

**FISCAL YEAR 2002 BUDGET REQUEST FOR THE  
DEPARTMENT OF ENERGY**

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**HEARING**  
BEFORE THE  
**COMMITTEE ON**  
**ENERGY AND NATURAL RESOURCES**  
**UNITED STATES SENATE**  
**ONE HUNDRED SEVENTH CONGRESS**

FIRST SESSION

TO CONSIDER THE PRESIDENT'S PROPOSED FISCAL YEAR 2002 BUDGET  
FOR THE DEPARTMENT OF ENERGY

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MAY 10, 2001



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# CONTENTS

## STATEMENTS

	Page
Abraham, Hon. Spencer, Secretary, Department of Energy .....	6
Akaka, Hon. Daniel K., U.S. Senator from Hawaii .....	35
Bingaman, Hon. Jeff, U.S. Senator from New Mexico .....	4
Craig, Hon. Larry E., U.S. Senator from Idaho .....	32
Domenici, Hon. Pete V., U.S. Senator from New Mexico .....	27
Johnson, Hon. Tim, U.S. Senator from South Dakota .....	3
Murkowski, Hon. Frank H., U.S. Senator from Alaska .....	1
Smith, Hon. Gordon, U.S. Senator from Oregon .....	34
Thomas, Hon. Craig, U.S. Senator from Wyoming .....	29

## APPENDIX

Responses to additional questions .....	53
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# **FISCAL YEAR 2002 BUDGET REQUEST FOR THE DEPARTMENT OF ENERGY**

**THURSDAY, MAY 10, 2001**

U.S. SENATE,  
COMMITTEE ON ENERGY AND NATURAL RESOURCES,  
*Washington, DC.*

The committee met, pursuant to notice, at 9:30 a.m. in room SD-366, Dirksen Senate Office Building, Hon. Frank H. Murkowski, chairman, presiding.

## **OPENING STATEMENT OF HON. FRANK H. MURKOWSKI, U.S. SENATOR FROM ALASKA**

The CHAIRMAN. Good morning, ladies and gentlemen. I am fearful that if we do not get started we will have more Senators in, and the Secretary appears to be in a jovial mood conversing, and we might not get started or finished. We have got some votes, but nobody is sure when they are going to occur, so there is really nothing new to report, other than my colleague says about 11 o'clock or thereabouts, either today or tomorrow.

But in any event, good morning. Today's hearing is to consider the Department of Energy's budget request for fiscal year 2002. We are very pleased to have with us our Secretary of Energy, Mr. Spencer Abraham, and we want to welcome you back to the committee, and particularly back to the U.S. Senate, where you have spent a good deal of your productive years.

Now that you have made the sacrifice to go downtown, why, we have great expectations, based on your background and training you have received from this august body. In any event, your discretionary budget request for the Department of Energy is just over \$19.2 billion, an increase of nearly \$282 million over last year's request, and nearly \$1.437 billion over fiscal year 2000 enacted levels.

The proposed budget in our opinion fulfills the President's desire for moderate discretionary spending while meeting crucial national missions. Energy, national security, environmental quality, and science are among those. The budget proposal is, of course, important in light of the energy crisis that we face, and the Department of Energy is going to play a significant role in managing and correcting this crisis.

However, the reality is that to end the crisis we are going to have to develop a comprehensive energy strategy that, one, increases production of conventional fuels, that two, expands use of alternative fuels and renewables, and three, improves energy efficiency and conservation.

The highlights, I think, include in your budget request certain initiatives in each of these areas: production, alternative fuels, renewables, and energy efficiency. I am pleased to see an increase of 14 percent in funding for the nuclear waste program. It is important to keep that program on track, moving towards making a recommendation to the President on a permanent repository site in fiscal year 2002. Another important fuel for our future, clean coal, benefits from the President's clean coal power initiative, a \$2 billion, 10-year plan to provide clean, affordable electricity from coal, in short supply these days. That is, electricity. Coal still supplies 52 percent of our stationary power generation.

I have said to you many times, and you have said to me many times, we have all said to each other many times that we need a balanced approach to meeting our energy need, and the devil, of course, is in the details. We need renewables, we need conservation, but we also need to go back to basic sources of energy, using our technology to produce them better.

I am glad to see that the increased request for weatherization assistance to improve energy efficiency in some 123,000 homes is in your request, and a more focused, renewable energy R&D program along with tax incentives to encourage market development.

As you know, Mr. Secretary, Senator Breaux and I have introduced a comprehensive energy bill, along with a number of cosponsors, and in that bill there are many broad programs and inducements for alternative and renewable energy, as well as R&D programs. The bill is going to be debated to some extent, I am sure, with respect to the President's program, but nevertheless we feel it is important and appropriate to bring it into the debate for consideration, so we would appreciate your comments on that.

The budget request also includes substantial funding for a national security mission, \$7.2 billion, to manage our Nation's nuclear arsenal and reduce threats from proliferation and nuclear materials, and the request also includes environmental management funding to clean up the legacy of our past nuclear activities and protect the public.

In the nomination hearing yesterday, we had discussions with some of your people relative to the adequacy of the budget and, of course, the question of to what level you clean up these sites is a question for endless discussion, and whether or not they have to be cleaned up to drinking water quality standards as a comparison, and whether that is realistic, or the realization on some is that you cannot print enough money to clean them up, these are decisions that we expect you to make and to bring before this committee and make some solid recommendations on the practicalities.

Now, I understand the DOE is currently prioritizing about 113 sites to ensure the most effective and cost-effective cleanup. Some have suggested on some sites that you simply fence them off in perpetuity. That sounds like a crass approach, but on the other hand it may have some practicability.

Finally, the budget request includes a slight increase for the Office of Science, \$3.16 billion. That office maintains DOE's lead role as the largest Federal source of funding for physical sciences, and DOE is the third largest source of basic research overall, after the

NIH and the NSF, and I think a lot of people overlook that responsibility.

DOE research has yielded several exciting findings in the past year, human genome, climate modeling, nano-technology, materials of various kinds, and your budget request also reflects core reviews going on in several significant areas, DOD nuclear posture, National Security Council, nonproliferation, DOE's environmental management mission, the Vice President's Energy Task Force, and so forth.

Finally, in conclusion, let me congratulate you on a responsible and a modest budget, which is not easy to do in Washington. On the other hand, that happens to be my opinion, and there may be others that share different views. In any event, your Department will be well-positioned to respond to the findings of the several ongoing policy reviews once those reviews are completed, and I look forward to working with you, Mr. Secretary, in making those changes through budget amendments or legislation. I again thank you for being with us today, and I want to welcome you back.

Senator Bingaman and I have requested in your absence unanimously that we limit opening statements to Senator Bingaman and myself, and since there was no objection—you were not here—Senator Bingaman.

[A prepared statement from Senator Johnson follows:]

PREPARED STATEMENT OF HON. TIM JOHNSON, U.S. SENATOR  
FROM SOUTH DAKOTA

Mr. Chairman, I am pleased that we are taking the time to hold this hearing today on the FY 2002 budget for the Department of Energy.

This is a difficult time for the energy system in our country. Our system is trying to deal with growing demand but is being strained to its limits. Gasoline and heating prices are higher than they have been in years and our neighbors in California are facing continuing rolling blackouts. As the summer draws closer, other areas could be affected as well.

I am pleased that the Administration, as well as the Chairman and Ranking Members of this Committee, are releasing or have released plans that address the nation's long-term strategy. I believe these are good starts that will hopefully lead to bi-partisan solutions.

In light of the difficulties the nation is facing, however, I am troubled by some of the proposals in the DOE budget. In my view, we should be finding avenues to adequately fund short-term needs. In the haste to reach a bottom line, I am fearful that the choices made in the budget proposal are short-term responses to long-term problems.

In particular, I am troubled by 25% cuts in renewable energy programs. Our rising dependence on imported petroleum has become a storm cloud over the economy. The failure to address America's energy needs has jeopardized our energy security, economy and national security. To meet our future energy needs, all sources of fuel and energy must be thoroughly explored and utilized.

Renewable fuels, such as biodiesel and ethanol, are increasingly important sources of transportation fuel in the country. Ethanol-blended gasoline is sold in every state in the country, particularly in areas where it is used by refiners as an oxygenate to comply with Clean Air Act requirements. Ethanol's high octane and clean air benefits make it a logical choice for refiners in addressing the production constraints caused by numerous environmental challenges, including low-sulfur gasoline, the phase-out of MTBE and toxic performance standards. Similarly, biodiesel offers one of the best available alternatives for heavy-duty applications because it has high cetane, lubricity, and BTU content, yet contains no sulfur or aromatics. Since biodiesel is compatible with existing diesel engine technology and infrastructure, it can be used in a number of beneficial ways, including as an effective lubricity additive while low-sulfur diesel regulations are implemented.

Increasing the production and use of ethanol and biodiesel will promote a number of energy, environmental and economic public policy goals. First, it will decrease the

need for imported petroleum products, reduce the stress on our refineries and reduce consumer gasoline costs. Second, it will help improve air quality across the country by reducing carbon monoxide, hydrocarbon, nitrogen oxide and toxic emissions. Third, the increased demand for grain used in the production of ethanol and biodiesel will provide an important economic stimulus to rural America. Finally, because ethanol and biodiesel are produced from renewable resources, they are the most efficient means of reducing greenhouse gas emissions from motor fuels in the near term.

In a speech on energy issues to the Associated Press last week, Vice-President Cheney indicated we could reasonably expect renewable power generation to meet three times the share of energy needs it meets today. The same is true for renewable fuels. Ethanol and biodiesel could meet 3% of the nation's motor fuel market within ten years—providing energy, environmental and economic benefits for the nation. A 3% market share for ethanol and biodiesel would displace about 9 billion gallons of gasoline annually or between 500,000 and 600,000 barrels of crude oil each day.

In addition, wind power funding is due to be cut by 50% in the DOE budget. My state is fourth in the nation in wind power capacity. Harnessing and utilizing wind power has proven to be effective in my part of the nation. Cutting funding for wind power sends the wrong message at a time when we should be diversifying our resources.

The use of renewable fuels will not single-handedly solve our nation's energy needs. But it can be an important component that could diversify our energy source and lessen our dependence on imports. We must find avenues to fund these important programs.

Moreover, if we are going to increase our domestic supply, proposed cuts in exploration of fossil fuels is also not the way to go. Traditional resources such as coal and natural gas continue to be our main sources of supplies and we must continue to find technologies that will increase supply efficiently and in an environmentally safe manner.

We must also not overlook conservation and energy efficiency. While the Administration has increased funding for weatherization, it has drastically cut funding for energy efficiency R&D programs. To short-change the demand side of the energy equation at a time when we have great constraints is not the direction we should be taking at this time.

Mr. Chairman, our energy situation is one of the most important issues facing the nation today. I am hopeful that the Administration will reconsider some of these budget cuts so we can address these problems in a balanced manner.

#### **STATEMENT OF HON. JEFF BINGAMAN, U.S. SENATOR FROM NEW MEXICO**

Senator BINGAMAN. Thank you, Mr. Chairman. Welcome, Secretary Abraham. We are very glad to have you here before us. Obviously, the Department of Energy's budget is extremely important, given the energy problems that the country faces. I think energy issues have become front-page news all around the country, and the crisis that we face in parts of our country and sectors of our energy industry is very real.

I also hope, Chairman Murkowski mentioned the legislation that Senator Breaux and he—I believe he put it that way, that Senator Breaux and he have introduced a bill. I would point out that Senator Breaux and I have introduced a bill, too, since Senator Breaux is cosponsoring both bills.

Senator CRAIG. On both sides of the issue.

Senator BINGAMAN. It is really—I think the two bills do not reflect two sides of the issue. I think what they do is to reflect a different emphasis on different aspects of the issue.

The CHAIRMAN. Maybe you should join me and I should join you.

Senator BINGAMAN. Well, I would be glad to have you join me.

The CHAIRMAN. Well, I got mine in first.

[Laughter.]



Senator BINGAMAN. All right. I do have some concerns which we will have a chance to go through in your testimony and in the questions. It seems to me that the Department of Energy budget we have seen does not support the policy initiatives of the administration. For example, fossil and nuclear energy supply and natural gas infrastructure development, I do not see the support in the budget for those.

Moreover, many of the programs that you have proposed for very severe funding reductions, such as energy efficiency, renewable research and development programs, I believe those have to be part of a balanced energy strategy. We need to have high levels of support for them at this time in our history.

I have been informed that the Department has prepared a budget amendment that would restore funding for certain programs in the renewable area, but that it would pay for those increases by reducing research and development for transportation efficiency. Obviously, this concerns me. I do not understand why we would be proposing this particular budget amendment at this particular stage in the process. Also, I have a concern that it appears, at least from what I have heard, that there is an underlying assumption that it is a zero-sum game, and you have got to find another place to cut the budget in DOE if you want to add anything anywhere.

Frankly, the debate we are having, and the vote we are going to have later this morning on the budget resolution is a little bit disingenuous in that whenever you say you raise an issue, some of the time the answer is, do not worry, we are going to go ahead and fund that even though it exceeds the budget. In the case of tax cuts, I saw an article in the paper this morning, the chairman of the Ways & Means Committee in the House said, don't worry about the size of the tax cut provided for in the budget resolution, we are going to pass a lot more in the way of tax cuts than is provided for in the budget resolution. I have heard the same kinds of comments made about education funding, saying do not worry about the fact that there is no money in the budget resolution for increases in education. We are going to fund it anyway.

The votes may be there for both of those things, increasing the size of the tax cut, increasing the funding for education. I fear that the votes will not be there for increasing some of these Department of Energy accounts, and therefore we may be stuck with the funding caps and the funding levels that are provided for in the budget resolution. So it gives me concern that we have this zero-sum approach.

I also just want to mention that obviously we have a serious problem with gas prices around the country, as well as electricity shortages in California. I would be interested in any insights you could give us as to short-term actions the administration would intend to pursue to try to deal with any of those problems, or if you believe there are none that are realistic, then I would need to hear that, but I appreciate you coming, and we look forward to your testimony.

The CHAIRMAN. Mr. Secretary, good morning. Please proceed.

**STATEMENT OF HON. SPENCER ABRAHAM, SECRETARY,  
DEPARTMENT OF ENERGY**

Secretary ABRAHAM. Mr. Chairman, Senator Bingaman, Senator Akaka, nice to see you all, Senator Craig, Senator Thomas. As was the case in my previous appearances before this committee, I want to begin by both thanking you for giving me the chance to appear, but also to say how much I enjoy the chance to come back to be with former colleagues and to work together to address issues of concern, of which our Department confronts many.

What I would like to do, Mr. Chairman—I prepared a fairly lengthy written statement—is to ask that it be submitted for the record.

The CHAIRMAN. Without objection, it will be entered into the record. I appreciate that. I read it last night, and it is quite comprehensive.

Secretary ABRAHAM. It would take a little while to read. Let me just make a few comments. First of all, over the last 2 months we have done our best in a brief period of time to prepare this first budget. We appreciate your patience and consideration as we have done our best in that compressed time frame to try to evaluate things, and the success and failure of the various programs in the Department. We are trying to present here a budget that does our best to essentially meet three challenges that I posed to people throughout the Department.

First, what we have tried to do is to have our budget reflect the budget priorities that were clearly established by President Bush during his campaign, in his campaign platform, and in areas where we had clear guidance to begin establishing policy-driven budget priorities.

Second, we were confronted, virtually the very first week of our administration, with decisions which I strongly support, to begin policy evaluations and reviews in a number of areas across the spectrum of the Government, but as I think most of you know, almost all of the reviews that were launched tend to have fairly significant implications for the policies and ultimately the budget of the Department of Energy. One of the reviews was the review that Vice President Cheney is in charge of, our Energy Policy Development Task Force.

We expect within the next week or so to have the results of that task force recommendations before the President for his final approval, but obviously the priorities and the recommendations that are going to come out of that report will provide a huge amount of guidance with regard to the direction of the Department of Energy, and so to a significant degree we tried to, in the formulation of this budget, select the areas where these policy analyses were occurring and to in those areas try to preserve the core competencies of the various programs subject to further additions or changes that might come either in this budget cycle, or certainly, of course, in the 2003 budget cycle, but we did not have that guidance because work on this submission, as you know, had to begin back in February.

I would add also in the area of defense policy there are also several reviews that directly affect us, from a full-scale review of our nuclear strategic programs, which will affect, of course, the defense

programs component of the NNSA division of our building, and also a very broad, sweeping review of our nonproliferation and deterrence programs, which will affect, as well, some of the things that we do in the area of defense programs and nuclear proliferation, so we are sort of waiting for what will soon be the completion of those projects.

We, however, did have the opportunity to evaluate some of the programs that were ongoing, areas where we made some decisions based on reviews that we conducted, and where what we did in that respect was to aim to end programs that we determined were either obsolete or redundant, to try to reduce the role of Government where we felt that private sector participation, especially in R&D programs, could be increased, that is, to increase cost-sharing situations, and to try to respect guidance, especially in the area of defense programs and security at our facilities, where we felt the Congress had already made a major statement with regard to priorities.

The consequence of all of that, I would be happy to get into in the questions, and already we will just note, for example, that an area that Senator Bingaman mentioned, the vehicle program, the PNGV program, we would be delighted to respond to that in the question period, because that is one of the areas where we did conduct some analysis of the direction of the program, and it did bear on the decisions which we made.

But let me just say overall, the Department's budget, as the chairman indicated, is \$19.2 billion. While that constitutes a \$456 million reduction from the final fiscal year 2001 appropriation level, it actually is a little bit deceptive, because when you subtract some very unique costs that took place in the last fiscal year, specifically the emergency funds that were expended with regard to the Cerro Grande fire at Los Alamos and some other one-time projects, the actual difference between the final appropriation level of last year and this submission is approximately \$13 million.

In addition, I would note that this budget is significantly higher, as the chairman indicated, than the submission of a year ago, about \$275 million more, and so relatively speaking, it is consistent with both last year's appropriation level and a little bit more than last year's initial submission. To the extent that we could, we have already tried to implement some of the President's priorities, but to a large extent the budget reflects a pause for us to try to evaluate, after the task forces and analyses are completed, their budgetary implications.

We really did not think it was smart to continue forward with every single policy priority of the past, when we were engaging in policy reevaluations for the future. What we believe is that our budget in the Department needs to reflect that evaluation process. Whether or not that translates into actions that would be part of the ongoing appropriation process this year, and I suspect it could, it certainly will be reflected in the next budget process which, interestingly enough, we are almost ready to begin for fiscal year 2003.

In any event, Mr. Chairman, I believe the budget does a good job of addressing a number of issues. One of the concerns that we had upon taking office, and which I know that was shared here in the

Senate and in the House was the security at our facilities. We have significantly increased the budgetary commitment for security and safeguards.

I believe that the right actions were already being implemented to try to address many of these concerns, but we felt that, especially with regard to cyber security, a significant upgrade was needed, and that is reflected in the budget. We tried to also begin the process of further developing our science-based stockpile stewardship program, and that is reflected in the budget.

On energy programs, where we feel there is, again there is clear direction, such as in clean coal technology, it is reflected in the budget. But in some of these areas, we again chose to maintain core competencies, but wait until the completion of our national energy plan, so that we could proceed with the budget that more accurately reflects the priorities of the administration. In any event, I have included most of this in my statement. I am happy to submit that, and I would be happy to respond to your questions.

[The prepared statement of Secretary Abraham follows:]

PREPARED STATEMENT OF HON. SPENCER ABRAHAM, SECRETARY,  
DEPARTMENT OF ENERGY

Mr. Chairman and members of the Committee, it is a pleasure to appear before you to discuss the Department's FY 2002 budget request for our programs outside of the National Nuclear Security Administration (NNSA).

This budget is an important first step toward the future. It is a prudent transition between what was left to us by the previous administration and where we will be headed in the budgets for 2003 and beyond. In the limited time given us to formulate this budget, we turned its focus as much as we could toward our ultimate goal of major DOE reform. We also initiated a broad range of strategic and policy reviews that would fully shape future budgets. As a result, this budget begins to reflect our intention for serious reform in some important program areas. And make no mistake, change is coming. Some people will fault this approach, saying it changes too much or too little. But this is the right budget for this year; it's the responsible way to set us on a course toward a comprehensive change in the way we do business.

PRINCIPLES GUIDING THE FY 2002 DEPARTMENT OF ENERGY BUDGET

The total FY 2002 budget request for the Department is \$19.2 billion.

This budget is a principled and responsible effort, one that fulfills President Bush's commitment to moderate discretionary spending while meeting critical requirements in national security, energy, science, and environmental quality. This budget adjusts program requests to reflect reviews underway to reevaluate and refine the Department's missions, and to implement management strategies that meet the challenges of the future. The request incorporates the following principles:

- Enhance complex-wide safeguards and security efforts
- Eliminate programs that have completed their mission, are redundant, ineffective, or obsolete
- Review all private-sector subsidies and maximize cost-sharing opportunities
- Finish promising R&D projects where investment installments are nearly complete
- Establish baselines and improve accountability for project and capital asset management
- Arrest deterioration of infrastructure through stronger management of maintenance
- Utilize computer information systems to improve management and promote efficient use of resources
- Eliminate unnecessary layers of management, and direct personnel to high-priority missions
- Achieve a 5-10 percent savings in management expenses through comprehensive, creative management reform
- Recognize and respect Congressional policy determinations for operating the DOE complex.

This budget also maintains the Administration's flexibility to respond to government-wide policy reviews now underway. The Department of Defense Nuclear Posture Review, the National Security Council reviews of U.S. deterrence requirements and nonproliferation programs, Vice-President Cheney's National Energy Policy Development Group, and a newly initiated internal Environmental Management Mission Assessment figure heavily in the Department's current budget and its future year planning. Pending future decisions as a result of the reviews, the budget seeks to preserve program options by maintaining core requirements in areas under review unless a change was dictated by a Presidential commitment. We stand ready to work with you and the other members of this subcommittee to address the recommendations of these reviews.

#### FY 2002 FUNDING REQUEST FOR ENERGY PROGRAMS

Recent events have called into question the future availability, cost, and reliability of our traditional fuels. To address the situation, President Bush asked Vice President Cheney to lead an effort to develop a national energy policy to help the private sector and government promote dependable, affordable, and environmentally sound production and distribution of energy for the future. In advance of these policy determinations, the FY 2002 budget focuses DOE's energy programs toward the next generation of energy production, including renewable sources and advanced nuclear technologies. The budget also reflects an evaluation of program operations, and, where feasible and appropriate, proposes to expand cost-sharing in applied research, further develop partnerships, and strengthen industry collaboration.

#### RENEWABLE ENERGY RESOURCES

In Renewable Energy Resources we made the tough choices on priorities while keeping key options on the table until the Vice President's Energy Task Force completes its work.

Some will argue that we should just spend more money now on existing energy programs, however, continuing and expanding programs that have been in place as we drifted to the brink of an energy crisis does not appear to be a wiser course of action. We also need a better measure of success for these programs.

For too long, critics have argued that these programs have produced few results. That is not fair. Many of our programs make sense and should be continued. On the other hand, some have produced few, if any benefits. The taxpayers sent us here to weed out the waste and to address growing problems of energy supply. The weeding begins in this budget but we won't just be downsizing. We intend to rebuild our energy resource programs so they are productive, so taxpayers receive a better value, and the programs deliver results measured against rigorous standards.

Including a budget amendment which the Administration will submit, the Department is requesting \$276.7 million in FY 2002 for Renewable Energy programs, a decrease of \$96.5 million from FY 2001 levels. The request maintains our biomass, hydrogen, hydropower, high-temperature superconducting energy storage, Renewable Energy Production Incentive Program, and transmission reliability programs at approximately current funding levels; and continues core research and development in all Renewable programs except Renewable Indian Energy Resources which will be terminated, and Concentrating Solar Power where only project close-out costs are requested. All other R&D efforts will be funded at levels to keep them as viable options pending finalization of the National Energy Policy.

This budget advances a diverse portfolio of new and emerging technologies that offer cleaner and increasingly affordable solutions to help meet our growing U. S. energy needs. The Renewable Energy Resources program works in partnership with industry and the national laboratories to accelerate the development and use of clean power and heat technologies, including renewable and natural gas hybrids and biofuels. Renewable Energy Resources activities supported in FY 2002 include:

- Biomass/Biofuels Energy Systems (\$82.0 million)
- Geothermal Technology Development (\$13.9 million)
- Hydrogen Research (\$26.9 million)
- Hydropower (\$5.0 million)
- Solar Energy (\$42.9 million)
- Wind Energy (\$20.5 million)
- Electric Energy Systems and Storage (\$51.7 million)
- Renewable Support and Implementation (\$9.5 million)

The Biomass Research and Development Act of 2000 established a Biomass R&D Initiative, to be carried out jointly by the Secretaries of Agriculture and Energy. The \$82.0 million requested in FY 2002 for Biomass/Biofuels, supports collaborative re-

search and development to improve our nation's ability to not only convert biomass into electric power, heat, and clean liquid transportation fuels, but also to extract high-value bio-based industrial materials such as chemicals, plastics, and building materials. DOE's biomass activities within the jurisdiction of the Energy and Water Development Subcommittee focus on two distinct elements: Biopower, which co-fires biomass with coal or gasifies biomass material that is combusted to generate power; and Biofuels, which converts agricultural and other products to ethanol. Combined, these core activities underpin a national effort to more effectively use a vast domestic resource. The total also includes \$5 million specifically for cross-cutting, integrated R&D for the emerging bioenergy and biobased products industry.

The \$51.7 million request for Electric Energy Systems and Storage includes funding for the Transmission Reliability Program (\$8.9 million) to develop real-time measurement and control systems, models, and tools to enhance the reliability and efficiency of grid operations. Advanced Energy Storage Systems (\$6.0 million) is supporting R&D in advanced battery systems, flywheels, supercapacitors, and large lithium-ion batteries, to provide seamless power during micro-outages, voltage sags, and frequency disturbances that cost industry up to \$150 billion per year. These energy storage devices can help bridge the gap between the reliability of today's electric grid system and current requirements of industrial and commercial users.

Within Electric Energy Storage Systems is funding to support a DOE-wide collaborative effort in Distributed Energy Resources (DER). There is also \$1.0 million for DER within Renewable Support and Implementation. Over the next two decades, consumers will be able to choose from an array of ultra-high efficiency, ultra-low emission, fuel flexible, and cost-competitive distributed energy resource products and services. These will be interconnected into the nation's infrastructure for electricity, natural gas, and renewable energy resources. The localized generation and use of power can greatly enhance reliability and power quality and provide an alternative to new transmission lines as we replace the aging electricity and natural gas infrastructure in the United States. This is critical to U.S. economic growth. The FY 2002 program will support research and development on thermal, electrical, and mechanical power technologies and provide cross-cutting assistance. In FY 2002, funding is included in the Energy Efficiency (\$47.3 million), Renewable Energy Resources (\$15.9 million) and Fossil Energy (\$45.1 million) programs to support this program.

As part of the Electric Energy Storage Systems, the High Temperature Superconductivity program (\$36.2 million) is applying the remarkable breakthroughs in superconducting wire technology to develop cables that will allow us to transmit 100 times the amount of electricity as traditional copper cables, with significantly reduced energy losses. Large motors and power transformers using superconductive materials will be much more efficient at only half the size of present-day technology.

Additional programs that are funded at FY 2001 levels are: Hydrogen R&D (\$26.9 million); Hydropower R&D (\$5.0 million); and the Renewable Energy Production Incentive Program (\$4.0 million). The Hydrogen Program includes research and validation projects for the development of safe, cost-effective hydrogen energy technologies that support and foster hydrogen as an integral part of the energy economy. The Program will continue research to improve efficiency, lower emissions, and lower the cost of technologies that produce hydrogen from natural gas and will work with fuel cell manufacturers to develop hydrogen-based electricity storage and generation systems that will enhance the introduction and market penetration of distributed, renewables-based utility systems. In Hydropower R&D, we will continue our R&D activities to support the development of a new generation of more environmentally-friendly hydropower turbines. And, level funding will allow our Renewable Energy Production Incentive program to continue our partnerships with state and local governmental entities to acquire renewable energy generation resources by providing financial incentives comparable to production tax incentives or investment tax credits available to private sector power generators.

#### FOSSIL ENERGY PRIORITIES

The FY 2002 budget for the Fossil Energy program contains two of the three DOE Presidential Initiatives. They are the Clean Coal Power Initiative and the Northeast Home Heating Oil Reserve.

##### *Clean Coal Power Initiative*

The FY 2002 budget includes \$150 million for the Clean Coal Power Initiative, a high priority effort that reflects the President's commitment to clean coal technology. Coal supplies 54% of the nation's current power demands. Virtually every credible energy forecast shows that coal will continue to supply around half of the nation's power through at least 2020 and probably beyond.

The Bush Administration is proposing a new vision for research in clean coal technology. In setting the direction for new, competitively awarded clean coal research, development and demonstration efforts, greater emphasis will be placed on seeking the advice of industry in shaping the program. We intend to investigate the use of consortia of companies, an industry board, or other mechanisms that can enhance the private sector's participation in planning this initiative.

New clean coal technology efforts will target the power industry's top priorities in solving problems generic to the way coal is used to generate electric power. Industry will be required to share the costs of projects, with the level of private sector financing ranging from 20 percent for the earliest stages of research to at least 50 percent for larger scale demonstrations.

The program will also solicit participation by universities as well as government laboratories in a broad-based effort to apply the best minds and institutions to eliminate barriers to enhanced coal use. Successfully implemented elsewhere in DOE, industry-guided research will choose the most important projects based on industry-defined merit.

#### *Northeast Home Heating Oil Reserve*

The Reserve provides an important 2-million-barrel "safety cushion" for the millions of families in the Northeast that depend on affordable heating oil to stay warm in the winter. Currently, one million barrels are stored in New York Harbor and one million barrels are stored in New Haven, Connecticut. Three companies—Amerada Hess Corp., Morgan Stanley Capital Group, and Equiva Trading Company—store the oil at their terminals, rotate the oil to maintain DOE specifications, and manage the delivery of the heating oil in the event of an approved use of the reserve.

On March 6, 2001, I signed letters notifying Congress of the Administration's intent to establish the heating oil reserve on a permanent basis. DOE intends to exercise the optional 1-year extension clause in its current contracts for storage of the emergency heating oil.

The FY 2002 budget continues operation of the Reserve with support for leasing commercial storage space, quality assurance, auditing, oil sampling and inspections.

#### OVERALL FOSSIL ENERGY RESEARCH AND DEVELOPMENT BUDGET

Our budget request for Fossil Energy R&D is \$449.0 million. Fossil fuels—coal, oil and natural gas—supply 85 percent of the nation's total energy, nearly three-fourths of its electricity, and almost 100% of its transportation fuels. The President's energy policy task force is examining a wide range of options to achieve the full potential of these fuels while safeguarding our environment. Recognizing this, our FY 2002 budget strikes a balance by focusing primarily on those areas where federal involvement is most critical.

Fuels and Power R&D. Within the \$159.8 million budget request, we have concentrated our efforts on research that will:

- directly support the Clean Coal Power Initiative, both immediately and over the 10-year life of the President's clean coal commitment,
- provide new, more reliable power systems for the joint Fossil Energy/Energy Efficiency effort to develop distributed energy resource technologies (for the localized generation and use of power), and
- expand the menu of options for managing carbon gases by developing affordable carbon sequestration technologies.

Emission Controls for Existing Plants. America has made remarkable progress in cleaning its air due largely to new technology. Coal use, for example, has doubled since the early 1970's but emissions of sulfur and nitrogen pollutants are down 70 percent and 45 percent, respectively. Yet, further challenges remain, especially in addressing emissions concerns and microscopic airborne particles. There may be opportunity for innovative, low cost technologies that address two or more pollutants simultaneously.

The Fossil Energy program is developing technologies that are intended to achieve future emission limits at costs far below what industry would pass on to consumers using today's technology. This is particularly important as support grows for an integrated emission reduction strategy that would sharply reduce key pollutants in exchange for long-term regulatory certainty.

Our FY 2002 budget contains \$18 million for these efforts. This is a slight decrease from the FY 2001 level of \$20.1 million reflecting the elimination of a program aimed at optimizing performance of coal-fired power plants in other countries.

Vision 21. Vision 21 is the core of our long-range power research program. It draws from several budget areas, including: gasification combined cycle, pressurized

fluidized bed combustion, fuel cells, and advanced research (the latter involving new materials research and advancements in supercomputing modeling and simulation).

Through this program, we believe it is possible to develop a new type of power facility that will virtually eliminate environmental concerns over the future use of fossil fuels.

A Vision 21 plant would be fueled by coal, or natural gas, or perhaps biomass or municipal waste. It would emit virtually none of today's air pollutants and produce no harmful solid or liquid wastes. This extraordinary achievement could ensure that America—and other countries—benefit from the full potential of their available energy resources without compromising environmental goals. A complete Vision 21 prototype is 10 to 15 years into the future, but many of the critical technology modules are already taking shape, and some are likely to be adopted by industry in the next few years.

In FY 2002, we propose to fund Vision 21-related efforts at \$37.5 million. The request is about \$14 million below the FY 2001 budget due primarily to completion of advanced turbine systems research and the redirection of funds from the indirectly-fired cycle program (this combustion technology is being refocused toward developing combustion/gasification hybrid systems under the Integrated Gasification Combined Cycle budget).

**Carbon Sequestration.** The Administration recognizes the importance of continuing to develop lower cost options for reducing the buildup of greenhouse gases. Voluntary emission reductions, for example, could become much more attractive if low-cost carbon management options result in commercial benefits—for example, injecting carbon dioxide from power plants into oil fields or coal seams to produce marketable crude oil or natural gas. If more emission reductions are needed in the future, research must be conducted now so that lower cost sequestration options are available. In FY 2002, we propose to increase funding for carbon sequestration research to \$20.7 million, a 10 percent increase that will enable the first limited field tests for the most promising approaches.

**Fuel Cells.** Our research into fuel cells focuses on lower-cost, high performance units that can provide localized power supplies for factories, hospitals, military installations, and other distributed power applications. (The complementary program underway in the Office of Energy Efficiency is developing fuel cells for vehicular and home use.) At modular scales of 5-kilowatts to 1-megawatt or more, the advanced fuel cells we are developing could be in growing demand as businesses and factories look for more reliable ways to generate premium-quality electric power onsite.

A high priority in this program will be to begin completing efforts that represent more than 20 years of development and are within 1 to 2 years of achieving their objectives. We will also allocate a smaller portion of the budget to the much longer-range future of fuel cells. The focus will be to co-fund competitively selected industrial teams that will develop new types of all-solid-state fuel cells that can break through the cost barrier currently limiting widespread market acceptance.

The FY 2002 budget request for fuel cells is \$45.1 million, a decrease of \$7.5 million from the FY 2001 level that reflects a shift from generic research to the development of a low cost five-kilowatt solid state fuel cell.

**Fuels R&D.** In FY 2002, the \$7.0 million budget request will support research to reduce the cost and broaden the range of feedstocks that can be processed into clean transportation fuels suitable for tomorrow's high-fuel-efficiency vehicles. Funding is requested for the continued development of improved ceramic membranes for producing synthesis gas that can be chemically recombined into a variety of clean liquid fuels. A small portion of this budget will also be used to support a university-industry consortium that is developing ways to use coal to produce high-value carbon products.

The Department does not propose to continue funding for developing new fuel processing approaches for producing ultra low-sulfur diesel and gasoline. The President has decided not to relax the requirements for cleaner automotive fuels. Industry now understands the need to meet the new standards, and this will create an incentive for private sector research into cleaner fuels.

**Petroleum and Natural Gas R&D.** The United States has experienced a decline in its domestic oil production for most of the past 30 years, yet huge quantities of crude oil remain. In fact, nearly two-thirds of all the oil found in the history of the U.S. remains unproduced, and much of it is beyond the capabilities of today's petroleum industry. There is the need for access to better technology and for validating that improved technologies will perform as expected.

These smaller companies now account for 40 percent of the oil produced in the United States and almost two-thirds of the natural gas. They account for 85 percent of new domestic drilling. The Department will continue to fund efforts that will en-



courage these smaller domestic producers to adopt optimum technologies that can find and produce oil and natural gas that might otherwise be left in the ground.

The overall funding for Petroleum & Natural Gas R&D reflects a significant decline compared to the current level of effort. This will require the program to be re-oriented toward three primary objectives:

- A concentrated effort to transfer improved technologies and “best practices” to the nation’s smaller independent firms in the very near-term—the next 1 to 5 years—and to lower the cost of environmental protection through a combination of risk assessments, technology development, regulatory streamlining, impact analysis, and improved federal-state-local coordination;
- Much longer-term research—10 or 15 years into the future—to develop technologies that could locate and produce oil and gas that are beyond the reach of current technologies or those that industry is developing; and
- Efforts to enhance the reliability and deliverability of the Nation’s natural gas pipelines and gas storage facilities.

The FY 2002 request for Petroleum and Natural Gas R&D is \$51.5 million.

Other Fossil Energy R&D. Among the other Fossil Energy research and development efforts in the FY 2002 budget are (1) \$5.2 million to continue advanced metallurgical activities at the Albany (OR) Research Center, including efforts that are helping to develop better materials for the *Vision 21* concept, and to study new carbon sequestration approaches; (2) \$9.5 million for corrective actions at Fossil Energy R&D facilities to meet environmental, health and safety requirements and for other locations where environmental remediation is necessary; and (3) \$1.0 million for regulatory activities involving natural gas imports and exports, exports of electricity, and authorizing Presidential permit applications from the private sector for constructing and operating electric transmission lines that cross U.S. borders with Mexico and Canada.

#### PETROLEUM RESERVES

Strategic Petroleum Reserve. The Strategic Petroleum Reserve provides the United States with strategic and economic protection against disruptions in oil supplies. The FY 2002 budget request of \$169.0 million will maintain the Reserve’s readiness to respond to a Presidential directive in the event of an energy emergency. During FY 2001, the inventory of 561 million barrels will provide 53 days of net import protection. By FY 2002, with the receipt of crude oil returned in the 2000 exchange initiative and all royalty-in-kind oil, the Reserve inventory is projected to grow to more than 591 million, its historical highest level. Even with the increase in inventory, the days of import protection are projected to increase only slightly, to 55 days, because of the continuing rise in oil imports.

Recently, the Energy Department renegotiated the delivery dates for 23.8 million of the 30 million barrels of crude oil released in last year’s exchange initiative. Under the original agreements, companies would return 31.35 million barrels later this year—the additional 1.35 million representing a premium in returning for obtaining crude oil when inventories were tight last year. Now, under the renegotiated contracts, which defer deliveries until December 2001 through January 2003, the Strategic Reserve will be replenished with 33.54 million barrels—2.4 million more than originally anticipated. It may also be possible that delivery dates will be renegotiated for at least some of the oil currently scheduled to be returned this year, further adding to the emergency crude oil inventory at no additional cost to the taxpayer.

In FY 2002, \$3.0 million is included in the budget request to begin dealing with a recurrence of gas buildup in the Reserve’s crude oil.

Naval Petroleum Reserves. The \$17.4 million budget request will permit continued operations of the NPR-3 (Teapot Dome) stripper well field in Wyoming and activities associated with the co-located Rocky Mountain Oilfield Testing Center.

Elk Hills School Lands Fund. The National Defense Authorization Act for Fiscal Year 1996, Public Law 104-106, authorized the settlement of longstanding “school lands” claims to certain Elk Hills lands by the State of California. The Settlement Agreement between the Department and the State, dated October 11, 1996, provides for payment of nine percent of the net sales proceeds generated from the divestment of the government’s interest in Elk Hills, subject to the appropriation of funds. Under the terms of the Act, a contingency fund containing nine percent of the net proceeds of sale has been established in the U.S. Treasury and is reserved for payment to the State, subject to the appropriation of funds.

The first installment payment was appropriated in FY 1999. No appropriation was provided in FY 2000, and the FY 2000 Interior and Related Agencies Appro-

priations Act provided an advance appropriation of \$36.0 million to become available in FY 2001.

The FY 2001 Interior and Related Agencies Appropriations Act provided an advance appropriation of \$36 million to become available in FY 2002 that, consistent with the budgetary treatment of other advance appropriations in the budget, would not be counted as discretionary funding for FY 2002 but would still be available next year. The FY 2002 budget requests \$36.0 million in additional new budget authority for FY 2002. Thus, the budget proposes that a total of \$72.0 million be available for this purpose in FY 2002.

#### ENERGY CONSERVATION PRIORITIES

The FY 2002 budget for the Office of Energy Efficiency and Renewable Energy (EERE) incorporates: concern for our low-income citizens—we have doubled our Weatherization Assistance Program; improved energy security—we are refocusing our transportation programs, particularly the Partnership for a New Generation of Vehicle; and energy reliability—ensuring grid reliability and advancing small-scale, on-site power generation through Distributed Energy Resource programs. This budget redirects our energy efficiency resources to benefit consumers, with emphasis on those least able to afford the high cost of energy. To do this, cuts are made to programs where industry and others can step in—sharing costs or pursuing research independently.

##### *Weatherization Grants*

Household energy needs consume a disproportionate share of expenses in low-income households. The Department's Weatherization Assistance Program reduces the heating and cooling costs for low-income families—particularly households that include the elderly, persons with disabilities, and children. To help correct the heavy energy burden faced by low-income Americans, the Administration proposes to increase the Weatherization Assistance Program in FY 2002 to \$273.0 million, an increase of \$120.3 million above current levels.

The funding level of \$273.0 million will weatherize approximately 123,000 low-income homes plus 108,000 additional homes with other leveraged Federal resources, such as Low Income Home Energy Assistant Program funds, and State and Utility funds, saving \$2.10 in energy costs for every dollar invested over the life of the energy efficiency measures. In order to ensure the necessary expansion of the Weatherization network's production capacity, enabling it to deliver services to many more low-income households over the ten-year period beginning in FY 2002, the program will work with the stakeholders to ensure investment in such essential elements as equipment and training for additional crews, and to test improved implementation approaches for the Weatherization Program. This year's budget marks the beginning of a 10-year commitment to increase funding for the Weatherization Assistance Program by \$1.4 billion.

##### *Transportation Programs*

The Partnership for a New Generation of Vehicles (PNGV) program involves companies in my native State of Michigan, and I supported it when I was a Senator. While developing the FY 2002 budget, together with our automotive partners, we reviewed PNGV and agreed the program needed to be redesigned toward solving today's problems.

The current popularity of the sports utility vehicle raised questions about one of the basic premises under which the PNGV program was initiated. When PNGV began in 1993, it was directed at building only one type of automobile—the mid-sized sedan. Today, we believe greater benefit could be achieved by developing energy-efficient components that can be adapted for use in several models throughout our fleet of vehicles. That is principally why in the FY 2002 budget we are reformulating and streamlining the PNGV program—to make it more flexible for automakers, of greater benefit to the taxpayer, and more realistic in the face of today's diverse challenges.

A new PNGV approach can help Detroit with promising, longer-term technologies that will produce a range of cleaner, more efficient vehicles. The Administration will offer a budget amendment to support this new PNGV program at \$100 million.

The 21st Century Truck Program is a relatively new multi-agency partnership with sixteen companies from the truck manufacturing and supplier industries and is aimed at developing technologies needed to produce trucks and buses with higher fuel economy, reduced emissions, and improved safety. The Department of Energy has been a leader in planning and research related to this effort. The partnership is proceeding well, with over 65 scientists and engineers from industry and government having completed an extensive technical plan that will guide the development

and implementation of this program. Our FY 2002 budget contains \$70.6 million for this program.

*Distributed Energy Resources*

Over the next two decades, industrial, commercial, institutional and residential customers will be able to choose from a diverse array of ultra-high efficiency, ultra-low emission, fuel flexible, and cost-competitive distributed energy resource products and services. These will be interconnected into the nation's infrastructure for electricity, natural gas, and renewable energy resources. Distributed Energy Resources—the localized generation and use of power—can greatly enhance reliability and power quality and provide a strategic alternative to new transmission lines as we replace the aging electricity and natural gas infrastructure in the United States. This is critical to new industry growth, including the high technology e-commerce needs for up to 100 times the power density and 10,000 times the power quality and reliability requirements of standard buildings. The Distributed Energy Resources program, which is shared with the Office of Fossil Energy, supports research and development on thermal, electrical, and mechanical power technologies and provides crosscutting assistance to the commercial, residential (rural and urban), utility, and industrial sectors.

The programs called for in this budget address many challenges that today inhibit the widespread adoption of distributed energy resources. System related barriers include limitations in efficiency, emissions and cost problems, and systems that are not flexible for remote control, smart control, and system optimization. Near-term market and institutional barriers include a lack of interconnection standards, lack of new technology building and fire codes, and a need for consistent siting and permitting rules. Energy Efficiency program funding for this activity remains constant at \$47.3 million.

OVERALL ENERGY EFFICIENCY BUDGET REQUEST

The Energy Efficiency programs funded by this Subcommittee work to reduce energy use in buildings, in the industrial sector, by vehicles, in power generation, and in federal facilities all while increasing long-term economic growth. The FY 2002 budget requests \$795.0 million for the Department's Energy Conservation programs. Shortly, a budget amendment will be forwarded by the Administration to reflect proposed changes in the Partnership for a New Generation Vehicle (PNGV).

**Building Efficiency Improvements.** In the U.S., buildings account for more than one-third of the annual energy consumption and use two-thirds of all electricity generated. Americans spend approximately \$240.0 billion per year to heat, cool, light, and run equipment and appliances in residential and commercial buildings. The Office of Building Technology, State, and Community Programs, in partnership with industry, develops, promotes, and integrates energy technologies and practices to make buildings more efficient and affordable. Our FY 2002 budget request is \$367.1 million and contains funds for Buildings Research and Standards, \$30.6 million; Building Technology Assistance, \$321.5 million, including the Weatherization Assistance Program at \$273.0 million and the State Energy Program at \$38.0 million; the Community Energy Program, \$8.5 million; and the Energy Star Program, \$2.0 million.

**Improving Our Transportation Efficiency.** Transportation today accounts for 67 percent of the nation's oil use, and our vehicles remain 95 percent dependent on a single fuel—petroleum. Transportation's need for oil has brought our country to the point that it uses 4.7 million more barrels of oil per day—just for cars and trucks—than it produces. Imports, which account for more than 52 percent of our consumption, are at an all-time high and currently add an estimated \$100 million per year to our balance of payments deficit. Working with partners in industry, research organizations, State governments, and other Federal agencies, the Department's Office of Transportation Technologies programs support research, development, and deployment programs which will reduce oil consumption by achieving: 1) significant improvements in vehicle fuel economy; and 2) displacement of oil by other fuels which are domestic, clean, and cost—competitive. For our transportation programs, we are requesting \$239.4 million in FY 2002. Programs include Vehicle Technologies R&D, \$154.1 million; Fuels Utilization R&D, \$23.5 million; Materials Technologies, \$41.3 million; and Technology Deployment, \$10.2 million.

**Industrial Technologies.** Industry today accounts for 38 percent of all U.S. energy use. Moreover, just nine industries—agriculture, aluminum, chemicals, forest products, glass, metal casting, mining, and steel—account for 27 percent of all U.S. energy use. These industries ship \$1 trillion in products annually, employ over 3 million people, and generate four additional jobs in the economy for each manufacturing job. The Office of Industrial Technologies partners with key energy-intensive in-

industries to develop and apply advanced technologies and practices that reduce energy consumption, maintain and create jobs, boost productivity, and significantly improve the competitiveness of the United States. In FY 2002, we are requesting \$46.4 million for Industries of the Future (specific); \$31.9 million for Industries of the Future (crosscutting); and \$9.4 million for management and planning. The FY 2002 request for Industry programs reflects a shift to areas with greater potential for industry participation.

Federal Energy Management (FEMP). As the nation's largest energy consumer, the Federal government can lead the nation in becoming a cleaner, more efficient energy consumer. In 1999, the Federal government spent almost \$8 billion to provide energy to its buildings, vehicles, and operations. Over 40 percent of the government's energy bill is spent on heating, cooling, and powering its 500,000 buildings. The Office of Federal Energy Management Programs reduces Federal energy costs by advancing energy efficiency and water conservation, promoting the use of renewable energy, and managing utility costs in Federal facilities and operations, including those of the Department of Energy. The FEMP program facilitates alternative financing, bringing private resources to bear on the up-front investment needed to make efficiency and conservation improvements at federal facilities. The program also provides technical assistance to help federal facility managers better address their energy needs. In FY 2002, we are requesting \$13.3 million for FEMP.

#### ENERGY INFORMATION ADMINISTRATION (EIA)

For the Energy Information Administration (EIA), we are requesting \$75.5 million for ongoing data and analysis activities and critical data quality enhancements. EIA's base program includes the maintenance of a comprehensive energy database; the dissemination of energy data and analyses to 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; and the maintenance of the Short-Term Integrated Forecasting System for near-term energy market analysis and forecasting.

In FY 2002, EIA will focus on three multi-year initiatives. They are: 1) redesigning the 20-year-old energy consumption surveys to update the survey frames, sampling design, and data systems, and realign them with the information on residential and commercial buildings populations resulting from the 2000 census; 2) revising EIA's natural gas and electricity surveys and data systems to reflect changes in these restructured energy industries; and 3) addressing critical petroleum and natural gas data quality issues to facilitate EIA's ability to collect and disseminate reliable and accurate energy data needed to assist the Administration and Congress in making informed energy policy decisions.

#### ECONOMIC REGULATION

The FY 2002 budget request of \$2.0 million is for refund application processing and for related activities arising from the regulatory program initiated under the Emergency Petroleum Allocation Act of 1973. Excess funds from refund processing are transferred to the Treasury.

#### NUCLEAR ENERGY, SCIENCE AND TECHNOLOGY

The FY 2002 budget request for Nuclear Energy, Science and Technology is \$223.1 million. It focuses on activities that maintain the Department's nuclear research infrastructure.

Today, the nation's 103 nuclear power plants are our second largest source of electricity (20 percent of electricity generation in 2000) and are producing record quantities of power. In 2000, nuclear generation was up another 4 percent to 754 billion kilowatt-hours and U.S. plants reached new highs in operating performance by generating power at nearly 90 percent of total capacity. Meanwhile, the cost to produce electricity from nuclear power hit a record low in 2000, leading nuclear power plants to surpass coal-fired plants for the first time in more than a decade as the lowest-cost source of electricity generation.

The investments that the Department of Energy proposes to make in nuclear energy, science and technology are driven by the recognition that nuclear technology serves the national interest for reliable, affordable and environmentally sustainable electricity. Nuclear technology also allows us to expand our understanding of the universe by powering deep space exploration and it enables, through the use of medical isotopes, the diagnosis and treatment of devastating illnesses. Our investments in nuclear technology are also based on the understanding that, in order to meet the challenges and accelerate innovation in the 21st Century, we must begin today

training and preparing tomorrow's scientists and engineers and providing focused investments in the science and technology infrastructure.

The FY 2002 request for Nuclear Energy, Science and Technology program includes:

- Nuclear Research & Development (\$27.1 million)
- University Reactor Fuel Assistance and Support (\$12.0 million)
- Advanced Radioisotope Power Systems (\$29.1 million)
- Medical Isotope Program (\$18.2 million)
- Infrastructure (\$81.3 million)
- Nuclear Facilities Management (\$30.5 million)

The Nuclear Energy Research and Development program sponsors R&D programs to stimulate universities, industry, and national laboratories to innovate and apply new ideas to old problems. This request continues funding for the Nuclear Energy Research Initiative (NERI), to enable support existing projects coming out of our universities, laboratories, and industry; and for the International-NERI program, to leverage U.S. research activities on advanced nuclear technologies with new investments made by the research organizations of other countries. The request establishes the Nuclear Energy Technologies program to complete the Generation IV nuclear power systems technology roadmap and several efforts designed to pave the way for near-term implementation of advanced nuclear power plants in the United States. In addition, under the Nuclear Energy Plant Optimization (NEPO) program, the Department will continue to provide important leadership to encourage the development of advanced technologies needed to keep U.S. plants operating reliably and cost-effectively as they operate over the next three to four decades.

For University Reactor Fuel Assistance and Support the FY 2002 request includes \$12.0 million to continue the Department's commitment to maintain U.S. leadership in nuclear research and education, an amount equivalent to previous years. By supporting the operation and upgrade of university research reactors, providing fellowships and scholarships to outstanding students, and providing Nuclear Engineering Education Research Grants, the program helps maintain domestic capabilities to conduct research. The program also helps to maintain the critical infrastructure necessary to attract, educate, and train the next generation of scientists and engineers with expertise in nuclear energy technologies.

The FY 2002 budget request includes \$29.1 million for Advanced Radioisotope Power Systems to continue the national program to develop and build advanced nuclear power systems for deep space exploration and national security applications. The Advanced Radioisotope Power Systems program supports and funds DOE activities related to development, demonstration, testing, and delivery of power systems to the National Aeronautics and Space Administration and other federal agencies.

The FY 2002 budget request includes \$18.3 million for the Medical Isotope Program to continue the application of DOE's unique expertise and infrastructure to promote advanced research in the use of medical isotopes to treat and diagnose cancer and other diseases. The FY 2002 program continues to provide U.S. researchers with vital, stable and radioactive isotopes that are essential to both basic scientific studies and clinical trials of new cancer treatments.

The FY 2002 budget request includes \$81 million for reactor infrastructure requirements. The program will continue to maintain the Argonne National Laboratory-West, Idaho, nuclear infrastructure. An additional \$8.7 million will be used to support Test Reactor Area activities, also in Idaho, such as naval reactor fuel and core component testing at the Advanced Test Reactor, and privatized production of isotopes for medicine and industry. We also continue to manage the shutdown of the Fast Flux Test Facility at Hanford, Washington.

The FY 2002 budget request includes \$30.5 million for Nuclear Facilities Management to support the Experimental Breeder Reactor-II (EBR-II) shutdown activities; the disposition of spent fuel and legacy materials; and research on, and development of, various waste disposition technologies. This winter, we met our key commitment toward the permanent shutdown of the EBR-II and removed all molten sodium from the EBR-II reactor. By the end of FY 2001, the Department will complete the processing and disposition of the EBR-II secondary and primary sodium and the Fermi reactor sodium, in compliance with the Idaho National Engineering and Environmental Laboratory Treatment Plan. In FY 2002, we will complete all tasks required to place the EBR-II in industrially and environmentally safe permanent deactivation.

The FY 2002 request does not include funding for the Advanced Accelerator Applications (AAA) program initiated in FY 2001. This activity, currently managed by the Office of Nuclear Science and Technology, investigates the use of high-energy accelerator-based systems to reduce the radioactive toxicity and volume of spent nuclear

fuel. Decisions on the future of this new program are deferred pending the recommendations of the Vice President's National Energy Policy Development Group. Until these priorities are clearly identified, the Department will not request funding in FY 2002 for major new initiatives.

#### FY 2002 FUNDING REQUEST FOR SCIENCE PROGRAMS

In Science, the budget enables DOE to continue to serve its role as a primary federal supporter of scientific research—a role which has earned praise for Nobel prize winning research, cutting-edge R&D, world class research facilities, and our highly regarded national laboratories. Funding maintains the schedule for the Spallation Neutron Source project which will help the U.S. to maintain its preeminence in science and technology. The FY 2002 budget request for the Office of Science is \$3.16 billion for FY 2002 in the “Science” appropriation, an increase of \$4,436,000 over FY 2001; and \$8,970,000 within the “Energy Supply” appropriation.

The Office of Science is the dominant supporter of the physical sciences (physics, chemistry, etc.) in the U.S. and plays a major role in supporting other scientific fields, including the life sciences, mathematics, computation, engineering and environmental research. We manage a vast network of major scientific facilities that are essential to the vitality of the U.S. research community. Tens of thousands of the leading research scientists in the U.S.—representing virtually every scientific discipline—depend upon the Office of Science to maintain and operate these unique facilities.

The FY 2002 request for the Office of Science's basic research portfolio supports the President's goal to strengthen the U.S. scientific enterprise to ensure continued international leadership in technological innovation, and DOE missions in energy, environment, and national security. Basic research in the Office of Science is performed through six major programs:

- Basic Energy Sciences (\$1,005 million)
- High Energy Physics (\$721 million)
- Biological and Environmental Research (\$443 million)
- Nuclear Physics (\$361 million)
- Fusion Energy Sciences (\$238 million, to be amended to increase by \$10 million)
- Advanced Scientific Computing Research (\$166 million)

In FY 2002, the Basic Energy Sciences (BES) program continues construction of the Spallation Neutron Source to provide the next-generation, short-pulse spallation neutron source for neutron scattering. The project is scheduled for completion in June 2006. Another high priority in FY 2002 is nanoscale science, engineering, and technology research. BES will build on research directions initiated in FY 2001 to explore concepts and designs for Nanoscale Science Research Centers user facilities similar in concept to existing BES major scientific user facilities and collaborative research centers that will provide unique, state-of-the-art nanofabrication and characterization tools to the scientific community. Significant partnerships with regional academic institutions and state governments are anticipated.

The FY 2002 request for High Energy Physics (HEP) reflects the start of a four-year campaign at Fermilab, Illinois to substantially upgrade the luminosity of the Tevatron in an ongoing campaign to discover the Higgs particle (believed to be key to understanding mass) and other new particles predicted by current theories. The B-factory at SLAC, California, will begin a three-year program of progressive upgrades, interwoven with intensive operational schedules, to make important contributions toward understanding the preponderance of matter over antimatter in the universe. Appropriately focused support for university and laboratory based physics theory and experimental research will be emphasized in FY 2002.

As a founder of the Human Genome Project in 1986, the Biological and Environmental Research (BER) program will, in FY 2002, continue its tradition of developing leading-edge research programs in biology with “Genomes to Life.” This program will develop innovative research and computational tools that move biology from today's genome sequence information to tomorrow's understanding of complex biological systems. In FY 2002, BER microbial research will provide DNA sequences for four additional microbes important in bioremediation, clean energy, or global carbon cycling. In FY 2002, the Global Climate Change program will conduct research designed to reduce uncertainty in predicting the effect of greenhouse gases on future climates. Carbon cycle and sequestration research will help to assess current carbon sinks and to develop methods of enhancing natural processes for terrestrial and ocean sequestration of carbon.

The FY 2002 request for Nuclear Physics supports operation of the new Relativistic Heavy Ion Collider at Brookhaven National Laboratory to offer researchers a unique opportunity to create and characterize the quark-gluon plasma, a phase of

matter thought to have existed in the very early stage of the universe. The Thomas Jefferson National Accelerator Facility will perform experiments whose results will continue to change our understanding of how quarks bind together to form the basic building blocks of our world. The currently operating Sudbury Neutrino Observatory experiment is designed to measure for the first time the appearance of a neutrino type not produced by the sun, providing revolutionary insight into the properties of neutrinos and the core of the sun.

In FY 2002, Fusion Energy Sciences will conduct basic research in plasma science in partnership with the National Science Foundation. It will continue operation of DIII-D, Alcator C-Mod, and the National Spherical Torus Experiment. Researchers will investigate alternative fusion concepts to develop a fuller understanding of the physics of magnetically confined plasma and identify approaches that may improve the economical and environmental attractiveness of fusion. The basic research into inertial fusion energy will capitalize on NNSA's stockpile stewardship R&D effort in inertial confinement fusion.

#### FY 2002 FUNDING REQUEST FOR ENVIRONMENTAL QUALITY PROGRAMS

The \$6.5 billion budget request for Environmental Quality programs continues environmental cleanup at sites across the country, supports a science-based recommendation to site a long-term nuclear waste repository, and maintains an emphasis on worker and environmental health and safety.

#### ENVIRONMENTAL MANAGEMENT

The budget request for Environmental Management activities is \$5.9 billion, including \$141.5 million for privatization projects. This request is approximately \$354 million less than the comparable FY 2001 appropriation, but essentially the same level as FY 2000. The request consists of:

- Defense Environmental Restoration and Waste Management (\$4,548.7 million)
- Defense Facilities Closure Projects (\$1,050.5 million)
- Defense Environmental Management Privatization (\$141.5 million)
- Non-defense Environmental Management (\$228.6 million)
- Uranium Facilities Maintenance and Remediation (\$363.4 million)

Responsible for the cleanup of contaminated sites, radioactive wastes, and nuclear materials resulting from the nuclear weapons production, the Department's Environmental Management program faces some of the most technically difficult and complex cleanup challenges of any other environmental program in the world. Our Cold War efforts produced large volumes of nuclear materials, spent nuclear fuel, radioactive wastes and hazardous wastes, resulting in contaminated facilities, soil, and groundwater at over 100 sites around the country. The request ensures that the Environmental Management program employs the best available technologies and business practices, and sets priorities to address important health, safety, and environmental needs.

Cleanup of these sites is an important and a very complicated endeavor. I am concerned, however, that the estimated length of time to complete the cleanup is too long, and the costs to the taxpayer too high. As with other DOE programs, the budget request reflects my challenge to the Environmental Management program to become more efficient. I also have initiated a sweeping Environmental Management Mission Assessment to identify efficiencies and ensure that our principal focus is on accelerating the cleanup of those sites with significant environmental, health, and safety risks. We need to find ways to continue progress and meet our commitments more efficiently and at a lower cost.

To see that we achieve this, we will begin immediately to conduct a top-to-bottom assessment of our Environmental Management mission to identify what has prevented us from narrowing the cost and efficiency gap and whether our strategies are suitable. We need to identify steps to strengthen project management, implement contracting strategies that help reduce costs and schedules, better employ new technologies, and sequence work more effectively. We need to be sure we are spending our cleanup dollars on the right problems and are addressing cleanup problems as effectively and safely as possible.

The Environmental Management budget request for FY 2002 reflects a good balance among the critical national priorities for the programs the Department administers. Our budget continues to place the highest priority on protecting the health and safety of workers and the public at all DOE sites. The request gives priority to activities needed to address high-risk wastes and nuclear materials to ensure they are properly managed and safeguarded and that progress continues to mitigate risks. Our request also keeps the major sites on track for meeting accelerated clo-

sure goals, and ensuring we are pursuing the most significant mortgage reduction opportunities. For example:

*High Level Waste Treatment Facility at the Hanford Site:* The request provides \$500 million to develop the waste treatment facility at Hanford that will immobilize a significant portion of the 53 million gallons of high level waste currently stored in underground tanks. The increase of \$124 million compared to the FY 2001 appropriation reflects the start of construction in FY 2002. The work is being done under a new performance-based contract awarded in December 2000 that provides incentives for the contractor to reduce costs and schedules for the project. The request keeps the project on track for beginning hot operations in 2007, a critical milestone in the Department's agreement with the State of Washington.

*Ensuring Safety and Progress for High Risk Materials:* Our request gives priority to our highest risk problems. We will ensure the high level waste tanks at the Hanford and Savannah River sites are safely maintained and the tanks stabilized or closed. We will continue vitrification of waste at Savannah River site, including the development of a technology to pre-treat salt waste, a necessary step to complete vitrification of all high-level waste at the site. Our request supports the stabilization of nuclear materials, including the operation of the canyons at Savannah River to stabilize spent nuclear fuel and other "at risk" nuclear materials. We will keep the transfer of spent nuclear fuel from K Basin to safer storage, on track at Hanford. We will continue receipt of foreign spent nuclear fuel in support of non-proliferation goals.

*Closure of Rocky Flats and Fernald:* Our request supports the accelerated cleanup and closure of Rocky Flats in Colorado and Fernald in Ohio which have no future DOE missions. These sites offer significant opportunities to reduce the "mortgage" the Department must pay to maintain the safety and security, freeing up future dollars for cleanup at other sites. The Rocky Flats site is the largest site challenged to accelerate site cleanup and achieve closure in 2006, and to date significant progress has been made towards making this goal a reality. Both Rocky Flats and Fernald have new "closure" contracts that provide incentives to the contractor to meet or exceed accelerated completion dates. Our request also funds supporting activities at sites such as Savannah River Site and Oak Ridge that are critical to achieving closure of these major sites.

*Increase Shipments to WIPP:* Our request supports an increase in shipments of transuranic waste to the Waste Isolation Pilot Plant in New Mexico. We will continue critical shipments from our Idaho site to meet our commitment to the State to ship 3,100 cubic meters of waste by December 2002; and from Rocky Flats to support the schedule for closure, as well as limited shipments from other sites. The WIPP facility remains critical to meeting our closure and completion goals at other sites.

Our request also funds new high priority responsibilities as well. This includes placing the uranium enrichment plant at Portsmouth, Ohio in cold standby, keeping it in a safe and operable condition, should it be necessary to return the plant to operation in the future, and providing assistance to displaced workers. Other significant responsibilities include the safe management and disposition of about 680,000 metric tons of depleted uranium hexafluoride, which Congress transferred last year to the Environmental Management program.

We have made real, on-the-ground progress since the Environmental Management program was created in 1989. We have completed active cleanup at 71 sites as of the end of FY 2000, and plan to complete cleanup at an additional three sites by the end of this fiscal year. We successfully operate two vitrification facilities in South Carolina and New York that convert highly radioactive waste into a safer, glass form. We have produced more than 1,100 canisters of vitrified waste at the Savannah River Site in South Carolina, exceeding our goals, and will complete vitrification at West Valley this year. The Waste Isolation Pilot Plant, the world's first deep geological repository, is up and running, disposing of waste from sites across the DOE complex with increased shipments and additional sites planned for FY 2002. We continue to make progress in moving corroding spent nuclear fuel to safer storage at the Hanford and Idaho sites; in stabilizing nuclear materials at Savannah River; in removing nuclear materials and decontaminating plutonium buildings at Rocky Flats; and in addressing contamination sources that threaten groundwater supplies.

Much of the success to date at our sites can be attributed to the positive working relationship we have established with our regulators and with others in the communities that surround the DOE sites. We will need the continued support and involvement of the state and federal regulators who oversee our work to meet future challenges and find new ways to accelerate and streamline our cleanup work. This Administration is firmly committed to conducting the cleanup safely and complying



with applicable laws and regulations. We want to be sure, however, that we are conducting our cleanup in the best and most practical way possible. Accordingly, I have asked the governors of the States that host our sites and EPA Administrator Christine Todd Whitman to work with us during our management assessment to improve the compliance framework that governs much of the cleanup work at our sites. We need to review our work to make sure it is consistent with sound priorities, and promotes on-the-ground results, and reflects the lessons and technical understanding developed over the past decade. I am confident that, working cooperatively, we can find ways to achieve our shared environmental goals more efficiently.

#### CIVILIAN RADIOACTIVE WASTE MANAGEMENT

The Office of Civilian Radioactive Waste Management FY 2002 budget request is \$445.0 million, an increase of \$54.6 million above the fiscal year 2001 program level. This request reflects the Department's commitment to make progress while ensuring that science governs the step-wise process required under the Nuclear Waste Policy Act, as amended, for decisions regarding licensing a geologic repository for high-level nuclear waste are made. We are implementing this policy by strengthening the scientific and technical basis underlying future siting decisions.

Of the \$445.0 million request, \$355.5 million, 80 percent, is targeted to site characterization activities, of which \$75.0 million is associated with the Site Recommendation and \$280.5 million is associated with License Application. In FY 2002, the Civilian Radioactive Waste Management Program will transition from predominantly "investigative science" under site characterization to "engineering and design." With this transition, resources will be applied to preparing a license application that could be submitted to the Nuclear Regulatory Commission. The request also includes a 15 percent increase to continue and strengthen the Performance Confirmation program. The Commission will use the sound scientific analysis in the license application, supplemented with the knowledge gained from Performance Confirmation, to make an independent assessment of how the repository will protect public safety and health and the environment. The request also includes \$5.8 million to restart important transportation and waste acceptance planning activities. This funding will help to develop a private-sector competitive procurement process for acquisition of a safe and cost-effective transportation capability.

#### ENVIRONMENT, SAFETY AND HEALTH

The FY 2002 budget request for the Office of Environment, Safety and Health (EH) is \$140 million, \$21 million less than current year spending. This reduction largely reflects the availability of prior year balances to fund the activities of the newly created Office of Worker Advocacy.

The EH mission is to assess and advise the Secretary of Energy of the health and safety of DOE workers, the public, and the environment near its facilities. EH performs independent environment, safety, and health oversight of the Department's programs in nuclear safety, worker safety, and radiation protection. In a new role, EH is responsible for helping workers obtain appropriate benefits under various state workers' compensation programs, and information and medical records when applying for benefits under the Federal Energy Employees Occupational Illness Compensation Program Act of 2000.

#### CONCLUSION

Mr. Chairman, and members of the Committee, that concludes my prepared statement. I will be glad to answer any questions you may have at this time.

The CHAIRMAN. Thank you very much, Mr. Secretary. We will proceed with the questions, Senator Thomas, of course, following Senator Bingaman, and Senator Craig, Senator Cochran, Senator Wyden, and Senator Smith.

A great deal has been made of the suggestion that one of the answers to our energy crisis would be to impose CAFE standards, and I am sure you and your folks down at the Department of Energy have labored over this. I understand there are about 200 million vehicles on the road. About 130 million are automobiles, and a good portion of those are not paid for. As a consequence, any mandates suggest that it would take a number of years to actually replace

significantly that fleet. We can go out and buy cars today that get 50 to 60 miles per gallon, and some people do.

I am wondering if you have any comments relative to the generalization made by many that CAFE standards are the answer. All we have to do is dictate a CAFE level that would pick up the savings and our current crisis in gasoline would be over.

Secretary ABRAHAM. Well, it is interesting, of course, when you change roles from being the Senator from Michigan to being the Secretary of Energy on some of these issues.

The CHAIRMAN. I knew you would have a certain familiarity with it.

Secretary ABRAHAM. One's background and expertise needs to be applied in different ways depending on what one's constituencies are, but here, just as a starting point, one of the issues that I think is very likely to be addressed in the energy plan that will be released next week is the issue of CAFE standards, and I feel constrained a bit in terms of trying to speak for what the administration's position will be because the President and Vice President will be releasing that report, but I think there will be a component of it that involves CAFE standards, and that will be available in a few days.

I would just note a couple of things. Again, from the perhaps slightly biased perspective of a Michigan native, but I would just say this, I think we worked out a pretty good agreement last year among the various parties who have worked on this CAFE debate over a long period of time. Instead of an all-or-nothing approach, we compromised, and I think on a unanimous basis in the Senate we decided that we should ask the National Academy of Sciences to engage in a very thorough investigation of CAFE and make recommendations back to us.

I think that report is due in July, and I think we probably should follow the guidance that we ourselves applied to the process, but I would say that if we make changes with regard to the standards, that the two issues that I hope will be part of the equation, or at least not lost in the discussions, are No. 1, safety implications, and No. 2, the impact of changes as they might be disparate between American manufacturers and foreign manufacturers.

On the safety front, I just would draw people's attention to the National Highway Transportation Safety Administration's estimates that for every 100 pounds of weight reduction in vehicles—this is, I think, the 1995 estimate—their projection was 302 lost lives because of safety implications on vehicles. When a further study was done in 1999 by Gannett News Service based on those projections, they estimated that there have been as many as 46,000 lives lost because of the CAFE standards imposed in the past.

I hope that as we move into a discussion of changes, that we would make sure that safety considerations are part of the evaluation. I also would, as I said, urge people to look at the implications in terms of disparate effects on American versus foreign manufacturers, as we might make any changes, because of the composition of the fleets—and I am talking now mostly about light truck category fleets here, where I think most people feel that CAFE numbers need to be changed.

The way the fleets are currently set up, foreign manufacturers have substantial credits built up, such that if a change were to be brought about in that CAFE level, it would provide a very significant competitive advantage, at least for a number of years, to foreign truck manufacturers, because as they have specialized in providing light trucks, we have tended to more on the heavy truck side. I would just urge that we keep these thoughts in mind as we look at these issues, and again I would have to postpone till next week any official administration comment—

The CHAIRMAN. I understand.

Secretary ABRAHAM. I think those are factors that ought to be considered.

The CHAIRMAN. Thank you, Mr. Secretary. I think it is important to identify, as you have attempted to do within reasonable limits, the trade-offs associated with any simple solution, which brings me to my last question, and that is relative to a realization that Americans have enjoyed relatively inexpensive but plentiful supplies of energy, and now they are becoming concerned over the inconvenience associated with cost, and in some cases lack of supply, which, if you carry this to an extent, can affect the standard of living of Americans as well as the economy.

One of the challenges that you and the administration have is what are you going to do about it, and I recognize it is premature to suggest that we discuss what is coming out of the Energy Task Force, but this committee held a hearing last week on fuels and infrastructure, and in my opinion infrastructure is a term that can be equated to when you do not know what else to talk about and you generalize and use the word infrastructure, and there is other words for that, and initials for it as well, but we do not have to go into that at this time.

But my point is that what came out of that hearing was rather interesting, and the expert witnesses, one who was an environmentalist, suggested that when the Clean Air Act amendments came in and were initiated in 1990, it really was not a recommendation that Congress attempt to prescribe the recipe for gasoline in the statute. However, unknowingly, that is basically what we did, and it was suggested by one of the gentlemen who represented the environmental blue ribbon panel, a gentleman by the name of Daniel Greenbaum—I quote.

He said, we have two paths we can follow for clean fuels, to continue clean burning fuels with legislated, mandated fuel additive requirements and risk potential market dislocations and increases in prices, or to keep the strong, clean air performance requirements for these fuels, but to free the market to make them in the most cost-effective way possible with the minimum specific fuel additive requirements.

The implication is that you let the marketplace make a determination of how you formulate these fuels, but you must attain, of course, the requirements for emissions that are in the Federal act, so if you give the industry more flexibility, particularly on oxygenates, then you are giving them the capability to produce more, cheaper, have less-reformulated gasolines, less complexities, and still maintain the air quality, which is what this is all about.

I recognize that this is theoretical in one sense, but what we had asked this panel to do was to try and come up with some suggestions on how to, within the parameters of air quality, is there some way that the fuel mix can be simplified and still attain the requirements that are within the act, and they seem to think that it was quite possible.

Have you got any comments that you would care to generalize in this area?

Secretary ABRAHAM. I do not have any scientific insight as to feasibility. Obviously, it is interesting to those from a fairly wide spectrum of political philosophy, and there have been several inquiries of the Department in recent weeks about the possibilities of either waivers for certain kinds of content, or whether or not there was a possibility for more flexibility.

First, the issue goes to, among other things, the question of how we deal with the strained refinery capacity which we have, and that is an issue that we are specifically addressing in the task force, because one of the reasons that the multiplicity of fuels poses challenges is that when you are operating refineries at a high volume, 95, 96 percent of full potential, and then you go through periods where the refineries have to change the composition of fuel, as we do for certain regions of the country at certain times of the year, that tends to cause a slow-down in the refinery's activities.

It tends to precipitate, therefore, supply shortages, which then cause these price spikes, but beyond that I do not have any additional information to offer at this time. I will be interested in what that panel might have come back with, but it appears that part the complication is there is also a refinery shortage.

The CHAIRMAN. Well, it is the 15 reformulated gasolines that we have got around the country. That is part of the complexity.

Senator Bingaman.

Senator BINGAMAN. Thank you very much. There is an article in this morning's edition of the *Energy Daily* that says, congressional leaders have signed off on a supplemental appropriation bill for the current fiscal year that would give the Energy Department's clean-up program an additional billion dollars.

One other area that we have been urging the President to seek a supplemental for now for a couple of months is the low-income home energy assistance program. As you know, in many States those funds have run out. People are not able to pay their utility bills, and in some cases I understand people are beginning to see those utilities cut off because of that.

If there is a supplemental appropriation bill that includes funding for the Department of Energy, would you support including funding for the low-income home energy assistance program?

Secretary ABRAHAM. I have to say that I am not involved with those discussions. I am not sure what the status of it is, because the LIHEAP program is under HUD's authority and not our portfolio.

I know that some discussions have taken place with OMB, but I do not honestly know what the status of them is. I would say that one of the unfortunate things, as you are aware, I remember this when I was still serving, was that we spent all the emergency dollars in LIHEAP for this fiscal year by the end of last calendar year.

I think it was \$300 million, or some amount like that, so as we encounter higher energy problems here, additional appropriations may be in order.

Senator BINGAMAN. Could you possibly try to find out from the administration whether they will support that and let us know? I would appreciate that.

[The information follows:]

The Low Income Home Energy Assistance Program (LIHEAP), which is administered by the Department of Health and Human Services, helps low income families pay their fuel bills.

With dramatically increased prices for natural gas, propane and other fuels as well as electricity in most regions of the country, requests for LIHEAP assistance increased by more than 30 percent in the current year, and the entire amount of the LIHEAP contingency funds has already been allocated. Winter is behind us, but has left hundreds of thousands of families with utility bill arrearages and threatened cut-offs of utility service, with the hardships of extreme hot weather still ahead. Some 27 million households are eligible for LIHEAP assistance, however, so the need is great. Accordingly, the President announced on May 29, 2001, that the Administration will support a \$150 million increase for the LIHEAP Program as part of the supplemental request for FY 2001.

LIHEAP provides a vital service which complements the Department of Energy's actions to make low income family homes more energy efficient, thus lowering their fuel bills, through the Weatherization Assistance Program. The Weatherization program has made nearly 5 million low income family homes more energy efficient over its 25 year history. In FY 2001 it is adding about 75,000 more homes—saving those households an average of more than 20 percent on their annual home energy bills.

Senator BINGAMAN. The issue that Chairman Murkowski raised about transportation efficiency, I know of your longstanding opposition to raising CAFE standards, and I have heard those speeches on the Senate floor, and I certainly understand that position.

The CHAIRMAN. He was rather open today.

Senator BINGAMAN. Oh, I agree.

The CHAIRMAN. All right.

Senator BINGAMAN. And consistent with what he said before.

Let me also say that I also know of your strong support in the past for the Partnership for a New Generation of Vehicles (PNGV). I am informed that the amendment that you folks prepared proposes a cut of \$39.1 million in that Partnership for a New Generation of Vehicles program. If we do not do anything with CAFE, if we no longer support this Partnership for a New Generation of Vehicles, what is our plan to get to more efficiency in the transportation sector? 66 percent of the oil that we consume, we consume in the transportation sector. How do we begin to deal with that if we do not do either one of those things?

Secretary ABRAHAM. Well, first, again, I want just to reiterate, as I said, on the issue of CAFE I have simply postponed any official statement on that, because I believe it will be addressed in the energy plan next week, and that might be very relevant to the question you pose.

With regard to the PNGV program, you accurately indicated that it is one that was very important to me. When I was in the Senate, I supported it strongly from my participation in the first budget process, and still do. What we did, though, is this. As the program went on, I became intrigued by the change in mission, or the difference between the initial mission of the program and where it seemed that the industry was headed with regard to vehicle production, and it was our conclusion, after conversations with the

auto industry during the budget development process, that some parts of the program that had been funded at certain levels in the past were no longer consistent with where it seemed that the industry was headed.

In response to that, we have decided to not continue using taxpayer money to support what we did not see as an investment that will translate into an actual vehicle improvement. We have retained about \$100 million for this program.

I do not rule out the possibility that we would potentially look at that again if we could come up with something where we had more confidence that the investment of the taxpayer money was going to be consistent with industry direction, and that is what—the industry, I think, does not disagree with, or at least the members we talked to felt that this was not an inaccurate assessment, so I believe in the core approach. I just do not think that those parts that we reduced are going to make a difference in terms of the final—

The CHAIRMAN. Let me ask about a few other proposed cuts. You requested a cut in natural gas research funding by 53 percent. That is an area where I had thought we were making a useful investment of taxpayer dollars. What is the rationale for cutting that funding?

Secretary ABRAHAM. Well, in the fossil energy program, we made an initial commitment, as I said at the outset, based on a clearly established priority that the President had committed to during the campaign to a substantial increase in the clean coal technology programs. We reflect that in a \$150-million clean coal technology initiative.

Obviously, that was a substantial increase in that part of the budget, and in looking at the remainder of the fossil energy budget, we concluded that some of the programs funded there were ones that we felt the industry participation level could be greater.

This is not to say that when those programs were initiated, that the participation of the Federal Government at the levels in the past were not justified, but as you know, in oil and natural gas in recent years at least, there has been a very significant change in the dynamics of the industry, and we felt at least that that warranted a higher degree of industry participation—or that more of that technology could be done in the private sector.

Senator BINGAMAN. Let me ask one more question before my time is up, and that relates to the proposed cuts of 50 percent for wind, solar, and geothermal research and development. Is it the same rationale there, that you felt the private sector should pick up that additional cost, or you did not think this was a needed area for research any more? What was your thinking?

Secretary ABRAHAM. Here is what I evaluated in that area: We have spent approximately \$6 billion in the last 20 years on geothermal wind and solar investments in current dollar terms.

In my view, first of all, to a large extent there has been a maturing of the technology. We have done a pretty good job, and I think industries have as well. There are many advanced wind, solar, and geothermal technologies available. There is the ability for this to now translate into direct implementation, and I might add that the percentage today, that those three components of the entire energy

mix contribute is slightly less than one-half of 1 percent, notwithstanding the \$6 billion investment.

Now, I am not ruling out that we have greater potential in the future. I am not persuaded at this point, or at least I believe that the technology component is sufficiently funded in this budget, because we are not zeroing them out, but we are scaling them back. I think there are other factors we ought to look at that I think have a greater chance of bringing more of these energy sources into play.

I think with respect to solar energy, that we need to examine the tax code and consider ways that we might incentivize people to employ solar energy generation in their homes, with tax credits that would be beneficial there. I think that with regard to solar energy we also need to examine the—actually, the rate approach, the electricity rate charges, and the market for that, and how that is affected, because solar, the way we meter and assess charges pretty much is an across-the-board approach.

That means that people do not pay more at peak times. If you use solar energy during the hottest times of the day, you theoretically should gain a benefit. We do not provide any special benefit to that, and that formed part of my basis for making these decisions.

In the area of wind, we have regulatory impediments more than anything else right now that are making it difficult to take the technology we have to the field. In the area of wind energy we have seen significant cost reduction in terms of the kinds of unit that could be installed, but we have impediments on the regulatory side, and siting and so on, to put them into place, and I want to evaluate that before we continue down the course, because I think relative to the contributions these three areas are making, the technology maturation has been pretty much completed in some areas.

Senator BINGAMAN. My time is up.

The CHAIRMAN. Senator Domenici is managing the floor, and asked for a waiver if he could proceed to welcome very briefly—I think it is a question you had, but go ahead.

**STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR  
FROM NEW MEXICO**

Senator DOMENICI. Well, Mr. Secretary, first, I hope my absence does not—I will leave when I am finished here. I hope my absence does not indicate that I think everything is going great. I think you are doing a good job, but I do not think the budget you produced is very good.

As a matter of fact, right off the bat let me say, if you are going to change the way we are going to do our cleanup at the nuclear sites, whether it be Larry Craig's State, or whether it be Oregon, Washington, actually you need lead time to change these ongoing operations.

If you would have said in the budget over the next 5 years you are going to reform, remodel, and change those programs, that would make sense, but to take \$1 billion out of the program and cause layoffs in some of these places of 1,000, 2,000, 1,500 people, and no new program, I do not think was the right way.

We will work with you and try to help solve that, and then the Energy Department prides itself on the civilian side with being one

of America's real science areas. I mean if you say National Institutes of Health, NSF, and NNSA, the Energy laboratories, that is break-through science. Those have been reduced dramatically such that we have a lopsided situation. All or money is going to the Institutes of Health, a little bit to science, and DOE is getting out of the business slowly, or cutting, curtailing it. I do not think you wanted that, and frankly I do not think we can let that happen.

Thank you for the time, and we will do our best with the appropriation process. There is more money available in the budget that you had to spend, \$6.2 billion, so we probably will be able to fix some of these.

Thank you for your hard work, and you are putting together a good Department, but I guess you know from a long time ago that I did not think the budget was very good.

[The prepared statement of Senator Domenici follows:]

PREPARED STATEMENT OF HON. PETE V. DOMENICI, U.S. SENATOR  
FROM NEW MEXICO

Mr. Chairman, I'm very pleased to welcome Secretary Abraham to our Committee to discuss the President's proposed budget for the Department of Energy for the Fiscal Year 2002. It is a complicated budget. The Department includes a very wide diversity of programs, which, as the Secretary understands better than any of us, translates into a major management challenge.

The budget submission is complicated this year by several issues. Foremost in the minds of the American public would be the severe energy shortages. The days of abundant energy supplies are gone in many parts of our country, as evidenced by rolling blackouts in California just this week. The situation in California is fragile, and there can be no pretense that any credible solutions are quick or easy.

It took years without an energy policy to reach the current conditions, and unfortunately getting more electricity onto the grid isn't quite as simple as flipping on a power switch someplace. We're in a situation where remedies will come slowly. Disruptions will continue for years before our supplies are back to healthy levels.

Based on these concerns, the most publicly visible challenge for the Secretary and other agencies of the federal government must be to craft energy solutions—solutions that will provide our nation with the best possible long-term energy outlook.

But beyond the challenge of energy shortages lie other serious issues within the national security side of the Department. The stockpile stewardship program, while fortunately still able to certify our stockpile without testing, faces increasing challenges from aging weapons. That program is faced with severe infrastructure problems, estimated by the Foster Panel and confirmed in testimony from General Gordon, which amount to many billions of dollars. These issues require investments in the range of \$300-\$500 million annually.

The non-proliferation programs remain critically important. It is vital that these programs continue on track because the threat of proliferation of weapons of mass destruction from Russia remains very real. At the same time, of course, I recognize that these programs can only advance through carefully structured partnerships in cooperation with Russia.

I appreciate that several major Presidential reviews are ongoing—the DoD's Nuclear Posture Review, the National Security Council Review of Non-proliferation Programs, the Department's review of the Environmental Management programs, and of greatest importance, the Vice President's National Energy Policy Development Task Force.

I am very hopeful that these reviews will provide guidance to correct what I perceive as a number of extremely unfortunate issues within the proposed budget. Just to list some of them:

- Stockpile Stewardship is seriously underfunded. Pit production, as one example, will not proceed on reasonable time scales with the proposed budget. Since the shutdown of Rocky Flats, we have not produced a single weapons-ready pit, that is simply unacceptable.
- Infrastructure supporting stockpile stewardship is not funded at all. At virtually any level of stockpile that the ongoing reviews may identify, the basic infrastructure for the program must be healthy. It is anything but healthy today. Examples of roof materials failing on workers are but one of the serious cases.



- Non-proliferation programs are cut by \$100 million in the President's budget. The whole idea of cutting programs before policy reviews are completed is of great concern. By publicizing reduced budgets, we are sending unfortunate messages to our own program workers, to say nothing of the Russians with whom we are cooperating. These messages may be impossible to correct if the reviews later suggest continued or increased funding—we may even lose critical staff from this ill-advised timing of cut first, then review.
- Environmental Management programs are seriously reduced. With the proposed budget, it will be impossible to meet key milestones at several facilities. The budget will result in failure to comply with legal mandates at several sites. One example within New Mexico involves the \$26 million cut to WIPP, at the same time that WIPP is expected to significantly increase the rate at which shipments are accepted and to take over characterization for all of the smaller sites around the complex.
- Critical energy supply programs are slashed, just when we are in the midst of an energy supply crisis. I've worked very hard to rebuild credible programs in nuclear engineering over the last few years, yet those very programs on which I've worked were seriously impacted. Highly successful research programs in oil and gas production were greatly reduced.
- Scientific programs were sharply reduced, both in the DOE and in other key agencies like NSF. Yet there can be no question that our present economic strength derives from years of careful nurturing, in part through federal research programs, of a wide range of scientific specialities. Furthermore, focusing our research increases on the National Institutes of Health is extremely short-sighted—the health sciences depend on support from many disciplines. We need strong federal science programs that span a wide range of specialities to create opportunities for new breakthroughs through combinations of technology advances in diverse fields.

In conclusion, Mr. Chairman and Mr. Secretary, I appreciate the enormity of the challenges undertaken through the Department of Energy. And from my perspective as Chairman of the Subcommittee of Appropriations on Energy and Water Development, I also appreciate that the proposed budget is inadequate to meet many of the Department's responsibilities. I remain very hopeful that the ongoing reviews will quickly conclude that additional resources are appropriate and I believe that many in Congress will be ready to help correct these problems if necessary.

The CHAIRMAN. Thank you.  
Senator Thomas.

**STATEMENT OF HON. CRAIG THOMAS, U.S. SENATOR  
FROM WYOMING**

Senator THOMAS. Thank you, Mr. Chairman.

Welcome, Mr. Secretary. It is good to have you here. Let me say first of all that I am delighted that energy policy does not just come from DOE, but I am pleased that you are focusing on that. The 6 years I have been here, DOE has talked not very much about energy. They have talked about these nuclear things and so on, which are very important, so that is good, but Interior, EPA, all of these people have a very real impact on it and, of course, that is what the Vice President's task force was talking about, so I think that is good.

Let me say that I think we have a pretty good plan for the long range, but we have got some problems right now, and we are going to hear more and more about it, whether it is gasoline, whether it is electricity, whether it is the prices, and I do not know the answers, but there needs to be some things, New Source Review, EPA, on some of the refineries, is there a chance of doing something there. We have already spoken of oxygenated fuels. Are there places where we can change that?

I think there needs to be some real look at it. The price of gas at the natural wellhead in Wyoming is about \$4.58 or something,

and \$14 when it goes into California. That is an interesting cost change. The hydro, we could probably use that more efficiently and create more power there in the short-term. Conservation has to be there.

However, are you going to react to this summer's prices? I am not for price controls, but we need to have some reaction to what is happening now.

Secretary ABRAHAM. Well, we are very concerned, as all of you are about the gasoline prices. I was disturbed this week when I read in the paper that local dealers were already being told to expect \$3 gas. I do not know how you make that kind of assessment, given the state of information, but I think it sometimes can be a self-fulfilling prophecy, and I have asked our Department to begin looking at where some of those signals were being sent, and why they are being sent.

Clearly, there are a variety of factors on gasoline prices that are at play. You have a world-wide production level that has been constrained by decisions that are beyond our control, OPEC decisions, as you know. I am not trying to only blame one source for the problem, but that is part of the problem, the extent to which we are dependent on foreign oil has grown. That sets us up with a little difficulty when we have production reductions.

As I indicated earlier, we also have the issues that relate to the strained capacity of refineries.

Part of the problem we have, and one of the things that I see as a tremendous challenge, is that any kind of disruption will trigger price spikes, and we have almost no ability, when we are operating at almost full capacity in these refineries, to do anything about it, not just because of the complexity of the fuel mix, but also just because of the maximization of capacity at the refineries during these peak demand times.

You know, whenever there is a fire at a refinery, it shuts down tremendous amounts of the supply percentage in that region. We have had two fires in the last 2 weeks. Obviously, it has taken a long time for us to get to the point where our refinery capacity is at this level, and that is something that we are trying to examine as well, what actions can we take that might increase capacity.

There are other issues at play, too. We do have—I mean, I hate to use the word, after the comments made by Senator Murkowski, but we do have an infrastructure problem, in the sense that the pipeline capacities in some areas are very, very strained, and in Michigan last summer we had gasoline prices spike up to \$2, nearly \$2.50, because one of the principal pipelines that supplies the Detroit area from the Chicago area had an explosion.

It was shut down, at least in large measure, and for a protracted period of time, because there was no refinery, there was no capacity to compensate for that loss either in terms of rerouting or in terms of a separate refinery that could be routed into Detroit. So we are doing a number of things right now, looking at some of these challenges, but I do not wish to in any way downplay their importance. To some extent they are long term, to some extent short-term.

Senator THOMAS. I understand. Are there regulations in place that if they were changed would have an impact on the refining?

Secretary ABRAHAM. I think there are some. We are looking at those as part of the Vice President's task force. I think there will be some reference to that in the task force report when it is completed.

Senator THOMAS. What is the task force report going to be? Is that going to be viewed as a policy? Is it going to be reviewed as recommendations to the Congress? Is it going to be how you operate? I do not quite understand.

Secretary ABRAHAM. I think it is actually going to take several forms. I think there will be certain recommendations which would by their very nature require legislation, and in that sense we would begin to work with all of you to develop legislation to address those recommendations. In some cases I think it would be recommendations that call for action that could be taken by various agencies and departments in the Government already, and in some cases it might be areas where the President could act by his own executive order, so it will take several different kinds of forms. Some of them might be also new rule-making procedures, where a regulatory issue is at stake.

Senator THOMAS. Well, I am pleased that you have taken a look at the coal research. I think coal is the logical fuel for stationary generation. Gas is so much more flexible, it can be used for many things, and the idea that every electric plant that is on the planning board is gas-fired I think is a mistake. I think it is a policy mistake, and hopefully we can deal with those things some.

How about accountability? Research can go on forever, and I understand you have to get into things, but is there any sort of way to coordinate and see if all the research we are doing is aimed at some kind of accomplishment, or do we just toss it out there and say, you guys play with whatever you want to?

Secretary ABRAHAM. Well, in a way this goes back to Senator Bingaman's question with regard to some of our renewable energy resources. We spent a lot of money doing research in these areas, and I have concluded that it is not just a situation where we would need more research. In many cases, we have been very successful in our R&D and joint ventures. Now we have got to look at other ways to take that now completed product and translate it into an energy-producing source. I think we can do that in the area of some of these renewables.

In other areas, one of the other areas with respect to our fossil energy budget has to do with the turbines program. We have completed work on large-size turbines. These would be 400 megawatt-size turbine generation. We do not need to continue doing that research. It is now done.

There was an issue brought to me in the budget process about continuing a very substantial line item in that area to begin work on researching in the area of mid-size turbines. I did a little investigating—I actually had it brought to my attention by a completely unrelated to the budget source, the fact that two major companies in this country are already manufacturing and have very lengthy back orders for mid-size turbines that are already available, and which are going to be, I think, proving to be an approach that a lot of States are going to take in the future, so I am trying to bring that sort of accountability, but you know, I think overall our R&D

programs have done a good job, and I think the only issue is, when we finish, the next issue is, does it translate into new energy sources.

Senator THOMAS. Exactly. Well, that is very good. Thank you, and I just want to compliment you and the administration. When we talk about increasing our production, we also have to talk about protecting the environment. We can do those two things together. We ought not to let people create the notion that it is one or the other.

So thank you, Mr. Secretary.

The CHAIRMAN. Thank you, Senator Thomas.  
Senator Craig.

**STATEMENT OF HON. LARRY E. CRAIG, U.S. SENATOR  
FROM IDAHO**

Senator CRAIG. Mr. Chairman, thank you. Mr. Secretary, welcome. It is good to see you again, Spence. I will not get into energy policy today. I think we will all be focused on what you announce on the 17th. We have already done our work here in response to the current crisis.

The bottom line is, our energy basket is empty, and I would hope that we would begin to refill it with a variety of energy sources that are diverse and flexible, that recognize our needs, and I hope that the policy you are proposing and the Vice President has been working on will be able to mesh with ours.

I would like us to have on the floor of the U.S. Senate a very robust debate on energy policy and a vote early this summer. I think the American people deserve to see it and to hear it, to get involved in it, because right now they are asking some very profound questions, and they deserve to get answers.

Having said that, Mr. Secretary, in preparing for this hearing today I was remembering our visit prior to your confirmation, and you wanted to know what the issues were that were critical to my State, and as it reflected the Department of Energy and, of course, as you know, I have one of those national labs, and we are very proud of it, and it is the designated laboratory for environment, and for new nuclear technology.

Having said that, one of those concerns with that lab, of course, is cleanup of contamination and, as you know, several years ago the State of Idaho and DOE entered into a very unique relationship, the only one of its kind in the Nation, a commitment, a contract, a legally binding contract that set out guideposts as to how DOE would perform in its cleanup.

Yesterday, DOE Acting Secretary Carolyn Huntoon, testifying before the House Energy and Water Appropriations Subcommittee, suggested that under the funding level in the budget requested, some of DOE's sites may fall out of compliance with their cleanup agreements, but the DOE is not sure which specific sites that would be.

Well, if you fall out of compliance in Idaho, you are in violation of a contractual commitment, and you understand that, as do I.

Senator Bingaman quoted an article in the *Energy Daily*. I have been spending a month working with my colleague who just left, Pete Domenici, to help you avoid that fallout, and I think we may

get there. It will take some supplemental funding, about \$1 billion worth spread across the laboratory complexes of our Nation, to meet the guideposts and the commitments of environmental clean-up, and I think we have to do that, whether it is in Idaho or down at Hanford with Senator Gordon Smith, or whether it is in the Carolinas, those are commitments made, and those are commitments that we have to adhere to.

Do you agree that some sites may fall out of compliance if this kind of supplemental money does not come along?

Secretary ABRAHAM. I am not prepared to say that any compliance will not be met, but if I can just make a comment on the environmental management side of our bill, and it is one that I hope would be the basis for future work together with this committee across the board. I know there are several members who are not here who have sites in their States as well. Senator Domenici referenced this, so let me, if I could, just take a minute to comment.

When I got to the Department, I was given a very in-depth briefing on the plans with respect to environmental management, the many sites across the complex. We have about 113 sites that were in need of some form of remediation. 71 of those sites have been completed. Three more will be completed this year, but by everybody's acknowledgement the ones that are finished are the easiest ones, and now the hard work remains.

I was troubled because the plan that was laid out for us, laid out for me by our environmental management team—and I want to just say that I think these are very well-intentioned, hardworking people. This is not a criticism of their work product. But the plans said that we would do this work, it would take 70 years, and it would cost somewhere around \$300 billion.

Now, the money is a factor always in these things, but to me the 70 years was an unacceptable number, and the fact of the matter is that we only have two of the major sites in the complex that are slated to be completed at a relatively early time frame, because we have designated an expedited schedule at those sites, for Fernald, Ohio, and Rocky Flats, in Colorado.

Now, the Rocky Flats experience, I think, is a good illustration of where I would like to take this program. In 1994, the estimate was that the Rocky Flats site cleanup would take approximately 75 years to be completed. In other words, it would take until the year 2070 to be finished, and that most of the major work would not be completed until well along that path, and that the cost would be somewhere in the vicinity of \$37 billion.

The Government, the Department took the lead. A decision was made that we would not settle for that. A decision was made in 1997 to move towards completion on an expedited schedule which we are maintaining with this budget of 2006, and we now estimate not only that that will happen, but that the cost for 1997 through 2006 will be about \$7 billion.

So to me that is the direction we should be headed, and I think it is unconscionable, frankly, to tell people that if they are lucky their grandchildren will live in a community where the environmental remediation is finally completed. They are not going to live there, because it is going to take so long they will not be around at the time it is done, 70 years from now.

So can that be accomplished? I think the Rocky Flats experience suggests that it's methods may not be applicable to every site, but I have got to believe that at least some of the things can be, and what I have ordered is a top to bottom review of how this program is slated to operate, how it can be improved, what we can learn from these other experiences, and what innovative approaches we can take to financing this cleanup.

What we have right now, I would just say to the members, does not make sense to me. We lurch from year to year with unpredictable amounts of money. Some say well, this budget is not enough. In my judgment, a billion more dollars is not going to do much more because the fact is that most of the sites do not have a short-term game plan. They have got some milestones in some places, but not ones that are going to bring about cleanup in a short time frame. I just do not know why we should continue down that road. I hope to find a better way, and to come back and work together with everybody to find a better way.

I have said to folks, if this was your own backyard, or if this was a State government, you would probably go out, you would probably borrow the money, you would issue bonds, or you would borrow, and you would clean up the problem, and you would pay it off over a long period of time. You would not do a little bit of cleanup every single year with a small amount of money, much of which goes to just maintaining the property, preventing people from getting injured and so on. It is at least where I would like to see us move, and I expect to come back after our review to this committee and try to work together, see if we cannot find a more effective way.

Senator CRAIG. Mr. Chairman, my time is up.

Mr. Secretary, I do not think any of us on this committee would disagree with your overall vision. Environmental cleanup and restoration is very expensive, and it is a stumbling track. We would like it done sooner than later.

What I am referencing are the commitments of today, and how we react to those versus, as Chairman Domenici said, setting down an informed and organized pattern and sending that message out in the next cycle that says, and from here we change to this, and here is our plan. That we can deal with. What we cannot deal with are dramatic cuts in current programs that are targeted, are committed, are budgeted, or were budgeted, and create dramatic kinds of changes without a perspective of where we want to get. I think that is my reaction.

The CHAIRMAN. Thank you, gentlemen. Senator Akaka is next, but he has been kind enough to give a minute of his time to Senator Smith, who has to go down to the State Department.

**STATEMENT OF HON. GORDON SMITH, U.S. SENATOR  
FROM OREGON**

Senator SMITH. Thank you, Mr. Chairman. Thank you, Senator Akaka. I will be very brief. I wanted to be here this morning to welcome you and thank you for all the work that you are doing, but to also make a plea that the door not be finally shut on the effort that Senator Feinstein and I are making.

I know philosophically that the administration is very much in support of markets. I happen to have come to the conclusion that while markets work, we do not have a functioning market now. We have a very dysfunctional market right now, and a lot of people are being hurt unnecessarily and are being victimized, I think, by some who are able to game the system to the great disadvantage of a neighboring State, but my own State as well, and I think energy is a necessity. It is not like peas. Peas are a luxury. I wish they were a necessity, but they are a luxury.

But I also believe we have a highly regulated market. We have never had a free market in energy, and people are truly going to want to see this administration appearing more engaged than it appears to be, and they are going to want the FERC to use the powers it has more aggressively than it is, so I hope that you will keep working with us.

I know philosophically where you are, and I understand that, but I think the two great fictions are that this is just like any other commodity that is subject to a market, and the fiction is that we have a market here. We have a crisis here, and I think it would behoove the President, it would behoove all of us to figure out a way to relieve this in a very aggressive way, but thank you for being here, Spence.

Thank you, Senator Akaka.

The CHAIRMAN. Senator Akaka.

**STATEMENT OF HON. DANIEL K. AKAKA, U.S. SENATOR  
FROM HAWAII**

Senator AKAKA. Thank you very much, Mr. Chairman. I want to add my welcome to the Secretary; and it is good to see you back on the Hill. I have a comment to make, and it will be brief. It has to do with renewable energy and energy efficiency.

The President's budget request proposes severe cuts in a number of areas, and renewable energy has been cut by 36 percent. That is \$237 million for fiscal year 2002. The Department, I understand, plans to restore some of these cuts in the near future. However, the restoration will occur at the expense of other worthwhile programs, including the Partnership for a New Generation of Vehicles. Under this budget, the hydrogen, hydro power and electric energy systems and storage programs would receive level funding in fiscal year 2002. These programs need increased funding rather than level funding, I feel.

Other programs such as geothermal, solar, and wind programs would sustain reductions of about 50 percent from the current funding levels.

The Department of Energy's buildings program and industry energy efficiency R&D program have been slashed by 40 to 50 percent. According to DOE, efficiency R&D programs have returned more than \$100 billion to the U.S. economy from a Federal investment of less than \$13 billion since 1978. A GAO study has validated this figure, and cutbacks such as those proposed will prevent the Nation from realizing the efficiencies and cost savings that the new technologies bring.

My comment is that we cannot afford to neglect renewable energy resources and energy efficiency, and Mr. Secretary, I am opti-

mistic that Vice President Cheney's staff will address these matters, and I know you will do all you can to help our country in these matters also.

Thank you very much. Those are my comments, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Akaka.

Secretary ABRAHAM. If I might make just a brief comment in response.

The CHAIRMAN. Sure.

Secretary ABRAHAM. Some of the issues that were referenced I think I have addressed earlier in terms of the Partnership for the New Generation of Vehicles, and some of the concerns we have about a certain part of that program.

In the area of renewable energy, I would just—I share your optimism with respect to hydrogen and fuel cell technologies and so on, and this is indeed an area in which I know that our task force has been putting some focus at my personal instigation, and I think there will be some comment on that in the results of that task force.

The other thing I just would say is that with regard to some of the nontransportation side of the efficiency budget, we have made some changes in priorities, and I feel I should at least explain how we reach those decisions.

As I think you all know, the budget contains a very substantial increase in the Weatherization programs of \$120 million, virtually doubling the program in something which—where we had, as I said earlier, an area where we had clear guidance from the President during the campaign and his platform. He feels very strongly that we need to direct more of our Federal dollars in energy efficiency to help people who are, for reasons of their own financial condition, not able to do as much for themselves.

In making that shift of dollars in that budget, I chose to reduce some of the areas, and you referenced them, the industries of the future research, and some of the building research money, because we felt that the share of support for that technology ought to be greater from the industries involved.

I mean, some of these are among those that are having the most successful track records in recent years, and we felt that given the rising energy costs, that they have a tremendous amount of self-interest involved to reduce their own energy consumption, and would participate at a greater level, and I intend to try to work with those industries to make their participation greater, but the reason you see a reduction on that side is because you also see an increase on the weatherization side, and some of these are tough choices to make.

Obviously, if one as a Department head were allowed to fund every single program at every conceivable level that they wanted, it would be easy to do a budget, but you do have to come back and make some of these calls, and those are the reasons, at least, that we went in some of those directions.

The CHAIRMAN. Thank you very much.

Senator AKAKA. Mr. Chairman, may I comment further and say that, Mr. Secretary, I am working with colleagues in Congress to move the hydrogen legislation this session, and I am pleased to



know that you have championed hydrogen with Vice President Cheney's staff. As I said, I am optimistic.

Secretary ABRAHAM. I look forward to working with you on that. We are very interested in that.

Senator AKAKA. Thank you.

The CHAIRMAN. The Senator from Oregon, Senator Wyden.

Senator WYDEN. Thank you, Mr. Chairman. It is good to welcome the Secretary and our former colleague.

Mr. Secretary, I want to start with the gas prices question, which is so much on the mind of my constituents. You said that you were troubled about where gas prices are headed. I obviously am as well, but what I am especially troubled by are the very significant anti-competitive trends in the gasoline business. We have redlining all over the west coast. We have got zone pricing. We have got a wave of mergers.

My question to you is, if you are troubled about prices, are you troubled about these trends that are sucking the competitive juices out of the gasoline business, and if so, what does the administration want to do about it?

Secretary ABRAHAM. If you are troubled about the prices, you have to look at all possible sources of the problem, and I believe the administration, that we are trying to do that.

I am confined to one portfolio, and I know that people at other Departments are looking in the areas in which they have responsibility. For me, the first concern I have is one that goes back to last summer in my own region. We saw this in Michigan, or, as you know, where I live, we saw this tremendous spike in prices.

We determined in no small measure we were totally at the mercy of refinery capacity in Chicago, and we do not have sources in the Detroit area sufficient to provide any kind of relief if there was, as there was, an explosion in a pipeline, as well as the problems that they had, took an extraordinary amount of time transitioning to summer grade fuel, so we are trying to look at what can be done about some of those issues within our portfolio.

But one of the issues that I have asked our Department to also begin exploring is the question of transparency of prices at these various stages in the supply process.

One of the things I mentioned earlier, I was concerned when I read in the paper that suppliers were telling stations, or at least the stations said they were told they were going to get \$3 a gallon gas before the summer was over in various regions. I do not know what the basis of that is, and I think the people in those communities need to know what the stations are paying, because I think they need to be able to monitor at what stage in the process there are unusual changes in cost. I think that may help us to address some of these concerns.

Senator WYDEN. Well, I hope you will talk to the stations, because the stations are being told they are not being allowed to compete, and we had a jury in Oregon give out an \$8 million award involving redlining, where in effect, the companies drew a line and said you could not sell somewhere, so I just hope that the administration will look at these anti-competitive trends in the gasoline business, because the American people want some relief this sum-

mer, and at a minimum they ought to know their Government is trying to put some free enterprise back in the gas business.

The CHAIRMAN. Senator Wyden, you have additional time. I just wanted to make sure that Senator Feinstein and Senator Cantwell were next, because I have got the Governor of the Virgin Islands in the back room.

Senator WYDEN. Thank you. The other area, Mr. Secretary, I want to go over with you, I was very troubled by what Mr. Blake said yesterday, and I indicated that to you on the phone, and I want to make it clear I am not prepared this morning to support him as the No. 2 person at the Department. He said in response to my questions that he would not rule out forcing the Northwest to sell by Federal order more power to California, and he wouldn't commit to requiring California to put the full faith and credit of the State behind more sales, and third, he did not indicate that much of anything was being done to force repayment of the \$100 million that was already owed.

Now, we went to the floor of the U.S. Senate and we were told that the Government should not be involved, and it would not be any problem, and PG&E, just as I said, went bankrupt, so there is now a prospect of my constituents getting just a few pennies on the dollar for what is owed, and I want to make it clear that Mr. Blake's answers yesterday were unacceptable.

I wrote the President yesterday, as I indicated to you, that I hope the administration would clarify its position and make it clear they are not going to force the people of the Northwest under Federal order to sell more power, and particularly given what has happened in the last few months.

So we talked about it yesterday, and I want it understood that I am not prepared to support Mr. Blake's nomination as of this morning.

Thank you, Mr. Chairman.

Senator FEINSTEIN. Thanks very much, Mr. Chairman.

Mr. Secretary, let me begin with the good. I guess a couple of months ago I wrote you a letter and urged you to take action in Federal facilities in California. You called me yesterday, filled me in on many of the details of what you have done, and I just want you to know that I really do appreciate that. It means a great deal.

I have a number of kind of disjointed comments I want to make. Let me do it very quickly. The first is, I think it is very important that Federal orders exempt California's refineries from blackouts. It is my understanding that once a refinery goes down, they have to retool, and the length of time can be 7 days, 2 weeks to complete that process. If, in fact, that is true, there will be an enormous gasoline price hike in California this summer as well, so I would like to ask you to make that a high priority item.

[The following was received from DOE:]

I certainly share your concern regarding the likely impacts of refinery shutdowns resulting from forced power outages. The availability of gasoline, diesel fuel and aviation fuel is critical to the economy and public health of Californians.

The California Energy Commission has stated that the shutdown of just a single refinery could lead to supply shortages and price spikes for gasoline and oil products, and that price spikes could last up to four weeks. Also, according to a Reuters report earlier this month, Valero Energy said that forced power outages would force the company to halt operations at its Benicia refinery, which provides more than

10 percent of California's refined product needs, and that it would take several days to resume operations.

Exemptions from rolling blackouts could be granted by the California Public Utility Commission (CPUC). The Department has supported the efforts of oil refiners to convince the CPUC to add refineries to their list of facilities not subject to blackouts. The CPUC has responded by inviting business customers to apply for exemptions. The Commission has been, reportedly, setting up an application process for exemptions, and has been negotiating with a consulting firm that could do an objective evaluation of the competing claims by refineries and others. In addition, a bill is pending in the California legislature that would make oil refineries the last industries to be curtailed in the event of electricity supply shortages. However, as of June 1, 2001, refiners had not been granted an exemption.

Senator FEINSTEIN. Take a good look at it. I do not know the pros and cons of it, but if what I have been told is correct, that is a major, major issue. If you want to make a quick comment——

Secretary ABRAHAM. I was not sure if you wanted to go through several points, and then I would try to respond.

Senator FEINSTEIN. Right. I would also like to ask you to take a good look at the testimony before the FERC on the Brattle Group, and this is a summary of the Brattle Group study of the El Paso Merchant Energy Company's exercise of market power from March 2000 to March 2001. In this, there is substantial evidence of market manipulation. It is our belief, and I am coming to this conclusion, that the market has been manipulated to the extent that the excessive cost of natural gas and power in California is literally in the billions of dollars.

I mean, this is not going to stop. Investigative reporters are on this all over. This is a major issue.

I also want to enter into the record, if I may, some quotes from a letter from the Williams Company.

[The following information was received from DOE:]

The report you mention, *The Brattle Group Study of EPME's Exercise of Market Power*, was prepared on behalf of Southern California Edison, and entered as an exhibit in an ongoing FERC action (California Public Utilities Commission vs. El Paso Natural Gas et al, RPOO-241). The report was prepared and submitted to buttress the Plaintiff's case in this action.

El Paso Natural Gas Company operates the largest interstate pipeline serving California. In March 2000, El Paso sold competitively a large bloc (1.5 billion cubic feet per day) of capacity in this pipeline to a trading affiliate, El Paso Merchant Energy. The Brattle Group study alleges that El Paso Merchant Energy withheld a portion of this capacity from the market, driving up the spot price of natural gas in Southern California, and opening a large "wedge" between California and Texas gas prices. High prices and restricted availability of natural gas have had deleterious effects on California gas consumers, including households, power generators and heavy oil producers. The study further alleges that El Paso was then able to profit from these higher prices in several ways, principally through higher selling prices for natural gas and transportation capacity not withheld from the market.

The FERC will have to determine, on the basis of the evidence provided by all parties, whether or not El Paso or its affiliate possessed "market power" in some defined market, and, if so, whether or not El Paso purposefully used its market power to raise prices above competitive levels, and, if so, what remedy would best promote the public interest.

It would be improper to make specific comments on this case while it is under FERC's scrutiny. There are, however, several general considerations suggested by this episode.

Market power, however defined, and whether exercised or not, is conferred by "barriers to entry," in this instance, capacity constraints or bottlenecks, in the gas pipeline and storage system. Removing or preventing bottlenecks serves the public interest better than trying to enforce conduct restrictions. The capacity of interstate natural gas pipelines and local producers to move gas into southern California exceeds the capacity of intra-state pipeline operators (PG&E and SoCal Gas) to receive

this gas. So long as this constraint binds, some allocation mechanism, formal or otherwise, will ration southern California gas supplies.

Natural gas pipeline constraints are only one of several supply constraints from which California has suffered. The most important is the lack of generating capacity, but others include electricity transmission constraints and scarcity of Nitrogen Oxide permits in southern California. Even if unlimited supplies of cheap natural gas had been available, California would still be experiencing rolling blackouts and an unsustainable "gap" between retail electricity prices and the cost of wholesale power purchases.

In the short run, we need to focus our efforts on resolving the bottlenecks and capacity constraints revealed by the current California situation. In the longer run, we must decide, how much excess capacity "insurance" we are prepared to carry, in California and elsewhere, and how that insurance ought to be paid for.

Senator FEINSTEIN. This is from Keith Bailey, chairman of the board, president and chief executive officer of Williams, and let me read from one part of it.

"For sometime, I have indicated, as part of an overall solution, Williams is prepared to support temporary price controls that would extend through the summer of 2002, and no longer, so long as they fairly allow sellers the ability to fully recover costs, including a reasonable rate of return."

In this letter, Williams points out that essentially what is happening is a lot of allegations with respect to market manipulation. They are concerned by it. They have come to the conclusion that the best way they can proceed is with cost-based rates to avoid this.

Thirdly, I will have a great deal of trouble supporting the energy budget if, in fact, it does what I believe our reading of it does. It is my understanding you propose to cut funding for the Energy Information Administration. I view this as a critical aspect of DOE in a market environment. The purpose of it is to ensure transparent markets.

You also propose totally eliminating the State Energy Price and Expenditure Report, and State Energy Data Report, and you propose discontinuing the international analysis program for greenhouse gas emissions.

Mr. Secretary, Bloomberg Market News uses this information, we use this information. It is how we determine the daily rates being charged for energy. Anything your Department does to reduce transparency of the costs of energy can only permit increased market manipulation. I feel very strongly about that, and if that ends up being the case, that we cannot get adequate information from your budget on present-day costs, it is going to be a real problem for me. I wanted to put those three things on the table now.

Secretary ABRAHAM. Any other, or should I—

Senator FEINSTEIN. That is it.

Secretary ABRAHAM. Okay, great. Well, let me first of all—I was just provided information which confirms what I had thought, which is that our proposed budget for EIA is the same as last year, and I will look into the specific issues you raise, because I was under the impression that we were maintaining funding for the EIA programs, and I would just say that this is an independent arm of the Department.

It is one that we have already, in the short time I have been there, come to rely on for evenhanded analysis. I do not always

agree with some of their conclusions, but I know that they are very independent.

[The following information was provided:]

The demand for EIA data, analyses, forecasts, special reports, and briefings, and the call on EIA to provide timely analyses and reports, especially in the face of the current energy crisis, regional shortages, and volatility in energy prices, has grown significantly. EIA's priority, as reflected in the FY 2002 budget, is to maintain energy data programs and forecasting systems needed to provide timely information during this period of high interest in energy. This includes continuing improvements in EIA's electricity, natural gas, petroleum and energy consumption surveys.

EIA is able to fund the FY 2002 fixed cost increases, which includes the Federal personnel pay raise, with the following impact to programmatic activities. EIA plans to:

1. Reduce printed publications. In keeping with EIA's Strategic Plan to reduce printed publication and make greater use of EIA's web site, EIA plans to discontinue the publication of the State Energy Price and Expenditure Report, the State Energy Data Report, the Renewable Issues & Trends, the Electric Power Annual Volume 1, and produce the Changing Structure of the Electric Power Industry every two years instead of annually.
2. Complete in FY 2001 the Interruptible Natural Gas Contract Study.
3. Defer maintenance on lower priority energy data surveys and processing systems.
4. Downsize plans for the integration of current information processing technology, and continue dependence on aging data systems & infrastructure.
5. Complete the development of the 15 regional models on greenhouse emissions, but defer plans to integrate the models into one international model.

These actions are in-line with EIA's Strategic Plan to reduce printed publication by making more energy data available on EIA's web-site, and to maintain EIA's core energy data quality and analysis capabilities.

Senator FEINSTEIN. Can I just give you some pages to look at?

Secretary ABRAHAM. Yes, would you, because I am confused a little bit as to the—

Senator FEINSTEIN. 247, 248, and 257.

Secretary ABRAHAM. I will be glad to do that, Senator.

Let me just comment on the other issues. First of all, with regard to the exemption, or with regard to the exemption of refineries, I gather that it is—I am not sure what the situation is. I have heard talk that the Public Utility Commission might consider not including refineries in the exempt category.

I would agree completely with your analysis of the implications of that on the price of products. As we have already seen, it takes only a minimal disruption with respect to any refinery to cause prices to spike, given the strained capacity during these peak periods. If all of the refineries, or any sizeable number, were to have that effect—I guess I will look into that.

What I am not aware of is what the rationale is for that decision, or if it has been made in California—

Senator FEINSTEIN. No decision has been made. I am going to communicate my feelings to the Governor, but I also wanted to use this opportunity to communicate them to you.

Secretary ABRAHAM. Right.

Senator FEINSTEIN. I do not know whether what the refineries say is true or not. That is why I would like to ask Energy to look at it.

Secretary ABRAHAM. I would be glad to. I would share your conclusion as to what the results would be. I do not know what the trade-offs are that they are considering. I mean, as to other cat-

egories of exemption, because I am just not apprised of what their option—

Senator FEINSTEIN. Tradeoffs are not pleasant, but I think if, in fact, it is going to shut down the production of jet fuel, it will stop the airports from functioning. If, in fact, it is true that—they are working at capacity now—that they cannot get gasoline to the marketplace, then that price of \$3 is going to look like a small amount by the end of the summer, so you have people to look at these things. I hope they will, and I would appreciate it if you would let me know.

Secretary ABRAHAM. I will, and I am in total agreement with your conclusion as to what the effects would be. I really do not know what the decisionmakers out there have been comparing it to in terms of other options.

I would be happy to look at the Brattle study. I know, or I guess I have read that a lawsuit or a complaint has been filed in that matter before FERC, so it sounds as if that is now a matter in a legal proceeding, but I would be glad to do that, and we will certainly take a look at the kind offer of the Williams Company to accept lower prices.

I am not sure they need Washington to force them to do that. If they want to charge less, I would hope they would, and I would think maybe they might be able to do that without any action from here, but I will be happy to look at that letter.

[The following information was submitted for the record:]

I am supportive of Mr. Bailey's efforts to play a constructive role in helping to resolve California's energy crisis. My reading of Mr. Bailey's letter, coupled with the Williams Companies' press release dated April 25, 2001, indicates, however, that the temporary price controls Williams supports are different in one important respect from the price caps contemplated in legislation you have sponsored.

Williams apparently envisions price controls that would be "temporary" in more than one sense—controls that would be in effect only through next summer and controls that would only be triggered during emergency periods. The Williams press release says that one "essential" element of "a rational course of action that seeks new sources of supply [and] that ensures confidence that services provided in the past and future will be paid in full" would be "price controls during emergency periods."

The legislation you have sponsored would impose price controls during all hours until the controls expire. In calling for price controls during emergency periods, the Williams proposal is more akin to the current price mitigation plan set forth in a Federal Energy Regulatory Commission (FERC) order dated April 26, 2001. FERC's price mitigation plan is triggered only when the California Independent System Operator declares a Stage I emergency and FERC's soft price caps remain in effect only so long as an emergency alert is in effect for California.

The CHAIRMAN. Senator Feinstein, do you have further questions?

Senator FEINSTEIN. Thank you. Thank you, Mr. Secretary. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much.

Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman and Senator Bingaman for holding this hearing on the President's budget. Secretary Abraham, good to see you again. Thank you for appearing here.

I am going to direct my comments this morning to something of critical importance to the State of Washington, but also to the entire country, and that is the cleanup of the Hanford Nuclear Res-

ervation, the largest cleanup project in our country, and I am sure probably one of the largest in the world.

I want to be clear on where the administration stands regarding the current budget debate over Hanford cleanup. I am sure you are well aware that OMB set the DOE budget at a level trims it from about \$19.7 billion in fiscal year 2001 to \$19.2 billion in fiscal year 2002. That would drop the cleanup budget from \$6.2 billion to \$5.9 billion, which obviously impacts Hanford.

There has been some discussion that the administration may reconsider this. Also, Congress has acted to restore the original levels. What is the administration's current position on restoring the \$400 to \$500 million shortfall in the Hanford cleanup?

Secretary ABRAHAM. Well, first of all, I have read conversations between various members of Congress and OMB on this. I have received no new guidance that may be in consideration from that which we have presented in the budget that you have before you, so if there is further discussion going on, I do not know if—to this point we have been given no indication of a changing—

Senator CANTWELL. So the original DOE budget that the administration proposed, that OMB determined, is reflected in these numbers.

Secretary ABRAHAM. That is right. That is where we are.

Senator CANTWELL. So we are still looking at a shortfall, for meeting Hanford cleanup milestones, by not having that \$400 to \$500 million?

Secretary ABRAHAM. Well, there has been no change in the numbers. Obviously, we have a major commitment to Hanford that is one of the few, in fact, of all of the various sites where in comparison to last year's level of support, if one does not include a rescission that was available last year, is actually a slightly larger commitment.

As you know, with respect to the tank waste vitrification facility we have increased our commitment there to \$500 million as part of our desire to build a vitrification facility, and we intend to do that.

You know, this has been a site, as you are well aware, that has occupied principal attention of the Department for a long time. I believe the agreements were entered into in 1989, roughly. There were countless numbers of milestones that were set. There have been six major amendments to these agreements in the last 10 or 11 years. Our goal is to proceed forward and to work together with the community, with the State, to do as much as we can to address the challenges ahead.

Senator CANTWELL. So do you think the President's budget, as proposed, will allow DOE to meet the milestones required by the Tri-Party Agreement?

Secretary ABRAHAM. Well, let us put that in perspective. As you well know—

Senator CANTWELL. I want to ask you about the Tri-Party Agreement in a minute, because I know you have suggested changing it.

Secretary ABRAHAM. Well, it has been changed. I am not suggesting changes, it has been changed I think six times since 1989.

Senator CANTWELL. Which obviously is part of the problem here.

Secretary ABRAHAM. Well, part of the problem—I think it is, perhaps, but part of the problem is that new information seems to surface about the magnitudes of the problems as more work is done.

There is also—and I think the committee is well aware of this. We are going to miss a milestone this year, and I think you know that, with respect to beginning the construction of the vitrification facility. Now, why did that happen? As I think probably most of you all know, the original bid for the completion for the construction and so on of the vitrification facility was somewhere around \$7 billion.

Then all of a sudden last year the contractor who had the bid announced that it was wrong, and it was going to be a \$15-billion cost, and so the Department, I think correctly, last year made the decision to rebid the contract, and in December that happened, but I think by all parties' agreement at that late point it was impossible to meet the milestone of beginning the construction this July, so obviously that is going to be missed, and I would acknowledge that now.

I think everybody understood it, but I think also we probably all would have agreed that allowing the contractor to double the cost was probably not the right course for us to follow.

Senator CANTWELL. So you, as Secretary, are supportive of the congressional action taken in a bipartisan fashion by both the House and the Senate to restore that level of funding?

Secretary ABRAHAM. The Congress obviously plays an important role in the budget process. When I testified last week before the House Energy and Water Subcommittee I was constantly offered more resources for my Department by people across the board on that committee, and obviously we have presented the budget that we think is appropriate for the Department, but the process will continue.

Senator CANTWELL. From a budget perspective what we have done so far is to have restored the level of funding. We want to make sure that it is appropriately allocated to Hanford, and that is a concern not just for people in Washington State, but for the region. It ought to be a concern, a very important concern, for the rest of the country as well.

Secretary ABRAHAM. I know you do, and obviously it is probably a unique situation to have Cabinet members resisting offers for more resources for their Department. We obviously are going to work, and the White House is going to work closely with you and with the members of the various appropriations committees on this budget throughout the remainder of the process.

Senator CANTWELL. I have a few other questions that I am going to submit as it relates to Hanford and the Tri-Party Agreement, so I hope you will be able to answer those as they relate to the budget process.

Following Senator Feinstein's question—we had a hearing last week with the head of FERC and the FERC commissioners.

Do you support FERC's investigation of overcharging in Washington State?

Secretary ABRAHAM. Yes. I think that now that the inquiry initially was for just California, and obviously because of the interconnectivity of the Western grid, issues that might have



caused unjust and unreasonable prices to exist in California could conceivably exist in other areas in which are connected or interconnected within that same region, so it seems to me to be a very appropriate follow-on to the California inquiry.

Senator CANTWELL. I know my time has expired, Mr. Chairman, but one more question, Secretary Abraham. Do you believe that there are reasonable and just rates being charged in the Northwest today?

Secretary ABRAHAM. My position is very simple. The FERC's job is to determine whether unjust and unreasonable rates were being charged.

Senator CANTWELL. But personally do you think the rates there are—

Secretary ABRAHAM. I believe that the refunds that have been ordered were appropriate.

Senator CANTWELL. The current rates being charged.

Secretary ABRAHAM. To the extent that they are unjust and unreasonable, and that is what FERC is trying to determine, I fully support the decisions they made.

The first time that we have actually ordered refunds in California has only occurred in the last couple of months, because of the determinations that these rates are unjust and unreasonable, and I support that effort.

Senator CANTWELL. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much, Senator Cantwell. I have been on this committee for 22 years. I recall the efforts to try and address a resolution for Hanford in the time Senator Scoop Jackson chaired this committee, on to Senator McClure, Senator Johnston, who mandated a special appropriation for this committee to go out and investigate Hanford, and he was chairman of the Interior Appropriations Committee at that particular time.

The cleanup in Hanford, as in other areas, has become an industry in itself, which has a certain perpetuating motivation. On the other hand, it is very real. I have been to Hanford. I have been to the reach area on the river, and so forth, and obviously you, as a representative of your State, have a job to do to resolve this. There is every reason to believe that there is a certain amount of leakage that is coming out of some of that contaminated material that has been sitting in tanks for decades, that is seeping into the watershed of the Columbia River. That has been documented to a degree.

We seem to highlight the potential damage of that, but the problem of cleanup has almost been beyond the comprehension of achieving significant advances. I could not begin to tell you how much money has been expended, and every now and then we have a tank that burps and causes legitimate concern.

I would suggest to you, and maybe it is already done to your satisfaction, but the State of Washington and Oregon try to get together with the Department of Energy to address some kind of an achievable resolve as opposed to, you know, what we are doing, which is quite appropriate, and I am not condemning you in any manner or form, but we are just throwing more money at it, and questioning whether this money is adequate enough for the next stage, but fundamentally, you know, this job goes from Secretary to Secretary, and each Secretary does his or her best, and each ad-

ministration does his or her best, but it is a gigantic problem, and then the question comes to mind to what extent can you clean up various portions, or is there some portion that you might as well build a fence around forever, or fill up some of those plants with concrete and make a hill out of them.

But at some point in time, I would hope some administration, some Secretary, some Governor can come together with an achievable—because 21 years is significant in my lifetime, but you know, the billions of dollars that we have expended that we have not really accomplished the level of cleanup that we had all hoped to do 25 years ago, and I do not expect an answer, but I share a frustration.

Senator CANTWELL. Well, thank you, Mr. Chairman, for those comments, and I appreciate your interest. The House and Senate have worked in a bipartisan fashion to restore these funds, not just for Hanford cleanup, but for other nuclear sites throughout the country. The approach that you are outlining has taken place in order to come up with these Tri-party agreements and milestones. Unfortunately, I think if the administration's budget level goes through, we will miss those milestones, and you will likely see action by the State of Washington against the Government for missing those milestones.

The CHAIRMAN. Well, that is unfortunate, because you know, the only folks that come out of those disputes usually are the lawyers. My bottom line is, what are we really accomplishing each year as far as cleanup, as opposed to maintaining a bureaucracy associated with those involved, and the bureaucrats and everything else.

Senator CANTWELL. I guarantee, Mr. Chairman, the people in Washington are first in that line in wanting to see real progress. But thank you for those comments, and we will keep working with the committee.

Secretary ABRAHAM. If I could just—Senator Cantwell was not here when I made some comments about our EM program, and I do not want to repeat them all, but I would look forward to having further discussion, at which point I would outline for you my frustration with the plans that exist not just at Hanford but at all but two of the sites, at the major sites in the complex that have such long periods of cleanup programs that, as I said earlier, only mean that somebody alive today's grandchildren may enjoy the benefits of living in a community that is free from contamination.

One of the things that I hope to work together with this committee on, as I said before your arrival, is to try to see if we cannot figure out a way to address a swifter and more cost-effective way of doing this, and part of it again, I suggest, it may have to do with the way our budget process works.®

We provide almost no certainty from one year to the next. Every budget process is a new appropriations debate between different sites with different needs, and because we do it that way, it is very hard when you are dealing with contractors, when you are dealing with goals, when you are trying to put plans in place to provide the assurance that something stays on track. At least, that is my observation on the short time I have been here, and I think we could work together to do this in a much more effective way.

The CHAIRMAN. Senator Bingaman, and then Senator Craig.

Senator BINGAMAN. Mr. Secretary, the President came out with his decision, I believe last week, that Federal facilities, particularly in California, would turn out the lights and turn off some of the escalators during peak periods, and I favored that. I thought that was a good step.

I am concerned, though, that the program that people have always looked to to reduce Federal facility energy consumption is the Federal Energy Management Program. That program is the one which would put in place more efficient equipment and other modernization of Federal facilities to reduce energy consumption. That program is scheduled for a 48-percent cut in your budget. Why would that make sense, at the same time that the President is concerned about Federal facilities using too much energy? Why does it make sense to cut that program?

Secretary ABRAHAM. Well, two comments. First of all, let me just preface them by saying, in fact, the Federal Energy Management Program has done a very good job. The Federal Government's use of energy has been significantly reduced since we passed the Energy Policy Act in 1992, and we are on track to meet the goals, I think, that were established as a consequence of several executive orders the previous administration offered in the 1990's, and which we intend to keep working on.

It was our evaluation that, very honestly, some of the work that the Federal Energy Management Program pays for out of our budget might ought to come out of the budgets of the various Federal agencies we provide a lot of assistance to, and so we are looking for more cost-sharing from other agencies who benefit, because they are the ones whose budgets are being reduced as a consequence of the expertise that we offer.

There also is a plan in place to shift some of the activities in terms of the on-site activities to private contractors that would be managed by the FEMP program, but would, in fact, be paid for by those other agencies, third parties.

Senator BINGAMAN. Are there some items you could point to in the budgets of those other agencies where there are increases that we could look at to offset the cuts that you are making in the DOE budget for energy efficiency?

Secretary ABRAHAM. Well, I am assuming that will come out of their energy savings, because I assume they have got a static budget for their energy expenses, and when we save them money, I think we ought to be the beneficiaries.

Senator BINGAMAN. So you are saying essentially, take it out of their hide, which I do not disagree with. I mean, that is a great thing.

Secretary ABRAHAM. I sort of think—I mean, obviously, they may not appreciate this perspective. I would acknowledge that, but it is the one that at least we have decided that makes a little bit of sense.

Senator BINGAMAN. Let me express a concern and ask your reaction to this. We have had an interesting sort of dynamic with regard to education legislation, which we are now considering on the Senate floor. The administration, right after it took office, immediately began discussions, a dialogue with the Congress, to agree upon a package of legislation we could go forward with in edu-

cation. That is now on the Senate floor, and hopefully will be voted on next week. There is a very real question as to whether it will be funded in the budget and in the appropriations process, but at least the authorizing language has come a long way. That is one procedure.

The alternative procedure, which we followed in the area of energy, I think is a great frustration to a lot of Americans, because they see their price of gasoline going up at the pump, they see their own home heating bills going up, they see their bill from the natural gas company going up, they see blackouts in electricity on the west coast, and in that area. Instead of having an early dialogue with the Congress, the administration set up a task force within the administration that, to my knowledge, did not involve the Congress. It certainly did not involve me or other Democrats that I am aware of, and I do not think it involved Republicans. The administration essentially said we are going to wait until this task force does its work, and then see what they come up with, and then consider sitting down and talking about how to implement some of their recommendations.

Essentially, it takes a very immediate problem and says, we are not going to approach it with the some urgency that we have even approached a subject like education with. Am I misreading that situation?

Secretary ABRAHAM. Well, I think you are, and I do not think the intention of this administration is to move unilaterally once this initial set of recommendations is placed before the President. Obviously, he is going to come forward and say these are my ideas, in the same way that you and Senator Murkowski introduced your energy plans. I suppose if Senator Breaux would introduce our plan we could make it a triple, but the fact is that you know, I think each of the players here on this side, and I know in the House there are efforts afoot to put together energy plans.

I have been asked to consult in one of those, but for the most part I have not been involved in those processes either but I think it is only to begin what, as I think Senator Murkowski said, would be in the case of at least where legislation is the ingredient—we are not going to be presenting the Congress with a set of bills next week. We are going to be saying these are our recommendations, as to the policies that make sense, and then I assume the same approach that was taken with the education legislation will be taken.

At least, that will be my intent in terms of trying to find the various ingredients for statutory proposals, but we are not going to be offering a set of bills next week. We are going to be offering some recommendations as to policy changes.

Senator BINGAMAN. Yes, as I say, my concern is not that I do not think ultimately you folks will be willing to sit down and visit with the Congress about what ought to be done, but it seems the process and the procedure you have chosen to follow inevitably puts off that discussion, has put off that discussion for additional months while people are seeing their utility bills go up, seeing the price of gas go up, seeing all of these energy costs get worse, and the economic consequences deepen as a result of that.

I guess I wish the administration had found a way to engage the Congress earlier so that we would not be sitting round sort of hold-

ing everything in abeyance to see what recommendations come out next week, so that we can then see which of them we can work together on and which ones we cannot. It is going to be hard to make progress as quickly by virtue of the procedure that I think you have chosen to follow.

Secretary ABRAHAM. Well, I again hope that the efforts we have engaged in will be understood in the proper context. We have a bit of a challenge with respect to energy issues, in that unlike some of the areas of Government, or some of the policy areas where a single Government agency or Department has almost total authority or responsibility, with Energy it is spread across many different Departments or agencies. I have the Department with the right name, but I do not have, as you well know from our earlier discussions, all of the various tools and levers that affect the policies that affect energy, so we have Interior, and Treasury, and so on.

I think the administration's view is that we needed initially at least—and essentially I would just remind the committee that in my confirmation hearing a number of members on both sides had said, we need a multidepartmental, interdepartmental approach, instead of what we have done in the past, and I think the feeling was, first we had to make sure that within the administration we got people together with different portfolios who had different perspectives to get that participation, but I assure you that we look forward to trying to work together with everybody on this as we move ahead.

It is a serious problem that I think you have acknowledged and the President has, Senator Murkowski and others, that needs to be addressed comprehensively and together.

Senator BINGAMAN. Mr. Secretary, thanks again. You have the Department with the right name, we have the committee with the right name, maybe we can get to talking seriously about solving some of these problems one of these days.

Secretary ABRAHAM. I look forward to it.

Senator BINGAMAN. Thank you.

Senator CRAIG. Senator Bingaman, let me comment, because I, too, am frustrated, wishing that tomorrow was yesterday as it relates to this conversation on energy. I must say that my first meeting with President-elect George W. Bush, which occurred somewhat late in November, as you know, in that meeting with Senate leadership, he said, you are going to hear me talking a lot about taxes, and a lot about education, but he said, by far I will tell you what is really going to be important to the American people, and that is an energy policy that they understand and that we work out together, and he said, one of my first jobs will be to appoint a task force to come up with our vision of that to work with you all.

So while I agree, I wish it were sooner rather than later, I think it is rather remarkable that within a reasonably short period of time they have done a comprehensive review and are now ready to present it to us, or nearly that. We were in a position to do it much more quickly, in the sense that we had our bodies and our people and our staff in place, and I hope we can get on with it, because the American consumers, as you so well said, are hurting at this moment.

Mr. Secretary, you are right to be proud of Rocky Flats, and you are right to be proud of West Valley and the cleanup that will go there. The problem is that a lot of the stuff that allowed Rocky Flats to accelerate now sits in a mountain of garbage cans in Idaho. The high-level fuel that will come from West Valley this summer is going to Idaho. So what we have really done to make ourselves look like we are cleaning things up, is that we have been in a great shuffle game, and Idaho is one of the repositories of the shuffle.

Now, we have said we will accept that as long as we stay on course. If not, my Governor and I and others are committed to dealing appropriately, if we have to, to make sure that we do.

Having said that, one of the shuffles, as you know, is to take that transuranic waste and put it in containers and move it to New Mexico, when we have finally got WIPP open and it is receiving facility. The problem there, and there is another one, is the availability of shipping containers and the sufficiency of the WIPP budget to support these shipments that allows us to move to a permanent repository the transuranic low-level waste.

Under the budget request, is there adequate funding to maintain the shipping schedules for both Idaho and other DOE sites to the WIPP facility?

Secretary ABRAHAM. There is. In our judgment we will be able to double the number of deliveries from 7 to 14 a week. Now, I will just tell you that one of the challenges here is that we are going to be moving some dollars, at least in our proposed budget, from non-environmental cleanup priorities at Carlsbad to make sure that these programs work.

Also, I can tell you that we will have an adequate number of casks. Our budget supports that for fiscal year 2002, and the shipments from Rocky Flats in Idaho are going to be given the highest priority.

What would limit us is a limit on the availability of casks next year. In that case, it is not going to be our budget, but the time it takes for these casks to be properly manufactured, or fabricated. Under procurement orders the Department placed last year, our vendors are building these new casks as quickly as possible, and will continue to deliver them during 2002.

Senator CRAIG. Well, Mr. Secretary, thank you. There are other questions, and we will submit those for the record. We appreciate your time here. I think we have just started a vote on that most important document, the budget, and I will need to get to the floor to do that, but I am very pleased with the leadership role you have taken, as are others. You have been outspoken, you have been clear in your message, and we will work very closely together to surmount these hurdles and get on with the business that is important.

I trust that the President's energy policy proposals will have a substantial portion in there on new nuclear. I think that we can agree that there is a great opportunity there for us all, as Americans, for clean technology and non-emitting technology that builds an abundance of electrical supply.

So we are looking forward to working with you, and that announcement, and then sitting down with you to incorporate that

into what we have done here, as I have said, so that we can, I would hope by June, have a robust energy debate on the floor of the U.S. Senate that begins to show the American people that their Government, both the legislative and the executive branch, are, in fact, well-focused on the energy needs of this country and to the business that our President so clearly speaks of, of producing and supplying.

Thank you very much, and the committee will stand adjourned. [Whereupon, at 11:32 a.m., the hearing was adjourned.]

[Subsequent to the hearing, the following was received for the record:]

GASIFICATION TECHNOLOGIES COUNCIL,  
*Arlington, VA, May 18, 2001.*

Hon. FRANK MURKOWSKI,  
*Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.*

DEAR SENATOR MURKOWSKI: We would like the enclosed statement, written by Mr. James Childress, Executive Director of the Gasification Technologies Council, included in the record of the hearing held on May 16, 2002 before the Senate Energy and Natural Resources Committee on the fiscal 2002 budget for the Department of Energy.

Sincerely,

MARIE D. KENT,  
*Administrative Assistant.*

[Attachment]

STATEMENT OF JAMES CHILDRESS, EXECUTIVE DIRECTOR, THE GASIFICATION TECHNOLOGIES COUNCIL, TO THE COMMITTEE ON ENERGY AND NATURAL RESOURCES REGARDING FISCAL YEAR 2002 BUDGET REQUEST FOR THE U.S. DEPARTMENT OF ENERGY

The Gasification Technologies Council (GTC) wishes to take this opportunity to comment on the fiscal year 2002 budget proposal for the Department of Energy's Fossil Energy Research and Development Program.

Council members includes gasification technology developers and suppliers that account for more than ninety-five percent of the installed syngas production capacity around the world. We count among members a significant share of companies supplying engineering and construction services, turbines, industrial gases, gas cleanup and processing and other critical equipment and services to the industry. Our membership also includes a growing number of users of the technology, reflecting the growing commercial acceptance of gasification in the energy marketplace.

Gasification provides the cleanest, most efficient means of producing power, chemicals and fuels from coal, petroleum residues and low value feedstocks. It is being used worldwide and offers the opportunity for further advancements in reduced cost, higher efficiency and lower emissions through continued research and development and commercial scale demonstration. Gasification is central to the Department of Energy's Vision 21 Program because of its high efficiency, environmental superiority and flexibility in feedstocks and product slates. Members of the Gasification Technologies Council have been engaged in a year-long project of company-by-company interviews and briefings with the Department of Energy to offer their thoughts on future investments the DOE and industry may wish to make in gasification-related research, development and demonstration. This process will provide the DOE with market-driven guidance on R&D projects and directions that offer the greatest chance for private sector participation and ultimate adoption in commercial scale manufacturing plants.

Our statement will address the gasification-related research and development elements of the fossil energy budget proposal, but first we wish to make the general observation that the R&D portion of the budget (items exclusive of the proposed Clean Coal Initiative which addresses commercial demonstration, not research) would be cut by more than 50%. This is inconsistent with President Bush's clearly expressed desire to accelerate development of domestic energy supplies, a move that will require step changes in fossil fuels technologies' environmental, efficiency and economic performance. If the goals of the Department's Vision 21 program are to

be achieved, with much higher efficiency, sharply reduced emissions and multiple product slates from coal-based manufacturing plants, the R&D budget must be increased, not cut in half.

Our recommended changes to the proposed budget with regard to specific categories include:

*Gasification Combined Cycle:* The \$35 million budgeted under this item should be increased by \$15 million to permit accelerated work on ceramic membrane separation technologies, advanced gas cleanup, and gasification system sensors and controls. These are necessary for the technological advances required to meet Vision 21 efficiency and emissions targets in a timely manner.

*Advanced Turbines:* Much of the success in increasing the efficiency of integrated gasification combined cycle (IGCC) technology has been in the development and commercial introduction of more efficient gas turbines. The budget proposes to zero out this program from a fiscal year 2001 level of just under \$31 million. The funding for the advanced turbine program should be restored. This will accelerate introduction of even more efficient turbines to reduce carbon emissions from power generation; fuel flexible turbines that can run on synthesis gas as well as natural gas; and improvements that provide greater reductions in NO<sub>x</sub> emissions without add-on systems.

*Fuels R&D:* The coproduction program has also been zeroed out. It should be restored. Central to the concept of the Vision 21 complex is the ability to produce liquid fuels from coal and other fossil fuels. Gasification and the indirect liquefaction of the synthesis gas to produce ultra clean fuels, such as methanol, dimethyl ether, and Fischer-Tropsch liquids, provide the most viable path. R&D on the technologies to produce such fuels should be continued.

*Clean Coal Power Initiative:* The budget calls for \$150 million as the first installment of President Bush's clean coal initiative. The budget amount should be increased to \$200 million, consistent with the President's ten year, \$2 billion program.

Gasification offers clear and measurable environmental benefits when compared to combustion based power generation technologies. However, an active research and development program is necessary to build on these strengths with an eye toward the much more aggressive Vision 21 goals. A restored DOE fossil energy budget addressing the above cited items offers a way forward to make the necessary step changes in the supporting technologies and to induce the private sector involvement necessary to bring the results of the research into the marketplace.

Thank you for this opportunity to present our views. Additional information about gasification technologies is available on our web site: <http://www.gasification.org>. I also remain available to respond to any questions on the issues addressed in this testimony.



APPENDIX  
RESPONSES TO ADDITIONAL QUESTIONS

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RESPONSES OF SECRETARY ABRAHAM TO QUESTIONS FROM SENATOR MURKOWSKI  
ATLAS URANIUM MINE TAILINGS SITE

*Questions 1-2.* A major mission of the Department is cleaning up Defense and Non-Defense radioactive sites. A major non-defense site in desperate need of clean-up is the Atlas Uranium Mine Tailings site adjacent to the Colorado River in Moab, Utah. If this site is not cleaned up, the health of the Colorado River is in jeopardy, as well as the health of the 25 million citizens who rely on the Colorado River as their major water source.

Does DOE's Office of Non-Defense Environmental Management Program plan to implement and clean up and remove the tailings for the Moab site as Congress directed it to do in the 106th Congress? And if so, why was funding for this important program omitted from the President's budget for 2002?

Answer. The Moab mill site is currently under custody and license of the Moab Mill Reclamation Trust and the oversight of the U.S. Nuclear Regulatory Commission and the State of Utah. Pursuant to the *Floyd D. Spence National Defense Authorization Act for Fiscal Year 2001* (the Act), DOE will assume ownership of the site by October 30, 2001, and carry out cleanup of the Moab mill site in a manner that is protective of human health and the environment.

The Department fully intends to carry out its responsibilities for cleanup of the Moab mill site pursuant to the Act. Among other things, the legislation directs DOE to obtain the advice of the National Academy of Sciences regarding the costs, benefits, and risks associated with various remediation alternatives, including onsite or offsite treatment of the hazardous materials. A major focus of that study will be the long-term stewardship aspects of the various disposal options.

In July 2001, the Department received a supplemental appropriation for FY 2001 that included \$1.9 million to develop a remediation plan for the site. The FY 2002 budget request does not include funding for remediation of the Moab mill site, because the Department had not yet developed a remediation plan due to unavailability of funding. Once the remediation plan is completed, the Department will be in a better position to request funding for remediation of the Atlas mill site during the annual budget process. In addition, approximately \$300,000 in FY 2002 will be available for surveillance.

PMA APPROPRIATIONS FOR OPERATION AND MAINTENANCE AND REPLACEMENT

*Question 3.* Could you provide the Committee with a list of appropriations expended from FY 1991 to FY 2001 for operation and maintenance and replacement within your system by fiscal year?

Answer. Bonneville Power Administration (BPA) receives no annual appropriations from Congress, it is "self-financed" by the electric ratepayers of the Pacific Northwest. The revenue-generating and rate-setting authorities of the Bonneville Project Act of 1937 and the Northwest Power Act provide Bonneville's statutory budget authority. However, the table below provides BPA's annual transmission expenditures for operations and maintenance (excluding interest and depreciation) and capital replacements for the fiscal years 1991 through 2001.

Fiscal year	O&M expense \$ million	Capital replacements \$ million
1991 .....	124.8	67.2
1992 .....	141.3	90.2
1993 .....	127.2	91.6
1994 .....	160.1	73.0
1995 .....	139.0	52.0
1996 .....	178.3	64.7
1997 .....	178.9	38.5
1998 .....	184.3	40.2
1999 .....	190.5	62.8
2000 .....	222.4	50.9
2001 (Budget) .....	244.1	66.4

Southwestern Power Administration's (SWPA's) costs for transmission system operation and maintenance, and replacements are funded through authorities provided under Appropriations Acts, or through SWPA's enabling legislation. The table below reflects total budget authority for operations, maintenance, and replacements, including associated Program Direction and Construction program costs.

Fiscal year	Dollars in thousands
1991 .....	\$14,499
1992 .....	\$19,551
1993 .....	\$15,770
1994 .....	\$25,499
1995 .....	\$16,029
1996 .....	\$20,693
1997 .....	\$17,429
1998 .....	\$18,947
1999 .....	\$20,195
2000 .....	\$23,311
2001 est. ....	\$21,192

Western Area Power Administration's (WAPA's) costs for operation and maintenance of its transmission system, including replacements, are funded by either appropriations or power receipts through the use of our revolving fund, depending upon the particular feature's authorization.

The chart below details these costs by fiscal year and includes associated Program Direction costs. Replacement items funded through WAPA's Construction and Rehabilitation line item are not included in these amounts.

(Dollars in Thousands)

Fiscal year	Appropriated funds	Revolving funds
1991 .....	\$107,557	\$38,238
1992 .....	\$121,652	\$50,221
1993 .....	\$121,516	\$46,061
1994 .....	\$120,789	\$42,746
1995 .....	\$110,035	\$39,403
1996 .....	\$120,627	\$42,812
1997 .....	\$116,060	\$44,717
1998 .....	\$120,744	\$39,954
1999 .....	\$116,386	\$41,886
2000 .....	\$128,413	\$46,727
2001 (Budgeted) .....	\$134,518	\$46,601

## TRANSMISSION INFRASTRUCTURE AND AGE

*Question 4.* Could you provide the Committee with a list of your transmission infrastructure and the age of those components?

Answer. The following graph shows the average age of Bonneville Power Administration's transmission system is 43 years old.\* Using the year that circuit miles were installed and classifying by voltage, the average age for 115-kv facilities is 51 years old, 48 years old for 230-kv facilities and 28 years old for the 500-kv facilities. The age of transmission lines is representative of the age of all transmission facilities. Southwestern Power Administration's response is as follows:

Equipment Age (in Years)							
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50	50+	Total
<b>Transformers:</b>							
69 kV .....	0	0	0	0	2	0	2
161 kV .....	1	3	2	9	3	0	18
	1	3	2	9	5	0	20
<b>Breakers:</b>							
69 kV .....	21	22	5	10	0	0	58
138 kV .....	7	0	0	5	1	0	13
161 kV .....	34	21	15	21	0	0	91
	62	43	20	36	1	0	162
<b>Transmission Lines* (Circuit Miles)</b>							
Sheet .....	10	0	5	61	15	6	87
Wood .....	0	0	98	472	313	410	1,293
	0	0	103	533	328	416	1,380
Total steel structures = 346							
Total wood structures = 9,912							
Total structures = 10,158							

\*Data reflects age of transmission lines based on the date of original installation. SWPA has installed no new transmission lines in the past 20 years. NOTE: Age alone is not reflective of the condition or need for replacement of transmission lines or supporting structures. Conductors are unlikely to need replacement because of age or physical deterioration. Steel structures have a life expectancy of 75 to 100 years with proper maintenance and wood pole structures will last 40 to 60 years depending on conditions. Over the past 20 years, SWPA has replaced poles on some 34% of its wood structures.

Western Area Power Administration has prepared a list for the record.

Equipment Age (in Years)							
	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50	50+	Total
<b>Transformers:</b>							
69 kV .....	22	11	1	13	6	11	64
115 kV .....	50	30	14	19	29	10	152
138 kV .....	0	2	0	0	0	1	3
161 kV .....	1	2	1	6	5	2	17
230 kV .....	41	45	17	30	21	11	165
345 kV .....	6	34	5	6	0	0	51
	120	124	74	61	35	452	
<b>Breakers:</b>							
69 kV .....	63	63	24	13	9	10	182
115 kV .....	154	117	65	42	9	5	392
138 kV .....	5	4	0	8	0	0	17
161 kV .....	19	14	5	9	0	1	48

\*The graph has been retained in committee files.

## Equipment Age (in Years)—Continued

	1 to 10	11 to 20	21 to 30	31 to 40	41 to 50	50+	Total
230 kV .....	178	127	60	46	10	9	430
345 kV .....	7	59	5	0	0	6	77
	426	384	159	118	28	31	1,146
Transmission Lines (Circuit Miles)							
Steel .....	713	1,218	528	4,606	1,714	154	8,933
Wood .....	486	623	289	1,482	3,333	1,650	7,863
Concrete .....	0	19	0	0	0	0	19
	1,199	1,860	817	6,088	5,047	1,804	16,815

## REPLACEMENT COMPONENT

*Question 5.* Could you provide the Committee the rate of information for the system indicating the replacement component?

Answer. The rate of depreciation for the replacement component is consistent with the rate of depreciation for the specific types of original investments. Replacements as a group are not depreciated differently. The following table provides the average service life and the annual depreciation accrual rate for Bonneville Power Administration's (BPA's) transmission plant (FERC accounts) components that make up the transmission infrastructure:

Transmission plant (FERC accounts)	Average service life	Annual accrual rate
Land Rights-Substations .....	75	1.36
Structures/Improvements .....	60	1.77
Station Equip—1970 & before .....	39	2.96
Station Equip—1971 & after .....	34	3.29
Sub on Customers Premises .....	28	4.05
Portable Property (at Subs) .....	40	2.76
Metering Station .....	32	3.48
Control Equipment .....	13	8.73
Towers & Fixtures .....	65	1.96
Poles & Fixtures .....	50	3.5
Overhead Conductor .....	50	2.6
Underground Conductor .....	30	3.97
Roads & Trails .....	75	1.35
Communications—Subs .....	15	5.97
Communications—Trans Line .....	40	2.50

As replacements are made on the system, the old equipment is retired from the composite group and the new equipment is added. All of the equipment/facilities in each composite group are depreciated at the rates provided above.

Per the most recent Depreciation Study completed for BPA plant assets, "the annual depreciation was calculated by the straight line method using the average service life (ASL) procedure and the remaining life basis. The calculated remaining lives and annual depreciation accrual rates were based on attained ages of plant in service and the estimated service life and net salvage characteristics of each depreciable group." The study explains the use of ASL as follows, "The use of average service life for a property group implies that the various units in the group have different lives. Thus, the average life may be obtained by determining the separate lives of each of the units, or by constructing a survivor curve by plotting the number of units which survive at successive ages. The use of survivor curves, which reflect experience and expected dispersion of service lives, is a systematic and rational means of estimating average service lives to be used to calculate depreciation for utility property."

Southwestern Power Administration's expected service lives for power circuit breakers and power transformers is 35 years and for transmission lines is 45 years. However, in planning for replacement of facilities, age of equipment is not the primary criterion. Equipment rating for increased loading, risk to the environment, operating condition, and reliability, including Southwest Power Pool requirements and customer expectations for dependable delivery, frequency of required maintenance and availability of parts are all considered.

Western Area Power Administration (WAPA) monitors the condition and age of electrical equipment and facilities, considering replacement as infrastructure reaches its normal life span, or upon evidence of deterioration. WAPA attempts to obtain the greatest useful life from each component as a matter of sound fiscal policy and good business practice, but must weigh any increased risk to reliability by keeping older equipment in service. However, age is only one factor in this assessment. WAPA also takes into account the operating condition of equipment, availability of spare parts, level of required maintenance, criticality to power transfer capability and potential impacts of sudden failure.

WAPA now has a significant amount of equipment at or beyond its expected service life (see Question No. 4—service life for breakers/35 years, for transformers/40 years, for wood pole transmission lines/40 years, for steel transmission lines/approximately 50 years, etc.). Depending on the condition and serviceability of these facilities, replacement will be required shortly. Additionally, industry deregulation, mandated open access to transmission and load growth are placing new demands on the interconnected power system. WAPA is using available transmission capacity to the maximum extent possible, operating electrical equipment at its upper performance limits for longer periods of time. This situation results in accelerated wear and aging of equipment at the same time that any failure has greater ramifications to the power system.

TRANSMISSION UPGRADE AND REPLACEMENT PLAN

*Question 6.* Does WAPA/SWPA/BPA have in place a plan to upgrade and replace any transmission infrastructure in the next five years?

Answer. Yes, Bonneville Power Administration (BPA) has developed a plan to upgrade the transmission infrastructure over the next ten years. In addition to the annual capital planning, BPA has developed a six-year Transmission Infrastructure Plan. The plan is in the review process. The transmission infrastructure plan will respond to expected increased load, relieve constrained transmission paths, and may integrate a potential of over 15,000 megawatts of new generation over the next four years, if the generation is developed to such an extent. This effort could well require construction of over 700 miles of new transmission line and associated facilities. The following table is a summary of the funding levels contained in the FY 2002 budget request.

PROPOSED TRANSMISSION CAPITAL PLAN

(Fiscal year—\$ in millions)

	2001	2002	2003	2004	2005	2006	Total
Capital Outlays in Congressional FY02 (BP-2) .....	\$193	\$237	\$242	\$163	\$184	\$186	\$1,205

BPA Borrowing Authority is used to fund BPA Transmission Business Line's system improvements needed to maintain system reliability and integrate planned new generation into the system. In addition, Borrowing Authority is used to fund BPA Power Business Line's hydro generation improvements, fish & wildlife projects, and conservation/energy efficiency.

Southwestern Power Administration's facility replacements and upgrades proposed in annual appropriations requests are based upon its ongoing 10-year construction program plan. Bases for prioritization of replacements and upgrades are: adequacy of equipment ratings for increased system loading; reliability of operation, including Southwest Power Pool requirements and customer expectations for dependable delivery; environmental concerns; and level of required maintenance and availability of spare parts.

Western Area Power Administration (WAPA) has a systematic, scheduled replacement and upgrade program developed through the preparation of both long-term (10-year) strategic plans and more detailed 5-year plans that serve as the basis for annual appropriation requests (Construction and Rehabilitation line item). WAPA's program reflects its commitment to the reliability and integrity of the power trans-

mission system, and is formulated through system studies of facilities and/or equipment reliability (operating condition, availability of replacement parts, safety, etc.); economics of life extension; and future needs for infrastructure based on strategic planning and capability to meet future system requirements.

WAPA's upgrade and replacement requirements for FY 2002 are outlined in its budget request. However, the realities of operating and maintaining a complex interconnected power system mean unforeseen priority projects will surface from time to time. While WAPA may need to restructure planned projects to accommodate the unexpected, all projects will share a common purpose to ensure system reliability, integrity and safety.

#### TRANSMISSION REPLACEMENT PROCESS

*Question 7.* What is the process that WAPA/SWPA/BPA has to undertake to replace transmission facilities, i.e. public hearings, EIS's, etc.

Answer. Bonneville Power Administration's (BPA's) transmission system capital needs receive numerous reviews. For example, FY 2002 and FY 2003 capital expenditures were reviewed in detail in the FY 2002 rate setting process by numerous customers, constituents, regulators and other interested parties. BPA conducted five regional workshops in FY 1999 and two additional workshops in FY 2000.

All major projects are required to go through extensive environmental reviews. Prior to replacing or building a new BPA transmission facility (line or substation), a regional/local public involvement effort is established. This process, under the National Environmental Policy Act (NEPA), consists of scoping and public meetings near a proposed project. A letter or notice is sent out prior to the project activities briefly describing the project and inviting the recipient to participate in public meetings to be held in or around the area. This letter or notice goes to potential landowners in a particular area, as well as BPA customers, Federal, state, and local governments, interest groups, tribes, and others that could be interested or affected by the project. A notice is also posted on the Environment Fish & Wildlife (EF&W) NEPA web page. This notice provides the opportunity to contact a BPA representative for additional information and lists what brochures or information can be obtained. The process provides flexibility to attend the meetings and comment or to send in written comments about the scope of the project during the not less than 45-day review period. During location/analysis activities, contacts with concerned individuals or groups are maintained as necessary. A draft copy of the environmental document is provided to those on the mailing list that requested a copy with time to comment on the content of the document. Towards the end of the draft review period, an additional round of public meetings are held to solicit comments on the contents and conclusions of the document. Once a decision is made on the project location and routing, a notice will be sent out to all those interested with this finding. A posting of the decision is also made to the NEPA web page. Throughout this process there may be notices of the project in local newspapers and radio spots also.

As part of BPA's response to the West Coast Energy Crisis, BPA has taken a broader approach to inform BPA's customers, constituents, and public of the proposed six-year Transmission Infrastructure Plan. BPA's Transmission Business Line (TBL) executives have briefed representatives from the Office of Management and Budget, Department of Energy, and Northwest (NW) Congressional staffs in DC and throughout the NW Region. Beginning in March 2001, they have met and briefed all key contacts associated with BPA's various customers and customer groups (Investor Owned Utilities (IOU's), Direct Service Industries (DSI's), Public Utility Districts (PUD's), Municipalities (Muni's) and Cooperative Utilities (Coops), associations and utility boards, Interest Group leaders, Tribes, and many others. BPA has prepared and distributed to interested parties various communication tools such as Talking Points, Journal Articles, TBL Access Newsletters, Tribal Quarterly Edition Newsletters and Keeping Current.

Southwestern Power Administration's (SWPA's) replacements affect existing transmission facilities that generally would not require a public hearing, environmental assessments or environmental impact statements. Replacement of transmission facilities is primarily undertaken through the annual budget process which involves using SNWA's 10-year construction program plan to develop the annual budget followed by budget reviews at SWPA, the Department of Energy and the Office of Management and Budget. All replacements projects are subject to an internal environmental review to determine if an environmental assessment or environmental impact statement is needed and follow Department of Energy guidelines for implementation of the National Environmental Policy Act.

As a member of the Southwest Power Pool (SPP), the regional electric reliability council, SWPA participates in the SPP open access transmission tariff and in the

development of the SPP Regional Transmission Organization. The SPP also has a role in the process as SNWA is required to coordinate with the SPP any planned outages to accomplish transmission replacements and to identify to the SPP for their review any transmission replacements planned to accommodate increased power loads or correct criteria violations. Upon SPP'S review of SWPA's proposed replacements and those of other transmission owners, the SPP will identify and direct implementation of the needed replacements for the region.

Western Area Power Administration's (WAPA's) process for replacement and rehabilitation of existing facilities/equipment is initiated by/through its commitment to reliability. WAPA's regions develop projects based on operation and maintenance assessments of facilities and equipment, and various power system studies of infrastructure reliability (operating condition, availability of replacement parts, safety, etc.); economics of life extension; strategic/future need and capability to meet future system requirements.

As previously outlined, WAPA's regions prepare 10-year plans for construction and rehabilitation work as part of their long-term strategic planning, and detailed 5-year plans that are consolidated into an agency-wide Construction and Rehabilitation (C&R) plan/program. WAPA's Management Design and Construction Council (MDCC) plans and directs the engineering, design and construction programs, setting agency-wide C&R project priorities for inclusion in the budget request.

WAPA operations and maintenance groups coordinate closely with regional planning groups to evaluate transmission options and opportunities, and with regional reliability councils in a three-phase process to obtain/ensure stakeholder input, involvement and potential participation in infrastructure. Also, WAPA's customers have considerable input, helping to establish the program each year, and may even propose projects for consideration that can become joint participation projects with cost-saving benefits to all.

The processes required for the physical replacement/construction work on individual projects are outlined in planning/scoping documents and include land acquisition for (negotiations to increase existing) right-of-way, environmental review (resulting in either a categorical exclusion, environmental assessment requiring public involvement, or environmental impact statement (EIS) requiring a public hearing as outlined in Department of Energy National Environmental Policy Act implementation guidelines), design, construction (including contract management) and commissioning.

## RESPONSES OF SECRETARY ABRAHAM TO QUESTIONS FROM SENATOR CRAIG

### ENVIRONMENTAL MANAGEMENT

*Question 8.* It appears that funding for State oversight programs—such as the one we have at the Idaho Department of Environmental Quality—have been substantially reduced in this budget request. This is of concern to me and to environmental officials who work for the State of Idaho. What funding will DOE provide to the state of Idaho's INEEL Oversight Program in FY 2002?

Answer. DOE has not yet determined what level of funding will be allocated for State oversight in FY 2002. State oversight has played an important and positive role in the cleanup of our sites. The Office of Environmental Management's budget continues to place the highest priority on protecting the health and safety of workers and the public at all DOE cleanup sites, and continuing to mitigate high risks. The Department is conducting a top-to-bottom review of the program to identify better ways of doing business. Secretary Abraham has asked EPA and the Governors of states that host a major EM site to assist us in the review. This review will influence how we will work with the states in which we do cleanup.

### NUCLEAR ENERGY RESEARCH

*Question 9.* I am encouraged by recent statements by the Vice President in support of nuclear power. In testimony received last week by the Energy and Water appropriations subcommittee on which I serve, I was told that the budget level proposed for the Nuclear Energy Research Initiative will not allow funding any new proposals in FY 2002.

If the Vice President proposes any new nuclear energy initiatives, how will they be accommodated?

Answer. The budget we submitted for FY 2002 held the line on spending by not initiating any new research while awaiting guidance from the Vice President's National Energy Policy Development Group. With that guidance, the Department will be able to identify those programs that can best contribute to the goals and initiatives that will see our Nation through our current energy supply and demand imbalance.

ance as well as respond to the energy supply needs of the Nation over the next twenty years. I am committed to working closely with the Senate Energy Committee and the Congress on these important priorities to identify research needs and funding to implement the recommendations of the *National Energy Policy*.

#### HYDROPOWER AND GEOTHERMAL ENERGY

*Question 10.* When we are desperate for additional power out West, would you agree with me that geothermal and hydropower are critical resources for us right now?

Answer. We certainly agree that hydropower is a critical resource for the West, as well as the Nation as a whole. Hydropower currently provides about 7% of the Nation's electricity, and over 60% of the power used in the Pacific Northwest. We estimate that nationally there is an additional potential of roughly 30,000 MW. Of this, 21,000 MW is at existing dams, with over 10,000 MW located in the West.

Geothermal energy also is key to our present resource mix, especially for the western United States. It already provides about 6% of the electricity generated for the entire state of California and 10% for northern Nevada. Within the portfolio of renewable power technologies, geothermal contributes about 17% of current power generation. We believe 9,000 MW of the electricity could be generated from geothermal energy by 2020, all of which would be produced in the West.

#### ENERGY EFFICIENCY FOR AG. MINING AND FORESTRY

*Question 11.* When you look at industry cost sharing, do you take into consideration the economic health of the industry?

Answer. Many industries face strong competitive pressures from industry in foreign countries which effectively limit their investment capital for research and development. Advanced energy efficiency technologies can provide energy, productivity, and environmental savings, which can assist industries in this very competitive global economic environment. Industries of the Future is a collaborative partnership between industry and government, which aligns national energy objectives with the commercial interest of energy-intensive industries for mutual benefit. As part of this public-private partnership, we facilitate the development of visions and technology roadmaps by our partner industries. We invest in pre-competitive and high risk research and development that neither the government or industry could pursue on its own. Under these public-private partnerships, we have adopted a cost-sharing goal of 50 percent across the entire industry portfolio which can be in money or in-kind. For the type of research and development that is being targeted and the mutual benefit that is derived by the partner industries, we believe that this cost sharing guideline is appropriate.

#### RESPONSES OF SECRETARY ABRAHAM TO QUESTIONS FROM SENATOR DORGAN

*Question 12.* What is the Department doing to increase transmission availability so we can develop more renewable energy, particularly more wind energy, in the Dakotas and other states?

Answer. The Department is approaching the issue of transmission availability in the Upper Midwest in several ways. The Transmission Reliability Program is performing research on several technologies to relieve transmission congestion and increase transmission capacity. For example, the program is developing real time monitoring and control systems to allow maximum power transfer over the grid. The program is also evaluating advanced, high-capacity composite conductors that can double the power transfer over existing right-of-ways. Additionally, the Energy Storage Systems Program is field testing advanced, high-capacity storage systems for transmission applications in partnership with industry that have the potential to complement wind generation resources while supporting transmission loading.

Within the Wind Program itself, DOE is working with stakeholders in the Upper Midwest through the National Wind Coordinating Committee, whose Transmission Subcommittee recently held a two day workshop to review transmission issues with technical experts, State regulators, members of the wind industry, and other stakeholders. Several near term options to assist individual projects were identified that are under consideration by DOE. Additionally, the Department has supported analysis by the West Area Power Administration (WAPA) of opportunities for selected wind additions and needed system upgrades on the Upper Midwest transmission system. To date, WAPA planners have completed steady state analysis of potential sites for several wind projects and are now addressing system dynamics issues as a follow on activity. We hope to continue involvement of WAPA experts in consideration of opportunities for wind development. A regional approach to transmission



system upgrades, as envisioned in the President's National Energy Plan, would be the preferred approach to expanding generation in the region.

*Question 13.* There is a growing interest in this country in the value of biomass as a renewable energy source. This would be especially valuable to areas with high agricultural use such as my state of North Dakota. What does your Department plan to do to research and develop the use of biomass, and what funding have you requested for such efforts?

Answer. For many years, the Department of Energy has supported research to convert biomass resources into electric power, process heat, clean fuels, and biobased products. In FY 2001, DOE's biomass R&D comparable budgets totaled \$149.9 million. This includes \$32.3 million in the Office of Science, and \$117.6 million in the Office of Energy Efficiency and Renewable Energy. In FY 2002, DOE has requested \$138.7 million to continue biomass R&D. This is a \$0.9 million decrease for the Office of Science, a \$4.3 million decrease in Renewable Energy Resources, and a \$6.1 million decrease in the Energy Conservation budgets for EERE from their FY 2001 funding levels. No programmatic reductions were made in EERE's Biomass/Biofuels development budget. This budget represents an increase in core activities after the elimination of \$13.3 million in budget earmarks.

Research into the establishment of integrated bio-refineries is a highlight of the proposed new research that is included in the FY 2002 budget request and supports the Biomass Research and Development Act of 2000. These refineries, as envisioned, will convert biomass feedstocks, such as switchgrass, corn stover, poplar, etc. into multiple products including fuels, plastics, electricity, heat and other consumer products. This research will help foster a bioenergy/biobased product industry in the United States that will increase domestic energy security, improve rural economies, and help the environment. Biomass represents a new opportunity for rural economies. Farmers increasingly are becoming owners of manufacturing facilities in rural communities. More than 150 farmer- and cooperatively-owned processing and manufacturing facilities began operation in the last 10 years.

EERE's Biofuels Program is providing research and development leading to larger volumes of clean transportation fuels and additives, such as ethanol. Currently, there are 62 ethanol production facilities in the United States, including two in North Dakota, which support our nation's transportation fuel requirements. DOE's support in biofuels includes a strong focus on work to reduce the cost of fuel derived from cellulosic feedstocks.

In the area of biopower, EERE is conducting feedstock development research to identify new sources of energy crops, such as switchgrass. In North Dakota specifically, DOE analysis is identifying important opportunities for switchgrass production in the state. DOE research is targeting improved gasification efficiencies on the order of 35% to 40%. We are also targeting 8,000 MW of biomass co-firing electricity capacity by 2010. In North Dakota specifically, DOE is working with the Energy and Environmental Research Center at the University of North Dakota to develop biomass co-firing projects at a state penitentiary and at the University.

In biobased products, EERE cost shares funding with private industry for research projects to convert biomass into chemicals and materials. Project teams consist of multi-disciplinary collaborations including industry, universities and National Laboratories. Examples include: the production of polylactic acid plastics produced through fermentation and polymerization from corn based sugars and the production of novel intermediates used to produce new plastics, coatings, paints, foams and lubricating oils from vegetable oils. The goal is to increase the use of biobased products by a factor of five by 2020.

*Question 14.* I noticed that the small wind turbine project received a \$500,000 cut in the President's budget request. I know some industry representatives believed the funding for this important effort should be increased from \$5 million to \$10 million. This project is designed to help achieve the same efficiencies for small machines that we are now able to get with large machines. Could you please explain the rationale for cutting this program?

Answer. The \$500,000 request in the FY 2002 DOE budget reflects the total funds needed to complete fabrication and initiate testing of three small wind turbine prototypes after the hardware development effort has been largely completed with prior year funds. Assistance for small wind systems remains a priority in the Wind Program and is supported by a variety of additional activities in the Applied Research and Cooperative Research and Testing areas of the program. For example, we have identified top priority states in which we will focus assistance for small wind systems, including California, Montana, Washington, Idaho, Arizona, and others. Our support will include the development of better resource assessment maps, state-specific consumer's guide for small wind, and development of benefit and cost data information for small turbine applications.

*Question 15.* Times are particularly tough on the family farm right now with low commodity prices and a farm safety net that has failed the agricultural community. I think that renewable energy sources—like wind energy and biomass—have potential to help struggling farmers through these difficult times. Could you paint a picture of how a family farmer might be able to make a profit by creatively using renewable energy sources?

*Answer.* Renewable energy development and use can help stimulate local economies in a variety of ways. For example, rural landowners can choose to harvest their wind resources by leasing a small portion of their land to project developers, for which they typically receive annual royalty payments. These payments have averaged around \$2,000-\$3,000 per turbine, providing farmers with more money to pay off debt, buy new equipment, and pay for school tuition. Developers have also funded infrastructure improvements in towns and communities, such as lighting, sidewalks, and libraries, sometimes in lieu of property taxes. The construction, maintenance and operation of these wind projects create jobs in a community and opportunities also exist to site wind equipment manufacturing facilities near wind projects.

To paint a picture of how a family farmer might be able to make a profit by creatively using renewable energy sources consider this: In the future, a traditional farm could be converted into a fully integrated system for producing energy and other products, in addition to food, from agricultural crops. Some of these technologies could be suitable for small- and medium-size farms. The traditional farmhouse and barn would receive power from a photovoltaic array and advanced wind turbines and they might sell surplus power to the grid, on a much broader scale than is done today. Livestock wastes could be used to produce power minimizing runoff into local water systems. Trees developed through advanced breeding or other techniques could provide windbreaks while growing to harvestable maturity in two to three years. Together, these bioenergy, solar, wind, and waste resources could provide substantial income for the farm economy and new job opportunities for rural communities.

*Question 16.* I noticed that in this year's budget request funding has been terminated for Wind Powering America, which was designed to promote development of wind power across the U.S., via public education and awareness, in particular. It seems like this program was just getting started and was successful. Could you please explain the rationale for terminating funding for this program?

*Answer.* A number of national priorities were examined as the Administration developed the FY 2002 budget, including requirements for fundamental energy R&D and near term national needs to achieve a balanced national energy portfolio. With the release of the National Energy Plan, the Administration is now reviewing options to develop renewable energy technologies and to encourage local economic development through appropriate program mechanisms, including outreach and education activities. Following this review, the Secretary of Energy may propose changes for our performance-based programs. The Department looks forward to working with Congress to achieve a balanced and truly comprehensive national energy portfolio.

*Question 17.* Money is needed for mapping wind resources to better refine wind resource data. What is the Department doing to fund and promote such efforts?

*Answer.* Using the National Renewable Energy Laboratory's (NREL) wind mapping capabilities, available wind databases, and geographical information systems, we have been able to refine wind resource maps on a priority basis. The Wind Energy Program has supported the development of five state wind resource maps over the past year, including North and South Dakota, Iowa, Texas, and Vermont. Plans are underway to fund the development of six additional maps, including the Northeast U.S., the Mid-Atlantic and Appalachian Regions, Southeast U.S., Montana, Illinois, and Idaho. Other states are in the process of developing their own wind maps for which we are providing limited technical assistance through NREL.

Recently, NREL hosted a workshop to explore issues related to developing improved maps that would lead to an updated wind resource atlas of the United States. Based on results of this workshop, DOE will be able to develop a plan for improved wind resource mapping. We plan to sponsor a second wind mapping workshop in the Spring of 2002 to explore an appropriate approach for development of a broader U.S. wind resource atlas.

*Question 18.* The DOE currently has a Tribal Energy Program. What efforts has the DOE taken to work with tribes in the past to develop renewable systems? What efforts are being made to restore funding for these initiatives? What further opportunities are there to develop projects in conjunction with the goals of the Wind Powering America Program to develop federal use of renewable energy?

*Answer.* The Department does not currently have a Tribal Energy Program. Funds were requested under the Renewable Indian Energy Resources Program line

item in the Department's FY 2001 budget request to initiate such a program but funds were appropriated instead for specific projects in Alaska. Nonetheless, the Department, through a competitive solicitation program in renewable technologies, provided FY 2000 feasibility study funding for seven Tribal Colleges and Universities to develop energy projects at the schools. It is anticipated that some of those projects will be initiated with FY 2001 appropriations later this fiscal year.

The Department has previously assisted the Tribes through the Indian Energy Resource Development Program authorized by Title XXVI that resulted in 29 projects being implemented. Additionally, the wind energy program continues to support a number of efforts that benefit Tribal energy stakeholders, including a program to lend wind measurement towers to tribes, resource assessments on tribal lands throughout the Upper Great Plains, provide support for the creation of a Native American Wind Interest Group, and participate in discussions on the Federal purchase of renewable energy credits from tribal wind generation. The program will continue to work with the Federal Energy Management Program, other agencies, and Tribal wind energy stakeholders to explore mutual opportunities as DOE implements its renewable energy R&D programs.

*Question 19.* What steps is the Administration taking to develop federal renewable energy use in general?

Answer. The Federal Energy Management Program (FEMP) helps Federal agencies take advantage of the benefits offered by renewable technologies and apply the renewable provisions of the Energy Policy Act and Executive Order 13123. All of the FEMP programs contribute to the advancement of renewables in the Federal government by encouraging their use at Federal facilities. When facilitators develop energy savings performance contracts and utility energy savings contracts, agencies are encouraged to incorporate renewable energy into their energy efficiency improvements. The technical and design assistance teams help agencies screen energy efficient projects to assess the opportunities for renewable energy at a facility or building. These teams also encourage the incorporation of renewable energy applications early in the design process. FEMP, through its outreach program, leads the Renewable Working Group—a group of more than 100 representatives from Federal agencies, DOE programs and the renewables industry—to share information on renewable technologies and opportunities offered by various DOE programs to demonstrate renewable technologies.

The Wind and Geothermal energy programs have and continue to support the activities of the Federal Energy Management Program to increase the use of renewable energy by Federal agencies and their facilities. Activities undertaken already include pilot projects to aggregate Federal energy demand in select cities and regions, using the consolidated demand and economics of scale to purchase renewable energy. We believe this load aggregation and renewables purchase project can be replicated across the country. We are also supporting FEMP efforts to include a renewable energy purchase requirement in all DOE facility electricity purchase plans and contracts. Finally, these programs are working with FEMP to develop an appropriate mechanism and process to enable a DOE-complex wide purchase of renewable energy credits.

In the Solar programs, the Department maintains collaborative partnerships with the National Park Service, Bureau of Land Management, USDA and the Forest Service. The purpose of these partnerships is to establish the sustainable use of photovoltaic technology in the Federal agencies. Through these partnerships, assessments of applications and acceptance of photovoltaics were completed within each agency to establish benchmarks. Based on the results of these assessments, 122 new projects were developed and installed around the country.

#### RADIOACTIVE WASTE REPOSITORY

*Question 20.* Will DOE establish and/or meet the deadlines necessary to make a presidential decision this calendar year with respect to a permanent radioactive waste repository?

Answer. I am committed to a decision on a recommendation that is based on science. As I have stated before, I will move as expeditiously as possible, understanding the time constraints involved. However, I am committed to following the process required by law in the Nuclear Waste Policy Act.

Before making a decision whether to recommend proceeding, I have a responsibility to be certain that any such recommendation to the President is sound and defensible. My decision must be based on a review of the Program's exhaustive scientific and technical work, as well as hearing any views of the Governors and State legislatures, members of the public, comments from the Nuclear Regulatory Commission, and other information that may be appropriate.

The Department recently issued a report summarizing the scientific and technical information developed to date about a potential repository at Yucca Mountain. At the same time, the Department initiated a public comment period on a possible site recommendation and plans to issue additional information this summer and hold public hearings on a possible site recommendation after that. Given the Program's current schedule, I believe that my decision whether to recommend the Yucca Mountain site for further development could be made by the end of this year.

#### CLEAN COAL POWER INITIATIVE

*Question 21-22.* Lignite coal is an abundant resource in North Dakota which provides a low-cost, reliable energy source for more than 2 million people in the upper Midwest. On several occasions, I have written you requesting that lignite coal projects would be funded through the Power Plant Improvement Initiative that this Subcommittee included in the FY 2001 Interior Appropriations bill.

I contacted you on these occasions because I wanted you to know of my interest in making sure that low Btu coal projects are given fair consideration in any new demonstration projects at DOE. In the new Clean Coal Power Initiative proposed by the Administration, I am interested in making sure that this project encourages the development of clean coal projects using North Dakota lignite. The Mid-Continent Area Power Pool (MAPP)—which includes Minnesota, the two Dakotas and the eastern half of Montana—estimates it will be short 5000 Mws by 2006. I think it would be prudent for DOE to give detailed attention to projects such as the Lignite 21 Vision Projects in North Dakota, which has already gotten a commitment of funds from the state. Although I haven't seen many details of the Clean Coal Power Initiative, I know that later this year the Office of Fossil Energy will convene a workshop with utilities, equipments, manufacturers, fuel suppliers, universities and others to work out some of these details that will guide the initiative. What is the Office of Fossil Energy doing to ensure that lignite interests are included in this meeting?

Answer. First I want to thank you for your keen interest in the very important Clean Coal Power Initiative proposed by the Administration. I also want to assure you that each and every proposal, including the proposed Lignite project, will receive a fair and thorough review based on the merits evaluated against the criteria in the competitive solicitations that will be issued under the Initiative. The Office of Fossil Energy plans to convene a workshop in the fall to give a broad cross section of industry and other stakeholders the opportunity to provide us with individual views that may help guide this Initiative. We will be sure that all interested stakeholders, including those representing the lignite interests, will be afforded the opportunity to participate in the workshop.

#### COOPERATIVE RESEARCH

*Question 23-24.* In North Dakota, the Energy and Environmental Research Center (EERC) at the University of North Dakota has expertise in the area of fossil fuel research and development. In fact, over the last several years, co-funded research under a cooperative agreement between the EERC and DOE has invested more than \$56 million in 126 projects. More than half of the funds for this research have come from non-federal sources, so the EERC has done a fantastic job leveraging federal dollars for fossil fuel research.

Given that the Department will need to rely on the research done by universities and others to guide the new Clean Coal Power Initiative, I was very disappointed that the Administration's budget eliminated funding for the cooperative agreement that the DOE has had with the EERC for the last several years. By cutting these kinds of existing fossil fuel R&D programs to pay for the \$150 clean coal initiative, the Administration gains no ground in developing new fossil fuel technologies. Can you explain why the Administration zeroed out cooperative research fuel projects?

Answer. The Administration's policy is to have funding allocated on a competitive basis. Since the Cooperative Research and Development portion of the Fossil Energy budget provides directed funding to two institutions without competition, it is one of the lower priorities in limited budgets.

EERC has developed an excellent program of cooperative research which combines industry talents and capabilities from an effective State and Federal program. Indeed, this capability is best illustrated by the growing involvement of industry and their continued willingness to invest their resources in this program. The Department believes that EERC and WRI are capable of competing for Fossil Energy funds under various competitive solicitations, including the Clean Coal Power Initiative.

## GREENHOUSE GAS EMISSIONS

*Question 25.* Senator Byrd spoke on the Senate floor last week about the need for a sound energy policy and the need for commitments to reduce global greenhouse gas emissions, including efforts on the parts of developing nations. Please explain the ongoing voluntary research and development programs and other initiatives that have been developed over the last several years to address our critical climate change and energy needs.

*Answer.* The Department's energy mission is to provide appropriate assistance to help providers ensure adequate supplies of energy at reasonable prices, with appropriate environmental protection. As part of this mission, DOE supplements private investment in energy R&D when market failures cause the private contribution to fall below the optimum levels for public benefits. Our climate program is a subset of this larger mission and is focused on improving our understanding of the dynamics of global climate change, and on the developing and deploying technologies that reduce net emissions of greenhouse gas emissions.

Existing programs that directly or indirectly contribute to climate change science or emissions limitations are described below. Our FY 2002 budget request and the recommendations contained in the recently released National Energy Policy call for a reevaluation and redirection of some of these efforts. In addition, the Cabinet-level review of climate policy that is now underway is also likely to have ramifications for these DOE programs.

- DOE's Industries of the Future Program focuses on generic pre-competitive, cooperative research with nine of the major process and extraction industries in the private sector. These industries include aluminum, steel, metal casting, forest products, glass, chemicals, mining, agriculture, and petroleum. These activities seek to improve the energy efficiency of industrial processes in these most energy-intensive industries, which account for 75% of industrial energy use. This includes collaborative road-mapping of technology needs with each industry, and cost \* \* \* R&D to meet those needs that provide significant public benefits that the private sector would not invest in on its own. Cross-cutting technologies applicable to many industries, such as advanced materials, sensors and controls, are also supported, where appropriate.

This program has had notable success. For example, the Oxy-fuel firing process for glass melting furnaces is now used in 20 percent of glass furnaces, reducing fuel use by 48 percent. Cathode research for the aluminum industry has achieved an, 8 percent energy savings.

- The DOE Transportation Program supports the development of more efficient cars and light and heavy trucks. The majority of the R&D effort supports the Partnership for a New Generation of Vehicles (PNGV) and 21st Century Truck initiative. The goals of these programs include tripling the fuel economy of today's mid-size cars (e.g., 80 miles per gallon) and delivery vans and doubling the fuel economy of heavy trucks. Activities supported by DOE include pre-commercial development of efficient vehicle components, such as low-emissions diesel and gasoline engines, hybrid powerplants, fuel cells, power electronics, high power batteries, and lightweight materials, as well as improvements in aerodynamics for trucks and buses.

Many of the technologies developed in the DOE program are beginning to be incorporated in industry concept cars exhibited at auto shows and some are being used in production vehicles. In 2000, the three PNGV partner companies produced concept vehicles that reached the 80 mpg target, although the incremental vehicle cost is still too high to allow market introduction today.

- The DOE Buildings Programs seeks to improve the energy efficiency of building in the residential and commercial sectors. Included are more efficient building equipment and materials such as furnaces, air conditioners, lighting systems, materials for roofs and walls, and windows. Improvements are sought in whole building design (systems integration) and construction techniques. An important part of the overall program is establishing federal minimum energy use standards for appliances, and collaborating with industry and States to develop new building energy codes.
- The Weatherization Program, which is not an S&T activity, provides grant funding for energy efficiency improvements to low income houses. These efficiency improvements reduce heating, cooling, and hot water energy use. Five million homes have been weatherized to date.
- The State Energy Program and the Community Program work with state and local governments to identify local opportunities for using energy more efficiently, and for incorporating alternative fuels and renewable energy into local energy markets. These federal, state, and local partnerships provide an on-going

means of helping consumers and businesses improve their energy efficiency. Energy Smart Schools, Energy Star, and Rebuild America are examples of efforts undertaken through these programs.

- DOE's Fossil Energy Program supports the development of cleaner, ultra-high efficiency technologies for electricity generation. This includes coal-fueled technologies with a goal of 60 percent efficiency (versus the middle 30's for a new plant today), and natural gas-fueled options with efficiencies above 70 percent (versus the mid-50's for a new plant today). Technologies include integrated coal gasification combined cycle (IGCC) for central station applications, and advanced fuel cells and fuel cell/turbine hybrids for distributed power generation. Products are incorporated from the advanced research program, including advanced materials for heat exchangers and innovative membranes for separation of hydrogen and carbon dioxide from other gases.

While these systems have not achieved widespread deployment, the IGCC technology is being successfully demonstrated and finding its way into niche applications. Advanced fuels cells and turbines are being demonstrated and commercialized, and are expected to achieve significant deployment in distributed and hybrid applications in the next decade. In particular, the General Electric 7H series turbines have just been deployed, achieving 60 percent efficiency and substantial reductions in NO<sub>x</sub> emission with no additional post-combustion control technology.

- The Climate Challenge Program is a joint partnership between DOE and the electric utility industry that has been very successful. To date, more than 600 electric utilities have pledged to limit their net emissions by more than 170 million metric tons of carbon dioxide equivalent in the year 2000. Electric utilities represent about 85% of voluntary actions to reduce, avoid or sequester greenhouse gases, as reported by the Energy Information Administration under Section 1605(b) of the Energy Policy Act. Results include: 1) Major reductions in the potential cost of reducing greenhouse gas emissions; 2) Increased participation by the electric utility industry compared to other reduction approaches, resulting in additional emission reductions.
- DOE supports research to improve the efficiency of electricity transmission and major electrical devices through activities such as the Superconductivity Partnership Initiative and the Second Generation Wire Initiative. These initiatives are aggressively pursuing the development of high temperature, superconductivity electric equipment. Important advances have been made in this area, including development of breakthrough methods for making superconducting wires with over 10 times the current-carrying capability of wires made with older methods, and development and successful testing of the world's first superconducting motor.
- DOE supports the development of a range of electric generating options that can be located near the point of consumption ("Distributed Generation"). These technologies can reduce overall GHG emissions through improved efficiencies, use of waste heat, and reduced transmission losses. Distributed generation technologies can be based on fossil or renewable energy sources.
- DOE supports the development of a wide range of non-fuels solar and renewable energy technology, seeking to improve their reliability, expand their applicability, and reduce their costs. This includes solar electric and thermal energy, wind, hydropower, and geothermal energy.

These activities have been very successful in bringing down technology costs. For example, the cost of producing photovoltaic modules has been cut in half since 1991, and the cost of wind power has decreased 85 percent since 1980. Both of these technologies have been commercially successful in certain applications.

- The Biofuels Program develops technology to enable and support the expansion of an indigenous, integrated biomass-based industry that will reduce reliance on imported fuels and provide for productive utilization of agricultural residues and municipal solid wastes. Included are the development of superior biofuel feedstocks and processes for converting feedstocks to electricity (both directly and by co-firing with coal), as well as to biodiesel, ethanol, and hydrogen for clean transportation fuels applications. This is supported by the Biobased Products and Bioenergy Initiative, which is an interagency initiative aimed at tripling the use of biobased products and bioenergy in the U.S. by 2010 (compared with 2000.)
- The Clean Cities Program assists in the demonstration and adoption of alternative fuel vehicles, variously capable of operating on biofuels (such as ethanol), natural gas, or electricity. This increased fuel flexibility in the transportation

sector can provide a basis for reducing GHG emissions associated with automobiles.

- The Hydrogen Program is pursuing the use of hydrogen as a source of energy for transportation, electricity, and heat that has lower or no net GHG emissions (depending upon how the hydrogen is produced). Hydrogen can be separated from fossil sources or from water utilizing renewable energy. Today, hydrogen is primarily produced from methane, and a by-product of its production is CO<sub>2</sub>. Thus, alternative sources of hydrogen production is a key focus of this program. Hydrogen can be used to operate fuel cells in vehicles and buildings. Success will require reducing the cost of producing, storing, and using hydrogen, especially from renewable feedstocks (e.g., bioenergy) and resources (e.g., solar energy).
- The Federal Energy Management Program (FEMP) is helping federal agencies make cost-effective investments in energy efficient and renewable energy technologies and resources.
- DOE's Sequestration R&D Program focuses strictly on greenhouse gas reduction. Along with improved efficiency and lower carbon fuels, carbon sequestration provides an important third pathway for greenhouse gas reduction. Since it is completely compatible with the existing energy infrastructure, its deployment would not lead to costly early replacement of capital investments. The program is pursuing a suite of technologies to capture and store greenhouse gases. Near-term research focuses on technologies that provide multiple benefits in addition to climate mitigation, such as soil conservation, or production of high value energy products (enhanced oil recovery or production of coal bed methane) to offset sequestration costs. Longer term efforts are focused on a range of technologies capable of permanently storing carbon dioxide in geologic formations or other storage media.
- DOE and its predecessor agencies have actively supported the development and demonstration of civilian nuclear power technologies. Each year nuclear power plants in this country, which generate 20 percent of domestic electricity, avoid about 180 million tons of carbon emissions that would have come from burning coal, gas, and oil. The Nuclear Energy Research Initiative (NERI) invests in researcher-initiated ideas that seek to reduce the impediments to further deployment of nuclear power. NERI funds research in areas related to economic competitiveness, safety, and non-proliferation. It also funds research into fundamental engineering and scientific principles that have broad power generation applications, such as the innovative use of nuclear power to make hydrogen fuels for the future U.S. economy.
- The Nuclear Energy Plant Optimization Program (NEPO) invests in technologies and ideas aimed at improving the reliability, safety, and capacity of operating nuclear power plants. Nuclear power has enjoyed steady gains in capacity and availability over the past ten years, the NEPO program is intended to help maintain this trend.
- The Nuclear Energy Technologies Program is developing a Generation IV Technology Roadmap to identify and establish R&D leading to the deployment of improved reactor technologies in the coming decades. The Roadmap will be completed in FY 2002. This program also funds a study of the potential for deployment of a special class of Small Modular Reactors to locations ill served by the infrastructure required for coal, oil, or gas fueled power plants. Finally, this program funds studies of the potential commercialization of the plutonium burning modular helium reactor and of the deployment of advanced light water reactors.
- Within the Office of Science, the Biological and Environmental Research (BER) program has a long-standing, comprehensive Global Change Research Program (GCRP) that contributes to the interagency U.S. Global Change Research Program (USGCRP). Since 1978, the Office of Science began funding basic research needed to understand, model and assess the effects of energy production on atmospheric carbon dioxide and climate.

The BER activities seek to establish the detailed scientific understanding necessary to predict the effects of increasing greenhouse gases on the Earth's climate and the potential consequences of human-induced climate change. An important focus of the research is on the effects of atmospheric properties and processes on the Earth's radiant energy balance, including the role of clouds. This is the key uncertainty in global climate change science.

The research also seeks to elucidate the processes affecting the atmospheric chemistry, transport, and fate of energy-related emissions. This includes improving scientific understanding needed to predict and assessing

the both effects of energy-related emissions on air quality and atmospheric composition and the quantities of carbon removed from or released to the atmosphere naturally by terrestrial and oceanic ecosystems. It also includes research to develop methods or approaches to purposefully enhance carbon sequestration in land and in the ocean and to understand the potential environmental implications of enhanced sequestration. BER also funds research to characterize and sequence the genome of microbes that could be used for producing alternative energy sources (e.g., methane or hydrogen producing microbes, energy from biomass) and for carbon sequestration. The Department's energy mission, distilled to perhaps overly simplistic terms, is to ensure adequate supplies of energy at reasonable prices, with appropriate environmental protection. Our climate program is a subset of this larger mission and is focused on improving our understanding of the dynamics of global climate change, and on the developing and deploying technologies that reduce net emissions of greenhouse gas emissions.

#### CLIMATE CHANGE MITIGATION

*Question 26.* Mr. Secretary, Congress required a report of the Administration's activities last year, and that was supposed to be submitted with the FY 2002 budget. Please explain the status of the report, and whether, and when, we can expect to see the report. This report is critical for Congress' efforts to develop our funding needs for climate- and energy-related programs.

*Answer.* Climate change mitigation technology research by the U.S. Government is conducted at a number of agencies, including the Department of Energy. In order to include all research activities, the Office of Management and Budget prepares the report. The report is now under preparation at the Office of Management and Budget, and we will ensure you receive a copy as soon as it is completed.

#### RESPONSES OF SECRETARY ABRAHAM TO QUESTIONS FROM SENATOR WYDEN

##### FAST FLUX TEST FACILITY (FFTF)

*Question 27.* The Energy Department's Record of Decision to permanently deactivate the Fast Flux Test Facility (FFTF) reactor at Hanford didn't just call for FFTF shutdown, it also selected a Preferred Alternative of producing Plutonium 238 and medical isotopes at facilities at Idaho National Engineering and Environmental Laboratory (INEEL), and the Los Alamos, Oak Ridge and Brookhaven National Laboratories. So if you were to overturn the FFTF shutdown decision and restart the reactor for these missions which are now assigned to DOE facilities in Idaho, New Mexico, Tennessee and New York, as you are considering, wouldn't that involve canceling the work just assigned to Idaho, New Mexico, Tennessee and/or New York? Which of these facilities would you take the work away from in order to justify FFTF restart?

*Answer:* As you know, I have suspended the deactivation of the Fast Flux Test Facility (FFTF) in order to conduct a 90-day review of the decision to permanently deactivate the facility to ensure that all relevant factors affecting the decision to close the FFTF are addressed. I recognize that the status of this facility has been at issue for almost a decade and that the years of debate have produced a wealth of information both in support of startup and operation as well as permanent deactivation. However, I am aware that some experts have suggested that there is new information on the need for the facility for nuclear energy R&D, production of isotopes, and production of plutonium-238 as a power source for space missions. Therefore, it is necessary to examine this information before proceeding to implement a final decision on the future of the facility.

Restarting FFTF would not adversely impact the ongoing missions of the facilities you cited in your question. Rather, it would enable the other significant multiuser research reactors—the Advanced Test Reactor in Idaho and the High Flux Isotope Reactor in Tennessee—to free up capacity for other isotope production and irradiation testing missions. However, it is this issue, the need for and capabilities of the FFTF versus the availability and capabilities of other facilities to meet the needs of the country—that will be examined during the 90-day review.

##### ENVIRONMENTAL MANAGEMENT PROGRAM

*Question 28.* A number of Attorneys General from Western States wrote to you expressing their concerns about the impact of budget cuts on cleanup of Hanford and other DOE weapons production sites. The Attorneys Generals pointed out that the proposed cuts would seriously hinder cleanup and could put DOE in violation



of legally required compliance schedules under cleanup agreements. These delays could not only increase cleanup costs but could subject the Department to fines and penalties. Is it a good use of scarce Department resources to waste money paying higher cleanup costs and fines down the road for delays in cleaning up sites, rather than spending the money needed to keep the cleanup on track?

Answer. I am committed to complying with the Department's legal obligations, including obligations under the Tri-Party Agreement that covers cleanup at Hanford. I am also committed to establishing more efficient plans to close the Department's sites more quickly.

When I assumed office, I was told that the schedule calls for taking several decades, at a cost in excess of \$200 billion, to complete the cleanup. That is not good enough for the American people. I believe there are plenty of opportunities for efficiencies and cost savings in the Environmental Management (EM) program.

I have also directed a top-to-bottom assessment of the program with the goal of strengthening project management, pursuing contracting strategies that will help reduce costs and schedules, employing new technologies, and sequencing work more effectively. Until we have completed the assessment, with input from our regulators, and until the Congressional appropriations process is final, it is premature to speculate on what compliance issues we may face.

#### OFFICE OF RIVER PROTECTION—FUNDING FOR SINGLE SHELL TANKS

*Question 29.* Hanford's Office of River Protection is responsible for: (a) preventing the nation's largest volume of high-level radioactive wastes from leaking into the environment, reaching the ground water and entering the Columbia River and; (b) converting these wastes into glass for disposal. From DOE's Budget Request, it appears that the former mission is being shortchanged by about \$165 million. These funds are for Tank farms Operations, which are supposed to safely maintain, repair, upgrade, and survey Hanford's 149 single-shell waste tanks. These tanks are between 40 and 60 years old. Many have leaked wastes into the groundwater that have reached the river; and many are in a serious state of deterioration. What was the rationale for these cuts, given that the single-shell tanks pose the greatest risks of leaks and contamination of the environment and Columbia River?

Answer. The President's FY 2002 budget request for tank farm operations provides funding to maintain the safe operation of all the waste tanks at Hanford, as well as funding upgrades to the retrieval systems needed to support the on-time startup of the waste vitrification facility. In particular, the single-shell tank interim stabilization program is fully funded and will remain on schedule to meet regulatory milestones.

#### FY 2002 BUDGET IMPACTS ON THE HANFORD RIVER CORRIDOR REMEDIATION WORK

*Question 30.* In reviewing the DOE's Budget Request for Hanford, it appears that several environmental restoration and waste management projects, such as stabilization and removal of highly radioactive spent fuel near the Columbia River, and cleanup of contaminated areas also near the river area, have been cut by some \$120 million dollars. Given that these problems pose the most imminent dangers to the environment and the Columbia River in particular, could you explain the rationale for these deep spending cuts? Are these decisions based on risk and science?

Answer. The President's FY 2002 budget request places high priority on funding high-level waste and high-risk nuclear material activities, and provides full funding for the K-Basins Spent Nuclear Fuel Project and for stabilization activities at the Plutonium Finishing Plant. Some lower-risk environmental restoration activities, including remediation work along the Columbia River, will be deferred. Other remediation work along the Columbia River will still be completed, including completing remediation of nine release sites, decommissioning one facility, and disposing of up to 215,000 cubic meters of contaminated soil and debris at the on-site Environmental Restoration Disposal Facility. In addition, Secretary Abraham has directed a top-to-bottom review of the Environmental Management Program to ensure that the best available technologies and business practices are applied to cleanup work across the DOE complex. The study will focus on efficiencies and cleanup strategies that will allow us to accomplish lower-priority work at the site on the most expeditious schedule possible.

#### RESPONSES OF SECRETARY ABRAHAM TO QUESTIONS FROM SENATOR CANTWELL

##### OFFICE OF RIVER PROTECTION—FUTURE FUNDING FOR THE WTP

*Question 31.* I think we all agree that cleaning up the high-level radioactive waste in the old and decaying underground storage tanks absolutely must be done to pro-

tect the Columbia River, ground water and public health in general. The Administration and DOE are suggesting in this budget the \$814 million in FY02 is adequate to both operate the tank farms and do the necessary construction work to have a vitrification plant operating by 2007, as previously agreed. The need for those activities is actually in the neighborhood of \$1.07 billion this year. In order to adhere to the schedule as closely as possible—and were this year's figure to stay at \$814 million—the latest estimates indicate the absolute minimum amount of funding necessary for FY03 would be almost \$1.2 billion (\$1.194 billion, to be precise). That would seem to be a huge—albeit necessary—increase, if this year's funding remains at \$814 million. Is the Administration committed to seeking that level of funding in FY03 if this year's budget is limited to the figure originally requested by the President?

Answer. DOE is committed to moving ahead with the design and construction of the Hanford vitrification plant and beginning radioactive waste treatment by FY 2007. At the requested funding level of \$500 million in FY 2002 and with adequate funding in FY 2003 and beyond, meeting the 2007 milestone for beginning hot-waste processing is expected to be achievable.

#### OFFICE OF RIVER PROTECTION—CONSTRUCTION OF WASTE TREATMENT PLANT

*Question 32.* If not, what assurances can you give me that DOE can complete the necessary vitrification facility by 2007, according to the schedule included in the legally-binding Tri-Party Agreement?

Answer. Assuming DOE receives adequate out-year funding, the construction of the Waste Treatment Plant is on schedule to be tested using radioactive feed in 2007. The construction contractor, Bechtel National, Incorporated, is under an incentive contract to meet this milestone.

#### OFFICE OF RIVER PROTECTION—BUILDING NEW DOUBLE SHELL TANKS

*Question 33.* Given this apparent uncertainty on the schedule for constructing the Waste Treatment Plant—not to mention the serious environmental hazard Hanford poses, which grows more acute with the passage of time—is DOE considering building new double-shell tanks to replace the many single-shell tanks at the site that are already well past their design life—and a third of which are leaking? This strikes me as an unnecessarily inefficient measure when the real solution—to glassify the waste—only needs to be funded adequately.

Answer. The Department is not considering building new double-shell tanks to replace the single shell tanks. The Department agrees that vitrifying waste is the best solution to the Hanford waste problem and is proceeding with that approach as a budget priority. The State of Washington, in its regulatory role, continues to require the Department to study the possible installation of additional double-shell tanks as a contingency against future single-shell tank failures and/or to allow the waste to be moved out of the single-shell tanks prior to the processing of these wastes in the vitrification plant. As a point of clarification, all but two of the 67 suspected or known leaking tanks have been stabilized by removing the pumpable liquid and at present, there are no known leaks in the single shell tanks at Hanford. The pumpable liquid in the remaining two tanks with suspected leaks, is currently being removed.

#### FY 2002 BUDGET IMPACTS ON THE HANFORD RIVER CORRIDOR REMEDIATION WORK

*Question 34.* Aside from the waste treatment/vitrification issue, there is also clean-up underway along the Columbia River. This remediation effort is proceeding well, yet the Administration's budget request cuts the program well below the level necessary to support the Hanford 2012 Vision project. Please explain your plans to keep this progress underway so that the Hanford river corridor clean-up can be an example of a closure project, a concept that you support.

Answer. The Department's FY 2002 budget request places high priority for funding on high-level waste and high-risk nuclear material activities. Lower-risk and lower-priority environmental restoration activities, including remediation work along the Columbia River, will be deferred based on lower environment, safety, and health risks. At the requested funding level, remediation work along the Columbia River will continue, including completing remediation of nine release sites, decommissioning one facility, and disposing of up to 215,000 cubic meters of contaminated soil and debris at the on-site Environmental Restoration Disposal Facility. The River Corridor 2012 plan was envisioned to combine all work done along the Columbia River (principally in the 100- and 300-areas) under one contract and achieve River Corridor cleanup and most area closure by 2012. The Department is currently working on developing a new contract strategy for achieving cleanup of the River

Corridor, and is taking into account input from potential bidders, the FY 2002 funding levels, and the top-to-bottom review of the Environmental Management program. This review will focus on ways to complete cleanup more cost effectively and proceed on the most expeditious schedule possible.

#### BUDGET FOR CONTRACTS

*Question 35.* You've suggested that new, highly incentivized, performance-based contracts mechanisms—such as those in place at Rocky Flats (CO) and Fernald (OH)—are the answer to cutting costs and clean-up time at DOE sites. Similar contracts are now in place at Hanford with Fluor Hanford, CHG (CH2M-Hill) and Bechtel-Washington Group. But in order for these new contracts to work as designed—to ensure best commercial practices—they have to be adequately funded. The administration's proposed budget simply does not adequately fund these contracts. How can DOE expect these new contracting methods to work without the proper budget support?

*Answer.* The contracts you reference represent the most recent innovative contracting strategies in the Department's implementation of performance-based contracting. We believe performance-based contracts that hold contractors accountable for performance and provide incentives to accelerate work and reduce costs are effective tools for accomplishing the Secretary's challenge to every program in the Department to find ways to become more efficient. Although the scope of work to be accomplished may need to be adjusted to reflect available funding, the basic structure and drivers that encourage efficient contractor performance remain intact.

#### ENVIRONMENTAL MANAGEMENT PROGRAM

*Question 36.* I was concerned to learn you have sent letters to the governors of states that harbor DOE clean-up sites, suggesting that compliance agreements like the Hanford Tri-Party need to be reexamined and made more flexible. Could you explain the need for such a renegotiation?

*Answer.* The letter I sent to the Governors pointed out that the current compliance framework was developed more than a decade ago, and noted that we have all learned a great deal during the ensuing years. I therefore invited the Governors to join the Department in examining ways to improve how we do business, including an examination of the compliance framework. My goal is to ensure that we have the most effective plans to close the Department's sites more quickly. It is premature to conclude that specific agreements would need to be amended, although I recognize that is a possibility.

#### HANFORD TRI-PARTY AGREEMENT RENEGOTIATIONS

*Question 37.* The Hanford Tri-Party Agreement has already been altered over 250 times since 1990. Nearly all of these changes have reflected technical difficulties and agreement on new work priorities. The State of Washington has recently agreed with DOE's innovative approach to cleanup along the Columbia and supported these new, incentivized contracts at Hanford. Given this history, what incentive does the State of Washington have to renegotiate the Tri-Party Agreement, when it appears the Administration fails to support Hanford innovations with adequate funding?

*Answer.* I share your concern that the Department needs to find more innovative and cost effective ways to complete the Hanford cleanup. I appreciate the efforts of the Hanford parties, including the State of Washington, to work to overcome obstacles and challenges. I also appreciate the State of Washington's willingness to work with the Department to find new and innovative ways, such as the Hanford Site Columbia River Corridor Cleanup Plan (2012 Plan), to complete the cleanup of the site more effectively. Involvement by the State in the Department's top to bottom assessment of the Environmental Management program will provide an opportunity to share results of efforts to date with the new Administration. In addition, it will provide opportunities to identify potential new improvements that could help ensure sufficient funding to implement cleanup strategies. We hope the State will continue to be open to whatever changes may be needed to improve operations and meet our obligations.

#### COMMUNITY TRANSITION

*Question 38.* Another significant element of a clean-up program is worker training and community transition. It's important as we clean up these sites that we leave a legacy for the communities, which made substantial sacrifices to produce weapons-grade nuclear material. Please explain your commitment through DOE's Worker

and Community Transition program to ensure that we do right by our local communities.

Answer. The Department has made a significant commitment to both the contractor worker affected by the restructuring process and to host communities around the complex. The Department's Office of Worker and Community Transition, together with program offices and field organizations, has already facilitated the orderly separation of some 50,000 employees. Likewise, the Department has assisted "energy communities" in creating approximately 25,000 new private sector jobs to date.

The Department's commitment to the contractor workforce, and to the communities in which they live, will continue. Programs will target those communities where restructuring activities are the most pronounced and where communities are deemed to be at greatest risk or without access to other development resources.

