumps (Heating and Cooling):				
Gas-Fired Heat Pumps	OBT	0.00	6.50	6 50
Res. Absorption Heat Pump (GAX)	OBT	4 30	0.00	-4 30
"Hi-Cool" Heat Pumps	OBT	2.15	0 00	-2.15
Dissicants and Chillers	OBT	0.00	4 50	4.50
Large Commercial Chiller	OBT	0.00	0 00	0 00
Enabling Technologies.				
Computer Aided Design	OBT	0.00	0 00	0.00
Advanced Absorption Fluids	OBT	0.00	0.00	0 00
Dessiccant Cooling Technology	OBT	2.30	0 00	-2 30
Technology Open Solicitation (~25%)	OBT	1.00	0.00	-1.00
Technology Open Solicitation (~20%)	OBT	1 00	2 10	1.10
Total Heat Pumps		**10.75**	**13.10**	**2.35**
Gas Turbines:				
Adv. Turbine Systems Program / Cogeneration	OIT	52 01	31.30	-20 71
Continuous Fiber Ceramic Composites	OIT	4.20	4.20	0.00
Combined Heat and Power (District Heating and Cooling)	OIT	0 99	2.00	1.01
Total Gas Turbines		**57.20**	**37.50**	**-19.70**

Category / Project	Office	FY 1999 Appropriation (million $)	FY2000 Request (million $)	Request - Approp. (million $)
Natural Gas Vehicles:				
Automotive Alternative Fuels R&D	OTT	3.00	0.25	-2.75
Heavy Duty Alternative Fuels R&D	OTT	8.17	11.10	2.93
Natural Gas Vehicles, Including Hybrids	OTT	0 00	0.00	0.00
Alternative Fuel Vehicle Technology Deployment	OTT	6 00	8.35	2.35
Incremental Cost of Federal Fleet NGVs	OTT	0.00	0.00	0.00
Total NGV (not incl. Fuel Cells)		**17.17**	**19.70**	**2.53**
Fuel Cells:				
Fuel Cells for Industry	OIT	0 00	0.00	0.00
Fuel Cells for Buildings	OBT	1.75	5.50	3 75
Fuel Cell Development for NGVs	OTT	6.80	8.28	1.48
Total Fuel Cells		**8.55**	**13.78**	**5.23**
Materials Technologies:				
Advanced Industrial Materials	OIT	2 00	3 00	1.00
Automotive Propulsion Materials	OTT	1.30	0.60	-0.70
Heavy Duty Vehicle Materials Technology	OTT	1 83	1.21	-0.62
High Temperature Materials Laboratory	OTT	1.37	1.40	0.03
Total Materials Technologies		**6.50**	**6.21**	**-0.29**
Other:				
Active Transport Membranes	OIT	0 00	0.00	0.00
Advanced Calciner for Alumina	OIT	0.25	0 00	-0.25
Advanced Process Controls	OIT	0 00	0.00	0.00
Anaerobic Digestion	OIT	0 00	0 00	0.00
Glass Industry Vision	OIT	1.84	2.52	0.68
Forest Productts Industry Vision	OIT	0 25	0 30	0.05
Steel Industry Vision	OIT	3.63	2.50	-1.13
Sensors and Controls	OIT	0.97	1.00	0.03
Aluminum Industry Vision	OIT	0 60	0.60	0 00
Gas/Solar and Gas/Biomass	OIT	0.00	0.00	0.00
Hydrogen R&D	OPT	3 00	5.50	2.50
Natural Gas Climate Challenge	OPT	0.00	0.00	0.00
Wind/Gas Partnership	OPT	0.00	0 00	0 00
Geothermal	OPT	0 00	0.00	0.00
Dispatchable Hybrids (Conc. Solar Power)	OPT	0.00	0 00	0.00
Thermophotovoltaics	OPT	0 00	0.00	0.00
Power System Integration and Reliability	OPT	0.00	0 00	0.00
Competitive Solicitation	OPT	0.00	0.00	0.00
Technology Introduction Partnerships	OBT	1.60	0 00	-1.60
Total Other		**12.15**	**12.42**	**0.28**
Total Natural Gas Programs		**113.31**	**103.71**	**-9.59**

In examining the impacts of standards on the nation, however, DOE considers the total energy consumed over the fuel cycle as well as emissions and energy costs. In this manner, the analysis captures the total impact of the standards. Further, in accordance with the recommendations made to DOE by the Advisory Committee on Appliance Energy Efficiency Standards, DOE is committed to using the full range of consumer marginal energy rates in examining the impact of standards on consumer life-cycle-costs. Similarly, DOE intends, with stakeholder input, to use a range of energy price forecasts and energy conversion factors and associated emission reductions based on generation displaced by standards, for the standards analysis.

Question: What were the results of the independent analysis you funded to look at the issue?

Answer: The study being conducted by the Rand Corporation for DOE on this issue has not been completed.

Question: To what extent are you using a site versus source based analysis in your programs and why?

Answer: Where the performance of a building or a specific type of equipment is being considered, it is most appropriate to evaluate the efficiency in terms of reduction of costs in energy use at the site. When one is considering the benefits to the nation resulting from a specific program, DOE uses source values.

Question: What further steps will you take to ensure source-based consumption is considered in future programs?

Answer: DOE will evaluate the results of the study being conducted by the Rand Corporation and determine if any further changes are required.

Federal Energy Technology Center

Question: What are you doing to take advantage of the expertise at the Federal Energy Technology Center, which is under the Fossil Energy program?

Answer: The Office of Industrial Technologies (OIT) strives to take advantages of expertise at the DOE field offices as well as the federal laboratory system including the field office/national laboratory complex at the Federal Energy Technology Center (FETC). The FETC had detailed two employees to OIT to participate in vision activities. The FETC has been and is encouraged to participate in the OIT vision team laboratory solicitations and vision roadmapping meetings with the national laboratories and field offices. The FETC participated in the annual OIT exposition and symposium that reviewed all the visioning activities and participation opportunities. The OTT maintains technical information exchanges with FETC experts on topics such as fuel chemistry of natural gas and coal liquids, as both neat and blending-fuel options, and are co-funding a program for a small-scale natural gas liquefier. The FETC is helping the ITS to implement and manage the Energy Star program. Last year, the FETC placed and managed our prime contract for Energy Star, under which we recruited major market players like Sears, Home

Depot, and Whirlpool. In addition, the FETC is receiving funding to assist us in providing outreach to consumers through media interviews and public education materials, and providing administrative and technical assistance to the program.

Question: What work did FETC perform for you in fiscal year 1998?

Answer: The following summarizes our partnership efforts since fiscal year 1998:

- The Sensor and Controls Crosscutting Program is coordinating with the FETC on technical support and technology development activities. The FETC currently supports sensor technology development for Environmental Management as well as Fossil Energy. By coordinating efforts with the FETC, the OIT is taking advantage of this wealth of information. Advanced sensor and control technologies are needed to improve industrial process efficiency, reduce generation of wastes and pollutants, and achieve better quality products.

- The OIT manages a National Initiative in Computational Fluid Dynamics (CFL) on behalf of the chemical and petroleum industries. CFL involves the use of computers to calculate the properties of flowing materials, such as vapors and liquids in petrochemical processes. The FETC has renowned expertise in CFL, which was developed on behalf of coal conversion technology. The FETC leads a team of national laboratories and industry in developing new CFL technology. The ORNL, LBNL, SNL and four industrial companies are also part of this team.

- The FETC is working with the OIT and the Mining Industry of the Future Initiative. The FETC contracts/field office division is providing project solicitation and management services. In addition the program is coordinating with Fossil Energy's coal program to maximize the impact of federal funds and eliminate the potential duplication of effort.

- The FETC, through its research arm, has participated successfully in a glass industry solicitation and is currently funded to develop a laser cutting and polishing method for hand glass products.

- The FETC continues to participate in the Advanced Turbine Systems Program (ATS) by providing contracting services for OIT and coordinating/leveraging their management of the Fossil Energy activities for the ATS program. Within the laboratory at FETC, research has been completed in the area of combustion and fuel variability.

- The OIT has partnered with Fossil Energy through the FETC in support of a system study for gas turbine/fuel cell hybrid technology in which five contracts were awarded for a 6-month study of potential hybrid designs. This effort will be finishing up in fiscal year 1999.

- In 1998, the Office of Transportation Technologies (OTT) cost shared with Fossil Energy, through the FETC, a Fischer-Tropsch fuel precursor production run, using natural gas as the feedstock, at the FETC's La Porte, Texas, facility. The products of that run were characterized by the FETC, and a Fischer-Tropsch product based on that characterization was

developed and delivered for engine operation evaluation by Energy efficiency Office of Heavy Vehicle Technologies.

- The ITS is using the FETC to initiate a major new research and development effort in the buildings sector in fiscal year 1999. The initiative covers the entire spectrum of building equipment and envelope technologies. It is specifically intended to initiate competitively-selected, multi-year, industry-led research and development projects. The FETC will provide contract administration and technical management of the projects with ITS oversight.

Question: What reimbursable agreements do you have with FETC for fiscal year 1999?

Answer: With the FETC being a DOE field office funded under the Fossil Energy budget line, the OIT does not provide funding for field services performed at the center. Through the research laboratory, continuation of CFL work was funded at the level of $118,000 and $95,000 will be funded for glass laser research in fiscal year 1999. In fiscal year 1999, the OTT has a cost-shared effort with Fossil Energy, managed by the FETC, at Cranch, Inc., to develop an acoustic-wave, small-scale liquefied natural gas production facility. Cranch is matching, in cash and in kind, $150,000 from the Office of Heavy Vehicle Technologies and $200,000 from Fossil Energy.

Question: How does that compare with the budget request for 2000? Please provide details for the record.

Answer: There may be continuing funding as required for completion of the current phase of the Cranch project.

Cooperative Efforts with Fossil Energy and the States

Question: Just yesterday, I received a letter from Peter Carroll of Solar Turbines. He was very complementary of the government-industry partnership in the turbines program. He pointed out that the joint turbine program with Energy Conservation and Fossil Energy has been very cost-effective. What are you doing to work more closely with Fossil Energy to coordinate major research programs in which you share responsibilities and do not duplicate efforts?

Answer: The Office of Energy Efficiency and Renewable Energy (EERE) has undertaken close cooperation with the Office of Fossil Energy (FE) in a number of areas, as described as follows:

Coal Co-firing using Biomass, Biomass Gasification

The EERE's Office of Power Technologies' Biomass Power Program is working with FE to develop technologies to permit use of processed biomass material (pelletized wood and crop residues) for co-firing with coal in utility electricity generation facilities. This office is also working with FE to incorporate biomass gas, derived from biomass thermo-chemical catalysis, as a fuel for gas-fired electric generation turbines.

Deriving Hydrogen from Coal

The EERE's Office of Power Technologies' Hydrogen Program is working under a Memorandum of Agreement with FE to support research into deriving hydrogen from coal through separation technologies, to clean up syngas, and to sequester carbon. There is also a cooperative solicitation to look into high value added products from carbon, including hydrogen. Both efforts are jointly funded by EERE and FE.

Development of Gas-fired Advanced Turbines

The EERE's Office of Industrial Technologies (OIT) has participated with FE for the past 6 years in the Advanced Turbine Program, designed to develop medium- and small-size gas fired turbines for distributed electricity generation in industrial scale applications. The two offices worked jointly in close cooperation to design a program in which FE assumed principal responsibility for the larger size turbine development (greater than 1 megawatt), while the EE/OIT directed its efforts to smaller size units (200 kilowatts). That effort is due to end in fiscal year 2000.

Atmospheric Carbon Emissions Reductions

During fiscal year 1998, the offices of FE and Science undertook to fund a pilot study of opportunities for carbon emissions reductions, focusing on large-scale carbon sequestration and on reduction of carbon emissions associated with fossil fuel use. Beginning in fiscal year 1999, EERE has joined the other two offices in further expanding the study and recommended activities to include a focus on carbon emissions avoidance through increasing use of renewable energy resources and reductions of fossil energy use through achievements in energy efficiency. The study is being conducted by the Oak Ridge National Laboratory.

Gas Turbine Fuel Cell Technology

The Office of Industrial Technologies (OIT) has partnered with FE through the FETC in support of a system study for gas turbine/fuel cell hybrid technology in which five contracts were awarded for a 6-month study of potential hybrid designs. This effort will be concluding in fiscal year 1999.

Fischer-Tropsch Fuel Precursor

In 1998, the Office of Transportation Technologies (OTT) cost shared with FE, a Fischer-Tropsch fuel precursor production run, using natural gas as the feedstock, at the FETC's La Porte, Texas, facility. The products of that run were characterized by the FETC, and a Fischer-Tropsch product based on that characterization was developed and delivered for engine operation evaluation by the EERE Office of Heavy Vehicle Technologies.

Question: Mr. Carroll also recommended that you work more closely with state energy offices and, perhaps, form a state steering committee to define projects. How do you respond to that suggestion?

Answer: As part of our expanding collaboration with the states, DOE is undertaking coordinated planning with the state research and development organizations so that our fiscal year 2001 budget request and the future state budget requests include funding for high-priority joint projects. This will enable both DOE and the states to build into the budget requests the flexibility needed for mutually productive collaboration.

Question: Last year this Committee encouraged you to work more closely with the states in setting your research agenda and to development cooperative efforts with the states to leverage scarce research dollars. What projects have you begun with the states?

Answer: There has been substantial progress in collaboration between the DOE and state research and development organizations since the signing of the initial Memorandum of Understanding (MOU) with the California Energy Commission less than 3 years ago. This progress has been in three areas. First, DOE, state agencies, and national laboratories have worked steadily to develop and put into place the procurement mechanisms that would enable cost-sharing of projects. Because of the very different legal, procurement and management rules and regulations governing the actions of these diverse organizations on a variety of issues (for example, joint work and intellectual property), it has required considerable effort to develop the mechanisms that will enable the MOUs to function. These mechanisms are now close to completion. Second, there have been a number of joint projects undertaken since the signing of the MOUs that, for a variety of reasons, did not require the use of the above mechanisms. These collaborations are listed below. These initial projects were identified as obvious potential areas for joint work that did not require extensive discussions to identify and were possible under the different organizations current budgets. Third, there has been substantial progress made in developing a process of coordinated planning of research and development portfolios. This is the most important of the three areas, because without coordinated planning, project-level coordination would generally be on an ad hoc basis. Coordinated research and development planning will enable the budget planning of the DOE and the states to use resources more efficiently. Discussions at both the top management and project management levels are currently under way with the objective of generating fiscal year 2001 (or equivalent) energy technology research and development budget requests at the federal and state level that capture synergies and opportunities that the various organizations represent.

DOE is typically asking a 20 to 50 percent cost share from the states on collaborative projects. The cost share level is largely a function of how close a project is to potential commercialization. Lower cost share is generally required for high-risk research and development, while higher cost share is required for first-of-a-kind technology demonstrations.

Identified Collaborations are as follows:

- An upcoming petroleum meeting and workshop is co-sponsored by California Energy Commission and DOE to be held on March 11th through12th. Fossil Energy Petroleum Exploration, Office of Industrial Technology Petroleum Industry Vision, Petroleum Industry Companies, and several states (Wyoming, Utah, California, and others) will be taking part in the meeting.

- The Energy Information Administration (EIA) is working on a data collaboration with the California Energy Commission (CEC). Both DOE and the CEC collect similar data on power plants pollution, fuel use, and other data. Under utility deregulation the CEC's ability to gather data is reduced or eliminated. Collaboration between the CEC and EIA would reduce the duplicate data gathering and still give the CEC access to the data it needs. The EIA may fund the CEC to gather the data. Data collection collaboration has been an ongoing activity and has been helped by being a technical focus area between EIA and the CEC.

- During the February 16th and 19th meetings among California Energy Commission, New York State Energy Research and Development Authority, Association of States Energy Research and Technology Transfer Institutes, National Association of State Energy Offices, and DOE had agreement on the following technology areas on which we will initially focus collaboration and planning activities:

  - Energy Information Administration Data
  - Petroleum
  - Biomass/ Bio-fuels/ Bio-power/ Bio-feedstock
  - Micro-turbines/ Fuel Cells
  - Combined Heat and Power and Distributed Generation
  - Smart Schools
  - Planning and Coordination Process

- The five organizations met and coordinated in these technical areas. Further meetings of program managers in the different organizations are planned. Each organization has determined the lead contact in each of the five organizations for the six technical co-ordination areas. In addition, another area has been added for the joint planning and coordination process to be fleshed out by April 19th. Each of the areas has had a point of contact in each of the organizations named, as well as a chief lead who is responsible for making the technical and planning coordination process move forward. A joint planning process letter of intent has been prepared and signed by the organizations.

- We are exploring the opening up state special projects to research and development projects under the State Energy Program grants. In order to do this, we are considering revising the state energy program rule which currently prohibits funds going to research and development. Other state partnerships are being reviewed to also incorporate research and development collaborations with the states.

- Electric turbo-compounding which involves adding a motor/alternator to the turbocharger shaft, probably a switch reluctance motor/alternator which doesn't have magnets so it doesn't require cooling and is inexpensive. During acceleration the motor/alternator would be motored to reduce turbo lag. A similar motor alternator would be attached to the engine shaft where it would be the alternator, starter and damper. So the this system would not be a parasitic drag on the engine and would actually be pulling the engine. The result would be reduced fuel use and improved EGR which would reduce emissions. This system could also be used to provide electric power to non-thermal plasma after-treatment. California Energy Commission considers this their top priority program. It is actually two distinct programs,

one for the class 7 and 8 truck application and one for the light truck application. California Energy Commission could fund $200,000 for each, and the Department of Energy could fund roughly $400,000, each assuming 50-percent cost sharing.

- Catalytic soot filter which will be installed in transit buses in the San Francisco Bay area and monitored. Phase I funding would be about $150,000 split equally.

- Microwave regenerated particulate trap/filter, a project that both the Department of Energy and California Energy Commission have funded with Cummins in the past, new work would focus on the use of a monolithic SiC substrate rather than the prior SiC coated ceramic paper approach, the electrical system including magnetrons and vehicle installation and testing. Funding would be about $250,000 split equally and with 50-percent cost sharing.

- Electrocat system, essentially a non-thermal plasma device for only particulate and poly-aromatic hydrocarbon reduction, which is very effective reducing ultra fine particulate (less than 0.1 micron in diameter), up to 90 percent while not making smaller particulate, is independent of temperature, tolerant of sulfur and projected to be inexpensive. While this program is not yet defined, there is a leading candidate for the electrical system in California, interest at Caterpillar and Engelhard. The Department of Energy has $100,000 set aside for fiscal year 1999 for this project. California Energy Commission is still considering the reviewing this situation. There is also a possibility of the British Department of Environment supporting this project with the Department of Energy and the California Energy Commission, as the developer is AEA, a spin-off from Harwell.

- Catalytica, a combustion systems company in Mountain View, California, has developed combustion chamber catalysts that they claim significantly reduce emissions in gas turbine engines. They are trying a similar approach for diesel engine combustion chambers. They have people who were key players in three-way catalyst development at Ford and General Motors as well as having two Nobel Prize winners on staff. We are waiting for their lawyers to let them tell more about their concepts. Certainly a candidate for Department of Energy and California Energy Commission support.

- NoxTech, an emissions reduction company in Irvine, California is developing a non-thermal plasma device to simultaneously reduce NOx and particulate with the Department of Energy support. They also have urea after treatment system for NOx reduction that the Department of Energy has supported for from its inception at Sandia National Lab and NoxTech has purchased the commercial rights. California Energy Commission is interested in both concepts.

- Thermoelectrics at the Hi Z company in San Diego have had a breakthrough in the Quantum Well concept that improves thermoelectric efficiency of the best bulk semi-conductor devices by a factor of six. Both the Department of Energy and California Energy Commission have jointly funded this work in the past and are reviewing current possibilities. Thermoelectric devices can convert heat to electricity or if power is supplied, they can either cool or heat a space depending on polarity. This topic is currently being reviewed.

- A current activity showing great promise is a multi-partner research program, the Rice Straw-to-Ethanol Production project in Gridley, California. The partners include a wide variety of organizations, including: National Renewable Energy Laboratory, Stone and Webster Engineering, SWAN Biomass Company TSS Consultants, California Institute of Food and Agricultural Research, Northern California Power Agency, Sacramento Municipal Utility District, Hass-Cal Industries, the City of Gridley and the California Energy Commission. The project objectives are to validate economic production of ethanol from rice straw, acquire additional cost-share funding and acquire financial commitments to design and operate a commercial facility. Currently, the most cost-effective method for the agricultural community to dispose of the rice straw is to burn it, and nearly 300,000 acres are burned each year creating a substantial air pollution problem. Success in this venture will validate the premise that a shared research effort can succeed in creating business opportunities, produce clean power, and provide a much needed solution to one of the major air pollution problems in the California Central Valley.

- With the assistance of the California Energy Commission, the Department of Energy is holding workshops to get input from engine developers, the developer's vendors, power generators, and the public on the viability of a future program to develop "Next Generation Gas Turbine Power Systems." It is envisioned that any future programs would be a collaborative effort between the Department of Energy and California Energy Commission to reduce duplicate work and maximize the leveraging of the Department of Energy's and California Energy Commission's funds. The Department of Energy's Federal Energy Technology Center and the California Energy Commission are also currently co-funding a market study by Arthur D. Little to determine the market potential and public benefits of such a program. Early indications are that developing gas turbine systems in the 30- to 150-megawatt range could have far reaching public benefits to the U.S. taxpayers and the citizens of California. Some of the benefits could include low emissions, lower cost of electricity, and more reliable distribution of electricity.

- The California Energy Commission has identified projects in the first two phases of Public Interest Energy Research (PIER) solicitations, which will be pursued through partnerships with the Department of Energy and the National Laboratories over the next 2 years. The complete list of PIER I and II projects is attached to this report. The following five projects are highlighted here as examples of cooperative activities in each of the research agenda program areas:

  1) High-Temperature Superconducting Power Transformer, New York State Energy Research and Development Authority Contract No. 4660-IABR-IA-98. Contractor: Intermagnetics General Corporation. In this project, the Department of Energy and New York State Energy Research and Development Authority are now cooperating with Intermagnetics General Corporation, Waukesha Electric Systems, the Electric Power Research Institute, and Rochester Gas and Electric Corporation to design, build, and test a prototype high-temperature superconducting power transformer that would not only greatly improve transformer efficiency, and also reduce fire and environmental hazards of oil-cooled transformers. Funding for New York State Energy Research and Development Authority fiscal year 1998-99: New York State Energy Research and Development Authority,

$150,000; U.S. Department of Energy, $1,500,000; Others, $671,500. Total funding anticipated: New York State Energy Research and Development Authority, $300,000; U.S. Department of Energy, $2,946,867; others, $2,400,500.

2) Empire Bio-power Consortium - Biomass Systems Implementation, New York State Energy Research and Development Authority Contract 4163L-ERTER-ER-97. New York State Energy Research and Development Authority Contractor: State University of New York, School of Environmental Science and Forestry. U.S. Department of Energy Contractor: Niagara Mohawk Power Corporation. In this project, the Department of Energy, New York State Energy Research and Development Authority, the U.S. Department of Agriculture, New York State Electric and Gas Corporation, Niagara Mohawk Power Corporation, the State University of New York College of Environmental Science and Forestry, and others are collaborating to demonstrate use of short-rotation forestry such as willow plantations for renewable biomass fuel to reduce the use of coal in electric power plants. Funding through New York State Energy Research and Development Authority fiscal year 1997-98: New York State Energy Research and Development Authority, $170,000; U.S. Department of Energy, $336,942; others, $326,247. Total funding anticipated: New York State Energy Research and Development Authority, $400,000; U.S. Department of Energy, $4,959,000; others, $8,381,000.

3) Demonstrating the Microsmooth™ Process on Aluminum Wheels, New York State Energy Research and Development Authority Contract No. 4690-IABR-IA-99. New York State Energy Research and Development Authority Contractor: Metal Arts Company, Inc. New York State Energy Research and Development Authority, the Department of Energy, ALCOA, and Metal Arts Company have recently initiated a project to demonstrate an innovative electrolysis process for nickel-plating aluminum wheels that would reduce use of electric energy by 33 percent, natural gas by 60 percent, and water by 50 percent, cut process waste by 70 percent, and greatly lower costs compared to conventional plating processes. Funding through New York State Energy Research and Development Authority fiscal year 1998-99: New York State Energy Research and Development Authority, $265, 939; U.S. Department of Energy, $400,000; others, $225,000.

4) Affordable, High-Efficiency Small-Scale Solar Electric Generator, New York State Energy Research and Development Authority Contract No. 4622-ENTER-ER-98. New York State Energy Research and Development Authority Contractor: Clever Fellows Innovation Consortium, Inc. In this cutting-edge project, New York State Energy Research and Development Authority, the Los Alamos and Sandia National Laboratories, the National Aeronautics and Space Administration, and Clever Fellow Innovation Consortium have worked together to develop and test a solar-thermal electric generator that could be used for distributed electric generation applications, while costing one-third less than photovoltaic installations. Funding through New York State Energy Research and Development Authority fiscal year 1997-98: New York State Energy Research and Development Authority, $193,778; Los Alamos National Laboratory, $16,000; Sandia National Laboratory, $80,000; others, $140,188.

5) Levulinic Acid Demonstration Pilot Plant, New York State Energy Research and Development Authority Contract No. 4204-ENTER-ER-96. New York State Energy Research and Development Authority Contractor: Biometics, Inc. The Department of Energy has recently participated with New York State Energy Research and Development Authority in a multi-year project to develop a prototype plant to produce levulinic acid from waste paper sludge, rather than petroleum. Funding through New York State Energy Research and Development Authority fiscal year 1997-98: New York State Energy Research and Development Authority, $659,000; U.S. Department of Energy, $2,553,100; others, $1,975,000.

- In another, and broader planning-related effort, New York State Energy Research and Development Authority, U.S. Department of Energy, the Electric Power Research Institute, and energy organizations from California, Iowa, Massachusetts, Missouri, Washington, and Wisconsin are collaborating on a study to identify new research and demonstration projects that could help advance high-priority emerging technologies for energy efficiency and potential new targets for market transformation activities. (Emerging Technologies in the Residential and Commercial Sectors, New York State Energy Research and Development Authority Contract No. 4610-IABR-BR-98. New York State Energy Research and Development Authority Contractor: American Council for an Energy-Efficient Economy. Funding through New York State Energy Research and Development Authority fiscal year 1997-98: New York State Energy Research and Development Authority, $15,000; U.S. Department of Energy, $30,000; California Institute for Energy Efficiency, $15,000; Electric Power Research Institute, $15,000; five other states, $5,000 each.)

- The Department of Energy, Office of Fossil Energy, has partnered with the Southern States Energy Board (SSEB) to collaboratively bring international business opportunities to its member states for the promotion of clean coal utilization and clean coal-related technologies exports. Through this partnership, a project with Brazil focussing on the feasibility of using its indigenous coal resources for clean power generation to meets Brazil's growing demand resources has opened opportunities for U.S. clean coal technology goods and services. Member states of SSEB include Alabama, Arkansas, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, Puerto Pico, South Carolina, Tennessee, Texas, Virginia, Virgin Islands, and West Virginia.

- Low Emission Boiler System (LEBS). The LEBS is one of the highly advanced power systems under development through a Department of Energy/State of Illinois partnership. As compared to coal-fired power plants that constitute the bulk of our domestic power generation system, LEBS offers a significantly higher thermal efficiency, superior environmental performance, and a lower cost of electricity. Among the advanced power systems currently under development, LEBS is the closest to entering the commercial market. LEBS is expected to be available for commercial applications in 2002. The LEBS program, initiated in 1992 by three industry teams, has four phases. Phase I, completed in 1994, included technical and economic evaluations of candidate plant subsystems, a systems analysis of the entire power plant, and the preliminary design of a commercial-scale, 400 megawatt electric LEBS plant. In Phase II, three industry teams continued engineering analysis and modeling activities and conducting experimental testing of plant subsystems at

scales of approximately 3 to10 megawatts. Phase III produced site-specific designs for proof-of-concept test facilities, 10 to 80 megawatts in size, and updated commercial plant designs and economics based on Phase II results. At the end of Phase III in 1997, the Department of Energy selected one team from competitive proposals, that is, D.B. Riley, Inc., to continue on to Phase IV. Phase IV, the final portion of the program, includes detailed design, construction, and operation of a proof-of-concept facility. The proposed LEBS proof-of-concept plant, known as the Prairie Energy Project, is a new 86-megawatt plant to be located at the Turris Coal Company's mine in Elkhart, a municipality near Springfield, Illinois. This proof-of-concept plant is a test unit for the 400-megawatt commercial generating unit design. After the test program is completed, the plant is to operate as a source of independent power and will serve as a showcase for LEBS technology. The estimated cost of the Prairie Energy Project is $127 million. The sources of funding are U.S. Department of Energy, $34 million; State of Illinois, $25 million; and the balance funded from private industry.

- The Department of Energy and the State of California Energy Commission have initiated discussions with the State of Texas Land Office and the Texas Railway Commission in identifying energy issues primarily relating to regulations and policies on power generation, transmission, and distribution. Texas has a major interest in the use of natural gas for power production since this may be the most profitable use of gas resources. The state revenues from the use of the natural gas go into its education system.

Question: The Committee asked for a report by December 31, 1998, on cooperative projects with the states for fiscal year 1999. The report has not been received. Why haven't you moved more aggressively to identify and implement projects?

Answer: As stated above, DOE has worked steadily to develop and put into place the procurement mechanisms that would enable cost-sharing of projects among the DOE, state agencies and national laboratories. The very different legal, procurement and management rules and regulations governing the actions of these organizations on a range of complex issues ranging from joint work to intellectual property rights has required considerable effort by lawyers and procurement experts to develop mechanisms to enable the MOUs to function. In addition, the huge degree of specificity in the DOE budgets (particularly Energy Conservation) frequently allow for collaboration with states only when a state objective or project lines up precisely with a particular DOE budget line.

Training

Question: How much did you spend on training in-house employees in fiscal year 1998?

Answer: The Office of Energy Efficiency and Renewable Energy (EERE) spent $175,045 in fiscal year 1998 to train headquarters federal employees.

Question: What about contract employees?

Answer: No funds were expended on training contract employees at headquarters.

Question: What is the training budget for fiscal year 1999?

Answer: A modest 10-percent increase in training costs for headquarters was projected for fiscal year 1999 ($195,000). This increase was predicted to cover the anticipated need for additional training as part of DOE's efforts to retrain/retain technical R&D managers, to increase training opportunities for under-represented employees, and to rebuild a talented and diverse workforce as part of the Workforce 21 Initiative.

Question: What is included in the 2000 budget request for training?

Answer: Headquarters anticipates the same level of training in fiscal years 1999 and 2000. Therefore, no further increase in training costs for fiscal year 2000 are projected and we project the fiscal year 2000 training budget at $195,000.

Question: Last month the General Accounting Office issued a report critical of training in the Department of Energy. The GAO found that 90 percent of DOE's training is not mandated by law or regulation and that training costs could be reduced by eliminating some non-mandatory training. How much of your training is not mandated by law or regulation?

Answer: Headquarters EERE employees are not required to participate in training by law or regulation. However, our federal employees participate in training to update their technical, computer, and administrative skills. Training is based on organizational/mission needs.

Question: The GAO criticized DOE for duplicative and non-standardized training across DOE and by DOE contractors. What are you doing to address these concerns in the energy conservation program area?

Answer: All training for EERE staff is carefully reviewed by the cognizant supervisors in the context of both the needed requirements of the employee and the program. The review also ensures that there is no duplicative or non-standardized training. Headquarters employees are provided with standardized training through: participation in courses offered by the DOE Training Office, courses offered by the Department of Agriculture, or courses in local colleges and universities. Therefore duplicative or non-standardized training is not an issue in EERE.

Question: The GAO identified training courses offered by DOE on social styles in the workplace and on employees facing mid-life questions. To what extent do your employees take these courses?

Answer: Of 514 instances of training in fiscal year 1998, only ten instances -- or 2 percent -- of training at headquarters were taken in this category.

Question: The GAO noted that DOE's training expenditure per federal employee is higher than most other federal agencies or private companies. What is your training budget as a percentage of payroll and how does it compare with DOE as a whole?

Answer: Training expenditures at headquarters was only 0.007 percent of payroll for fiscal year 1998. This is below DOE expenditures on training as a whole.

Policy and Management

Question: You have asked for a 24-percent increase in policy and management funding. How is this increase consistent with the National Performance Review emphasis on streamlining government?

Answer: We believe the increase is consistent with the National Performance Review (NPR) on streamlining government and other objectives of the NPR such as strengthening government-wide management (that is, implementation of acquisition reforms, use results to improve program management, improving financial management, managing the year 2000 computer problem); improving program operations and integrity; and improving program management.

Question: How much of the requested increase is for fixed costs; how much is for new programs; and how much is for program expansions? Please provide details for the record.

Answer: The chart on the following pages provides a detailed breakdown of all of the Policy and Management programs to distinguish how much of the requested increase is for fixed costs; how much is for new programs; and how much is for program expansions. Most of the increase, a total of 48 percent, is for program expansions including the costs for 12 FTEs resulting from Workforce 21 plans to address the loss through downsizing of technical and professional staff at headquarters in the field, small increases for International and Market Development and Information and Communications activities, and projected awards for crosscutting efficiency projects resulting from broad based solicitations. Nearly 27 percent of the increase is for fixed costs such as projected federal pay raise and landlord costs for the Forrestal building, the Regional Support Offices (RSOs), and the Golden Field Office. Finally, 25 percent of the increase is for new programs such as RSO collaborative work with state organizations on energy efficiency technology development and deployment through highly leveraged, merit-reviewed proposals from the states.

State Grant Funding within Program Elements

Question: To what extent do you fund state grant programs using funds from programs in the sector-specific areas of the budget?

Answer: Sectors implement certain activities of their own technology deployment programs through states, using separate, competitive grants under the umbrella of the State Energy Program. Sector-specific grants made to states under the State Energy Program Special Projects competitive solicitation will total about $13.9 million in fiscal year 1999.

Question: What say do individual program managers have on specific projects that are funded with funds from their programs?

DEPARTMENT OF ENERGY
FY 2000 CONGRESSIONAL REQUEST
(Dollars in Thousands)

Energy Efficiency -- Policy and Management

Program Activity	FY 1998 Enacted	FY 1999 Enacted	FY 2000 Request	$ Change	% Change	Explanation of Change
Policy and Management - Total	**28,925**	**37,732**	**46,666**	**8,934**	**23.7%**	
A. Headquarters	**7,839**	**14,802**	**18,337**	**3,535**	**23.9%**	
1. Salaries and Related Expenses	3,820	4,550	5,070	520	11.4%	
Fixed Costs	3,820	4,550	4,375	(175)	-3.8%	Includes the fixed costs for federal employee payroll including 5% projected funding increase for federal employee pay raise and increases for promotions and within grade increases for 48 FTEs and an offsetting funding reduction of 5 FTEs from the prior fiscal year.
New Programs	0	0	0	0	0.0%	
Program Expansions	0	0	695	695	100.0%	Supports the projected costs for 8 FTEs resulting from Workforce 21 plans to address the loss through downsizing of technical and professional staff at HQ. The 8 FTEs are described in the request but the FTEs were not included in the request because final decisions were pending when the request was completed. However, the funding for these 8 FTEs was included in the request to ensure that the final decisions resulting from Workforce 21 could be implemented.
2. Contractual Services	4,019	10,252	13,267	3,015	29.4%	
Fixed Costs	4,019	10,252	10,572	320	3.1%	
a. Working Capital Fund	4,019	4,280	4,600	320	7.5%	The increase for the Working Capital Fund is primarily for rent for the Forrestal building for EE employees at headquarters.
b. Crosscutting & Support Services	0	5,972	5,972	0	0.0%	Maintains an on-going level of effort for analysis, information and decision support to all levels of EE management for planning, budget formulation and financial management; project monitoring, management, and integration; communication, outreach and customer service to EE corporate customers to facilitate meeting corporate goals.
New Programs	0	0	0	0	0.0%	
Program Expansions	0	0	2,695	2,695	100.0%	The $2,695,000 increase includes $428,000 for crosscutting activities an will permit consolidation of all crosscutting functions, analytical research performance measurement and program evaluation activities, performance-based planning, budget formulation and execution, and personnel management. The balance of the increase, a total of $2,267,000 is for support services such as mailroom, travel processing, and computer systems development, computer hardware and software configuration and maintenance.

DEPARTMENT OF ENERGY
FY 2000 CONGRESSIONAL REQUEST
(Dollars in Thousands)

Energy Efficiency -- Policy and Management

Program Activity	FY 1998 Enacted	FY 1999 Enacted	FY 2000 Request	$ Change	% Change	Explanation of Change
B. Golden Field Office	4,546	4,790	5,490	700	14.6%	
1. Salaries and Related Expenses	2,522	2,925	3,360	435	14.9%	
Fixed Costs	2,522	2,925	2,977	52	1.8%	Supports the fixed costs for federal employee payroll including 5% projected funding increase for federal employee payraise and increases for promotions and within grade increases for 31 FTEs and an offsetting funding reduction of 1 FTE from the prior fiscal year.
New Programs	0	0	0	0	0.0%	
Program Expansions	0	0	383	383	100.0%	Includes the projected costs for 4 FTEs resulting from Workforce 21 plans to address the loss through downsizing of technical and professional staff at the Golden Field Office. The 4 FTEs are described in the request but the FTEs were not included in the request because final decisions were pending when the request was completed. However, the funding for these 4 FTEs was included in the request to ensure that the final decisions resulting from Workforce 21 could be implemented.
2. Contractual Services	2,024	1,865	2,130	265	14.2%	
Fixed Costs	2,024	1,865	2,130	265	14.2%	Includes the projected increases for landlord activities such as rent, equipment maintenance, communications, utilities, supplies and material and contract support in areas such as accounting, finance, and personnel.
New Programs	0	0	0	0	0.0%	
Program Expansions	0	0	0	0	0.0%	
C. Regional Support Offices	12,398	13,990	17,489	3,499	25.0%	
1. Salaries and Related Expenses	8,244	9,630	10,120	490	5.1%	
Fixed Costs	8,244	9,630	10,120	490	5.1%	Supports the fixed costs for federal employee payroll including 5% projected funding increase for federal employee pay raise and increases for promotions and within grade increases for 123 FTEs.
New Programs	0	0	0	0	0.0%	
Program Expansions	0	0	0	0	0.0%	
2. Contractual Services	4,146	4,360	7,369	3,009	69.0%	
Fixed Costs	4,146	4,360	5,799	1,439	33.0%	Includes the projected increases for landlord activities such as rent, equipment maintenance, communicktions, utilities, supplies, and material and contract support in areas such as accounting and finance and personnel.

DEPARTMENT OF ENERGY
FY 2000 CONGRESSIONAL REQUEST
(Dollars in Thousands)

Energy Efficiency -- Policy and Management

Program Activity	FY 1998 Enacted	FY 1999 Enacted	FY 2000 Request	$ Change	% Change	Explanation of Change
New Programs	0	0	1,570	1,570	100.0%	Supports closer collaboration with state organizations on energy efficiency technology development and deployment, especially activities that cut across headquarters organizational lines The RSO Directors will have substantial discretion in awarding these funds to highly leveraged, merit-reviewed proposals from the states, thus enabling more rapid and effective collaboration
Program Expansions	0	0	0	0	0.0%	
D. International Market Development Program	**2,600**	**2,600**	**3,600**	**1,000**	**38.5%**	
Fixed Costs	2,600	2,600	2,600	0	0.0%	Provides for an on-going level of effort to encourage the acceptance and use U S energy efficiency technologies by developed, transition (economies in transition) and developing countries in support of U S national interests and policies
New Programs	0	0	700	700	100.0%	A total of $700,000 is for specialized assistance on the utilization of energy efficiency technologies to advance U S. strategic interests in bilateral and multilateral energy and environmental security activities. Also, activities will be directed toward helping to meet U S. disaster relie and assistance commitments and obligations by facilitating the delivery o appropriate energy efficiency technologies.
Program Expansions	0	0	300	300	100.0%	Funding for the Committee on Energy Efficiency Commerce and Trade (COEECT) is increased to support additional trade missions to emerging markets and increased focus on Latin America
E. Information and Communications Program	**1,550**	**1,550**	**1,750**	**200**	**12.9%**	
Fixed Costs	1,550	1,550	1,550	0	0.0%	Provides for an on-going level of effort to disseminate information about energy efficiency and renewable energy technologies to customers and stakeholders through the Energy Efficiency and Renewable Energy Network (EREN)
New Programs	0	0	0	0	0.0%	
Program Expansions	0	0	200	200	100.0%	Supports an expanded use of the Energy Efficiency and Renewable Energy Network (EREN) including improved development of the website to increase integration of relevant organizational Internet applications; the increased use of EREN to communicate and obtain feedback on EERE corporate policies, initiatives, and programs; and to publishing an increased number of EERE studies and reports.

Answer: The submissions for each State Energy Program Special Projects category are competed based on the sector-specific scope, criteria, and selection factors developed by the sector program managers. The program managers establish and manage the objective technical review panels which evaluate and rank proposals and develop funding recommendations for specific projects.

Question: For the record please provide a list of all projects that were funded under this arrangement in fiscal year 1998 and of the specific amounts by budget key activity (including budget page numbers) which will contribute to funding these programs in fiscal years 1999 and 2000.

Answer: A listing of specific State Energy Program Special Projects funded in fiscal year 1998 and a table of funding amounts by key activity for fiscal years 1999 and 2000 follow:

Building Technologies: Rebuild America

Total Funds Provided for 1998: $1,001,249
Number of Projects Funded: 11
Number of States Receiving Funding: 11
Description: Rebuild America helps community and regional partnerships increase the energy efficiency of commercial and multifamily buildings, and public housing. State Energy Program Special Projects funded by Rebuild America for 1998 emphasized increasing the resources available to community partnerships by adding individuals within State Energy Offices to the Rebuild America national program team. These projects will expand the scope of Rebuild America activities in the states, making the program more attractive to current and potential partners, raising state-wide awareness of the program, and facilitating marketing efforts. States receiving funding for Rebuild America special projects for 1998 are as follows:

Connecticut	$ 100,000
Hawaii	100,000
Indiana	100,000
Iowa	100,000
Kentucky	100,000
Louisiana	89,000
Mississippi	62,249
Nebraska	100,000
Nevada	100,000
North Carolina	100,000
Utah	50,000
Total	$1,001,249

Building Technologies: State Codes and Standards

Total Funds Provided for 1998: $3,934,614*
Number of Projects Funded: 23

Number of States Receiving Funding: 22
Description: The Office of Codes and Standards provides technical assistance and incentive funding to states to help them in updating their building energy codes to meet or exceed current standards. State Energy Program Special Projects funded by Codes and Standards for 1998 cover a variety of training and outreach activities, design aides, and incentives to support states in updating, implementing, and enforcing their residential and commercial building energy codes, which will enhance the energy efficiency of the buildings and provide environmental benefits. States receiving funding for Codes and Standards special projects for 1998 are as follows:

Arkansas	$ 63,000	New York	$400,000
California	400,000	Oklahoma	100,000
Colorado	276,000	Oregon	400,000
District of Columbia	20,000	Rhode Island (1)	80,000
Florida	100,000	Rhode Island (2)	313,514
Iowa	50,000	South Carolina	66,000
Kansas	259,000	Utah	248,500
Louisiana	129,000	Washington	120,000
Maine	100,000	Wisconsin	50,000
Maryland	100,000	American Samoa	95,800
Mississippi	100,000	Palau	63,800
Nebraska	400,000		
		Total	$3,934,614

*Office of Codes and Standards: $3,889,614; Office of State and Community Programs: $45,000

Building Technologies: Home Energy Rating System

Total Funds Provided for 1998: $250,000
Number of Projects Funded: 7
Number of States Receiving Funding: 7
Description: The Home Energy Rating Systems (HERS) program encourages the adoption of such systems as a means to improve the energy efficiency of homes, and to access the financing to do so. State Energy Program Special Projects funded by HERS for 1998 are designed to support tate efforts to overcome barriers to improving the energy efficiency of residences through the use of HERS and related activities. States receiving funding for Home Energy Rating Systems special projects for 1998 are as follows:

Delaware	$ 25,000
Idaho	30,000
Kentucky	15,000
Michigan	50,000
Nebraska	50,000
Washington	30,000
Wisconsin	50,000
Total	$250,000

Federal Energy Mangement Program

Total Funds Provided for 1998: $966,000**
Number of Projects Funded: 6
Number of States Receiving Funding: 6
Description: The mission of the Federal Energy Management Program (FEMP) is to reduce the use and cost of energy in the federal sector by advancing energy efficiency, water conservation and the use of solar and other renewable energy sources. State Energy Program Special Projects funded by FEMP for 1998 are designed to transfer FEMP's Energy Savings Performance Contracting Program (ESPC) model to state offices for financing and completing state and federal energy projects within those states, and to provide support to state projects that employ the ESPC concept. States receiving funding for FEMP special projects for 1998 are as follows:

Hawaii	$ 45,000
Iowa	275,000
Maryland	271,000
Ohio	275,000
South Carolina	50,000
Texas	50,000
Total	$966,000

**Federal Energy Management Program: $750,000; Office of State and Community Programs: $150,000; Office of Transportation Technologies: $66,000

Industrial Technologies

Total Funds Provided for 1998: $2,480,000***
Number of Projects Funded: 22
Number of States Receiving Funding: 17
Description: The Office of Industrial Technologies (OIT) works with energy and waste intensive industries, such as steel, aluminum, forest products, glass, chemicals and metal casting, to improve their competitiveness through improved energy and environmental performance. State Energy Program Special Projects funded by OIT for 1998 include initiating state-level implementation of technical roadmaps for the Industries of the Future program, the promotion and development of combined heat and power approaches, and deployment efforts to encourage energy efficiency and improved environmental performance. States receiving funding for Industrial Technologies special projects for 1998 are as follows:

Alabama	$ 70,000	New York (1)	$ 178,600
California (1)	199,000	New York (2)	184,000
California (2)	127,000	Ohio (1)	78,000
Georgia (1)	97,000	Ohio (2)	100,000
Georgia (2)	65,000	Tennessee	80,000
Indiana	150,000	Vermont	125,000
Iowa	80,000	Virginia	125,000

Louisiana	60,000	Washington (1)	125,000
Maine	146,400	Washington (2)	67,000
Michigan	98,000	West Virginia	150,000
Montana	75,000	Wyoming	100,000
		Total	$2,480,000

***Office of Industrial Technologies: $2,350,000; Office of State and Community Programs: $130,000

Transportation Technologies: Clean Cities/Alternative Fuels

Total Funds Provided for 1998: $2,665,204****
Number of Projects Funded: 33
Number of States Receiving Funding: 25
Description: The Clean Cities Program fosters the development of a sustainable alternative fuels market through the public/private Clean Cities partnerships formed around the country. The 1998 Clean Cities State Energy Program special projects include initiatives such as the purchase of alternative fuel vehicles, vehicle demonstrations, infrastructure development, the reduction of greenhouse gas emissions through increased use of renewable fuels and advanced vehicle technology, and the development of Clean Cities organizations. States receiving funding for Clean Cities/Alternative Fuels special projects for 1998:

Arizona	(Phoenix)	$ 86,204
California (1)	(Long Beach)	100,000
California (2)	(San Francisco)	100,000
California (3)	(Buena Park)	99,000
California (4)	(San Diego)	50,000
Colorado	(Colorado Springs, Denver, Weld, Larimer)	53,395
Connecticut	(Norwalk, Waterbury, Norwich, New Haven)	125,000
District of Columbia (1)	(D.C.)	16,000
District of Columbia (2)	(D.C.)	105,000
Florida	(Gold Coast/Dade, Broward, Palm Beach)	20,000
Georgia (1)	(Atlanta)	70,000
Georgia (2)	(Atlanta)	20,000
Illinois	(Chicago)	250,000
Maine	(Greater Portland)	20,000
Maryland	(Washington D.C., Baltimore)	110,000
Massachusetts	(Boston)	90,000
Minnesota	(Twin Cities/Minneapolis, St. Paul)	250,000
Missouri	(St. Louis)	100,000
New Mexico	(Paso del Norte, Albuquerque)	100,000
New York	(Western/Central New York, Long Island)	100,000
North Dakota	(Red River Valley)	20,000
Ohio	(Tri-State/Cincinnati)	20,000
Oregon	(Portland/Medford, Rogue Valley)	80,000

Pennsylvania (1)	(Philadelphia)	100,000
Pennsylvania (2)	(Pittsburgh)	43,000
Texas (1)	(Paso del Norte)	149,605
Texas (2)	(Austin)	20,000
Utah	(Salt Lake City)	109,000
Virginia	(Hampton Roads/Norfolk)	44,000
Washington	(Puget Sound/Seattle)	50,000
West Virginia	(State of West Virginia)	100,000
Wisconsin (1)	(Wisconsin Southeast Area/Milwaukee)	45,000
Wisconsin (2)	(Wisconsin Southeast Area)	20,000
	Total	$2,665,204

****Office of Transportation Technologies: $2,574,000; Office of State and Community Programs: $91,204

Power Technologies: Remote Applications of Solar and Renewable Energy to Reduce or Avoid Diesel and Gasoline Power Generation

Total Funds Provided for 1998: $1,736,084
Number of Projects Funded: 24
Number of States Receiving Funding: 18
Description: The Office of Power Technologies has provided funding for design, purchase and installation of renewable energy technologies, including solar hot water, photovoltaic, wind, and biomass technologies in remote areas where they would displace or avoid the use of diesel fuel or gasoline. Examples of projects funded include island mini-grid systems, end-of-line systems or off-grid applications that could not be cost-effectively served by line extensions, wood fired cogeneration, wind energy, and solar powered watering systems for farms. Projects funded emphasize new products, innovative hybrid designs, or new applications for off-grid or remote areas. States receiving funding for Remote Solar and Renewable special projects for 1998:

Colorado	$ 16,000	Utah (1)	$ 136,000
Florida	110,000	Utah (2)	23,930
Georgia	15,000	Utah (3)	77,000
Hawaii (1)	28,000	Utah (4)	1,379
Hawaii (2)	131,000	Utah (5)	9,332
Iowa	100,000	Vermont	100,000
Maryland	25,000	Virginia	53,000
Missouri	21,000	Washington	150,000
New Jersey	52,000	Wisconsin	21,000
New York (1)	15,000	Northern	
New York (2)	44,472	Mariana Islands	12,000
Pennsylvania	116,000	Puerto Rico	100,000
Rhode Island	378,971		
		Total	$1,736,084

FY 1999 and FY 2000 State Energy Program Special Projects Contributions by Budget by Key Activity				
Key Activity/ End-Use Sector	FY 1999 Funding	Budget Page	FY 2000 Request	Budget Page
Office of Building Technology, State and Community Programs (ITS)				
- Building America	not participating	N/A	$ 300,000	375-6
- Rebuild America	$ 1,250,000	439	$ 1,000,000	438
- Community Projects	not participating	N/A	$ 400,000	437-8
- Codes and Standards	$ 4,200,000	442-3	$ 4,000,000	438
- Home Energy Rating Systems	$ 250,000	378	no request	378
ITS Total	$ 5,700,000	484-5, 488-9, 493	$ 5,700,000	484-5, 488-9, 493
Federal Energy Management	$ 950,000	507, 536	$ 950,000	507, 536
Office of Industrial Technologies	$ 2,800,000	680	$ 2,800,000	680
Office of Transportation Technologies (Clean Cities)	$ 2,700,000	not specified	$ 2,700,000	not specified
Office of Power Technologies	$ 1,750,000		$ 1,750,000	
Grand Total	$13,900,000		$13,900,000	

National Laboratory Funding

Question: To what extent is the level of national laboratory participation in your programs increasing in fiscal year 2000?

Answer: The fiscal year 2000 budget includes $203 million for the national laboratories, a slight reduction from the $207.2 million in fiscal year 1999. This small reduction of 2 percent for the national laboratories is primarily the result of technical program managers not yet making final determinations on which work performer is the best one to implement the program. Energy Efficiency is trying to increase fair and open competition whenever and wherever possible. Competition can be between DOE laboratories, other federal government laboratories, and the private sector. As a result, the laboratory or organization that will ultimately perform the effort cannot always be determined in sufficient time to include in the laboratory tables.

Question: Please provide details for 1998, 1999, and 2000 in the same fashion as in previous years.

Answer: The requested data on laboratory funding for the Energy Efficiency programs is provided in the tables on the following pages.

Energy Conservation Laboratory Summary
(Thousand Dollars)

	Los Alamos National Lab			Sandia National Lab		
	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned
Bldgs. Tech., State, & Community Sector	$0	$0	$0	$0	$0	$0
Industry Sector	2,659	3,464	3,284	3,048	3,449	3,390
Transportation Sector	5,752	6,223	7,630	5,006	9,645	8,052
Federal Energy Management Program	0	0	0	147	155	160
Policy and Management	0	0	0	0	0	0
Total Energy Conservation	$8,411	$9,687	$10,914	$8,201	$13,249	$11,602

	Ames Lab			Argonne National Lab		
	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned
Bldgs. Tech., State, & Community Sector	$0	$0	$0	$350	$450	$450
Industry Sector	196	52	0	5,563	3,895	2,267
Transportation Sector	65	100	65	16,901	20,093	18,849
Federal Energy Management Program	0	0	0	0	0	0
Policy and Management	0	0	0	0	0	0
Total Energy Conservation	$261	$152	$65	$22,814	$24,438	$21,566

	Brookhaven National Lab			Nat'l Renewable Energy Lab.		
	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned
Bldgs. Tech., State, & Community Sector	$1,210	$1,000	$1,000	$11,672	$9,981	$12,200
Industry Sector	148	0	0	3,746	2,557	2,640
Transportation Sector	2,300	725	3,925	39,766	22,658	12,110
Federal Energy Management Program	0	0	0	6,094	8,064	10,064
Policy and Management	0	0	0	0	0	0
Total Energy Conservation	$3,658	$1,725	$4,925	$61,278	$43,260	$37,014

Energy Conservation Laboratory Summary
(Thousand Dollars)

	Idaho Nat'l Engineering Lab			Oak Ridge National Lab		
	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned
Bldgs. Tech., State, & Community Sector	$0	$0	$0	$15,123	$16,550	$16,750
Industry Sector	676	250	205	12,881	16,708	15,525
Transportation Sector	3,016	2,955	5,294	34,408	32,400	34,133
Federal Energy Management Program	0	0	0	2,228	2,684	3,354
Policy and Management	0	0	0	0	0	0
Total Energy Conservation	$3,692	$3,205	$5,499	$64,640	$68,342	$69,762

	Pacific Northwest Lab			Lawrence Livermore Lab		
	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned
Bldgs. Tech., State, & Community Sector	$9,514	$8,982	$8,800	$0	$0	$0
Industry Sector	1,779	1,500	1,927	0	0	0
Transportation Sector	4,247	6,345	3,785	1,885	3,925	3,688
Federal Energy Management Program	2,480	2,488	3,110	0	0	0
Policy and Management	0	0	0	0	0	0
Total Energy Conservation	$18,020	$19,315	$17,622	$1,885	$3,925	$3,688

	Lawrence Berkeley Lab			Energy Tech. Engineering Ctr.		
	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned
Bldgs. Tech., State, & Community Sector	$10,451	$11,600	$11,600	$0	$0	$0
Industry Sector	1,568	1,807	1,573	0	0	0
Transportation Sector	3,600	4,060	4,150	0	0	0
Federal Energy Management Program	1,959	2,432	3,040	0	0	0
Policy and Management	0	0	0	0	0	0
Total Energy Conservation	$17,578	$19,899	$20,363	$0	$0	$0

	Total All Labs		
	FY 1998 Actual	FY 1999 Planned	FY 2000 Planned
Bldgs. Tech., State, & Community Sector	$48,320	$48,563	$50,800
Industry Sector	32,264	33,682	30,811
Transportation Sector	116,946	109,129	101,681
Federal Energy Management Program	12,908	15,823	19,728
Policy and Management	0	0	0
Total Energy Conservation	$210,438	$207,197	$203,020

QUESTIONS SUBMITTED BY CONGRESSMAN MORAN

Federal Energy Management Program

Question: Last year, we discussed the large potential savings from the Federal Energy Management program. Could you discuss your progress in federal energy savings achieved by this program?

Answer: The success of the Federal Energy Management Program (FEMP) is reflected in an estimated program impact of approximately $900 million (1997 constant dollars) in annual energy cost savings in 1997 from the 1985 baseline. Total reduction in the energy bill for federal buildings was $2.16 billion in 1997 from 1985 levels, reflecting all factors influencing buildings energy use (that is, reductions in square footage, energy price reductions, building retirement and new construction, changes in mission, and changes in equipment). The annual site energy use avoided in 1997 was 71.8 trillion Btu, and the total reduction in site energy use in 1997 was 121.3 trillion Btu, the latter reflecting downsizing of the government over the period. These savings were produced by actions funded primarily with appropriations provided to individual agencies in fiscal years 1988 through 1995. The appropriations to agencies have reduced significantly since 1995, which has led to the current emphasis on private sector financing for energy efficiency projects.

Question: You have requested an additional $8 million for the Federal Energy Management Program in fiscal year 2000. If you do not receive the entire request, please discuss this impact on the program?

Answer: The incremental increase of $8 million in the FEMP fiscal 2000 budget request is primarily designed to accelerate agencies use of alternative financing mechanisms for energy efficiency, renewable energy and advanced conventional technologies. The FEMP-based Super-ESPCs, utility financed projects, as well as through available contracting vehicles developed by other agencies would be supported. In addition, the increase would support program design and implementation associated with expanded authorities that would allow use of performance contracting for mobility efficiency, efficiency in federal leased space, and water conservation.

Approximately $5 million of the requested increase in appropriations is for direct support of alternatively financed projects. This represents 100 to 160 projects, or an estimated $150 to $240 million of private sector investment. At a 20-percent return on investment, each year delay in making these investments would cost the government $30 to $48 million in lost energy cost savings. Not acting to address inefficiency in federal mobility, leased federal space, and water conservation through private sector financing could eventually result in lost energy cost savings estimated at more than $350 million annually, and in excess of $3 billion over the potential life of the energy conservation measures not installed.

Delays in proceeding with these investments imposes unneeded burdens on federal budget for the replacement of inefficient infrastructure, as private sector investments substitute for appropriations on a dollar for dollar basis. In addition, private sector jobs are lost when federal appropriations that leverage this activity are not available.

Question: What impact will reduced funding have on the reimburseables returned to the government?

Answer: Congress has instructed DOE to seek reimbursement for services it provides other federal agencies in support of alternatively financed energy projects. Congress has provided DOE with the authority to accept such reimbursement of costs out of the energy savings produced by the projects financed. In order to initiate this system of service provision with delayed cost recovery, current appropriations for FEMP must be provided to capitalize the cash flow, leading to reduced appropriations in future budget cycles. Lower levels of current appropriations, assuming they are not provided in future budget years, means a reduction in the future reimbursed cash flow to the government of approximately double the value of appropriations not provided. In other words, one dollar of appropriation in fiscal year 2000 could be recouped twice and used to provide additional services by fiscal year 2005. Against a fixed goal year, the value of future appropriations for generating a reimbursable funding stream diminishes the closer it gets to the goal year, as there is less and less time for the funds to recirculate. This causes outyear appropriations requests to be higher. The timing of reimbursement by agencies will affect the profile and total amount of reimbursable generated; up front reimbursement produces a larger flow than delayed reimbursements.

Workforce

Question: I understand that your workforce has been dramatically reduced in recent years, while your budget and responsibilities have steadily increased. How do you propose to accomplish your program goals with inadequate numbers of staff?

Answer: Workforce reductions in the Office of Energy Efficiency and Renewable Energy (EERE) have impacted our technical and professional staff the most. On April 2, 1999, Secretary Richardson approved EERE's Workforce 21 Plan. The EERE now has the ability to fill positions to reach an approved fiscal year 2000 ceiling of 561 positions.

Question: Do you have the right technical people to meet the challenge?

Answer: Based on EERE's Workforce 21 Plan, our recruitment plans will focus on filling our technical and professional skills gap; rebuilding a diverse and qualified workforce; and developing organizational training plans in order to implement succession planning strategies. These actions should ensure that EERE will have the right technical staff to meet our mission.

Question: Have you requested additional funding in the fiscal year 2000 budget to address these issues?

Answer: Yes, the fiscal year 2000 Congressional request includes $1,490,000 to support 16 FTEs. These FTEs are described in the request but were not included because final decisions were pending when the request was completed. The funding for these FTEs, however, was included in the request to ensure that the final decisions resulting from Workforce 21 could be implemented.

Uncosted Balances

Question: On February 11, GAO testified that all DOE programs should strive toward a goal that carryover balances should not exceed 15 percent of total obligational authority. Do the energy efficiency program's carryover balances fall within this objective?

Answer: The Energy Efficiency Programs, like most DOE research and development programs, do not fall within the Government Accounting Office's (GAO's) goal for carryover balances of 15 percent of total obligational authority. However, the carryover funding balances in the Energy Efficiency programs continued to improve significantly in fiscal year 1998 with a reduction of 22 percent. Uncosted balances for programs under the Energy Conservation appropriation were reduced $92.1 million during fiscal year 1998, from a beginning balance of $410.7 million to an ending balance of $318.6 million. It is important to note that the GAO threshold of 15 percent for uncosted balances is a "starting point" for further analysis. The GAO formula is easily applied to final fiscal year end financial data as well as to future fiscal years but it does not consider the many facets of program execution which impacts uncosted balances. We believe the DOE analytical process provides a more accurate representation of uncosted balances because it recognizes that the type of obligating instrument will impact the uncosted balances and it also impacts the complexity of analyzing the data. The DOE methodology is based on the review of the total funds available to cost and includes the current year beginning uncosted balance and the current year obligations. Also, the focus of the DOE methodology is on those areas for which DOE can exercise the most control; costs and uncosted balances are segregated into discrete categories which display similar and predictable costing rates.

In fiscal year 1999, the Energy Efficiency program will be following a four-point action plan to further reduce uncosted balances. Most important, we intend to demonstrate that the uncosted balances which remain are necessary and appropriate. Program managers will intensify their focus on uncosted balances by reviewing progress and problem areas at program reviews which I hold with the managers on monthly basis. In addition, the action plan will include improvements in advance procurement planning and streamlining, a review by the National Academy of Public Administration of Energy Efficiency's financial management and procurement practices, and the establishment of a management improvement team to improve corporate management processes and procedures, including the effective management of uncosted balances.

Building Technology, State, and Community Sector Program

Question: I note that the Building Technology, State and Community Sector (ITS) program receives a significant increase. Can these funds be used for schools?

Answer: The proposed increase for ITS is targeted for a variety of existing programs, several which would be relevant to schools. States may apply the State Energy Program funds to support activities such as planning, financing strategies and energy education for high efficiency schools. Rebuild America provides technical assistance and tools for community wide efforts that typically include school districts. Rebuild America also provides small competitive grants through the State Energy Program Special Projects to leverage state resources for partnerships

within the state. The proposed Competitive Community Partnership would be open for community proposals that include schools.

The increase also includes $3 million in the Community Partnership Program to support activities under the Energy Smart Schools Partnership -- a partnership including DOE and other federal, state, and local government organizations, school organizations, utilities, energy service companies, architectural and engineering firms, and equipment manufacturers. These funds will be used to: develop design guidelines and specifications for building new energy efficient schools; provide training and tools for school administrators to implement energy saving performance contracts; support outreach to school organizations (for example, the American Association of School Administrators and the Association of School Business Officials); support national teleconferences on project development and financing; and develop a Web site that provides a clearinghouse for school administrators and teachers on how energy efficiency and renewable energy technologies can work for the school and as learning activities for the students.

Question: Given the success you have experienced with the federal Energy Management Program, could you try to replicate it with state and local governments and school districts?

Answer: The issues state and local governments and school districts face are very similar to those of federal facilities. They need reliable information on what investments to make in energy efficiency and they need capital investment funds. They also face realities that facility managers may not have energy expertise and the school district may not have adequate initial capital for energy efficiency in retrofits or new construction.

DOE is already replicating successes of the Federal Energy Management Program (FEMP) through its Rebuild America and State Energy Programs. Rebuild America is using similar strategies, and lessons learned from FEMP and focusing on building sectors outside the federal sector. Rebuild America works to improve the energy efficiency of commercial businesses, state and local government, K-12 schools, universities and colleges, and public and assisted housing. The program provides access to technical experts, training, and guidelines on project development, financing, commissioning, and operations and maintenance to assist partnerships in implementing energy efficiency and renewable energy technologies.

To support project development and financing, Rebuild America is helping partnerships use energy saving performance contracts, an approach used successfully in the FEMP program, to support project development and financing. For example, in Reno, Nevada, DOE is helping the city implement an energy saving performance contract that will save the city $300,000 each year on energy costs. Rebuild America is also supporting a Rebuild America partnership between seven states that are all developing programs to help communities implement energy saving performance contracting.

The State Energy Program provides financial assistance to State Energy Offices to support energy efficiency and renewable energy programs and projects. The program provides maximum flexibility for states to design and implement programs that best serve the needs of communities in their states, including state and local governments and schools. The program gives the states the opportunity to use the funds to replicate successful FEMP activities.

QUESTIONS SUBMITTED BY CONGRESSMAN NETHERCUTT

Materials Technology

Question: I understand that the Materials Technology budget in the fiscal year 2000 budget request is the only portion of the Transportation budget that is reduced from last year's appropriation (fiscal year 1999, $37.5 million -- fiscal year 2000, $33 million). Given the fact that Materials Technology is applicable both to automotive and heavy vehicles, could you explain to my why you would look to cut back on that budget, especially when DOE is about to begin efforts to develop lightweight materials for application to heavy trucks and sport utility vehicles?

Answer: The reduced request in the Lightweight Vehicle Materials budget reflects DOE's conclusion on priorities. In part, this conclusion is based on the judgement that aluminum for automotive applications has matured to the point at which it is no longer "high risk" research that requires an extensive government role. This view is based on the presence in the world market of at least four aluminum-intensive vehicles, a recent public statement by an aluminum industry executive that the cost premium for aluminum in autos is now only about 10 percent relative to steel, and initial successes in many of our aluminum projects. While some might argue over the magnitude of the progress, all recognize the technical risks involved in these technologies have been reduced -- reducing the need for a strong DOE role.

For heavy vehicles, on the other hand, the position of aluminum, magnesium, and other lightweight materials and composites is very different than in the Partnership for a New Generation of Vehicles case. Lighter weight trucks will enable not only greater operational efficiencies, but also heavier payloads, which translate into higher company and industry productivity and profits. However, the structural, reliability, and durability challenges associated with the materials in trucks differ greatly from those in passenger vehicles. Different approaches must be taken in design, manufacturing processes, and often in alloy selection. For these reasons there remain many opportunities for further development of high strength, lightweight materials and material processing technologies to impact the energy efficiency of the heavy vehicle sector.

Question: In addition, why are you cutting back on this budget which is the basis for funding of the Northwest Alliance for Transportation Technologies (NATT) when several of the partners in NATT are aluminum companies who have significant presence in the Pacific Northwest?

Answer: The budget reduction is based on DOE judgments on priorities for government funding and maturity of technologies such as aluminum and as explained in the previous question. The budget cuts in aluminum projects will be significant; however, we are evaluating our planned implementation of the fiscal year 2000 budget with our industry partners to minimize these impacts. Consideration is being given to stretching out and/or delaying certain activities to assure that all our goals are met, but in a way which will assure continuing progress toward achieving our goals.

Hydropower

Question: You request $7.0 million in your Energy Supply budget for the development of advanced hydropower resources. As you may know, we have several listed species of salmon in the Pacific Northwest. From the mouth of the Columbia River to the spawning grounds on both the Columbia and Snake Rivers, there are 29 federal hydroelectric facilities which these fish must pass. There are five non-federal facilities on the Columbia River, and some have been successful in using "fish friendly" turbines. I recognize that these turbines are expensive, but in my opinion they can be worthy investments. I'm curious if the federal facilities are looking at these types of turbines as a serious option to what is currently being used in hydropower.

Answer: Competitively-selected advanced turbine conceptual designs with improved environmental performance were completed under the DOE Hydropower Program in 1997. Features of an advanced Kaplan-type turbine conceptual design developed by Voith Hydro, Inc., are already being incorporated in the rehabilitation of the Corps of Engineers Bonneville Dam hydropower project. These features include a minimum-gap runner to minimize injury to fish, low flow turbulence, improved blade design with thicker entrance edges, smoother surfaces, and oil and grease reduction. DOE is working closely with both the Corps of Engineers and the Bureau of Reclamation in planning and implementing the DOE Advanced Hydropower Turbine System Program.

Question: I also am curious to know if DOE is working with some of these non-federal facilities to explore their successes and/or failures.

Answer: Planning and implementation of DOE's advanced hydropower research and development is coordinated with a technical review committee consisting of both federal and private-sector representatives. Private utilities and public utility districts are represented in this committee, including the Grant County and Chelan County Public Utility Districts in Washington.

Question: How can the research the Department has done with smaller turbines help develop fish friendly turbines?

Answer: DOE's advanced hydropower turbine research and development is intended to be applicable to both small and large turbines. The conceptual design features developed by Voith Hydro, Inc., are applicable to any size Kaplan and Francis turbine. Also, DOE is planning to initiate proof-of-concept testing of the conceptual design developed by the Alden Research Laboratory. In addition to a pilot-scale test to verify biological performance of this innovative design, DOE has also asked Alden to study the suitability of this design for use in large-scale facilities, such as those on the Columbia River. Finally, the biological studies currently being conducted under the DOE program are intended to provide biological performance criteria for advanced turbine design.

Industries of the Future

Question: In your budget justification you are requesting increases in funding for all of the programs, except petroleum, in the Department's Industries of the Future program. You stated in your written response to me last year that the Visions for Industries of the Future span 20-25 years. What type of progress has been made in the past year?

Answer: We've made very good progress in the last year. The mining and agriculture industries successfully created visions and are finalizing technology roadmaps, and the petroleum refining industry just recently developed a vision for their industry. We executed nine solicitations for research and development for these industries and crosscutting technologies, and obligated virtually 100 percent of our appropriations in a competitive manner. We conducted our third Industrial Energy Efficiency Symposium and Exposition, with 100 exhibitors and over 1,200 attendees. We produced over 170 fact sheets on technologies, and a myriad of other communication products in order to improve adoption of these new technologies. We had over 100 technologies which were commercialized, and are tracking over 100 others that are on the brink of commercialization. We continued to track the impact of energy efficiency, environmental improvement, and productivity enhancements of these successes. We conducted an ideal example of Integrated Delivery through a superb Showcase Demonstration at the Bethlehem Steel's Burns Harbor mill. We reduced our uncosted obligations to about 40 percent of our appropriation. With each industry, we established a portfolio of near, mid- and long-term technical assistance investments supported by a minimum of 50 percent cost-share from industry.

Question: What types of milestones are you using to evaluate the progress in the near term?

Answer: We track a number of milestones to gauge the progress and success of the Industries of the Future. As the Office of Industrial Technologies has done for over 20 years, we track every technology that is commercialized to measure market penetration, and energy and environmental performance. We work with industry to complete and update Technology Roadmaps. We monitor the progress of nearly 300 projects which are underway through site visits and program reviews and use milestones such as test results showing improved performance and the ability of the project to meet deliverables. We also use industry reviewers to ensure that they are satisfied with the project since they are cost sharing. We monitor our progress on uncosted obligations. We seek to leverage other government resources which can contribute to achieving industries' Vision goals and roadmap targets not in our mission area. To date, we have catalyzed almost 200 percent leveraging from other sources of funds.

Department of Energy

Energy Information Administration

Statement of Jay E. Hakes
Administrator, Energy Information Administration
Department of Energy
Before the
Committee on Appropriations
Subcommittee on Interior and Related Agencies

PROGRAM FUNCTIONS

The Energy Information Administration, EIA, is the leader in providing high-quality, policy-independent energy information to Government, industry, and the public, in a manner that promotes sound policy decisions, efficient markets, and public understanding. While an integral part of the Department of Energy, EIA is mandated to maintain a policy-neutral position. EIA was established by Congress as an unbiased source of energy information and analysis.

In accordance with Section 205 of the Department of Energy Organization Act, EIA collects, interprets, analyzes, and disseminates information on energy reserves, production, consumption, distribution, prices, technology, and related international, economic, and financial matters. EIA produces reports with statistical time series, projections of near- and mid-term future energy trends, and analyses of topical energy issues. On a reimbursable basis, EIA provides custom energy data, analyses, and data processing support to other Department of Energy offices and other federal agencies.

The National Energy Information System contains the operational elements of EIA. The Oil and Gas program develops, operates, and maintains the statistical information systems for the collection, processing, and analysis of data on petroleum and natural gas reserves, production, refining, distribution, marketing, and prices. The Coal, Nuclear, Electric, and Alternate Fuels program performs statistical and analytical functions for its respective fuels markets. The Energy Markets and End Use program maintains energy statistical information systems and analyses for energy end use, price, supply and demand balances, and economic, international, and financial matters. The Integrated Analysis and Forecasting program produces mid-term forecasts and analyses for domestic and international energy markets and implements the greenhouse gases program. The Information Technology program provides computer services and information technology coordination for EIA and other Departmental users. The National Energy Information Center performs dissemination activities for all EIA information products. The Statistics and Methods program provides coherent and credible strategies for information collection, processing, documentation, and dissemination. The Resource Management program provides agency financial, human resource, and logistics management and funds general overhead costs.

PROGRAM ACCOMPLISHMENTS

In October 1998, the Energy Information Administration won the Energy Quality Achievement Award. The achievement award is the second highest quality award given out in the U.S. Department of Energy. EIA is only the second federal organization to win this award and the first ever at headquarters. The quality achievement award recognizes "a sound, systematic approach to

quality management, a fact-based improvement process in place in key areas, and no evidence of major gaps in deployment." Improvement trends or good performance are reported for most areas of importance.

EIA Administrator Jay Hakes testified in October 1998 on a report, "Impacts of the Kyoto Protocol on U.S. Energy Markets and Economic Activity" before the U.S. House of Representatives, Committee on Science. The study requested by both Chairman James Sensenbrenner and George Brown, ranking minority member, examined six different targets for U.S. energy-related carbon emissions reductions, based on the technology and market assumptions of the EIA *Annual Energy Outlook 1998*. This 6-month study resulted in an analysis report that was reviewed by a panel of independent experts. The report received over 100,000 Internet hits during its first week of release and was covered by major newspaper and wire services. Briefings were given to the White House, the Council of Economic Advisors, the Council of Environmental Quality, the Department of Energy, and other government agencies. The report was released in time for its use at the next negotiating meeting of the parties set in Buenos Aires in early November 1998.

EIA prepared numerous reports and briefings to address the factors affecting the collapse of crude oil prices in 1997 and 1998. Testimonies were given in the Senate and House. A briefing was given to California Congressional staff on the impact on domestic producers and the widening differentials between crude/product and light/heavy prices. EIA also addressed the Independent Petroleum Association of America and was invited to make a presentation at a conference co-sponsored by the Department of Energy and the California Independent Petroleum Association addressing the impact of low prices on domestic producers. Similar material was presented to senior officials from OMB, GAO, and the Mexican Embassy. EIA's analyses of gasoline markets were used to prepare and present testimony at a hearing in El Paso, Texas, conducted by Congressman Green and Reyes, to address price movements and differentials observed between Houston and El Paso markets.

EIA recently released a major report, "Deliverability on the Interstate Natural Gas Pipeline System," examining the capability of the interstate pipeline network to move natural gas to various markets within the U.S. Focus group discussions with natural gas data users were conducted to obtain information on their changing data needs in view of the restructuring of the natural gas industry. This information will be used as part of a program to reassess and revise the natural gas data collection and information program.

Several service reports were prepared during 1998 in response to special requests for analysis: the impact of renewable portfolio standards requested by Senator Jeffords, the impact of increasing the number of diesel-fueled vehicles in the U.S. requested by the Office of Energy Efficiency and Renewable Energy, the impact of increased propane use for alternate fuel vehicles on the supply and price of propane to residential customers requested by the General Accounting Office, and supply curves of carbon prices versus carbon emissions reductions requested by the Office of Fossil Energy for analyzing issues regarding coal technologies.

EIA supports the Department of Energy's national security responsibilities by briefing government policymakers with the latest EIA analyses and data during contingency situations. For example, EIA briefed the National Security Council on the energy situation in Nigeria, the Department of

Energy on Iraq, and conducted an emergency readiness exercise with the International Energy Agency. EIA also prepared unclassified reports on crises such as "East Asia: The Energy Situation," and "Russia: Energy Situation Update."

During the past year, EIA's staff were participants in the Department's effort in fulfillment of its strategic goal concerning national security support and reduction of global danger from weapons of mass destruction. EIA provided uranium market impact analyses for the Department's efforts to reduce inventories of surplus weapons-usable fissile materials worldwide through conversion to civilian reactor fuel. An EIA technical expert participated in transparency monitoring tasks in Russia associated with the irreversible dilution of highly enriched uranium from dismantled Russian nuclear weapons to low enriched uranium for purchase by the U.S. Enrichment Corporation. EIA also began to develop data capabilities for strengthening the international nonproliferation regime. EIA has continued its support of the DOE's Civilian Radioactive Waste Management Program with both data and analysis needed to certify the correctness of the funds collected from nuclear utilities and with nuclear spent-fuel characteristics needed for repository final design.

EIA recently expanded its alternative fuels survey to collect information on alternative fueled vehicles in use by federal and state governments and fuel providers. We also published a first-ever assessment of the cost of renewable purchased power, which provides insights to the cost of implementing provisions of the Public Utility Regulatory Policies Act of 1978.

PROGRAM IMPROVEMENTS

The timeliness of greenhouse gas emissions was improved by releasing the 1997 estimate 5 months earlier than the full publication release date. The cycle time was reduced by 12 months by surveying and processing 2 years of voluntary reporting data for greenhouse gas emissions while increasing the number of reporters to the voluntary program.

EIA's report on housing characteristics covering the 1997 Residential Energy Consumption Survey was released in electronic form in the summer of 1998, about 6 months closer to the data year than the report for any previous cycle, a timeliness improvement of about 40%. For the first time no paper publication was produced. A major reason for the improvement in timeliness was that the 1997 residential survey was fielded using computer-assisted personal interviewing, thereby eliminating most post-survey editing and call backs because the data quality checks were built into the computer and administered during the interview.

Preparations are mostly complete for the 1998 Manufacturing Energy Consumption Survey to be fielded in the spring of 1999. Sample size and geographic coverage are slightly less than they were for the 1994 manufacturing survey, and the fuel switching and motors sections of the 1994 questionnaire have been eliminated to reduce costs. The questionnaire is redesigned to more clearly collect data on natural gas purchases from utility and nonutility suppliers, and the entire form has been redesigned into a more linear question format, in place of the largely matrix approach to data collection used in previous cycles. Industry coverage for the 1998 manufacturing survey has also been redesigned so that data can be produced for industries in both the Standard Industrial Classification and the new North American Industry Classification systems.

The Short-Term Energy Model was successfully updated and posted to EIA's Web site for download on schedule each month in 1998. This model has become an increasingly important tool in the monthly analysis of energy markets. The model grew significantly in popularity in 1998; visits to the model download page increased from 350 to 800 per month between 1997 and 1998.

In 1998, EIA conducted its largest customer survey to date, mailing out surveys to nearly 4,000 of our publication subscribers with questions about satisfaction ratings on six major reports and preferences for electronic versus paper dissemination of information. The more than 2,100 respondents were basically satisfied with all product attributes, such as relevance, accuracy, and comprehensiveness, but not with timeliness. Customers rated accuracy as the most important product attribute. About 90% of respondents reported having electronic access to our products through the Internet and CD-ROM, but only 56% were aware that our information was available electronically on our Web site. Despite electronic availability of our information, 58% indicated they wanted the paper copy. EIA learned from this survey that we need to continue to work on the timeliness of our information and that we need to increase our efforts to publicize the electronic availability of our information.

EIA will open a children's Web site in the spring of 1999. As an initiative of the Energy Industry Studies Program, the site profiles the major energy resource in words, numbers, and pictures and offers virtual visits to energy installations and an energy quiz.

PERFORMANCE INDICATORS

EIA's mission is to produce energy information that promotes sound policymaking, efficient markets, and public understanding. EIA undertook the development of performance measures several years ago and has been working to collect performance information, to disseminate the information to managers and decision makers, and to refine the measures to ensure that we are tracking the things most important to our mission. Measures are directly tied to goals in our strategic plan. We measure the level of achievement of our intended outcomes by evaluating product usage, timeliness, accuracy, customer satisfaction levels, and employee satisfaction levels.

We track product usage levels in many ways: Web site file downloads, unique customers and the products they use, number of listserv recipients, number of telephone inquiries, number of media citations, and number of publications mailed out to customers. Web and listserv increases plus our citations in the major media rose by 30% between 1997 and 1998. In 1998, there were over 1.4 million user sessions on our Web site. From these exploding numbers, we know that our customer base has expanded greatly and that we are reaching a much larger and more diverse audience than in the past.

EIA measures customer satisfaction through customer surveys and feedback we receive electronically from Web site customers. In 1998, we conducted two agency-wide surveys and three product-specific surveys. The results from these surveys tell us where to direct resources to expand or eliminate products and improve operation efficiencies and product quality. We often ask customers about specific options, such as whether they would like shorter reports or whether they would call us more if we had a toll-free number for our information center. Feedback from

electronic customers helps us improve the organization and usability of our Web site.

FISCAL YEAR 2000 BUDGET REQUEST

EIA's Congressional budget request is $72.6 million for FY 2000. This request is $2.1 million over our FY 1999 level of $70.5 million and 14% below the FY 1995 appropriation of $84.6 million (or 22% below after adjusting for inflation). In FY 2000, EIA intends to continue the base program, enhance international analysis capabilities, begin work associated with assessing the accuracy and reliability of several energy data systems, continuing overhauling several survey frames and data systems, and seek further efficiency gains through the use of our information processing and communications technologies.

In FY 2000, EIA's base program will consist of the maintenance of a comprehensive energy database, the publication of reports and analyses for a wide variety of customers in the public and private sectors, the maintenance of the National Energy Modeling System for mid-term energy markets analysis and forecasting, the maintenance of the Short-Term Integrated Forecasting System for near-term energy market analysis and forecasting, customer forums and surveys to maintain an up-to-date product and service mix, and the continued development of electronic dissemination of products such as the EIA Internet home page and CD-ROM.

EIA will be focusing on two principal areas of need in the coming fiscal year. First, to enhance EIA's international analysis capabilities in order to assess carbon mitigation, permit trading, and other global climate change issues. Second, while resources have steadily decreased over the past several years, and EIA has addressed Year 2000 remediation without additional budget authority, EIA has postponed required maintenance and updates on many of our survey and data systems in order to maintain the scope and breadth of EIA's energy data and analyses capabilities to meet customer requests. Of particular concern is the changes in the natural gas and electricity industries brought on by deregulation and restructuring. EIA's current survey and data systems need to be overhauled, for they are losing their ability to accurately reflect these industries. In addition, EIA consumption surveys are operating on a base which is reaching 20 years of age, well beyond the normal 10-year life cycle. Beginning in FY 1999, EIA is initiating a multi-year effort to revise these aging survey and data systems in order to maintain the reliability of analysis and data products.

ADDITIONAL COMMITTEE QUESTIONS

Energy Information Administration

Budget Increase

Question: How much of your proposed $2,144,000 increase is for "uncontrollable" fixed costs such as salary and benefits, rent increases, etc.?

Answer: For fiscal year 2000, the net increase in fixed costs is $1.3 million, an increase of $1.6 million for federal staff salary and benefits partially offset by a $0.3 million reduction in Working Capital Fund expenditures. Contained within EIA's fiscal year 2000 request are "uncontrollable" fixed costs totaling $48.2 million. Specifically, $34.6 million for federal salary and benefits costs; $8.2 million for Working Capital Funds (rent, utilities, phones, etc.), other overhead costs, set-aside for prior year obligations, etc.; and $5.4 million for EIA Information Technology infrastructure operation and maintenance. Following several years of aggressive cost avoidance initiatives like office space reduction, process improvements, and introduction of more efficient information technologies, even achieving Year 2000 compliance within budget, for fiscal year 2000 these "uncontrollable" fixed costs continue to grow and now represent 66 percent of EIA's budget request. As a comparison, these same costs represented only 59 percent of EIA's fiscal year 1995 appropriation.

Question: How much of the proposed increase is for new or expanded initiatives? Please provide details for the record, including a comparison by project of fiscal year 1999 and 2000 funding.

Answer: The following table presents a comparison between fiscal year 1999 and 2000 for the level of investment needed to continue overhauling two survey and data systems, continue the upgrade of EIA international data analysis capabilities, and the start of one survey overhaul.

Investment Required in:	**Fiscal Year ($ thousands)**		**FY 1999 to FY 2000 Increase ($ thousands)**
	1999	**2000**	
Continue - Electricity Information Survey and Data Systems Overhaul	500	1,090	590
Continue - Natural Gas Surveys and Data Systems Restructuring and Perform Overdue Data Systems and Frames Maintenance	200	610	410
Continue - International Energy Analysis and Modeling for Climate Change	500	1,190	690
Start - Energy Consumption Systems Overhaul	0	610	610
Of EIA's FY 2000 budget request, total additional funding needed to continue overhauling electricity and natural gas surveys and data systems, beginning overhaul of energy consumption surveys, and continue upgrading international analyses capabilities			2,300

Question: Your budget increase appears to be less than the sum of your fixed costs and your program increases. Please explain.

Answer: As can be seen in the table below, an additional $1.610 million is needed for federal staff salary and benefits, and $2.300 million for continuing the overhaul and upgrade of our survey systems and analytical capabilities. However, with aggressive management of our Working Capital Fund, completion of one-time funded fiscal year 1999 projects, efficiency gains we expect to achieve, and reducing our contract usage, the EIA budget includes offsetting operating costs reductions of $1.766 million. Therefore, EIA requires only a $2.144 net increase to continue funding the overhaul and upgrades to our energy survey and analysis capabilities.

Costs ($ thousands)	Description
1,610	Initial FY 2000 estimate for federal staff salary and benefits based on 371 full-time equivalents (FTEs) progressing down to a SAI end-of-year target level of 367 (not including 1 FTE funded through the Nuclear Waste Disposal Fund), with a pay raise of 4.4 percent. In FY 1999, the FY 2000 end-of-year SAI level was revised to 375. Please note that if the pay raise for FY 2000 is 4.8 percent EIA will need to shift $540,000 from contract support to federal staff salary and benefits.
2,300	FY 1999 to FY 2000 increase needed to fund energy surveys and data system overhauls and upgrade international analyses capabilities. 590 Continue - Electricity Information Survey & Data Systems Overhaul 410 Continue - Natural Gas Surveys & Data Systems Restructuring and Perform Overdue Data Systems & Frames Maintenance 690 Continue - International Energy Analysis and Modeling for Climate Change 610 Start - Energy Consumption Systems Overhaul
3,910	Total Additional Costs for FY 2000
(1,766)	Savings from completion of activities and projects which EIA received one-time funding in FY 1999, from aggressive management of Working Capital Fund (WCF) costs, efficiency gains, and reductions in contract usage. (1,300) End of one-time funding for projects for which funds were received and used in FY 1999. (300) Costs avoidance in WCF business lines by reducing office space, phone lines, office supply usage, etc. (166) Reduction in contract usage and cost avoidance through efficiency gains.
2,144	EIA's total FY 2000 increase requested for multi-year survey, data quality overhaul and international analyses enhancement.

Question: What are the out-year costs associated with each of your new and expanded programs?

Answer: Assuming EIA receives the funds requested in fiscal year 2000, EIA will require the following out-year investments to complete the overhaul, data quality maintenance, and enhancements needed to maintain EIA's ability to provided this nation with required accurate and reliable energy information and analyses:

Investment Required in:	Fiscal Year ($ thousands)				
	2000	2001	2002	2003	2004
Electricity Information Survey and Data Systems Overhaul	1,090	1,000	1,000		
Natural Gas Surveys and Data Systems Restructuring and Perform Overdue Data Systems and Frames Maintenance	610	800	900		
Energy Consumption Systems Overhaul	610	600	600	600	600
International Energy Analysis and Modeling for Climate Change	1,190	1,000	500		
Total Investment Needed	3,500	3,400	3,000	600	600

Question: The budget caps will make it difficult for the Committee to fund the President's request. Please rank your funding increases in priority order.

Answer: As stated in our fiscal year 2000 budget request, the additional funding is needed to address three areas critical to EIA's mission to provide reliable and accurate energy information and analyses of current energy issues to Congress, the private sector, and the citizens of the United States. The Department has requested these short-term increases to overhaul key EIA energy surveys and data systems, and upgrade our ability to conduct international energy analysis, because they are all considered high priorities to maintain EIA's ability to provide reliable energy data and analysis.

Among these initiatives, the first priority is the overhaul of EIA's existing surveys and data systems to address the changes resulting from the deregulation and restructuring of the electricity and natural gas industries. As a result of the changes that have and are occurring in these markets, in particular the unbundling of services, the traditional respondents to EIA surveys (for example, interstate natural gas pipelines) no longer can or will be able to provide the information they have in the past. Accurate information is essential to the efficient operation of these increasingly complex markets, and to assess the impacts of these market transitions on customers. Changes in the surveys and respondents to capture these changes must be made to maintain reliable information for these important energy sources. Without the required upgrades, EIA coverage of these energy markets will significantly degrade as survey statistical frames and

the resultant data and analyses become unreliable.

Our second priority is the continued development of international modeling and analysis capability to assess issues related to climate change. Requests by Congress and others to conduct carbon analysis and produce projections on the international level continue to increase. Currently, EIA is unable to directly assess the economic consequences on the United States when considering alternative non-domestic energy compliance options (that is, EIA cannot assess the impact of actions taken by foreign countries nor calculate an international price for carbon permits). With our existing capability, EIA cannot assess emissions trading between countries nor international carbon trading schemes. Without this capability, EIA will not be able to undertake the types of analyses which are being requested on the impact of proposed international treaties, agreements and policies. Since this effort was initiated in fiscal year 1999, and these issues are expected to be debated in the near term, we believe it is important to continue this effort in fiscal year 2000.

Our third priority is the overhaul of EIA's energy consumption survey designs which are reaching 20 years old; twice the age normally reached before major redesigns are initiated (as accepted statistical practice with these kinds of surveys is to revise the frames following each decennial census). Because funds for redesign were not provided during and after fiscal year 1990, EIA was unable to redesign these surveys following the 1990 census. Substantial deterioration is increasingly likely to occur as survey designs become more and more outdated, despite attempts to account for units entering and leaving the population. For example, as stated in our fiscal year 2000 budget submission, commercial floor space, a key energy demand indicator which also can be used to assess the quality of coverage of EIA's commercial consumption survey, showed a decrease from the 1992 to the 1995 survey. This result conflicts with other economic indicators that show a rapidly expanding commercial sector. Clearly, the consumption surveys need to be overhauled following the fiscal year 2000 census.

EIA is valued by Congress, state and local governments, the private sector, and the citizens of the United States as the source for reliable energy information and policy neutral analyses of energy issues. To maintain our ability to provide reliable energy data and analyses, EIA requires short-term budget increases to overhaul these key energy surveys and data systems and upgrade our ability to conduct international energy analyses.

Reimbursable Work

Question: Your statement for the record briefly mentions analyses performed on a reimbursable basis. How much funding do you receive from these reimbursable activities?

Answer: In his statement, Jay E. Hakes, Administrator, Energy Information Administration, stated: "On a reimbursable basis, EIA provides customer energy data, analyses, and data processing support to other Department of Energy offices and other federal agencies." Most of the funds received by EIA from other DOE offices and other federal agencies are used for data acquisition and processing. Very little is used for conducting analyses. The table below provides a listing of EIA's reimbursable work.

Question: Who are the major customers for these services?

Answer: EIA provides customer energy data, analyses, and data processing support to other Department of Energy offices and other federal agencies such as the Office of Civilian Radioactive Waste Management, the Environmental Protection Agency, DOE's Office of Industrial Technology, and DOE's Strategic Petroleum Reserve Office. A list of EIA customers for reimbursable work is provided in the table below.

Question: What are your projections for reimbursable funding in fiscal years 1999 and 2000? Please provide details for the record.

Answer: Presented in the table below, are the current estimates for reimbursable work EIA will perform for other Department of Energy offices and other federal agencies during fiscal years 1999 and 2000.

Amount ($ thousands)		From	For
1999	2000		
200	0	Office of Industrial Technologies (OIT)	Funding for data collection, processing, and data product enhancements (focusing on industries of interest to OIT) from the 1994 and 1998 Manufacturing Energy Consumption Survey (MECS). Provide detailed industrial forecasts for each industry (pulp and paper, cement, chemical, etc.) in the 1999 *Annual Energy Outlook*. This was a one-time action by OIT to "piggy-back" on EIA's MECS to efficiently obtain information of interest to OIT.
185	100	DOE Strategic Petroleum Reserve Office (SPRO)	Petroleum markets analysis and use of EIA's information processing technology.
150	150	Environmental Protection Agency (EPA)	EPA cosponsors the Form EIA-767, "Steam-Electric Plant Operation and Design Report." The electric utility environmental data from this form are used by the EPA to provide input for their ongoing responsibilities of monitoring the nation's environmental health.
527	373	Office of Civilian Radioactive Waste Management (OCRWM) Nuclear Waste Disposal Fund	Funding for 1 FTE and funds for contract resources to support several tasks: collection and processing of data on spent nuclear fuel, the verification of the fees the electric utilities operating nuclear power plants pay into the nuclear waste fund, and project the future level of the nuclear waste fund. For FY 2000 EIA expects the fee verification and fee projection activities will remain the same, but OCRWM will not update the spent nuclear data base as this data base is not updated annually.
1,062	623	Total Estimated Reimbursable	

In-House versus Contract Analysis

Question: What percentage of your analyses are conducted in-house and what percentage are conducted under contract? Please comment on the split and whether you believe it is appropriate to change that distribution.

Answer: Since fiscal year 1995, EIA's federal staff has been reduced over 18.5 percent: fiscal year 1995 end-of-year 460 FTEs compared to fiscal year 1999 SAI end-of-year target of 375 FTEs. EIA contract staff has been reduced even more (64 percent) due to budget reductions and the fact that contract funds needed to be reduced to absorb the inflationary increase in the salary and benefits of our federal staff. In fiscal year 1999, EIA's revised SAI target is 375, which includes 1 FTE funded by the Nuclear Waste Fund, and we estimate our average contractor staff level will be 195. Throughout these past years of downsizing, EIA has intentionally strived to have analysis and forecasting work performed by federal staff and utilize contractors primarily in data operations and computer services support roles. Thus, virtually all EIA analysis and forecasting work is led and mostly performed by EIA staff.

Typically, contract resources are used to gather data, provide specific expert support (like an engineering assessment of technology development), make model enhancements, and occasionally conduct specialized analyses which are used as input to broader analyses being led by EIA federal staff. Any such use of EIA contract resources for supportive analysis are typically one-time in nature. EIA does not strictly account for federal and contractor staff usage on analyses functions due to the natural overlaps that occur with other data management and modeling functions. We estimate that contractor staff support for analysis and forecasting work is approximately 35 percent of the federal staff. For fiscal year 2000, EIA does not plan to make significant changes in its workforce distribution for analysis work between federal staff and contractors.

Question: What budget implications would such a shift entail?

Answer: Since no shift in the federal versus contractor mix for analysis work is planned, there will be no budget implications. EIA does need to retain the flexibility to use contractors for short-term efforts requiring skills that may not be available in-house and where difficulty is experienced in recruiting employees with the required skills.

Customer Satisfaction

Question: Your budget request indicates a high level of customer satisfaction with your analyses and products. Is there any difference in customer satisfaction between what is produced in-house and contractor produced or between products that are direct funded and reimbursable funded? Please explain.

Answer: Virtually all EIA analysis work is led by EIA federal staff. When contractor support is employed, it is typically in support of a larger piece of analytical work or product being developed by a federal staff member. Seldom does EIA engage its contract support as the

primary agent in the production of an analytical work. The small amount of reimbursed funds directed to analysis are used to provide contractor support to assist EIA federal staff in performing requested analysis, usually a service report analyzing a specific policy. All of EIA's reports, data, information, and analyses are produced as EIA products, and the federal staff is responsible for assuring the quality, reliability, and accuracy. Thus, EIA does not collect customer satisfaction information at the level described in the question.

Question: Please describe your primary efforts to improve the timeliness of your products and how those efforts relate to your budget request.

Answer: EIA is continually striving to improve timeliness. This is something our customers tell us is most important to them. The following are several examples of our efforts in this area:

- More than 75 percent of inquiries received by EIA's National Energy Information Center (NEIC) relate to information on EIA's World Wide Web site. Internet dissemination has vastly improved the timely release of EIA information, but often customers need help finding something on our Web site (which currently runs to 70,000 pages), need data not available on our Web site, or have difficulty accessing or downloading a file. In addition to knowing EIA data and energy data sources outside EIA, we have trained our information specialists to offer Internet technical assistance to our customers. All of this is a one-stop service for customers--they can get speedy information and technical support with one phone call or e-mail message.

- The Electric Power Division has made a concerted effort to reduce the time it takes to produce its annual data publications. These efforts have paid off by reducing the time to produce five annual data reports by 19 percent. Specifically, it took 375 days to produce the 1996 data publications in 1997. In 1998, it took 305 days to produce the 1997 data publications.

- The *Annual Energy Outlook* is now released on the Internet 3 months earlier than the 1996 version.

- The *International Energy Outlook 1999* is being released about 1 month earlier than 1998 version.

- EIA has processed 2 data years of the Voluntary Reporting of Greenhouse Gases forms in 1 year to bring it on a schedule of a 7-month release after the end of the data period, (that is, data for the 1998 calendar year will be released in July of 1999).

- EIA's household characteristics data from the 1997 Residential Energy Consumption Survey were released 6 months closer to the end of the data collection period than they were for the previous 1993 survey. This represents a reduction in processing time to information release of over 40 percent.

All timeliness improvements have been obtained through the reduced non-response rates and earlier submissions of data by respondents. This is due to better follow-up by staff, the development and implementation of new computerized cross-checks of data within and between forms, the incorporation of computer-assisted interviewing, the associated built-in editing of data during the interview process, realignment of priorities, stricter adherence to schedules, and the ability to make the information available to our customers electronically. All of these timeliness improvements have been accomplished without requiring an increase in EIA's budget.

With the additional funding EIA is requesting in the fiscal year 2000 budget, we will continue the overhaul and redesign of the electricity, natural gas, and energy consumption surveys, expand the use of electronic data gathering technologies, and incorporate improvements in survey information gathering designs. In conjunction with addressing the changing energy markets, these upgrades should improve the quality of the responses and result in fewer errors which will lessen the resources needed for editing and call-backs by EIA. Coupled with the possible use of electronic submission, the use of telephone respondent reporting, and restructured survey samples, the acquisition of energy markets data should require less time, provide more reliable and accurate data, and lead to a reduction in "processing cycle" time needed before EIA releases the information. Thus, with the upgraded surveys, the continued growth in usage of EIA's web site by our customers, the continuing efforts to make more of EIA's information and analyses available electronically, the time between data collection and public availability of energy information will continue to be reduced.

Staffing

Question: What is your current staffing level and how does that compare to your target staffing level?

Answer: EIA's current staffing level is 375 on-board which equates to 367 FTEs (the lower FTE number results from the savings gain from part-time employees and one staff member on appointment with an international organization; not counting the 5 Welfare-to-Work program participants). EIA's revised fiscal year 1999 SAI target level is 375 FTEs (including one FTE paid for by the Nuclear Waste Disposal Fund). EIA projects ending fiscal year 1999 at 369 FTEs.

Question: What are you doing to recruit and retain staff so that you maintain staffing at the Department-approved level?

Answer: Currently, EIA is engaged actively with the Department and the Office of Personnel Management (OPM) to recruit federal staff, especially at the entry level. We are placing particular attention on improving the diversity of our workforce, which has been hard hit by 4 years of retirement and other attrition. The following are specific examples of recruitment and retainment efforts:

Recruitment Efforts:

- Working closely with the Department's personnel office and OPM to ensure all available

minority institutions are notified regarding position vacancies,

- Utilizing special hiring authorities and considering recruitment and retention pay bonuses where appropriate,
- Posting vacancies on the EIA and DOE Internet sites,
- Posting vacancy announcements through the OPM fee for service Microcomputer Assisted Rating System (MARS), and
- Participating in job fairs, conferences, and university campus site visits to interview potential applicants.

Even with these efforts, recruiting in today's tight labor market will continue to be difficult for the foreseeable future. We were advised recently by OPM representatives that the expected unemployment rate for this year's graduating seniors is less than 2% for the skills EIA requires: economists, operation research analysts, and statisticians. The OPM further advises aggressive recruiting strategies at the agency level are essential to locate qualified applicants. Improving our diversity will require even more extraordinary efforts. Also, OPM now recommends agencies with skills needs like EIA's to pursue and be prepared to fund cooperative educational arrangements at appropriate academic institutions beginning at the freshmen and sophomore levels as a strategy to "grow your own talent pool" and compete with similar efforts by the private sector.

Retainment Efforts:

- Conducting office-by-office workforce analysis to identify skill needs and succession requirements,
- Maintaining developmental training plans,
- Establishing an educational program with financial assistance for employees to foster upward mobility,
- Conducting in-house training for energy specific subjects, and
- Other: EIA has moved staff to critical positions based on employee interest. Periodically, staff are asked to see if there is interest in moving into critical positions. Opportunities for enhancement of an individual's knowledge and skills through such educational and training activities as participating in conferences, attending technical courses, and working with in-house experts on current projects and programs.

INDEX

U.S. Department of Agriculture

	Page
Asian longhorned beetle	32
Baca location	40
County payments	27, 44
Deferred maintenance	24
Endangered species	40
Funding State programs	21
Infrastructure	19
Invasive species	33
Lands legacy initiative	30
Local fire departments	39
Opening remarks	1
Program priorities	31
Protecting open spaces	37
Questions from the Committee	43
Recreation	20, 23
Revenue generation	35
Road maintenance	34
Rural priorities	29
Statement summary	12
Timber user fees	27
Transportation funding	26
Uncontrolled expenses	22
Watersheds	19
Wildfires	20

Forest Service

Agreements with States	84
Below-cost timber sales	100
Budget allocation priorities	97
Chief's opening remarks	65
Economic impacts	92
Financial accountability	97
Fire season preparations	80
Forest health map	98, 100
Forest road system debate	94
Forest succession	101
Hispanic employees	80
Program budget priorities	93
Questions from Mr. Hinchey	176
Mr. Kolbe	183
Mr. Kingston	195

Page

Questions from Mr. Hinchey—Continued
Mr. Nethercutt 168
Mr. Obey 173
Mr. Skeen 185
Mr. Taylor 197
The Committee 103
Rainbow family gathering 98
Recreation fee demonstration program 85
Regulatory flexibility analysis 92
Road analysis procedures 87
Roads moratorium 86
Storm damage, 1985 101
Timber salvage sales 96

DoE Secretary Hearing

Accounting Problems 237
Additional Committee Questions 245
Black Liquor Gasification 229
Climate Change 221, 242
DoE Research Labs 231
Economic Estimates 226
Electricity Deregulation 242
Energy Conservation 227
Fuel Efficient Cars 235
Funding Offsets 234
Hanford 222
Kyoto Protocol 240
Medical Isotopes 241
National Energy Strategy 219
Nuclear Reactors 236
Opening Remarks 201
Questions Submitted by Congressman Charles Taylor 271
Questions Submitted by Congressman George Nethercutt 272
Questions Submitted by Congressman Jack Kingston 274
Questions Submitted by Congressman Joe Skeen 265
Questions Submitted by Congressman Norman Dicks 261
Refining Capacity 224, 238
Strategic Petroleum Reserve 225
Vision 21 220
Waste Isolation Pilot Project 228
Written Statement 207

Department of Energy—Fossil Energy

Bioprocessing 307
Carbon Sequestration 324
Caspian Oil Reserves 307, 314
Caspian Sea Oil and Gas Reserves 315
Clean Coal 304, 313
CPICOR 314
Domestic Oil Market 315, 342
Electric Restructuring 306
Fuel Cell Research 322
Historically Black Colleges and Universities 311
Interstate Oil and Gas Compact Commission 345

Page
Long-Term Energy Outlook 343
Methane Hydrates..... 303, 305
Naval Petroleum Reserve 346
Oil Recovery 305
Opening Remarks of Robert W. Gee, Acting Assistant Secretary 277
Prepared Statement of Robert W. Gee, Acting Assistant Secretary 281
Research and Development 341
Reservoir Class Revisit Program 318
Stripper Wells 344
Technology Development with Independents Program 320
Turbine Research 323
University Coal Research Program 308
Vision 21 278
Additional Committee Questions:
Administrative Provision 357
Advanced Research and Environmental Technologies 357
Advanced Turbines Programs 373
Clean Coal Technology 348
Cooperative Research and Development 389
Cost Sharing for Fossil Research 354
Effective Environmental Protection/National Laboratory Partnership 385
Fossil Fuels 391
Fuel Cells 362
Gas Upgrading/Coal Mine Methane 386
Gas to Liquids 384
High Efficiency Gasification Combined Cycle 372
High Performance Power Systems 370
Life Extension 357
Natural Gas Research/Methane Hydrates 381
Naval Petroleum and Oil Shale Reserve 349
Offsets for Fossil Energy Research 353
Oil Technology 386
Petroleum Account 356
PM 2.5 Monitoring and Control 378
Program Direction 388
Strategic Petroleum Reserve 354
SynGas Program 389
Vision 21 367
Questions Submitted by Congressman Mollohan:
Clean Coal Technology Program 338
Critical Infrastructure Protection (Natural Gas and Electricity) 340
Fossil Energy's Budget 336
Fossil Fuel Usage 338
Fuel Cells 337
Methane Hydrates 336
Questions Submitted by Congressman Moran:
Clean Coal Technology 401
CO2 Emissions 400
The Green Scissors Report 399
Questions Submitted by Congressman Wamp:
University of Tennessee Space Institute 392
Vision 21 392

Department of Energy—Energy Conversation

Alternative-Fueled Transit System 451

Page
Appliance Standards 435
Black Liquor Gasification 450
Budget Consolidation and Increases 419
Climate Change 430, 432, 455
Energy Savings to States 438
Federal Energy Management Program 425, 450
Forest Products Industry 453
Fuel Cells 424
Funding Priorities 428
Global Warming 420
Hydrogen Research 434
Northwest Alliance for Transportation Technologies 423
Opening Statement of Dan Reicher, Assistant Secretary 403
Partnership for a New Generation of Vehicles 422, 431
Prepared Statement of Dan Reicher, Assistant Secretary 407
Savings from Appliance Standards 436
Transportation Technologies 437
Weatherization Assistance Program 425, 427, 433
Additional Committee Questions:
Advanced Gas Turbines 481
Alternatively Fueled Vehicles 462
Building Programs 488
Clean Diesel Program 480
Cooperative Efforts with Fossil Energy and the States 506
Exemplary Buildings Program 494
Federal Energy Management Program 499
Federal Energy Technology Center 504
Fuel Cells for Transportation 479
Global Warming 456
Hybrid Lighting 489
Industries of the Future 484
Industry Research Programs 481
Lighting Research 489
Measuring Energy Consumption—Source versus Site 501
Microturbines 487
Motor Challenge 483
National Laboratory Funding 525
Natural Gas Research and Development 501
Natural Gas Vehicle Research and Development 477
Overview of the Budget Request 456
Partnership for a New Generation of Vehicles 464
Policy and Management 516
Priorities within the Buildings Program 496
Priorities within the Industry Program 486
Priorities within the Transportation Program 481
State Grant Funding within Program Elements 516
Training 514
Transportation Program Increase 462
Weatherization and State Grants 496
Questions Submitted by Congressman Moran:
Building Technology, State and Community Sector Program 530
Federal Energy Management Program 528
Uncosted Balances 530
Workforce 529
Questions Submitted by Congressman Nethercutt:
Hydropower 533

Page

Questions Submitted by Congressman Nethercutt—Continued
Industries of the Future 534
Materials Technology 532

Energy Information Administration

Additional Committee Questions 542
Budget Increase 542
Customer Satisfaction 547
In-House vs. Contract Analysis 547
Reimbursable Work 545
Staffing 548
Statement of Jay E. Hakes 537

WITNESSES

	Page
Domeck, Mike	65
Gee, R. W	277
Glickman, Hon. Dan	1
Hakes, J. E	537
Hakes, Jay	201
Kripowicz, R. S	277
Kripoqicz, Robert	201
Lyons, Hon. Jim	1
Reicher, D. W	201
Reicher, D. W	403
Richardson, Hon. Bill	201



ISBN 0-16-058608-9

