

OIL AND GAS INDUSTRY IN THE GULF OF MEXICO

JOINT OVERSIGHT HEARING

BEFORE THE

SUBCOMMITTEE ON
ENERGY AND MINERAL RESOURCES

AND THE

SUBCOMMITTEE ON
OVERSIGHT AND INVESTIGATIONS

OF THE

COMMITTEE ON
NATURAL RESOURCES
HOUSE OF REPRESENTATIVES

ONE HUNDRED THIRD CONGRESS

SECOND SESSION

ON

ECONOMIC HEALTH OF THE DOMESTIC OFFSHORE OIL AND GAS
INDUSTRY

HEARING HELD IN WASHINGTON, DC
JUNE 23, 1994

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ECONOMIC HEALTH OF THE DOMESTIC OFFSHORE OIL AND GAS INDUSTRY

THURSDAY, JUNE 23, 1994

**HOUSE OF REPRESENTATIVES, SUBCOMMITTEE ON ENERGY
AND MINERAL RESOURCES AND SUBCOMMITTEE ON
OVERSIGHT AND INVESTIGATIONS, COMMITTEE ON NATURAL
RESOURCES,**

Washington, DC.

The subcommittees met, pursuant to call, at 10:15 a.m. in room 1324, Longworth House Office Building, Hon. Richard H. Lehman (chairman of the Subcommittee on Energy and Mineral Resources) presiding.

OPENING STATEMENT OF HON. RICHARD H. LEHMAN

Mr. LEHMAN. The subcommittees will come to order. Today we are holding a hearing of the Subcommittee on Energy and Mineral Resources and the Subcommittee on Oversight on the economic status of the industry involved in oil and gas development on the Outer Continental Shelf.

I would like to thank Congressman Miller for the opportunity to work together today on this important joint hearing of our two subcommittees. He will be along shortly.

The industry which supplies oil and gas, the Nation's primary source of energy, is one of utmost importance and is going to be for many years to come, not only as a fuel supplier, but as a vital source of capital formation, technological development, and employment in the United States.

In 1990, consumers spent over \$300 billion on oil and gas, 5.5 percent of the GDP, and the industry invested \$21 billion on infrastructure. Today, we hope to gain insight into the recent developments in one segment of that industry, that pertaining to oil and gas resources offshore.

Offshore drilling is of increasing importance as a source of natural gas and holds the greatest promise for discovering substantial domestic reserves. During the last two years there has been a revival of activity in the Gulf of Mexico, in part due to increased interest in natural gas, in part due to advances in drilling technology.

There is no question that price volatility has had traumatic effects on those employed in the offshore oil and gas industry, but as we take a look at one segment of the industry, it is important to keep in mind the benefits to be derived by—government interaction in the offshore industry will undoubtedly have widespread effects on other segments of the industry that are onshore. It is

also important to keep in mind this Nation's commitment to protecting the environment regardless of what measures may or may not be enforced in offshore drilling overseas.

I join Chairman Miller in welcoming Deputy Secretary of Energy Bill White and Assistant Secretary of Interior Bob Armstrong, as well as our distinguished guests from industry and academia. I look forward to discussing this issue, as it will affect all Americans for years to come, whether they live in coastal areas or States far removed from offshore drilling.

Thank you all for being here, and at this point, I would like to recognize the Ranking Member of the full committee, the gentleman from Alaska.

OPENING STATEMENT OF HON. DON YOUNG

Mr. YOUNG. I thank the Chairman for this hearing, the full Chairman and the subcommittee Chairman.

Contrary to some of the bright spots that you mentioned in your opening statement, the way I see this happening in the oil industry, you can't just isolate offshore and separate it from onshore and call the industry healthy. Most of us know that we have lost in the industry, in the last 10 years, more jobs than the automobile industry and the textile industry have lost collectively. We are not independent. We are more dependent now than ever before.

We have not, in this administration and even the last administration or the administration before that or the administration before that or the last six administrations, in any way tried to encourage the production of oil in the domestic field. The last time that we did anything at all in this Congress to encourage production onshore or offshore, of course, was the trans-Alaskan pipeline.

Just recently, in Alaska, ARCO has announced a great turndown of employment. We are not exploring for oil in Alaska, we are not exploring for oil in Alaska offshore as we should be, we are not exploring in California, we are not exploring in any other State other than the Gulf area.

I take it today's hearing is about tax benefits for those in the Gulf area, and I encourage that, but I don't think we can isolate just one area and discuss this as solving the energy dependency that we have in this Nation. I am very discouraged.

There was a meeting down at the White House the other day, and there was some mention of what was going to happen, what we must have, to the President, but I can respectfully suggest I don't see much action. I am looking forward to hearing the testimony from the two gentlemen that are seated at the table today, but if anyone can tell me the industry is healthy today, I would like to see the bright spots.

We are now importing oil at a tremendous rate. Approximately 70 percent of our fossil fuels are now being imported by the United States. There is no encouraging area in the United States, other than the Gulf, and unless we do some tax benefit for that area, we won't have that.

Now there are reasons, Mr. Chairman; we know that there are reasons. Primarily, you talk about the environment; there is also State regulations, Federal regulations and little incentives. In the

meantime, most of the technology which we have acquired over the years has gone overseas.

We have the oil industry, now a billion dollars in Russia from one company alone; we have areas in China, China Sea, Vietnam, and other areas, Colombia, Venezuela, of course, Mexico. We are exporting our technology, losing our American jobs at a great rate, but more than that, we have become more dependent upon those countries.

Some will tell you, Mr. Chairman, this is the right thing to do because we can get oil cheap now and we will conserve our oil for the future efforts in this country. I respectfully suggest that you don't start up the oil industry overnight. This is not like some other industries in which that possibly can be done.

If I may suggest, Mr. Chairman, we tried that in 1942 and 1943 and 1944 in Alaska. The environmental damage done in Alaska was done by the United States Government, not by the oil companies. It was done because we had, in fact, a shortage of oil and a war in process. We were not prepared, we did not have the equipment nor the technology nor the knowledge itself where the oil was at.

Alaska has a tremendous amount of oil onshore and offshore. We would like to have an opportunity to develop that oil resource for the United States and for the State of Alaska. I cannot see it happening unless this Congress and this administration or whatever administration is here in 1996 understands this is a domestic industry that needs help.

I do compliment you for having this hearing on this one small area, but if we look at the total picture, we are so far behind the curve that if this Congress does not wake up to the need for producing domestic fossil fuels, there will be a dark night, and it won't be in Alaska.

Mr. LEHMAN. Thank you, Mr. Young.

[Prepared statement of Mr. Young follows:]

Honorable Don Young
June 23, 1994
Oversight of Oil and Gas Production

Mr. Chairman:

Thank you for holding this hearing today to look at the health and prospects of one of America's greatest -- and sickest -- industries. Ever since the Committee stopped holding hearings on opening up a small sliver of ANWR for oil production, I had thought that we had given up some of our responsibility as a committee to ensure that the U.S. supply a good deal of its own energy consumption and keep oil and gas jobs here at home, rather than see them go abroad.

I'd like to urge my Chairman to reassert our Committee's interest in these matters. I think he is uniquely placed to do the right thing. For you, Mr. Chairman, to embrace policies to promote the healthy and environmentally-sound rebirth of the U.S. energy industry - our largest industry - would be like Nixon going to China. You may be the only one to do it, and you may have a golden opportunity. I pledge to work with you in that endeavor.

It is clear on its face that the industry is sick. We've lost almost one-half million jobs in a decade - more than the automotive, steel and textile industries combined. Because the industry is spread out across the country, and independent, it just doesn't get the attention that these other important industries do. Still, we consume more energy than ever before.

Alaska just this week got the devastating news that one of our largest private employers and most aggressive explorers of new oil sources here at home was packing up some of its bags and reducing the size and scope of its present and future plans for our State. ARCO announced layoffs of 750 men and women from a workforce of 2350. When this happens, we not only lose economically, but maybe even more importantly, we lose in our communities. Many of these people contribute significantly to the well-being of the state and their neighbors. They are active in their houses of worship and community work, and they give unselfishly of their time and their money to make Alaska a better place. I've said before that our people and our children are our most important natural resource, and when the lack of opportunity to produce natural resource wealth -- the only real wealth -- from the ground stops, it necessarily affects our human assets.

I would like to work together to try to increase our understanding of this problem and to work out a solution which will put Americans back to work and back on top of the world in the energy industry.

Mr. LEHMAN. Mrs. Vucanovich.

OPENING STATEMENT OF HON. BARBARA F. VUCANOVICH

Mrs. VUCANOVICH. Thank you, Mr. Chairman. I appreciate your scheduling this oversight hearing, this joint oversight hearing today. It is timely to discuss the issue of the economic—quote, “economic”—health of our domestic oil and gas industry.

I guess we can't escape the H-word, so this hearing must be about what health care reform is necessary for our domestic industry to stay at home, look for, and produce hydrocarbons from our offshore lands rather than seek better deals overseas.

The Interior Appropriations bill on the Floor yesterday and today quietly continues appropriations moratoria on OCS exploration and development for almost everywhere but the Gulf of Mexico. That must be something like managed competition. Panel III's witnesses represent the health care alliances, I suppose; and of course, Panel I is the Federal Government overseeing the working of the system for better or worse.

Of course, I am being facetious, Mr. Chairman.

I do think we need to explore incentives for our industry to produce domestic natural gas and crude oil reserves in view of the continual increase in hydrocarbon imports. I am sure there is a lesson to be learned from the fact that 500,000 natural gas and oil industry jobs have been lost in the last 10 years. The flight of much of the major oil companies' investment in new projects to foreign countries is no surprise because these nations realize the importance of building and sustaining a job base.

Of course, you have heard me say far too many times that the domestic mining industry is facing the same plight. Now we are conferees on reform of the mining law of 1872 where we fully expect Senator Johnston to attach his deep water royalty holiday ideas to any offer from the other body. How does a royalty holiday to stimulate frontier development square with the proposals for hard rock royalties as high as 35 percent of the gross proceeds of a gold mine and mill?

I think many of the mines in my State are in frontier areas, too, but I look forward to the testimony received today and certainly welcome all of our witnesses.

Thank you, Mr. Chairman.

Mr. LEHMAN. Thank you.

The gentleman from Wyoming.

OPENING STATEMENT OF HON. CRAIG THOMAS

Mr. THOMAS. Thank you, Mr. Chairman. I will be very brief. Most everything has been said, I guess.

I am pleased that you are here. Obviously, the energy industry is particularly important to my State. We don't have much offshore drilling in Wyoming, but it does have an impact. I was one of those who was at the White House the other day, and we do think that some things need to be done. We need to talk about overregulation, we need to talk about access to those Federal lands, whether they be offshore or whether they be onshore, that are available for exploration and production. We do need to talk about royalties and

what we do there. We need to talk about selling Alaskan oil to Japan and some of those kinds of things.

But the time has come; we need to do more than talk about it, we have already been talking about it.

I must tell you, Mr. Secretary, that I was a little disappointed in the initiative of energy in terms of the impact it had on the industry or is having. We need to go beyond that, it seems to me, and I will be interested in your talking about it.

Thank you for being here. Look forward to your testimony.

Mr. LEHMAN. The gentleman from Colorado.

Mr. MCINNIS. Mr. Chairman, I will pass.

Mr. LEHMAN. Thank you.

I recognize the Chairman of the full committee, Mr. Miller.

OPENING STATEMENT OF HON. GEORGE MILLER

Mr. MILLER. Thank you, Mr. Chairman. My apologies for coming in late, and I do have an opening statement, but I think I will submit it for the record. I was in the Education and Labor Committee; we are doing the health care bill.

But thank you for being with us this morning, and we look forward to your testimony.

Mr. LEHMAN. Thank you.

[Prepared statement of Mr. Miller follows:]

Opening Statement of Rep. George Miller
Chairman, Natural Resources Committee
"Oversight Hearing on OCS Oil and Gas Industry"
June 22, 1994

Today, we are holding a hearing on the economic status of the industry engaged in the development of the energy resources of the Outer Continental Shelf (OCS). I am pleased to join Rep. Rick Lehman, Chairman of the Energy and Mineral Resources Subcommittee, in conducting this joint hearing with the Oversight Subcommittee.

The Natural Resources Committee has long been in the center of the often contentious issues involved in the management of the OCS. I was a member of the Ad Hoc Select Committee that wrote the 1978 amendments to the OCS Lands Act. As recently as the last Congress, we attempted to resolve a variety of OCS issues as part of the conference committee on the Comprehensive Energy Policy Act.

The purpose of this hearing is to achieve a better understanding of the economic trends in the oil and gas industry and to examine what impact federal policies have on our offshore energy program.

The OCS leasing program is significant both to the Treasury and to the nation's supply of energy. In 1993, the OCS produced 14 percent of the nation's total production of oil and 26 percent of natural gas. The vast majority of

this production comes from the Central and Western Gulf of Mexico. About \$2.4 billion in annual federal royalty revenues are being generated by OCS activities.

In recent months, much debate has occurred over the role the federal government may play in providing economic incentives for greater activity by the oil and gas industry in developing domestic resources. Just last week, President Clinton heard from Members of Congress proposing tax credits, royalty relief for deep water drilling on the OCS, greater access to federal lands and a host of other initiatives to encourage more domestic production.

Central to many of the arguments of the industry is the proposition that federal laws, regulations and royalty requirements are impeding the domestic search for oil and gas, especially on the OCS. Some in Congress are seeking to relieve the industry of regulatory and financial burdens in order to stimulate greater exploration and production of domestic reserves.

Others point to the world wide oil supply, the low price of oil, and the variety of tax incentives, subsidies and mechanisms already in the law that provide relief, or the possibility of relief, to the domestic industry. These observers question the wisdom, and the necessity, of allowing the production of valuable resources from public lands with even less recovery of the value for taxpayers, who own the resource, than occurs today.

We should note that many of the same producers are operating overseas under much weaker governments, far greater regulation and much heavier financial burden than they receive here at home. And, we must also note that states and private land owners have not ratcheted down their royalties, though some are urging us to do so for the federal government's oil and gas reserves.

We are stewards of the public's resources and, to quote some of my colleagues, we should run them a little more like a business. I appreciate it is expensive to drill for oil in frontier areas, or to build irrigation systems or mine for gold. The reason private individuals and corporations engage in these activities is because there are huge profits to be made. We do not begrudge them profits; but we want the taxpayer, who owns that resource, to receive a fair share.

So, we begin this hearing with our minds open, but with a healthy dose of skepticism. The burden of proof is on those who seek to diminish potentially the return to the Treasury by reducing royalty payments or other payments. Simply proving the economic frailty of the oil industry is not sufficient; the question is whether royalty forgiveness is so major a factor in that ill-health that we should change the law to include incentives, subsidies and regulatory flexibility that do not now exist.

I look forward to an open discussion of these and other issues with our witnesses today.

PANEL CONSISTING OF HON. BILL WHITE, DEPUTY SECRETARY, DEPARTMENT OF ENERGY; AND HON. BOB ARMSTRONG, ASSISTANT SECRETARY, LAND AND MINERALS MANAGEMENT, DEPARTMENT OF THE INTERIOR

Mr. LEHMAN. At this time, we have two distinguished representatives of the administration who will open up the testimony today, and I want to recognize them at this point and welcome them to the committee, the Honorable Bill H. White, Deputy Secretary, Department of Energy; and the Honorable Bob Armstrong, the Assistant Secretary for Land and Minerals Management in the Department of Interior. Without objection, we will put your complete statements in the record, ask you to summarize; and just at random, we will start with you, Mr. White.

STATEMENT OF HON. BILL H. WHITE

Mr. WHITE. Thank you, Mr. Chairman. We do recognize the importance of this industry, and I will tell you, if anyone had a question about that, just read, I believe it was the editorial in The Washington Post this morning concerning our balance of payments deficit and the effect that that is having on the weakening of the dollar.

Because the dollar has been weak recently, there is renewed pressure to slow down the growth of the economy. That is not what Americans want. We don't want to see slower growth in the economy, and we trace it back to that balance of payments deficit; and I will tell you, there is no larger contributor to that balance of payments deficit than the import dependence on foreign oil.

This industry is also important for jobs. These are some of the higher-wage jobs that we have in the United States, where we have always had and still continue to have a comparative advantage in our skills, so we need to nurture those skills. The offshore industry plays a very critical role in that. It plays a very critical role because the United States has been and must continue to be the leader in worldwide offshore technology.

So much of worldwide exploration and production is going offshore. We need Americans designing those rigs and making those oil tools and performing those jobs, and we can't have Americans doing them abroad unless they are working at home so they can nurture those skills, and this is compatible with the environment. There are no firms that have better environmental practices offshore than American firms and American technologies, which have been developed here.

It is also important because I think most people who look at the energy situation in this country agree that we must promote the use of natural gas, especially for electrical power generation. Natural gas used in electrical power generation has some clear advantages. One is the domestic resource that we have, and yet 25 percent of our gas is produced from Federal lands; and in the last two years for which we have figures, in 1991 and 1992, we replaced half of the gas produced from those offshore reserves by new discoveries.

Even with the extensions of existing fields, we were only replacing that production by 60 percent. Well, if we want to get our gas utilization up in this country, we are going to have to find gas.

Now, I would say, to conclude, that I don't accept the idea, though, that we somehow within this administration have been doing nothing, and I will give you some very specific things that have been going on. Technology in this business is important. The price of finding a unit of gas is dropping in this country, and it is dropping because we are able to identify gas and where gas is more specifically, and a lot of the production aspects of oil, the costs are also dropping.

One example of the impact of that—this isn't pie in the sky—is the last offshore lease sale that the Department of Interior had, compared to the previous ones of some \$40 million of bonuses; you are talking about \$277 million of bonuses that were paid that reversed the declining trend that we saw in the last four years of lease sales. It reversed that trend because people were able to use technologies to see gas deposits and oil deposits below structures that they had not been able to see using their geophysical data; and the United States Government and Department of Energy programs are in the middle of that.

We have requested tripling the budget on gas research in this administration, compared to the budget where we found it, and doubling the budget on oil; and that is our commitment to these technologies.

The second thing that we have been doing is removing barriers to the utilization of gas for electrical power generation and transportation. None of us want or believe in price controls and a Soviet-type pricing system like we saw 20 years ago, that replaced a market system; but to maintain the economic health, of course, those prices would need to be strong, and there is nothing that contributes more to the strength of gas prices and after-tax profits than opening these new markets for gas utilization.

What is being done, Mr. Chairman—both Mr. Chairmen—in California, where the expansion of supply for electrical power generation is planned almost exclusively through gas or renewables, is just one example of that.

Finally, you are right, we need to relook at the way we look at regulations. I think some of the ideas that we have discussed on royalty relief are one of those; and just to give you a specific example on the Department of Interior, they have granted the majority of applications for royalty relief on stripper wells that have been made to the Department of Interior, thousands of applications have been granted for stripper well relief when the price cratered at the end of last year.

So those are three specific things that we are doing within the administration, but there is no doubt that we need to do more.

Thank you, Mr. Chairman.

Mr. LEHMAN. Thank you.

[Prepared statement of Mr. White follows.]

STATEMENT OF
BILL WHITE
DEPUTY SECRETARY
U.S. DEPARTMENT OF ENERGY
BEFORE THE
SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES
AND
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
COMMITTEE ON NATURAL RESOURCES
UNITED STATES HOUSE OF REPRESENTATIVES

JUNE 23, 1994

Mr. Chairman and Members of the Subcommittees:

We are here today because we share the common view that the domestic natural gas and oil industry is strategically important to this country now and for the future. My testimony will provide an overview of the present state of the industry and a specific focus on the potential for increasing natural gas and oil production from marginal prospects in the Gulf of Mexico.

The Administration recognizes the imperative of a healthy overall economy, including a robust domestic gas and oil industry. We also recognize the importance of ensuring public confidence and acting in concert with public approval. We believe these can be mutually compatible objectives.

In December 1993, we took a first step toward a comprehensive action plan with the release of the Domestic Natural Gas and Oil Initiative.

The U.S. oil and gas industry has historically been one of the most resilient sectors of our economy. Today, that resiliency is facing its greatest test. Domestic production is declining. The Nation is increasingly dependent upon imported oil. Today, nearly 45% of our domestic oil consumption is supplied by imports. By 2010, according to projections by our Energy Information Administration, imports could reach 60% of our domestic consumption if oil prices rise to about \$28 per barrel. If prices remain low, our reliance on imports could be greater.

Imported oil has been the single greatest component of our trade imbalance for the last 20 years, accounting for more than

60% of our trade deficit. Between 1980 and 1992, the U.S. paid more than \$740 billion (1987 dollars) to purchase imported crude oil and products from other countries. This trade deficit reflects the reality that oil can be produced a lower cost in other nations.

Additionally, there is an environmental concern raised by increased oil imports. While implementation of the Oil Pollution Act of 1990 will provide new protections, including double-walled tankers, against oil spills from both tanker traffic and offshore facilities, historically the environmental threat from tanker spills is much more severe than the potential for ecological damage from offshore production. From 1974 to 1991, there have been 92 tanker spills of greater than 1,000 barrels. Nearly 2 million barrels of oil have been released into the ecosystem from these spills. By contrast, during the same period, production from the Outer Continental Shelf (OCS) has resulted in only 9 spills of 1,000 barrels or greater, totaling only 70,000 barrels.

I. THE IMPORTANCE OF THE OUTER CONTINENTAL SHELF

The offshore is -- and must continue to be -- a key component of our energy strategy. Today, more than 25% of natural gas production and about 10% of oil production comes from the Federal OCS. (Onshore production from Federal lands accounts for another 10% of gas and 5% of oil production.) Furthermore, from a reserve perspective, the Federal offshore has about 17% of proved gas reserves and 11% of our proved oil reserves.

We need to maintain access to Federal lands where development can occur in an environmentally-sound manner, with full public support and participation. We have begun efforts to work cooperatively with stakeholders to ensure that the public understands the energy and economic significance of the OCS and the environmental safeguards that are an integral part of today's industry.

Appropriate financial terms to explore and develop high-cost areas, such as the deep water Gulf of Mexico, should be considered if we are to have this important resource available for future domestic needs. Any proposal must strike a balance between providing an appropriate incentive for industry and ensuring the public receives a fair return for the development of its resources.

II. THE IMPORTANCE OF IMPROVED TECHNOLOGY

American firms traditionally have been the world's driving force behind innovation, and today's modern natural gas and oil production represents the quintessential "high tech" industry. This is especially true for those American companies who are working offshore, pushing beyond current areas in search of deep water prospects.

Both on and offshore, the continued development and deployment of better technology can ameliorate the natural decline in domestic production. Technologies that use state-of-the-art computer subsurface mapping, for example, can reveal natural gas and oil deposits that traditional techniques may have

overlooked. More cost-effective drilling methods can open new natural gas supplies in medium- and hard-rock formations. Enhanced oil recovery techniques can recover a portion of the nearly two barrels out of three that conventional technologies leave behind.

A key element of our Domestic Natural Gas and Oil Initiative is not only to develop new technology in partnership with industry, but to ensure that all domestic producers have access to it. The gas and oil industry is not monolithic. It is not comprised of just "Big Oil." An important and increasingly significant portion of our domestic production today is from smaller, independent producers. These companies comprise the largest segment in terms of the overall drilling and production activities in the United States.

Independent producers (non-integrated firms) drill the majority of wells in the U.S. today. These firms are responsible for 85% of all domestic drilling and for approximately 30% of domestic oil production. Yet, these smaller firms generally have neither the capital nor the technical expertise to explore for oil outside their usual operating territories. Because independent producers do not have the economic flexibility of the major companies, they are more subject to financial distress when prices fall as they have over the past year. Our Domestic Natural Gas and Oil Initiative contains a number of actions to ensure that independent producers are aware of technological advances and have opportunities to make use of them.

III. IMPORTANCE OF NEW GAS WELL COMPLETIONS

This Administration has stressed many times the importance of increasing our use of natural gas. There are two attributes of natural gas that make it a desirable fuel: It is abundant domestically, and it is more environmentally benign than other fossil fuels.

The National Petroleum Council has estimated total U.S. gas resources to be 1295 trillion cubic feet (Tcf) (see table on next page). These resources could provide gas at our present rate of consumption well into the 21st century (68 years). Other estimates from the Potential Gas Committee, the Gas Research Institute, and the DOE all fall within the same range (909 to 1208 Tcf). Moreover, our North American Free Trade Agreement partners, Canada and Mexico, also have large supplies of natural gas that are readily available at economic prices. Canada alone has a resource base of at least 232 Tcf. With such large domestic and other North American supplies readily available, we can reduce the growth in imports of oil from unstable sources.

Table - Domestic Natural Gas Resource Estimate
(amounts are in trillion cubic feet)

Proved Reserves	160
Conventional Resources	
Reserve Growth	203
New Fields	413
Unconventional Resources	
Tight Gas Sands	349
Coalbed Methane	98
Shales	57
Other	15
Total Assessed Resource	1135
Total Resources	1297

Source: National Petroleum Council, The Potential for Natural Gas in the United States

The use of natural gas is also less environmentally harmful than the use of other fossil fuels. In many applications, natural gas can be used to reduce the emissions of SO₂, CO₂, particulates, and can sometimes be used to reduce NOx emissions. For this reason, natural gas is a key component of the Administration's Climate Change Action Plan, and an important tool in meeting Clean Air Act requirements.

For example, EPA has recently issued guidelines to urge state and local pollution control agencies to allow the use of natural gas in the summer in existing coal- and oil-fired power

plants and in industrial facilities as a NOx reduction strategy. This change, and others to improve our environment, will lead to an increasing demand for natural gas supply.

Natural gas utilization has increased in the last 6 years by 17% and is expected to continue to increase into the foreseeable future. We are targeting natural gas use to reach 24 trillion cubic feet (Tcf) by the year 2010., a substantial increase over present consumption of 20 Tcf.

While we are taking steps to encourage natural gas use in the transportation, residential, commercial, and industrial sectors, a major portion of the 6 Tcf increase is expected to be in gas use for electric power generation.

One of the key challenges to increasing the use of natural gas in the power generation market is to boost confidence in the long-term availability of the resource. The Administration is taking steps on two fronts: First, we are working with industry to enhance the natural gas delivery infrastructure, and improve reliability.

The Domestic Natural Gas and Oil Initiative calls for specific actions to:

- o Upgrade state data collection and reporting on natural gas production,
- o Build a national deliverability capacity model,
- o Enhance real-time gas transportation monitoring and automated systems,
- o Build a system for assessing natural gas underground storage operations,
- o Match natural gas storage to end user requirements,
- o Demonstrate natural gas storage optimization technology, and

- o Improve natural gas storage effectiveness for problem fields.

We are also encouraging state regulators to provide a more flexible approach to contracting for natural gas purchases by utilities, including long-term contracts.

Second, to continue to meet growing demands for natural gas, we must convert resources to reserves -- i.e., turn known gas-bearing formations into technically and economically feasible gas producers -- in those areas that are suitable for development. In recent years, our production of gas and oil has outstripped our reserve replacement. This means that production cannot be maintained. We must increase reserve replacement through drilling and enhanced recovery, so that we can maintain and increase production, while continuing to protect the environment. There is a need to increase the number of seismic crews, increase the number of drilling permits issued, number of rigs operating, and enhanced recovery activity.

While 10% of U.S. oil production is from offshore wells, fully 25% of our domestically produced natural gas is from the OCS. Natural gas accounts for about 70% of all OCS production. The Administration is seeking a constructive approach to developing these offshore resources. Much of our projected increases in gas demand could be supplied from the OCS from undiscovered natural gas resources -- which the Department of the Interior estimates could be as high as 154 TCF, or more than one-third of the country's undiscovered gas resources. As much as 65 TCF of undiscovered natural gas resources could be in the Gulf of

Mexico alone. Only exploration will prove how much is actually there.

The primary motivator for increased drilling activity is price. As natural gas prices rebounded from their lows two years ago, we have seen drilling activity increase. Natural gas well completions increased by 3% over the last two years and reserves and production per well have also been increasing, a positive reflection of the improved economic environment we are operating in. However, we are still not replacing reserves in the OCS as fast as they are being produced.

Since price is set by the market, the best opportunity to improve the economics associated with increased activity is by lowering costs. Industry exploration and development costs are much higher on the OCS than on land, and they increase significantly with water depth.

According to the Joint Association Survey, the cost for the average exploratory onshore oil well is \$64 per foot, whereas the cost of the average exploratory offshore oil well is over 6 times that at \$392 per foot. In 1991, total costs for the average exploratory natural gas well in the lower 48 states were almost \$600,000 onshore and over \$5 million offshore. In deep water, a tension leg platform in 3000 feet of water can cost a billion dollars.

There are a variety of ways to lower costs. Increased use of advanced technology, relief from state and federal taxes and other payments (royalties), and lowering operating costs through

regulatory relief are all approaches worthy of full consideration.

Increasing gas and oil production in the United States, in an environmentally sound manner, not only increases jobs in oil and gas and their support industries, it also enhances the efficiency of the economy by encouraging technological breakthroughs, and reducing oil and gas transportation costs. With advanced technologies and careful production practices, our stewardship obligations for these resources can be consistent with production. However, we need to ensure that appropriate incentives for the industry exist. More importantly we must move towards our goals of meeting future natural gas and oil needs with the support of the American public.

IV. CONCLUSION

The health of the domestic gas and oil industry is a major concern to this Administration. While there are bright spots, especially with the natural gas segment, the overall industry is troubled due to the persistent pattern of low and volatile oil prices. While we recognize the economic benefits associated with low oil prices, we also recognize that a continuation of these low prices will spell trouble for the domestic oil industry. The large companies will further increase their overseas investments at the expense of domestic activity, but the great majority of the smaller companies do not have the financial wherewithal to engage in overseas activities.

The oil and gas industry is important to our Nation. It is a vital contributor to our GDP, to jobs, to technological leadership, to environmental security. We pledge our cooperation in working with you and other members of Congress to seek out acceptable solutions for the both the short-term and long-term health of the oil and gas industry.

Thank you Mr. Chairman, I would be pleased to respond to any questions that you or the other members of the Subcommittee might have.

Mr. LEHMAN. Mr. Armstrong.

STATEMENT OF BOB ARMSTRONG

Mr. ARMSTRONG. Thank you, Mr. Chairman, Members of the committee. It is a pleasure to be here; it is a pleasure for me to be nearly anywhere that does not deal with grazing. I appreciate the opportunity to talk about this issue, but I would first like to briefly discuss the Department's philosophy with respect to the OCS program.

The Department believes that we have the responsibility to the American public to act as stewards of our publicly owned oil and gas resources by making them available in a way that assures the public a fair return for its resources, is responsive to the customers, the companies that produce them, and protects the environment. We have incorporated this philosophy into all aspects of the OCS program, and we have established several guiding principles with respect to the program, including: first; one relying on good science and the new technology that Mr. White just talked about; second including all the stakeholders in the decisionmaking process.

We have had a continuing outreach to the companies that we deal with and the environmental community in order to make our decisions on a sound basis. The third principle is to focus on the increased production of natural gas which we feel is an important fuel and a clean fuel; and, fourth, resolving issues with existing leases, which we deal with on an almost daily basis.

In the past, the program has come under much criticism, and its potential benefits have been obscured. Given this fact, we have worked hard to refocus the program in a way that will strive for consensus, incorporate the views of all affected parties, and base decisions on sound science and good data and analysis. We think we are making progress.

For example, the Council on Environmental Quality and the National Association of Environmental Professionals recently selected MMS's Offshore Oil and Gas Program to receive the second annual Federal Environmental Quality Award. The award was given to MMS due to its outstanding efforts to integrate environmental values into its agency mission and its commitment to excellence and environmental decisionmaking.

Now, you might say, well, why is this guy talking about protecting the environment, why aren't we going to talk about the health of the oil and gas industry? The plain fact is, we have found if we don't protect the environment, we don't get to produce the oil and gas. We either run into law suits or we run into some other kind of obstruction that we didn't expect when you don't pay attention to the environment.

I have had some experience with this. Virtually all of my life has been spent in the public land leasing business, and if you do it right the first time, then the companies get to operate, everybody makes money, and you keep going.

We appreciate your interest, and we continue to look forward to working with you on many of the issues affecting the OCS program.

I would now like to turn my attention to the specific issue of this hearing. Over the past several years, the petroleum industry has

experienced difficult economic times. It is very interesting to talk about all of the things that we are going to talk about today, but I would suggest to you that if we had \$25 barrel oil and it was stable, there probably wouldn't be a lot of the reasons for us to look at all of these alternative incentives for people to do something.

That price today—I believe it was \$19.37 per barrel, which incidentally represents an increase over the last couple of months—has been the thing that I think holds us back from producing a lot of the minerals that we could produce if the price were higher. I have suggested that if the price of West Texas Intermediate crude oil was \$25 per barrel and firm, among other things, you would find you would produce more West Texas Intermediate.

Now, the person that sits behind me, Bill Fisher, probably will be able to tell you more than anybody I know about the overall structure of the industry as it relates to price, but I think what he will tell you is that we have only produced about half of what we have discovered. If we had a price that would let us produce the rest of it, we could cure a lot of the problems that we have talked about. But we don't have that benefit, so I am going to move away from price now and talk about what we might do, given the existing prices, and see what we could do to help industry recover from some of the difficulties they have had.

We think that royalty reduction has some part to play in our operation. We can look at it on two ends. The first end would be to reduce the royalty at the outset until people can get some of their production costs back or their costs of exploration and drilling. That might provide an incentive in deep water areas to drill some areas that might not have been drilled otherwise.

Of course, at the other end is what you do when a field is playing out, the costs to operate it are higher, and you don't have the capability to produce without producing a lot of water or a lot of other difficulties that occur when a well is nearing the end of production.

As Mr. White pointed out to you, we have been amenable to reducing some of the royalties in some of these "stripper" wells when people made proper applications to us. So, first, what we are trying to do, given the existing situation, is work closely with the Department of Energy and others within the Administration on various national energy policy initiatives, particularly the ones that have been outlined in the "Domestic Natural Gas and Oil Initiative".

Second, we are continuing to work on improving the OCS program, based on the principles I discussed earlier, and restore a level of confidence to the program. We believe that this in and of itself can be an incentive. If people understand that oil and gas can be produced from an offshore well in almost every instance safer than it can be brought in by tanker, certainly tankers transferring it to liters with their attendant spill problems, we think that people will be more amenable to offshore exploration for oil and gas.

The third thing we are trying to do is to get people to understand that in areas which have been subject to moratoria in the past, perhaps it is time to look at some of those areas which might be gas producing as opposed to just oil producing.

One thing that surprises people is that Federal oil production offshore California is up. We are working on a continuing basis to talk to people in California about this, to kind of get over what I

call the problems that came originally from the 1969 Santa Barbara oil spill experience, and to point out that we have had a long time pass with production of oil and gas since the Santa Barbara accident that has been successful and has been clean and productive. So we are going to go ahead and look at where we think we can help the industry produce safely.

We think it is appropriate for our Department to do this, and we are happy to work with you and look forward to any questions that we might be able to answer as a result of this hearing today.

Mr. LEHMAN. Thank you, and thank you both.

[Prepared statement of Mr. Armstrong follows:]

**STATEMENT OF
BOB ARMSTRONG, ASSISTANT SECRETARY, LAND AND MINERALS
MANAGEMENT, DEPARTMENT OF THE INTERIOR
BEFORE
THE COMMITTEE ON NATURAL RESOURCES
SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES
AND
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
HOUSE OF REPRESENTATIVES**

JUNE 23, 1994

I appreciate the opportunity to appear before the Committee today to discuss the general health of the domestic petroleum industry with particular emphasis on steps the Department of the Interior (Department) is taking to encourage domestic investment and create a more stable, productive climate in which companies can operate.

TRENDS IN THE DOMESTIC OIL AND GAS INDUSTRY

Over the last several years, the U.S. petroleum industry has experienced difficult economic times. Since the collapse of oil prices in 1986, most companies have sharply curtailed expenditures by reducing their exploration and development activities and laying off tens of thousands of workers in their efforts to survive. Many companies were unable to adjust to the era of low oil prices and have gone out of business.

Not only have companies reduced their total exploration and development expenditures, they have shifted an increasing share of those expenditures overseas. According to the Energy Information Administration, a group of selected major energy companies allocated 49 percent of their 1991 worldwide exploration and development expenditures to foreign regions, compared to 27 percent in 1985. Other studies have indicated even higher levels of foreign expenditures. For example, an Arthur Anderson survey of 241 U.S. companies found that 64 percent of their exploration and development expenditures were made outside the United States.

Foreign areas showing the greatest increases in exploration expenditures are

South America, Africa, the Pacific Rim and the former Soviet Union.

Companies may have shifted a larger share of their exploration and development activities away from the United States for a number of reasons, including:

- Compared to the United States, finding costs generally have been less and discoveries per well larger overseas, allowing companies to earn higher rates of return on production abroad than they would earn from domestic production.
- Other countries have taken steps to encourage investment by U.S. oil companies by offering flexible royalty and tax policies that are responsive to market changes in both energy and economic conditions, as well as to the risk sharing preferences of companies interested in exploring for and developing those countries' energy resources.
- Producers are attempting to develop new gas reserves in areas such as the Pacific Rim where high growth in demand for gas is expected.
- Many companies are concerned with the uncertainty and associated costs of additional regulations in the United States and their direct impact on exploration and production costs.
- Some of the areas in the United States that the industry considers to be most prospective for oil and gas exploration are not available.

The number of wells drilled and the level of crude oil production in the United States have both fallen dramatically, in part because of the decline in domestic expenditures and, in part, due to the fact that certain areas of the United States are more mature producing areas. As a result:

- By March 1993, the number of active drilling rigs in operation was at its lowest level since 1940. It should be noted, however, that this number has increased since March 1993.
- About 4000 fewer oil and gas wells were drilled in 1993 than in 1973, the year of the Arab oil embargo.

- More critically, domestic crude oil production fell to about 6.8 million barrels per day, the lowest level in more than 30 years.

These trends warn of possible further declines in domestic production. Between 1985 and 1992, total U.S. proved crude oil reserves fell by nearly 5 billion barrels and natural gas reserves fell by over 28 trillion cubic feet. Simply stated, we are producing and consuming more domestic natural gas and oil than we are discovering.

The offshore petroleum industry, which accounted for about 24 percent of U.S. natural gas production and 14 percent of U.S. oil production in 1993, has suffered from the same decline that has affected the domestic industry as a whole. The number of Outer Continental Shelf (OCS) exploratory wells drilled has declined almost 40 percent since 1985. Similarly, the number of development wells drilled has declined roughly 26 percent during this same timeframe. Even more ominous is the fact that between 1985 and 1992, proved reserves of crude oil fell by nearly 30 percent and proved reserves of natural gas fell by 35 percent. Based on 1992 production rates, this represents less than a 10 year life for existing proved oil reserves and less than 7 years production from existing proved gas reserves.

Over the last year or so, there have been some signs of a recovery in the petroleum industry as the U.S. economy has grown stronger and gas prices have risen in response to higher natural gas demand:

- On March 30, 1994, the oil and gas industry placed a total of 598 bids on 375 tracts offered in Sale 147 in the Central Gulf of Mexico. The sum of all high bids was about \$277 million, more than twice the total high bids of both the Central and Western Gulf sales in 1992. This indicates that the industry remains interested in certain areas domestically and is willing to invest in good prospects.
- Development wells drilled on the OCS increased from 298 to 486 between 1992 and 1993.
- Exploration wells drilled on the OCS increased from 199 to 312 between 1992 and 1993.

- the number of rigs operating on the OCS increased from 153 to 183 between 1992 and 1993.
- OCS platform installations increased from 86 to 109 between 1992 and 1993.
- As of March 10, 1994, fourteen drilling rigs were drilling in water depths of 1500 feet or greater, up from only 5 in March 1993.
- Approved new exploration plans increased from 144 in 1992 to 190 in 1993.

Nevertheless, the recovery in the petroleum industry remains tentative and could be short lived. Indeed, in February, world oil prices dropped to their lowest level since the latter part of 1988, although they have rebounded significantly since that time. An extended period of low oil prices could adversely affect the oil production sector.

The Department recognizes the importance of domestic natural gas and oil production, including that from the OCS, to the Nation's economic health. Oil and gas are expected to remain critical energy resources well into the 21st century. However, the Administration also believes that we have the responsibility to act as stewards for publicly-owned natural gas and oil resources by making them available to the economy in a way that protects the environment, assures the public a fair return on the resources and responds to the needs of the public.

DEPARTMENT OF ENERGY'S DOMESTIC NATURAL GAS AND OIL INITIATIVE

Given the importance of natural gas and oil to the Nation, the Department of Energy (DOE) issued its "Domestic Natural Gas and Oil Initiative" in December 1993. The Department of the Interior collaborated with the DOE in the development of this initiative. To further promote the principles of this document, the Department has begun to work with the DOE and other Federal agencies to achieve the objectives of the initiative. For example:

- DOI meets at the staff level and at more senior levels with counterparts in other agencies such as DOE, EPA, and NOAA, to discuss oil and gas program issues and ensure effective coordination.

- DOI is consulting with DOE to evaluate proposals to reduce royalty rates for offshore leases in deepwater, certain categories of leases in shallow water and royalty relief for marginal wells onshore, and other such initiatives.

- DOI (through the Minerals Management Service (MMS) has an ongoing effort to work with state and local stakeholders, in addition to other Federal agencies, to resolve issues concerning development of existing leases offshore California.

- DOI (through MMS) is participating in projects offshore California and Texas supported by industry and DOE to develop new technologies to access natural gas and oil resources.

DEPARTMENT OF THE INTERIOR INITIATIVES TO IMPROVE THE OCS PROGRAM

While we believe the initiatives listed above have the potential to significantly benefit the OCS program and we look forward to working with DOE and other Federal agencies to ensure their success, we also realize that there are administrative improvements the Department can and should make to the offshore program. We believe that these improvements can be an effective incentive since they can help provide a stable climate for potential investments in technological and scientific advancement in the offshore arena.

The Department is committed to several guiding principles with respect to the offshore program--relying on good science, involving all stakeholders in the decisionmaking process, resolving issues in areas with existing leases, and focusing on increased production of natural gas. We believe that these principles provide a blueprint for building a more stable climate in our offshore program than has been experienced in the past.

The Department has created a more open dialogue with the States concerning OCS issues with positive results. For example, in California, the MMS and local and State agencies have joined in a Tri-County Forum that allows State and local representatives and MMS staff to discuss and resolve critical issues related to the potential development of existing leases. Due in part to these efforts, OCS production offshore California is estimated to increase from 43 million barrels/year in 1992 to 70 million barrels/year by 1997.

We are also working with constituencies in the Gulf of Mexico and Alaska to ensure their active participation in understanding and contributing to decisions which we may anticipate in these areas. Some refer to this approach as "conflict resolution" or as "alternative dispute resolution." While it is that, it is also a common sense approach to doing business.

The Department also wants to provide an environment that continues to encourage innovation and progress in discovering our Nation's oil and gas resources, as well as encouraging the use and continued improvement in safety of operations offshore. We are seeing great progress being made in better determining the location of our offshore energy resources through the use of 3-D seismic information. Also, our Safety and Environmental Management Program efforts are designed to assure safe operations in an efficient and cost-effective manner. These type of improvements can contribute to the continued protection of our environmental resources and provide for more efficient and safe operations. In addition, we are actively pursuing ways to make the best use of our budgetary resources for gathering and analyzing scientific information for decisionmaking. Finally, we are reviewing our regulations with the purpose of eliminating those that are unnecessary and instead concentrating our efforts on those that contribute to safe, efficient operation and the environmental integrity of the program.

OCS ROYALTY REDUCTION AS AN INCENTIVE

In addition to the items listed above, the Department is continually reviewing its policies to ensure there is an appropriate balance between gaining a fair return to the public and offering companies sufficient financial incentive to engage in exploration and development activities. In some

instances, we believe it may be appropriate to increase the financial incentive to initiate development of discoveries in deepwater where there is little, if any, infrastructure, the technological challenges are enormous, and production costs may be extraordinarily high or as a means of encouraging companies to continue production from existing leases that may be nearing the end of their economic life. This could be one means for us to meet our responsibilities under the OCS Lands Act to encourage production "to meet the Nation's energy needs" and help address the critical issue of declining domestic reserves.

Incentives of this kind are neither a "windfall" nor a "subsidy." While there are various types of financial incentives, the principal form of financial incentive available to the Department is a reduction in the amount of royalties to be paid by a lessee on production from the lease. The various forms of payments of the "economic rent" for OCS leases--bonuses, rents, royalties, and net profit shares—are simply alternative methods of sharing the risks and rewards between the lessees and the Federal Government. Since royalties directly increase the marginal costs of production, a reduction in royalties can, in some cases, act as an incentive to increased production.

As a general rule, royalty reductions must meet two important principles. First, the effect on Federal revenues must be neutral or positive. Second, the public must receive some compensating benefit for any royalties that may be foregone. For example, the public interest may be served by advancing U.S. technological leadership in deep water production and by reducing the time required to achieve the critical mass of deep water activity needed to support major shared infrastructure costs.

EXISTING ROYALTY REDUCTION AUTHORITY

Under section 8 of the OCS Lands Act the Secretary is given certain authority to set lease terms or reduce or suspend royalties. For example, section 8(a)(3) allows the Secretary the discretionary authority to reduce royalty rates "in order to promote increased production on the leased area, through direct, secondary, or tertiary recovery means, reduce or eliminate any royalty or net profit share set forth in the lease for such area." This existing authority has been used to reduce royalty rates on a case-by-

case basis on existing leases that are already in production. Accordingly, MMS has considered requests for royalty reductions when the reduction would extend production from a field nearing the end of its economic life and in situations where the lessee agrees to make new capital investments in order to increase production. MMS has granted royalty reductions only when the reductions would result in production that would otherwise not occur and when that production has a positive net economic value.

To date, MMS has received 10 applications for royalty relief covering 20 leases. Five applications covering 15 leases were approved; the remaining 5 applications for 5 leases were not approved. We recognize that the current royalty rate reduction regulations are not well understood by industry and that this may be a reason why so few companies have submitted applications. To make better use of the Secretary's authority, we have established a task force to draft new guidelines. These new guidelines should better describe eligibility criteria, simplify application procedures, and encourage greater participation by offshore companies while maintaining a fair return to the public.

With respect to future leases, section 8(a)(4)(A) of the OCS Lands Act allows the Secretary the discretion to utilize alternative bidding systems, but only after certain prescribed conditions are met which involve considerable time and effort. Although the Department has not utilized this authority, we are reviewing whether revised leasing terms for certain areas (for example, the deepwater Gulf of Mexico) would encourage additional interest while still ensuring that the public benefit of such an action is maintained.

Finally, while it does not provide for royalty reduction per se, the Act gives the Secretary some flexibility in setting royalty rates when offering leases for sale. Currently, most leases are offered for sale under a cash bonus bid system with a fixed royalty rate--usually 1/6th of the value of the production saved, removed, or sold from the lease. However, some leases (those in water depths of greater than 400 meters and those located offshore Alaska) have been offered with a 1/8th royalty (the lowest rate allowed under the Act in conjunction with a cash bonus bid). This approach reflects the fact that these areas represent greater technological challenges and higher costs.

In conclusion, we consider America's natural gas and oil industry to be a valuable national economic asset. We believe that it is important that the domestic industry remains strong and viable in order for the United States to maintain its international technological superiority in this vitally important enterprise.

This concludes my prepared remarks. I will be pleased to answer any questions the Committee may have.

Mr. LEHMAN. Let me just ask a couple questions to start this out here based upon what I have just heard.

Mr. Armstrong, here is the picture you paint. First, foreign exploration is increasing versus domestic exploration; second, U.S. production is decreasing. U.S. exploration is decreasing, and U.S. reserves are decreasing. Is that true?

Mr. ARMSTRONG. I think that is accurate.

Mr. LEHMAN. Okay. Obviously you don't view that as a good trend, do you?

Mr. ARMSTRONG. It depends on what you are looking at.

First of all, you have to understand that we have produced a lot of oil and gas, and that we don't have, for example, in the State I come from, Texas, a lot more places to look.

Now, if you had higher prices, you could look at the places where you have already found it and produce it, but as long as you have the price structure that you have, then I think you are going to continue to see this downward trend. There might be an exception with natural gas because it is used where you find it, but as long as you can go overseas—and the companies are free to do this more and more—and hunt for what in their terms is the "big elephant," then you have a cheaper product and it comes in at a cheaper price than we can afford to competitively get for oil that we might produce here.

So I think you are going to see this trend continue as long as that situation exists.

Mr. LEHMAN. And then putting your testimony together with Mr. White's, you see a picture where Mr. White says that the consumption is actually increasing, correct?

Mr. ARMSTRONG. I think that is correct.

Mr. WHITE. Yes.

Mr. LEHMAN. Across the board, it is increasing here, so our demand, if you will, is increasing, our production is decreasing, and our exploration is decreasing. This all fits together here in a picture that gets bleaker as you go out unless, as you say the only thing absent some Federal action here that might turn this around would be some type of increase in oil prices, right?

Mr. ARMSTRONG. That is correct.

Mr. LEHMAN. Unless there is an increase in demand?

Mr. ARMSTRONG. When you meet with the people that look at the big picture—and I welcome that, and not just at oil and gas alone and isolated, somebody has to make a determination, not at Interior and maybe not at Energy—about the relative merits of becoming more dependent on foreign crude vis-a-vis where we are with our economy if we were to either arbitrarily increase the price of domestic production or artificially do it.

What people seem to think is better—and they are far brighter than I about economics—is they seem to think that it is better to import oil and keep energy prices low than it would be to do what it took to get energy prices up. That seems to have been the driving force in the last three or four administrations, as I believe Mr. Young talked about.

Mr. LEHMAN. Then you also say that royalty reduction, and I use your words exactly, has some part to play in this scenario.

Mr. ARMSTRONG. That is correct, it could.

Mr. LEHMAN. Then, further, you put some kind of restrictions on the ability to which they can come into play by suggesting that they would be revenue neutral.

Mr. ARMSTRONG. That seems to be everyone's desire is that they either be revenue neutral or possibly revenue enhancing.

Mr. LEHMAN. Is that possible?

Mr. ARMSTRONG. I think it could be, yes. I think if you could go find a product because you provided the incentive at the front end for fields that would not otherwise be produced, then I think it is possible that at the back end you could get more money than if you didn't find it at all or there wasn't any incentive to drill for it at all.

Mr. WHITE. And if I could, Mr. Chairman, this central and western Gulf, where a quarter of our natural gas is produced and over 10 percent of our oil, a third of those tracts have not been leased in the last 10 years. And it is not because there is no hydrocarbon potential. This is on the shelf.

On the deep water, the vast majority of tracts have not been leased, and there is no doubt that if the economics were right that you could spur higher bonuses and that the Federal treasury would benefit if someone drilled a well they otherwise would not drill; and the key is in trying to define what those categories of leases are so that you do not give someone a windfall on a tract they would have drilled otherwise. And we think that is possible to do and the Department of Interior ought to be able to do it, both on the shelf and on the deeper water.

Mr. LEHMAN. Without debating Senator Johnston's proposal, which Mrs. Vucanovich has said is attached to almost everything that comes out of the Senate these days—

Mr. YOUNG. It will be on the health care bill.

Mr. LEHMAN. It will be on the health care bill, Mr. Young says. That approach ties the royalty reduction to the cost, does it not?

Mr. ARMSTRONG. Right.

Mr. LEHMAN. But going about it that way doesn't really do anything to increase production.

Wouldn't it be wiser, if you are going to do it at all, to require some production?

Mr. WHITE. That is an alternative approach. There are a couple of approaches that are being debated. I think the one that is in Senator Johnston's bill would say that you have royalty relief until your costs are recovered, but that would have been costs recovered from production.

Then there is another approach which would say that you get royalty relief on the first specified number of barrels of oil or oil equivalent revenues; and there is a debate about which of those two approaches would be preferable. I would say, in fairness, that both of them are geared towards production. If it is a dry hole, then there is no royalty anyway.

Mr. LEHMAN. You mentioned that one limitation of any royalty reduction plan again is that it be revenue neutral. And according to MMS figures, even taking into account additional fields that may be put on line, plans like Senator Johnston's would cost the Treasury over \$400 million even if the oil price were \$12.50 a barrel.

Are there any benefits to the public from that kind of relief?

Mr. WHITE. Well, I would like to get Mr. Armstrong's comment. I have personally gone through the different cases that were analyzed within the Department of Interior, and I certainly have seen cases analyzing how an approach like that advocated by Senator Johnston or others would be administered, which actually were revenue neutral or gained revenue. It would be possible to administer this program in a way that lost revenues; but I have also seen detailed Department of Interior studies showing that you could administer it in a way that you don't lose any revenues and seen some where you gain revenues.

Mr. ARMSTRONG. I think one way you could do this—and we look at this with some regularity these days—is to get the seismic information that is taken from the offshore. We have pretty good analysts. We think we can look at those particular fields that would be productive and financially rewarding without any kind of royalty relief.

We think there is another category of fields in the middle. It might be well to give relief, but we could look at it on a case-by-case basis and determine whether you should give relief. There are some other fields where that clearly would need an incentive. We think we could isolate those fields, look at them on a case-by-case basis, and make some pretty good decisions based on the science we have available to us so as to accomplish what we want to do, which is to get people into some areas they wouldn't otherwise get into.

Probably the easier way to analyze when the royalty holiday would end, we think, would be based on production, which might be an easier test than cost, because you just get too many difficulties and arguments about what costs really are and so forth. But it seems to me like you could say, if we could get to, for example, a thousand barrels, that is when the royalty relief stopped, or 500, or whatever was an appropriate amount.

Mr. LEHMAN. I recognize Mr. Young at this point.

Mr. YOUNG. Mr. Chairman, I want to thank both gentlemen for their testimony.

Unfortunately, as Mr. Miller has mentioned, he was late and this is a terrible process, this is a terrible issue we have to be addressing. I have meetings to go to, and to those who are going to testify later on, I do apologize, but it is interesting to me, the big boom in the oil industry.

The real big boom was one created during the war and after with the oil depletion allowance, and we eliminated that in Congress. Has anyone looked about restating that, or putting that in for an incentive for exploratory and production?

Mr. ARMSTRONG. We don't get to testify before many taxation committees.

Mr. YOUNG. I am asking you that now; that is the reason.

Mr. WHITE. But I will say that about half a dozen tax-oriented proposals we have been running numbers on—we being the Department of Energy and the Department of Treasury—to determine how much net this would cost the Treasury and how much additional oil would be found; and the depletion allowance, as such, is not high among those tax alternatives as far as how many addi-

tional barrels you purchase for a loss in revenue, but we have been studying that, sir.

Mr. YOUNG. In the first place, Mr. White, I want to compliment you on bringing up the concept of trade deficit, something I have been talking about for years.

The biggest contributor to our trade deficit is not Sony or Mitsubishi or whatever they call those things; it is the oil industry. Unfortunately, no one wants to come to grips with that.

My next question is, Mr. Armstrong and yourself both mentioned loss to the Treasury if we give these incentives. Isn't the greatest loss to the public taxpayer and the Treasury the lack of production and the exporting of dollars to buy foreign oil?

Mr. WHITE. Well, there is a loss to this country, and that is why I pointed out that editorial in The Washington Post.

Mr. YOUNG. I don't read The Washington Post in the morning. I don't want to get sick. I read it in the afternoon, but go ahead.

Mr. WHITE. But it is not just The Washington Post. I didn't read The Times this morning.

Mr. YOUNG. I don't read either one of them. Just go right ahead.

Mr. WHITE. But there is no doubt that this is significant. I have got to say, however, that one of the corrosive forces in our economy has been this deficit, so we need to take into account that, at the same time.

I would also mention to the Congressmen there is a periodical, that maybe you and I read together, called The National Review; and the May 30th issue had an interesting article in it, and it was an article very favorable towards a policy that it said was espoused in 1985 and 1986. And it named names about trying to force world oil prices lower by encouraging Saudi Arabia to open the spigots for the purpose of hurting the Russian oil industry.

I mean, it is there, it is blow by blow, quoting administration sources; and certainly that kind of stuff is—you know, here we were, we hurt the Russian oil and gas industry, I can assure you, but we sure hurt ours as well.

Mr. YOUNG. I happen to agree because the rest of the world controls the price of our oil. We don't control the price of our oil, but most of the technology and those that are working in those fields are Americans.

Mr. WHITE. Yes.

Mr. YOUNG. So it means it is not labor. That is not a cost. The drill rigs that we have offshore in the North Sea, the work in Saudi Arabia, the work that is going on in Russia, the pipeline being built in Russia now of a billion dollars by American technology, how come they can do it so much cheaper over there, if it is not labor, than we can do it here?

And what do you do as an Energy Department and a Department of Interior—and as I mentioned I am very bipartisan; I don't care what administration—to make sure the costs aren't so high so there is a profit motive there that is available to the oil-producing countries? Where is the cost factor that we can address and change it so that we can be competitive?

Mr. WHITE. That is a good question, and I think that you can change the economics either by changing the revenues—unless you want to do worldwide price controls, or get into an OPEC, which

is pretty darned hard to do for the reason Mr. Armstrong indicated, or you can influence cost.

Now, in the oil business, I want to say natural gas, we had more revenues in the oil and gas business last year. But in the oil business what has motivated some of the search overseas has been the search for the super giant oil fields.

Mr. YOUNG. Let me interrupt there. We do have the big elephant in America, we have got one of the biggest elephants that ever walked the face; it is a mastodon in fact. The elephant is way up there right next to one of the bigger elephants that we developed.

I keep hearing this allusion that we have no more elephants in our zoo. I mean, believe me, we do, so we will go on beyond that. That is not the main reason they are going over there. We will have them here if they have the opportunity.

What I ask you is, what can we do to make the attraction to keep the industry here instead of going overseas if they are using American-made drilling rigs, American workers; the high cost is there. What do we do? Does it take the Congress to do it? Can you do it through the agency?

Mr. WHITE. I think we can continue to try to lower the cost of technologies, and that is one big reason you have seen some strength in gas drilling in our country because now they can locate these bright spots, they can have direct hydrocarbon indications. That is one way that you can lower people's costs.

Obviously, we are talking about one of those today, Federal royalties. That is a cost of doing business, and that is why those costs are on the table.

Mr. YOUNG. Have you looked at any of the pile of regulations that has come out of the Department of Interior, the EPA, the Department of Energy, all the rest of it? Is there any of that superfluous regulation that could attract the industry and still do it environmentally safe?

Mr. WHITE. Probably so. No doubt about it, we have. (Not—"we" being this administration, but "we" the Government of the United States over a period of extended time.) This administration is a small part.

Mr. YOUNG. I have been here for six of them, and none of them are interested, believe me.

Mr. WHITE [continuing]. Has not designed regulations in a very cost-effective manner; and moreover, this is a difficult ship to turn around even when people try to exert leadership, as Bob Armstrong has, as have some people within the EPA, to try to get to more cost-effective regulations when people are risk averse in the bureaucracy.

We have got to get away from this command and control stuff more towards specifying what the result is, what the emissions should be, what the discharges should be and holding people accountable for those and coming up with systems that allow people to get to that performance on a basis that is least cost. That is how they have been able to improve the record for safety in the North Sea.

They started putting accountability at the layers in the company—tell them what they expected of them, what the results were going to be, allow the companies to design the programs, hold the

companies accountable if they don't do it. But we are a ways away from that, and it requires, incidentally, industry to do what Assistant Secretary Armstrong said, to not view environmentalists or the environment as enemies but to say, hey, look, we had better work with these folks to come up with a new system for doing something.

Mr. YOUNG. I agree. Mr. Chairman, my time is up, but I do believe—and I think you made the statement before on the offshore operations—they have done that; it is the safest record, I think, in the world as far as drilling, developing, and producing oil in offshore, so I want to compliment the industry and the departments in that arena because I think they have done an excellent job.

I think in my State they have done an excellent job onshore. We had one guy who took a left turn when he should have stayed right, but that is beside the point; that wasn't the production end of it, and you notice I said "left turn."

Mr. LEHMAN. Mr. Miller.

Mr. MILLER. Thank you. Thank you again for your testimony. I guess one of the basic questions I would have here which you have answered partially, suggesting that, within limits, you think you would be able to identify those areas where you might be able to bring about exploration and development, where otherwise it would not happen if you were given or used the existing tools and perhaps some additional tools to work with the industry.

But when we look at the overall larger picture and what we are suggesting to Americans here, the question is are we chasing our tail here or are we chasing a downward decline that is inevitable, given the nature of this resource and what is going on in the rest of the world?

I don't think you are going to do much of anything that is going to get someone like Chevron, who may have \$20 billion going into the former Soviet Union, to come back home when they think they have a chance to put a collar around one of the largest oil fields in history; and that prize is so big, if they make it, given all of the problems that they are having with the various governments and everybody else involved, that royalty relief or a holiday for some specified period of time doesn't do that.

I have a lot of oil refineries in my district, and I spend a lot of time with people in the oil industry. I guess I shouldn't consider it an insult, but the last remark that was made to me on this proposition was the chairman of the board of one of the major oil companies said to me, "George, with all due respect, a number of years ago we told our planners in our company that they should disregard governmental policy with respect to decisions that we would make regarding exploration and development because the kind of capital investments that we have to make run longer term than our confidence that any policy will remain the same within the government." I think, in fact, that is true. We raise prices, lower prices, the deficit goes up, we are looking for more taxes, less taxes, and this has been true throughout the history of this industry.

When I came here, the big achievement of the Class of 1974 was getting rid of the oil depletion allowance, it was a matter of a caucus, of a party line vote. We have been all through this, and we have been back and forth on natural gas, but the fact is, what has

overwhelmed all of those decisions has been the world marketplace. The World Bank went outside of OPEC, got a lot of people involved in the oil industry that historically hadn't had the wherewithal to do that, African nations and others; and now we see that every oil producing nation in the world must produce at a very substantial if not maximum rate just to hold on to their standard of living—what the Kuwaitis have created in Kuwait, what the Saudis have created in Saudi Arabia.

Saddam Hussein can't wait; you know, he went to those oil fields not to take them off the world marketplace, but to put them onto the world marketplace at a higher rate so he could repay his debt.

Obviously, Russia wants to get back to its seven million barrels a day or whatever it was producing at one time; the former Soviet states are all looking to produce, China is looking to produce, Vietnam is looking to produce, and they are all producing for one reason: to get hard currency because they simply cannot meet the expectations of their people without hard currency from either mining and/or oil and gas. And to suggest that our tinkering with royalties—and I don't think it is wrong.

Don't get me wrong, I don't think we ought to add to the burden, and I don't think it is wrong to look at this on a selected basis; but we shouldn't lead people to believe that this is again a quest for American energy independence, especially when you read the business journals that suggest, as perhaps you did, somewhat more obtusely, this ain't such a bad deal.

The American economy is benefiting from low-priced oil; the American energy companies may not be benefiting from low-priced oil. But overall, to the economy and the rate of inflation and what we know energy means to a highly developed economy such as ours, we have done pretty well by low-priced oil as it has meant almost every month when the inflation figures come out, what the component of energy has meant, that has been hard times in this industry.

But I don't know that you are going to turn around that price of oil—that price of oil with what we are doing because, in fact, what is coming on line and what is being driven by the governments overseas just far outweighs these kinds of decisions. And you mentioned replacement cost, Mr. Secretary, what we are replacing on an annual basis; but is that really the test of whether or not we have a successful policy or not?

Mr. WHITE. Well—

Mr. MILLER. It can't be.

Mr. WHITE. Certainly what I mentioned was this specifically, and I think there were a number of thoughtful remarks. Let me respond to a couple of them.

Mr. MILLER. If you just said that I would be happy.

Mr. WHITE. But I want to answer your question. So it is important, if we want to use relatively more gas in our energy supply, as we continue to improve efficiency, there still will be energy needed for electrical power and other things, and in transportation.

If we want to increase the market share of gas, then we have got to have some gas. And I was simply pointing out that a quarter of our gas, some of the biggest reservoirs, are in the Gulf of Mexico, central and western Gulf; and there is a disturbing trend that we

are not going to be able to maintain that level of production for very long unless there is some significant additional drilling, and when drilling occurs, it is productive. But it is a matter of the economic incentives; that was my point there. And on your point, I will say this, there are some good things about this oil and gas business in the United States that can be affected by people's perceptions at the margin.

Believe me, I have been out to the Tenghiz (Or Tengiz) Field where Chevron is making its investment. There are a lot of people that go abroad, but when they see the regulations and governmental policies of the Government of Kazakhstan—and I could put a number of other countries there—when they have tasted a little of that cooking, they would prefer to make investments in the United States of America; and so this is why the climate and the perception that oil and gas are welcome is important, as well as picking away some of these costs, dealing with the costs is important. Will we totally reverse the trend? No. But what we have to do since we are not going to affect prices is look to each of those elements of cost—one of which is technology, where we are doing a pretty good job; others are government regulation and royalties—and say, can we fine-tune that to make this a more attractive place to do business?

Mr. MILLER. I don't think there is any disagreement on this committee that that ought to be the goal. We ought not to be kicking up barriers in that effort. There is also a premium for having some of your corporate assets and your reserves under the protection of the United States of America, as some people have found out historically. It is all well and good, but we really don't know what will take place in China over the next 15 years; we really don't know the stability of Indonesia, although we think right now, at the moment, this is the greatest marketplace and opportunity in the world.

But the fact is, we don't know. As we have found out, and as people have said to me in the mining industry when you go to Wall Street and you ask for investment capital, they are very interested in how many ounces you have coming out of the United States of America or where in fact it is safe and stable; and, you know, we have got to recognize that there is that premium, too, for these companies and not disregard what that means in terms of the safety of those assets.

Finally, let me just ask this question. I spent a morning the other day at one of the research facilities with the major oil companies and looked at some of the technological advances that you are talking about and went through all the computerization, both for fields overseas and for fields here and also a lot to do with pollution control. It was really remarkable in terms of spills—remarkable information—and reaction times that are capable almost worldwide now in terms of environmental protection.

How do we treat that technology? Much of this, like in the high-tech industries in California, what they have today is obsolete six months from now and nine months from now. How do we treat that in terms of cost? Are they allowed to expense that on an ongoing basis, or is this a problem in terms of recovering that investment

in technology? It certainly changes the nature of what they know about these structures; there is no question about that.

Mr. WHITE. First, I am concerned that in this industry, like a lot of industries we have seen, private companies are slashing their R&D budgets. This could lead us to a long conversation about the role of the government science budget and tax policy. But let me just say this, we need to give Americans more incentive to spend more on some basic research that has led to some of these innovations, rather than less incentive. The proposal to permit the expensing of geophysical expenditures is one that, in part, may help that technology along, and that is one being given pretty active consideration by the administration.

Mr. MILLER. Mr. Armstrong, let me ask you: I think in response to Chairman Lehman, you hit upon this, but within the existing authority of the law, what kinds of things can you do now to meet the purposes of the Johnston bill or certainly the intent of that bill and its supporters to encourage development, to lower the cost, to lower the thresholds on existing and producing and nonproducing leases?

Mr. ARMSTRONG. We have some authority right now to reduce royalties on existing wells that are playing out, if that is a good term, at the back end. We do that, as was pointed out, upon application. We have granted more of those than we have turned down. Also we can tailor future leasing terms to provide some kind of reduction. The gray area is what happens where somebody has leased from us right now, but they haven't yet drilled a well, and may not drill without some incentive. We have our Solicitor's office looking at that situation, and the verdict is still out. We will find out about that, but we might have to come to you.

Mr. MILLER. I think we had a discussion about this some months ago.

Mr. ARMSTRONG. That is correct.

Mr. MILLER. That decision has not been made, whether or not that authority may, in fact, be available to you or not on nonproducing?

Mr. ARMSTRONG. That is correct. They are a little hesitant to do that. It was leased under a lease that contemplated drilling. Now companies are saying, well, we may not drill it, we still have several years to go on it, would you give us a break? Then we would go drill it, since it now is worth looking at.

If the theory that relief would get us increased production is valid, then I would take a look at that and hope that they would say, yes, you have the authority to do it. But right now we have some authority, not nearly as much as we would have under S. 318, but we can deal with some of this right now and are attempting to do it.

Mr. MILLER. Let me ask you this. We have historically, as a government and certainly as the agencies that you represent, over the past 20 years, we have constantly beat our chests here and shouted at the amount of revenues we have received from bonus bid; that sort of seems to be a measurement of whether we have a healthy program or we don't.

One of the things that has always troubled me, and it troubled me when we rewrote the Act, and one of the reasons we have all

these alternatives to the Secretary was if the oil industry is having a hard time, why are we extracting money from them up front to enter the field? Why wouldn't we move to an alternative, whether it is profit-sharing or simple royalty bidding, and if they win, we win? But why would we be ecstatic about picking up a couple of billion dollars—the money that could be invested into the industry for the purposes of bringing the wells on line, but use it—now. I always believed that back in the 1960s and the 1970s and the 1980s, it was kind of used to keep some people offshore because the majors had deep pockets, and when you reached out, they would grab some poor independent and say, we are partners on this well, you don't have to put anything up, but we are partners to keep the Justice Department and others away.

And we have always argued that, and I didn't win that argument, but I was always astounded by the fact that we would take hundreds of millions of dollars in various lease sales away from the industry and tout that as a very significant fact and a measurement of success as opposed to bidding out royalties, bidding out arrangements so that they could get on with the production and lower the financial hurdle so that we could receive the benefits of that effort.

And I just wonder why that isn't considered as we move into new areas. And you can do that within authority, and that is not one where we have got to go budget neutral, that is an administrative decision under current law that you can make decisions about.

Now, in the past, presidents and administration have always wanted to say we expect \$9 billion from bonus bids and now our budget is balanced or the deficit is smaller; and it never materialized. But nobody remembered that until the next budget came out and they said, not only do we expect the \$9 billion from last year, but we have \$9 billion, and that is how we got into the deficit problems.

Why aren't we thinking of those alternatives?

Mr. ARMSTRONG. Let me give you a quick history.

The reason you pay a bonus normally in the private sector is because, among other things, you might condemn that particular ranch. Let's say, you drilled it, it was a dry hole, but at least they have the bonus, so they will take the chance.

In my judgment, there is no reason to be preoccupied with bonus if you lease the huge areas that the government leases and has available to it, because whatever you miss on you will get some other day.

Mr. MILLER. You mean private production.

Mr. ARMSTRONG. That was the history. We got transfixed about bonus and royalty in the private sector initially and one of the reasons was because of condemnation of the tract. In another world, when I managed the State of Texas area, we were not hesitant at all to do royalty bidding.

Louisiana does a "pick 'em system." You can bid royalty, you can bid bonus, and they make a selection as to which are the best bids. I guess Long Beach is the preeminent example of net profits. It does create all kinds of opportunities for accounting and pencil-whipping people and that sort of thing, but there is some merit to looking at that.

But I do think that royalty bidding is a very suitable kind of approach if, to use the old oil field term, you "put the money down the hole," drilling it instead of putting the money into the bonus. Then if it is successful, you all have something to split out. That, coupled with the fact of royalty reduction at the other end, gives you a pretty good way that everybody should be able to profit; again, if what you are looking for is money.

Now if you are looking for energy, if you are looking for stability, you might look at some other corners of it. But royalty bidding, I have had people come up and tell me that they never would have gotten into the business if we hadn't had royalty bidding offshore because they just couldn't compete on the bonus basis. So you have more people involved.

I still think that rule number one is that the companies go where the product is. That is why you see what is happening in Russia. That is why you see what is happening—or where they think the product will be, and that still is a driving force, more so maybe even than pricing. I think they go where it is. If they can go find the big elephant in South America with the tanker capability that we have these days, the transportation capability, the driving force to me is still they are looking for where they can find it.

Then the other corner of this that we haven't talked about, but I want to say a word about it, is basically we use our oil for transportation. We use our gas for the production of energy or for heating or that sort of thing, for electrical energy. Each day that goes by when I drive down the road, the cars I see are bigger and bigger. We repave in D.C. principally with oil products.

And so we are creating a lot of this need by our habits. That is fine, but I just want to point out that as long as we continue to have more and more and larger and larger automobiles, you are going to continue to have this gap. I am not going to suggest that you change that. But I think at least we need to know this. And so in some ways we ask for it.

Mr. LEHMAN. Thank you. The gentleman's time has expired.

Mrs. Vucanovich.

Mr. MILLER. I don't expect a response, but at some point, can we find out if we are helping these companies out, what the States are prepared to do, are they going to reduce their royalties? We are talking about the overall health of the companies, including making investments. Do they have any plans to have a royalty holiday on State lands? I don't want to get into it.

Mr. ARMSTRONG. The two States you would look at are Texas and Louisiana, and I think both of them have provisions for a reduction, particularly for stripper wells.

Mr. WHITE. And I believe that they would be—and we will get an answer—willing to dovetail something with the Federal program if it were adopted.

Mrs. VUCANOVICH. Thank you, Mr. Chairman. I am sure you know this: We have a vote, but I have just a couple of questions for Secretary Armstrong.

In your written testimony on page 7, I didn't hear you state that financial incentives are neither a windfall nor a subsidy; and I guess my question is, if that is true for oil and gas, why is it that the current lack of a hard rock royalty is forever being labeled as

a subsidy by the Mineral Policies Center and Secretary Babbitt and some Members of this committee?

So I just am curious to know if this is still your statement as it was printed in your testimony?

Mr. ARMSTRONG. Well, when I originally opened my statement, I said that I was glad we weren't going to talk about grazing. I intended to include mining.

Mrs. VUCANOVICH. I am not talking about grazing, I am talking about mining.

Mr. ARMSTRONG. I should have included mining.

Mrs. VUCANOVICH. You can't help but draw a parallel. I am sure you understand that.

Mr. ARMSTRONG. I have heard this raised in other arguments.

Mrs. VUCANOVICH. Sure.

Mr. ARMSTRONG. I think if I could do a quick difference, the difference between mining is that there is no royalty at all with mining.

Mrs. VUCANOVICH. Well, then, of course why doesn't this math work? Why shouldn't you be looking at the mine mouth as you would on some of the other things for your royalty rather than to have a gross royalty?

Mr. ARMSTRONG. I think, as you and I have discussed in prior conversations, it is dollars. Whether you had a fair royalty that was determined by a higher royalty on net or a lower royalty on gross is something that people argue over, and I am sure you all will argue over. In the oil and gas business, principally we have gone with the gross royalty, and most people think it is just easier to compute. But the idea is, it needs to be fair and whether it is a higher net or a lower gross, that is the kind of decision I suppose you all will make.

Mrs. VUCANOVICH. Well, of course, you know, these arguments, I guess, we are supposedly going to solve in conference. We are having a mining conference, although it didn't happen yesterday. I guess it will probably be next week. But it seems to me that it is a dichotomy, the way the presentation is made, but I have no further questions. These are questions I think that go to the administration and go beyond perhaps what you are able to do or say today; but I appreciate your testimony, and we will see what happens on this bill. Thank you.

Mr. MILLER [presiding]. Craig, did you want to ask a question before we vote, or do you want to come back and ask them?

Mr. THOMAS. Yes, sir, very quickly.

I guess one. Do either of you think that the decline of domestic production has anything to do with national security?

Mr. WHITE. Yes.

Mr. ARMSTRONG. Yes.

Mr. THOMAS. Good.

Mr. ARMSTRONG. There are two ways to look at it. One is, you know, you are going to dump all of it out.

Mr. THOMAS. Don't equivocate now.

Mr. ARMSTRONG. Okay, but I am just saying, the national security argument, there are some people that tell me they don't think we ought to look at this as a commodity, that we ought to look at it as a resource that is strategic in nature, and that if we went

ahead and produced every last drop of domestic oil and gas, we would then be very dependent—not just sort of dependent—on foreign sources. So maybe we ought to save some and not be in such a hurry. That is an argument that is made from a strategic point of view, but there is no question it is a strategic resource.

The Interior Department for years was viewed as the agency with the capability of fueling the Nation's war efforts and other efforts.

Mr. THOMAS. We have lost 500,000 jobs since 1980, high-paying jobs, but yet there doesn't seem to be much of a motivation to do anything; it is sort of curious. For instance, you haven't talked much about—and I am going to borrow from one of the later participants here—but they took 3½ years to get a permit on a particular piece.

Another instance was that the industry pays more in regulatory costs than they do in exploration.

Another instance is the idea of the \$150 million liability bond, or whether it is that high or not.

Now these are things that you all could change, but you haven't talked about doing much about. And if you take it off just into public lands, Bob, back in Wyoming there is an extraordinary cost of permitting and EIAs and EISs, to where the companies walk away from them and say, to hell with it, I am not going to pay that to get on.

Do you have anything in mind in that regard?

Mr. ARMSTRONG. We not only have something in mind, we are working with it.

First of all, the EIAs, the EISs are the law; the \$150 million is the law, as I read it and as most lawyers read it. What we are doing is we have had outreach meetings throughout the West, particularly with oil and gas associations. We get them to come in and we say, okay, what is the biggest problem you have that we can fix for you? Part of it has to do with when you have to pay: what you do with overpayment? what you do if there are underpayments?

Mr. THOMAS. What have you done to fix it besides talk about it?

Mr. ARMSTRONG. Well, we have made a lot of changes and are continuing to work with them. The other thing I ask them is, where do you want to look? Then let's decide if we can open those areas up. Some of it is the law, not simply our regulations.

Mr. THOMAS. I understand, but you could come up and ask to change the law and you haven't.

Mr. ARMSTRONG. That is true.

Well, we may.

Mr. THOMAS. I hope so. But you know, frankly, as I said to you, I am getting a little weary of the meetings. They have gone on endlessly, and this doesn't all start with—as you pointed out three or four times—this administration, but you are the administration now. The price was also not \$13 in west Texas before, and which means in Wyoming, if you have heavy oil and a lot of water, you are talking about \$4 or \$5 net. That is a different situation than we have had.

Mr. ARMSTRONG. As I tell people, I have only been confirmed for 13 months and I haven't gotten it all done yet.

Mr. THOMAS. What have you done?

Mr. ARMSTRONG. I am working on trying to fix it, and we are making a considerable amount of outreach to the industry. Tom Fry, who is the Director of MMS, I think, gets excellent marks for trying to work out these problems because it doesn't benefit us to have regulation.

Mr. THOMAS. Your grazing things, MMS is kind of that way for me. Don't talk to me about MMS and what it costs to collect royalties; it is an absurdity, and we shouldn't be doing that any more.

At any rate, I am glad you are here. You can't tell that.

Mr. ARMSTRONG. I can tell that.

Mr. THOMAS. Nevertheless, I am, and I appreciate it.

Mr. ARMSTRONG. We will keep up the dialogue.

Mr. MILLER. You have to dig deep to see that. I don't think we have another round of questions for you; we are going to go vote and we thank you again for your time and your help. Obviously, for the members of this committee this is going to be immediate and ongoing discussions, given it was said that this idea has been attached to a number of items that we will be in conference on with the Senate.

We look forward to your continued help and cooperation in trying to weave our way through this. Thank you very much, and the committee will recess, and we will be right back after the vote.

Mr. ARMSTRONG. Thank you, Mr. Chairman.

[Recess.]

PANEL CONSISTING OF DR. RICHARD G. GORDON, SENIOR DIRECTOR, THE PETROLEUM FINANCE CO., REPRESENTING PETROLEUM INTELLIGENCE WEEKLY; DR. WILLIAM L. FISHER, DIRECTOR, BUREAU OF ECONOMIC GEOLOGY, UNIVERSITY OF TEXAS, AUSTIN, TX; AND DAWN ERLANDSON, DIRECTOR, ENVIRONMENTAL TAX POLICY PROJECT, FRIENDS OF THE EARTH

Mr. MILLER. The committee will come to order and we will hear from the second panel, Dr. Richard Gordon, Dr. William Fisher, and Ms. Dawn Erlandson. Welcome to the committee. Your statements and supporting documents will be placed in the record in their entirety, and let me thank you in advance for your time and for your trouble.

Dr. Gordon, we will begin with you.

STATEMENT OF DR. RICHARD G. GORDON

Mr. GORDON. Thank you. My name is Richard Gordon. I am an economist; I don't usually admit that in public places, but that is my profession. I am a Senior Director of The Petroleum Finance Company here in Washington, and most of you have probably never heard of that. We are a small consulting firm. We advise oil clients, oil companies, in areas of strategy, competitor analysis and oil markets.

We have been actively involved in training programs for the staffs of national oil companies and governments, really worldwide, ever since I joined the company nearly six years ago. Our clients have ranged from Kazakhstan, Armenia, Indonesia, Ecuador, Egypt and many others. Interestingly enough, I have never seen a U.S.

Government official in one of these training programs, and yet ironically, many of the training programs are funded by U.S. money.

Now, for five years, I served as a tax economist with Phillips Petroleum Company. While there, I analyzed tax policy worldwide, and in particular, compared investment opportunities and made recommendations as to which environments offered the best investment opportunities to the company.

I would like to keep my comments brief. There are basically five observations I would like to make.

First, an implicit assumption of U.S. policy for as long as I have been acquainted with it has been that the interests of consuming and producing states are at odds. This assumption is patently false. It is a myth, and it has been the cause of untold mischief in U.S. energy policy. No other major producing country in the world believes that its consumption and its production policy are at odds; they are integrated policies.

Secondly, the U.S. system of take, and I emphasize "take" because we are not just talking royalties here, we are not talking bonuses, we are not talking income taxes; we are talking every claim on the oil industry cash flow made by governments ranging all the way from the local and county government, with the property taxes, right up to the United States Government at the Federal level.

The U.S. system of take—that is, the bonuses, royalties, severance and production taxes, income taxes—that system is fundamentally regressive. Contrary to the most basic principle of U.S. Federal income taxation, our claims on energy resources—as a government, okay, and as a system of government—is not progressive; it is, rather, regressive. That goes a long way towards explaining many of the problems, I believe, in the industry today.

The effect, if you will, of a regressive system is that government take as a percentage of the project's worth, economic value, actually falls as profitability goes up, and rises as profitability goes down, just the opposite of what one would expect; and the implication is that the U.S. fiscal system compounds the almost inherent boom and bust nature of the oil and gas industry.

Let me back up just a moment.

That, by the way, is also one of the reasons why the U.S. fiscal system is one of the most volatile systems in the world. There is always a constituency that is unhappy in a regressive system. There is always a constituency that sees the need for relief in a regressive system.

Thirdly, policy initiatives, either for or against the industry, are quite frankly often one-dimensional; that is, they either offer incentives or they punish, but not necessarily both. Rarely have I seen policy proposals that simultaneously encourage exploration and production, but guarantee the government a reasonable share of any extraordinary profits that are generated as a result. Policy options can be designed to achieve this; they have been designed to achieve this in a number of countries throughout the world. I would strongly urge that you look at those sorts of issues.

I will skip number four. You can read that, and I will go to number five because I think this is important.

There is no correct energy policy. There are competitive policies and there are uncompetitive policies or noncompetitive policies, but there is no correct or right policy. The United States is participating in a market where competition for industry capital and jobs is very intense, and to be perfectly honest with you, the Government of Indonesia is far more adept at competing for that capital than we are.

We either compete or we will lose, and it has got nothing to do with what may be theoretically right.

Thank you.

Mr. LEHMAN [presiding]. Thank you.

[Prepared statement of Dr. Gordon follows:]

The State of the US Offshore Oil and Gas Industry

**Testimony Presented to the House Subcommittees on Energy and
Mineral Resources and Oversight and Investigations**

**Dr. Richard G. Gordon
Senior Director, The Petroleum Finance Company**

June 23, 1994

My name is Richard Gordon. I am a Senior Director of The Petroleum Finance Company, located in Washington, D.C. We advise oil companies on matters of strategy, competitor analysis, and the oil markets. Our clients include a large number of US and non-US based companies. We also participate in a number of training programs in the developing world which focus on taxation of oil and gas. For 5 years I served as a tax economist with Phillips Petroleum Company, analyzing tax policy worldwide and its implications for company investment opportunities.

Observations on Competition and Policy Effects in the Petroleum Industry

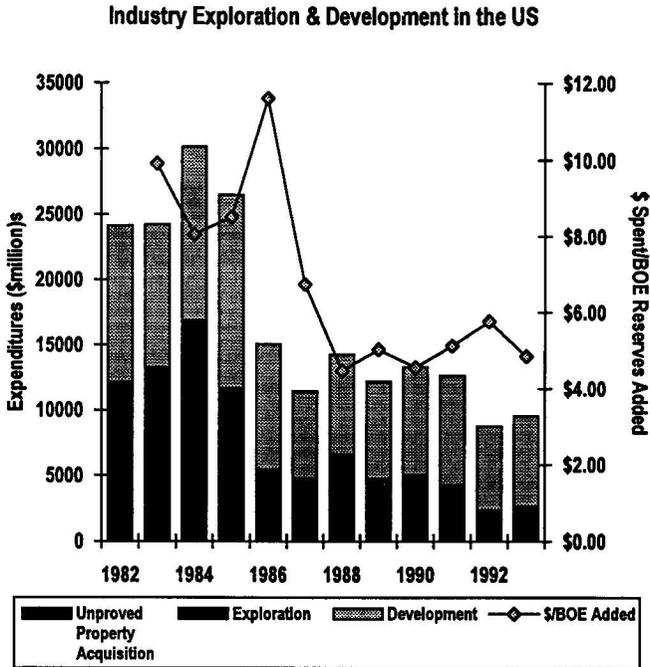
1. **An implicit assumption of US policy has always been that the interests of consuming and producing states are at odds. This assumption is wrong.**
2. **The US system of take** – the comprehensive system of bonus payments, royalties, severance taxes, income taxes and other government claims on oil and gas field cash flows -- **is regressive.** Government take, as a percentage of project net worth, falls as profitability rises and rises as profitability falls. The result is that government take in the US compounds the boom and bust cycle of investment. **There is always some constituency that is unhappy. This does not have to be the case.**
3. **Policy initiatives -- either for or against the industry -- are often one dimensional.** That is, they offer incentives or they punish. Rarely are policy initiatives undertaken that simultaneously encourage exploration and development and guarantee the government a reasonable share of unusually profitable results. Policy options can be designed that achieve both results.
4. **New oil and gas investment is not desirable for its own sake.** Oil and gas investments increase the wealth of this country if they return their costs and the social cost of capital. Reasonable and objective standards for evaluating the merits of a legislative proposal in this industry can be established.
5. **There is no such thing as a correct energy policy.** The oil and gas industry is intensely competitive. Competition is international in scope and defines the viable options available to both private companies and governments. **There are energy policies that are competitive and there are energy policies that are not competitive.**

Common Ground Exists

The US is a major producing country. It is also a net importer of crude oil. This is not going to change. Our interests, as a country, are served by geographically diverse and competitive sources of supply provided at reasonably stable or predictable prices. It is difficult to see how our country's long-term interests can be served by an ongoing industry hemorrhage of jobs, capital, and production when, ultimately, the result can only be increasing concentration of market power in the Persian Gulf followed by price increases.

Oil industry booms and busts are inescapable but government policy should not contribute to them and no constituency's interests are served by policies that do. The cycle of booms and busts is extraordinarily expensive both in dollars and in terms of the associated human cost.

Figure 1: Boom and Bust in US Upstream Activity



US investment in oil and gas operations was at a peak when costs were the highest and now, when costs are low, activity is low as well. The US taxpayer shares in both the revenues and the costs of oil and gas production. If US activity is skewed towards investing when costs are high and producing when prices are low, then everybody loses.

Regressivity is a Key Problem

Bonus payments, royalties, revenue and production based taxes and flat rate profits taxes are fundamentally regressive. Their burden is greatest when profitability is low. They amplify the boom and bust cycle. These regressive forms of government take are the central elements of our fiscal system. Reduction or repeal of royalties is a general pattern that emerged around the world after 1986 with only one major exception -- the US. An increased reliance on progressive profits-based taxes has been a common theme of government policy outside the US since 1985 -- the US imposed the Alternative Minimum Tax (AMT). The AMT compounded the regressive

of the US system of oil and gas taxation precisely because it is a revenue driven tax on investing companies.

Policy Balance is Fundamental to any Solution

Balance between consumption and production policy. On the supply side, balance between gas and oil. **Balance between incentives for the industry now combined with better profit sharing for the government when times are better or when extraordinarily profitable discoveries are made should be an integral part of any policy initiative.** There is no free lunch -- the industry is aware of this in its dealings with other governments. Coordination of policy efforts is essential to achieving this balance.

Compete or Die

There is no such thing as a correct energy policy. There is no such thing as tax neutrality. Is a neutral tax system in a world of governments pursuing non-neutral tax policies still neutral. No. Like it or not, the US is participating in a worldwide market in which the competition for oil industry investment capital, jobs, and income is intense. We are participating but we are not competing.

Mr. LEHMAN. Dr. Fisher.

STATEMENT OF DR. WILLIAM L. FISHER

Mr. FISHER. Mr. Chairman, I appreciate the opportunity to be here. Let me make a few brief comments, and I have prepared a statement for the record.

Over the past decade, there have been some very dramatic changes that have occurred in the U.S. oil and gas industry as to size, as to scope, and to level of drilling activity. Part of this was downsizing due to the very large buildup back in the booms of the late 1970s and the early 1980s; a lot of it has been attributable to relatively low and volatile oil prices that we have experienced over the past decade and a half; and finally, we have gone through a decade-long period of surplus of natural gas which has created a soft market and some prices that were substantially lower than expectations, say, 10 years ago.

A number of these events have occurred, and there has been substantial pain in that process, but I would also say that during the time frame of the last 10 years, where we have experienced low prices, the reduction in certain of the historical incentives that have been provided to the industry the past decade, has been one that has been almost a pure technological ingenuity play. There has been very little to fall back on, other than technology.

Technology has always been important in exploration and production. It is a high-tech business and always has been, but in the past decade that dependency on technology has been almost exclusive, and to a very great extent, technology has been substituted for price. Over that period of time, we have learned some very interesting things about the capability of the industry to respond and to apply technology in a very vigorous way.

We see that the oil and gas additions for unit of effort, that is, for completion of whatever kind of measurement you want to take, are two-and-a-half times greater now in recent years than they were in the early 1980s. We are adding as much volume of natural gas today and over the last several years with half the drilling that we added in the late 1970s and the early 1980s—almost the same volume with half the effort.

Exploration efficiency, which we measure in terms of the number of significant new finds per unit of effort, or hundred new feet of wildcats drilled, has showed a steady progression over the last 30 years. A lot of that has been attributable to the kind of technology associated with digital computing and reflection geophysics that have allowed that to have that dramatic improvement.

If you look at just reserve additions added per operating rig, that is now three times higher than what it was in the early 1980s; and it is higher than it was in the preboom levels of drilling that we saw in the late 1960s and the early 1970s.

Also, the role of technology or advancing technology has dramatically changed the perception of our judgment of the volume of remaining resources in the United States. DOE issued a report just a few months back that indicated, or estimated from a panel, about 140 billion barrels of oil recoverable at \$20 prices, as much as 200 billion barrels of oil in the U.S. recoverable at higher prices, \$27, but both cases assuming advanced technology. In fact, in their par-

ticular study, the lower price with advanced technology gave you more oil than the higher price with the existing technology, such is the relative sensitivity of technology within that particular price range.

The case of natural gas has been an absolutely dramatic one. A decade and a half ago in these halls we were prohibiting the use of natural gas. We perceived natural gas as rapidly depleting, near exhaustion, near termination. The estimates that have been made in recent years on the amount of remaining natural gas—and I will point out they go up almost every year—is now in the range of 1,300 to 1,400 trillion cubic feet. That is a solid order of magnitude greater than the estimates that were made just a decade and a half ago, and so that revolution in the perception of resources is very substantial.

The same thing is being applied in the Gulf of Mexico. MMS is in the process of doing a reevaluation or periodic evaluation of the remaining resources in the OCS, and those will unquestionably be up—particularly now with the advent of the subsalt play—and new calculations on reserve growth. The volume of oil and gas yet to be developed in the Gulf of Mexico probably exceeds, by a factor of two or three, the total historical production up to this particular point.

Mr. Chairman, despite the technologies, there are areas of policy that need to be addressed if we are really serious about having more oil sufficiency in this country, and if, as Secretary Armstrong was pointing out this morning, we want to stay in natural gas for the long run. The business of technology is one that has to be pursued with both incentives and in private endeavor if it is going to be maintained.

There are some big policy issues that we have been long addressing, like access for exploration. But those have to be addressed and tangled with over the long haul if we really want to be serious about the expanded use of natural gas. Price stabilization is an issue that has been very, very difficult to agree upon in any quarters or any forum; and yet that, in itself, would be a substantial boon to our ability to develop particularly oil in this Nation.

But policies that we probably can agree upon are those that advance technology, whether those be technologies in exploration production or technologies in operations, because operations technology is important in reducing risk and problems in offshore production, and focused incentives. I think there is a very legitimate role for the focusing of incentives, particularly when a portion of the resource at the margin that is higher cost or riskier is something we want to add to the resource base.

I cite just in passing the experience with coalbed methane and with tight gas; incentives there spurred technology, and these are now significant components in the U.S. natural gas resource base, whereas a decade and a half ago, they simply didn't exist. So there are the kinds of focused incentives that are now being discussed and considered in the Congress, there is an appropriate role for those in the Outer Continental Shelf.

I think the OCS provides this Nation with the opportunity for a more sufficient oil supply, if we pursue it; and it is the absolute, critical key to providing the opportunity for expanded use of natural gas.

Thank you, Mr. Chairman.

Mr. LEHMAN. Thank you.

[Prepared statement of Dr. Fisher follows:]



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Statement
of
William L. Fisher
to
U.S. House of Representatives
Subcommittees on Energy and Mineral Resources
and Oversight and Investigations
Committee on Natural Resources
June 23, 1994
Washington, D.C.

Mr. Chairman and Members:

I am William L. Fisher, Director of the Bureau of Economic Geology and Professor of Geological Sciences at The University of Texas at Austin. I appreciate the invitation to be before you today. I want, as requested, to address briefly the current status of domestic oil and gas activity with particular reference to the U.S. Outer Continental Shelf.

Currently, oil supplies are ample and ready, albeit an ever-increasing share is coming from imports. Domestic supplies of natural gas have met or exceeded demand for the past 9 years, including the long, cold winter just experienced in the United States. In real terms, prices of oil products, natural gas, and gasoline are among the lowest in a decade-and-a-half. These ready supplies of oil products and natural gas and their low prices are quite positive for the U.S. economy in the short term, ignoring the substantial and growing external costs of imported oil, which could create significant longer term costs.

Perhaps the most fundamental change in domestic oil and gas issues in recent years has been the perception of the remaining resource base.

In case of both the oil and natural gas resource base, estimates in the past 5 years are substantially greater than those made, say, 15 years ago, and some estimates are an order of magnitude greater. As the estimates have increased for the entire United States, corresponding increases have occurred on the Outer Continental Shelf. Remarkably, these increased estimates of the remaining oil and gas resource base have been made in the late 1980's and early 1990's, a period of historically low oil and gas prices. To be sure, most recent estimates envisage some modest increase in prices over the next couple of decades, but the real driving force has been a growing appreciation of the role of discovery and recovery technology.

Historically, we have assumed that volumes of resources convertible to producible reserves and supply were chiefly a

function of price. Price continues to be important, especially in influencing the amount of oil and gas drilling undertaken and in spurring investment in higher cost areas, but increasingly we are seeing development of the resource base being as sensitive to technology as it is to price, at least within a reasonable price range. For example, the National Petroleum Council shows a recoverable gas resource base of 600 Tcf at a price of \$2.50/MMBtu, assuming 2010 technology. At prices of \$3.50/MMBtu but with 1990 technology, the recoverable volume is the same—600 Tcf. Similar results are shown in the DOE estimate of recoverable oil resources. A \$27-per-barrel price with existing technology yields 130 billion barrels, whereas a \$20 price with advanced technology was larger at 142 billion barrels.

Technology also stretches the resource base. For certain, oil and gas are nonrenewable, finite resources, and much of the flush production in the United States has already been realized. But we have yet to determine the boundaries of finiteness nor to fix the limits of economic and technologic exploitability.

Another critical aspect of technology, and here assuming that technology embraces concepts and know-how, is its substitution for price. After nearly a decade of depressed and uncertain oil and gas prices, the wonder is not that we have a reduced domestic industry but rather that we have any industry at all. Such is the manifestation of the rigorous application of technology.

Unquestionably, our views of the U.S. resource base now incorporate the notion of technological stretch, in substantial contrast to the judgment of exponential decline widely held a dozen years ago. Exponential decline concepts yielded a public policy of resource

scarcity, supply rationing, actual prohibition of certain uses, and inordinate price distortion, as even a casual reference to the National Gas Policy Act of 1978 or the Fuel Use Act will show.

But by the early 1980's, average gas prices were up. Gas well completions were up. Reserve additions were up, and supply had begun to outpace demand, also owing to a significant reduction in demand in the face of higher prices and use constraints. As prices fell in the middle 1980's with oversupply, technology was rapidly substituted for price. Resource additions, which had been running 0.8 Bcf per completion in the early 1980's, have more than doubled in recent years and continue to increase. As a result, total gas additions have remained at about the same level of the early 1980's, when drilling effort was 100 percent greater. The doubling in volume of additions per unit of effort has been a major factor in reducing finding costs of natural gas by better than half. Not all this increase in additions per effort is from more rigorous application of technology, but much of it is.

Finally, the volume of reserves added per annual rig count had been steadily declining from the middle 1960's through the middle 1970's. The decline started after discovery of most of the giant fields by the middle of the century and was accelerated by the increased, but less efficient, drilling of the late 1970's and early 1980's. With less but more efficient drilling and with technology substituting significantly for price, additions per rig are now three times greater than they were 15 years ago.

The resource base of the Outer Continental Shelf, especially the Gulf of Mexico, is now judged to be substantially greater than just a few years ago. The Department of Interior (U.S. Geological Survey and Minerals Management Service) is now conducting a new evaluation of the U.S. oil and gas resource base, and according to their preliminary figures, future new-field discoveries of oil in the Gulf of Mexico of 9.5 billion barrels will essentially equal current existing reserves of 10.7 billion barrels, and future discoveries of gas of 100 Tcf compare to 130 Tcf of existing reserves. These discovery estimates are clearly conservative in that they were made before the first major subsalt drilling success. For example, Shell estimates the deep-water prospects of the Gulf, on the basis of success of explored acreage to date, to be on the order of 10 to 15 barrels of oil equivalent (Boe). Further, the Department of Interior estimates do not include reserve growth from fields discovered prior to 1992, and with newly calculated appreciation factors, estimated inferred reserves will most likely exceed earlier estimates substantially. I would estimate the remaining oil and gas resource base in the Gulf of Mexico to be on the order of 70 billion Boe, with about two-thirds of the remaining resource being natural gas. This is a volume nearly three times that of historical production from the Gulf and a volume equivalent to about 70 years of current production.

The judgment of a substantial resource base in the Gulf, along with continued technological advancement and price reduction of reflective seismic geophysics and anticipation of stronger markets for natural gas, will likely quicken the drilling and exploration pace.

Indeed, the interest shown in the last Gulf of Mexico lease sale is a good indicator.

The development and extension of the subsalt play will spur exploration. This is a play developed almost entirely by improved seismic that can provide for a more precise and better resolved picture through and below the salt. Additionally, there is a significant increase in the use of 3-D seismic imaging in old established fields on the shelf. The higher resolutions allow delineation of unseen or unrecognized compartments and new paths within the older fields. And many times the more precise geophysical detection technology is coupled with drilling technology, notably horizontal drilling with improved results. I think reserve growth potential in these older shelf fields will ultimately match the kind of reserve growth we have witnessed in onland Gulf counterpart fields.

Exploratory drilling in the Gulf has averaged between 400 and 500 wells annually since the early 1980's, excepting the crash year of 1986. These exploratory wells constitute about half of total Gulf drilling. Since 1985, seismic survey activity has been between one-half and one-third the level of late 1970's and early 1980's. In the past two years, activity has picked up and I expect the existence of a major new play in the subsalt, firm gas prices, and the potential for on-shelf reserve growth by applying new seismic surveys to older fields will sustain and likely increase activity in the Gulf.

If the U.S. domestic resource base is so large and if technological advances are moving at a robust pace, why is oil drilling at an all-time low and production declining, and why has the U.S. industry devoted an increasing share of its exploration and development budget abroad?

The reason for low oil activity is chiefly low prices and, perhaps more significantly, price volatility and expectation of price collapse. The expectation that the price of oil might fall, as indeed it did in recent weeks, leads to drilling of fewer prospects as they are discounted economically to near the expected low price level. As a result, oil drilling is barely exceeding 8,000 completions a year, a level sufficient to replace only about 60 percent of produced reserves. Some mechanism to stabilize world oil prices at, say, an \$18-per-barrel level would yield a substantial increase in domestic oil drilling, possibly as much as 50 percent. Unfortunately, we have been unable to devise a price stabilization policy acceptable to all despite a 40-year historical precedent in doing so.

The increasing involvement of major companies abroad and to some extent independents as well is due to several factors. First, the character of the remaining U.S. resource base should be appreciated. While large in the aggregate, most of it is convertible to producing reserves in relatively small increments; the average oil completion in the United States yields reserves of about 150,000 barrels, and the average gas completion, about 2 Bcf. This kind of a resource base offers little of the economy of scale historically sought by major companies. Some majors have downsized operations and created subsidiaries in tune with the smaller-increment resource base, and

many smaller mid-sized independent companies using economies of efficiency are pursuing it profitably. The chief domestic prospects for economy of scale, which major companies historically and presently are geared to pursue, lie in frontier areas, chiefly in Alaska, the Outer Continental Shelf, and the relatively unexplored portions of offshore basins such as the deep-water Gulf. Nearly all the frontier areas, except the deep Gulf of Mexico, are, as a matter of policy, closed to exploration, and this inaccessibility reduces the interest of majors significantly. Further, a perception, if not a reality, of open-ended environmental liability in domestic oil and gas development and production clearly discourages some operators. If we want the U.S. frontiers explored for the resources they could provide, we must address issues of access. As a Nation, we have been unable to do so in an effective, balanced way.

The provision of incentives, through the Tax Code or other mechanisms, has historically been successful in encouraging development of oil and gas prospects that are either marginal or risky. For example, the tax incentives of recent years tied to tight gas and coalbed methane development have served to spur development and technological advances that have made these resources significant parts of the overall gas resource base. Deep-water Outer Continental Shelf development incentives in two Senate bills, including royalty relief which could extend through cost recovery or a per-barrel tax credit, have been proposed. Although

there is an up-front public cost to such incentives, they will spur deep-water development, add resources that would not otherwise be added, and be a solid, longer term public investment.

The big policy issues in domestic oil and gas development like price stability and exploration access will not be solved easily regardless of their importance in domestic production and energy security. Policies that can be agreed upon are those that advance technology and know-how and those that provide focused incentives to encourage development of higher cost and riskier developments. We also appreciate that the technology that has improved oil and gas discovery and recovery is matched by technology that now makes development and production, especially offshore, to a great degree environmentally benign. Accordingly, regulations can be balanced. The Oil Pollution Act, for example, if appropriately modified, can be implemented in a way that provides for environmental responsibility but does not thwart needed resource development and production.

The U.S. Outer Continental Shelf provides the United States with opportunity for more sufficient oil supply and, most importantly, with many offshore areas being gas prone, with the opportunity of expanded use of natural gas.

Thank you.

Mr. LEHMAN. Ms. Erlandson.

STATEMENT OF DAWN ERLANDSON

Ms. ERLANDSON. Good morning, Mr. Lehman, Mr. Miller, and Mr. Barlow. I am Dawn Erlandson, Director of Tax Policy for Friends of the Earth.

Friends of the Earth is an international environmental advocacy organization. We have affiliates in 52 countries. On behalf of Friends of the Earth, I would like to thank you for the opportunity to present our views on the state of the domestic oil and gas industry.

Before I proceed, I would like to commend Chairman Miller and the committee for your consistent and determined oversight of the Federal Government's energy and public resources, and particularly for your determined investigation of Alyeska and the Trans Alaska pipeline system. All Americans are indebted to you for pointing up the failures and dangers in the TAPS and for the preventive measures that are now being put into place as a result of your efforts.

If there is one message that I can leave with you today, it is this: Before the oil and gas industry asks the American public and the Congress for further regulatory royalty and tax relief, it should demonstrate its commitment to America and retool and rebuild its infrastructure around total system energy efficiency, maximum environmental protection, and inherently safe technology. Doing so, we believe, will increase energy security, reduce the trade deficit, create jobs, advance technology, stimulate investment, protect the environment, and improve competitiveness.

Contrary to the claims of the oil and gas industry, it already receives numerous tax subsidies, perhaps more than any other industry. To make a comparison, in 1989, the emerging renewable energy industry received \$500 million in tax incentives, while the oil and gas industry received nearly \$8 billion in tax breaks. Similarly, the oil and gas industry benefits from significant exclusions and special treatment under nearly every major environmental law.

Clearly, the U.S. oil and gas industry is not being taxed or regulated out of this country. It is, however, going abroad, and it is being pulled by foreign governments offering attractive inducements and by fat oil fields with low-cost natural drive. In the industry's haste to leave, it has left a legacy of waste, pollution and inefficiency.

In our recent report, *Crude Awakening*, we found energy waste and pollution in the oil and gas industry on a scale that is hard to believe—an annual energy loss through spills, emission, evaporative loss, venting and flaring, waste generation, inefficient processing and pipeline and storage tank leaks that is equivalent to 1,000 Exxon Valdez oil spills every year.

The EPA estimates the cost of cleaning up petroleum-contaminated groundwater will run \$790 million a year. The Inspector General of the Department of Interior has estimated the cost of plugging 22,500 abandoned wells on the public lands will exceed \$300 million.

Industry claims that America's oil resources are in decline except for the protected Arctic Wildlife Refuge and certain environ-

mentally sensitive offshore regions they want to develop; the Department of Energy and others have determined that there are billions of barrels of oil recoverable in the ground. Some companies are using advanced techniques like horizontal drilling to hit modern-day gushers and big profits, even at \$17 per barrel in the so-called "exhausted" southwest Texas oil patch.

We challenge the rest of the industry to follow and lead a new assault on oil field inefficiency. We urge the Congress to reject efforts to provide a royalty holiday in Alaska or the Gulf of Mexico. Such a policy will greatly increase development pressure on the environmentally sensitive coasts of Alaska.

As for the Gulf of Mexico, the Minerals Management Service in March announced a definite upsurge in deep water rig activity this year. Moreover, earlier this year without the benefit of any additional royalty, tax or regulatory relief, Shell Oil Company set a deep-water drilling record in the Gulf at a profit.

In Alaska, consistently high profits put North Slope operations on a par with the most profitable corporations in the United States, thus raising questions about the need for relief. Efforts to lift the export ban on Alaskan crude oil to weaken underground injection control regulations and to weaken financial responsibility requirements under the Oil Pollution Act should be rejected. Rigid reliance on risk assessment and cost-benefit analysis should be rejected as they are overly simplistic and fail to capture important human health values.

We applaud the Interior Department's approach to ecosystem management and its natural resource damage assessment process and urge the efforts to discard them be rejected.

As for the new tax incentives, we urge the Congress to support increased energy efficiency and renewables first. Oil has been king of industrial substances for the longest time. It has created jobs, new businesses and whole new industries, but today the oil and petrochemical products around us are all too frequently public health, safety, and environmental threats. We challenge the oil and gas industry to rebuild, retool, and reinvest and say, we can, rather than, we can't.

Thank you.

Mr. LEHMAN. Thank you very much.

[Prepared statement of Ms. Erlandson follows:]



Statement of

**Dawn Erlandson, Director of Tax Policy
Friends of the Earth**

On the

State of the Domestic Offshore Oil and Gas Industry

Before the

**Subcommittee on Energy and Mineral Resources
and the**

**Subcommittee on Oversight and Investigations
United States House of Representatives Committee on Natural Resources**

June 23, 1994

OVERVIEW

Mr. Chairman and Members of the Subcommittees, Friends of the Earth wishes to thank you for the opportunity to present our views on the status of the U.S. oil and gas industry. We commend you for initiating this important hearing. I would also like to thank Jack Doyle, Pam Miller of The Wilderness Society, and Lisa Speer of the Natural Resources Defense Council for their significant contributions to this testimony.

We recognize that for some parts of the industry today, these are very difficult times. Yet, these are also times of opportunity and for examining this industry through a new lens.

If there is one message we would like to leave in this hearing record, it is this: before the U.S. oil and gas industry asks the American public for further regulatory, royalty, or tax relief, it should demonstrate its commitment to America and re-tool and re-build its infrastructure around total system energy efficiency, maximum environmental responsibility, and inherently safe technology. Doing so, we believe, will increase energy security, reduce the trade deficit, create jobs, advance technology, stimulate investment, protect the environment, and improve U.S. competitiveness.

Congress, for its part, should look very carefully at the total effect of its policies on the overall performance, efficiency, and societal costs of oil and gas operations and energy policy. All too frequently, Congress moves down specialized policy pathways -- be it tax, federal lands policy, royalty treatment, or environmental regulation -- without consulting other committees, or considering what each of these seemingly separate policies means in the aggregate, for industry and nation.

Tax policies, for example, have been very generous to oil and gas production. But how well has tax policy encouraged energy efficiency throughout the oil and gas system? How well has oil and gas tax policy fostered environmental responsibility, pollution prevention, or the conservation of fossil energy?

Environmental regulation, on the other hand, is viewed as excessive by the oil and gas industry, when in actual fact, there are at least nine federal environmental laws that have specific exemptions or other special allowances for oil and gas operations.

Despite years of tax concessions and regulatory favors, the U.S. oil and gas industry is fleeing overseas and in its haste has left a myriad of environmental liabilities for American citizens to tackle. Given this record of behavior, why should we give the industry more tax concessions and regulatory favors?

Today, as a new round of oil and gas industry tax, royalty, and regulatory "relief" proposals are advanced, it is the position of Friends of the Earth that no new incentives, credits, or exemptions be adopted until the considerable inefficiencies, lax environmental regulation, and existing clean-up liabilities now imposed on American taxpayers by oil and gas industry practices -- past and present -- are addressed. Some of these are noted in our recently published study, *Crude Awakening*, a copy of which is submitted with this testimony, and is described in more detail below.

Before I proceed, on behalf of Friends of the Earth, I would like to commend Chairman Miller and the members of this Committee for their consistent and determined oversight of the federal government's energy and public lands resources, and particularly for the Committee's determined investigation of Alyeska and the Trans-Alaska Pipeline System. All Americans are indebted to you for pointing up the failures and dangers in the TAPS and for the preventive measures that are now being put into place as a result of your efforts. As you know, the recent findings of enormous electrical code and other safety violations demonstrates the need for oversight of all elements of the oil and gas infrastructure.

THE LEGACY OF THE OIL AND GAS INDUSTRY

Waste, Pollution & Inefficiency

In large measure, the oil industry still carries with it the frontier approach to doing business -- seeking the rich find, taking the easy oil, leaving the wastes behind, and moving on. In our recently published report, *Crude Awakening*, Friends of the Earth has found energy waste and pollution in the oil and gas industry on a scale that is hard to believe: an annual energy loss -- through spills, emissions, evaporative loss, venting & flaring, waste generation, inefficient processing, pipeline and storage tank leaks -- that is equivalent to 1,000 *Exxon Valdez* oil spills every year, roughly equal to Australia's annual petroleum consumption (i.e., more than 262 million barrels of oil, or 11 billion gallons).

This wasted energy -- much of which is replaced with imported oil -- is costing the nation dearly in diverted capital, a mounting trade deficit, and lost jobs.

America's oil and gas infrastructure, in fact, is deteriorating badly. According to the American Petroleum Institute, "free product" -- i.e., floating gasoline or other petroleum hydrocarbon leaked into the ground -- is being pumped from groundwater at 64 refineries, 217 marketing terminals, and 75 transportation-related hubs or terminals.¹

In the case of pipelines serving the Gulf of Mexico and Alaska, the situation is not better. Last December, 16,000 gallons of oil spilled from a ruptured ARCO pipeline at a drillsite in the Prudhoe Bay field in Alaska. The spill went undetected for a period because an alarm system had been turned off.

In the Gulf of Mexico, 690 offshore pipeline failures were reported to the U.S. Minerals Management Service (MMS) between 1967 and 1987.² Of these, 290 resulted in "measurable pollution" ranging from 274 spills of less than 4,200 gallons up to 2 spills of more than 420,000 gallons. Unfortunately, Gulf of Mexico pipeline failures appear to be increasing. Between 1967 and 1987, companies reported more than 40 pipeline failures in only one year. But between 1978 and 1987, there were five years in which companies reported 50 or more spills. "The significant increase in failures since 1975," *Oil & Gas Journal* concluded, "can be attributed to the increase in the pipeline population, aging of the pipelines installed earlier, and the increased offshore construction activity."³

As for the Alaska pipeline, the oil industry boasted that it would last 30 to 40 years. But in 1990, only 13 years after the line opened, hundreds of corroded spots in the pipe's steel walls were found -- revelations that this Committee knows well.⁴

Thousands of offshore wells in U.S. waters spill oil and routinely discharge oil waste.⁵ The vast majority of the offshore wells are in the Gulf of Mexico, where 40 to 60 spills are recorded each year in federal waters alone. According to the MMS, from 1980

¹ American Petroleum Institute, "Hydrocarbon Recovery Results." December 1990 survey, published, December 18, 1992. See also, Lois N. Epstein, *LAST But Not Least: Leaking Aboveground Storage Tanks - Threats, Costs and Answers*, Environmental Defense Fund, Washington, D.C., February 1983.

² Jack Doyle, *Crude Awakening - The Oil Mess in America: Wasting Energy, Jobs & The Environment*, Friends of the Earth, Washington, D.C. 1984, p. 91.

³ J. S. Mandke, "Corrosion Causes Most Pipeline Failures in Gulf of Mexico," *Oil & Gas Journal*, October 29, 1990, pp. 40-44.

⁴ Doyle, p. 96.

⁵ *Ibid.*, p. 133, Table 9-5.

through 1990, oil spills from offshore wells on federal leases in the Gulf of Mexico totaled 429 with 44,733 barrels of oil spilled. A September 1992 blow-out and fire at a well in the Gulf of Mexico sent more than 460,000 gallons of oil into air and water.⁶

Every day in the Gulf, 3.4 million barrels of produced water are discharged -- much of which contains oil and grease, often in amounts which violate NPDES levels.⁷ There are also incidents of flaring and venting on offshore federal leases. Between May 1986 and January 1987, for example, Tenneco deliberately flared an estimated one billion cubic feet of natural gas in the Gulf of Mexico in order to avoid paying government royalties of \$115,000.⁸

Downsizing & Selling Off Assets

U.S. oil companies have been "downsizing" and "streamlining" operations since the mid-1980s; selling off production fields, shutting down refineries, and laying off workers. Proceeds from these sales, by and large, are not reinvested in the United States. More than 500,000 oil jobs have been cut since 1982, at least 130 oil refineries have closed, and an estimated \$20 billion worth of oil property will come on the market in the next 5 years.⁹

According to *Oil Daily*, "massive cost-cutting" enabled "most oil companies" to increase earnings in 1993. An *Oil Daily* survey of 23 major oil companies found a 91% rise in net income.¹⁰ While massive cost cutting and personnel reductions may be cheered by Wall Street, the industry's environmental and safety performance in the field do not appear to be improving as a result of these cuts.

⁶ *Ibid.*, p. 129.

⁷ Boesch Rabalais (eds.), "Produced Waters in Sensitive Coastal Habitats: An Analysis of Impacts, Central Gulf Coast of Mexico," OCS Report/MMS 89-0031, U.S. Department of Interior, Minerals Management Service, 1989.

⁸ Nina Andrews, "Tenneco Pays \$5 Million in Gas Flaring," *The New York Times*, June 3, 1989, p.37.

⁹ Last year, for example, Mobil closed 10 product storage terminals east of the Rocky Mountains, sold four pipeline systems in the East and Southwest, and cut its U.S. marine fleet by one third. Chevron is selling off what it calls "marginal" oil and gas properties, hundreds of which were acquired in the 1984 takeover of Gulf Oil. In all, some 1,200 oil and gas properties are planned to be sold by 1995, properties that one senior Chevron official called "garbage." Chevron is also selling one-third of its U.S. refining capacity and more than 800 gas stations, using the proceeds to help pay for its overseas operations, such as its joint venture with Kazakhstan. ARCO, too, has sold oil- and gas-producing properties in the western U.S. and targeted some of its proceeds for new discoveries in China and Indonesia as well as for existing Alaskan operations. Unocal has sold some \$225 million in geothermal assets in California, earmarking part of the money for Indonesia. Exxon, which has sold \$1.1 billion worth of U.S. assets in the last two years, sold its 75 year-old Bayway, New Jersey refinery to Tosco "for a song" at \$175 million, according to *Financial World*.

¹⁰ W. Lyon Garner, "Massive Cost Cutting Pays Off In Oil Company Profits," *The Oil Daily*, February 7, 1994, p. 5.

At a time when the entire oil system is corroding and leaking millions of barrels of oil, gasoline and other petroleum and petrochemical products into the environment, it is our view that further labor cuts, the use of untrained contract labor, and skimping on maintenance is not in the public's or the industry's best interests.

U.S. Oil Companies Heading Abroad

The U.S. oil industry, in fact, now spends more on exploration and production abroad than it does at home.¹¹ Companies such as Amoco, Chevron and Phillips are earmarking 60-to-75 percent of their exploration and production budgets for operations abroad.

In Russia, U.S. oil companies are receiving U.S. aid to produce oil. In September, the Overseas Private Investment Corporation (OPIC), a federal agency, approved loan guarantees and insurance worth \$28 million to Texaco. Last May, Conoco received aid from OPIC for a smaller project. "Texaco and all these other companies have on line projects that will cost multibillion dollars," explained an OPIC spokesman. "The administration has decided it's important for the U.S. to provide assistance to U.S. companies to help the former Soviet Union become a developed economy."¹² Furthermore, the MMS has provided training and advice to Russian officials about offshore development, even for leasing the Chukchi Sea, just east of Wrangel Island -- a major polar bear denning area and nature reserve.¹³

Meanwhile at home, the foreign-owned share of U.S. oil assets is rising. In 1980, about 11 percent of U.S. refining capacity was foreign owned. Today, it's nearly one-third. In addition to British Petroleum and Royal Dutch Shell, the national oil companies of Venezuela, Saudi Arabia, China and Mexico have become owners or part-owners in U.S. refineries, pipelines, storage terminals and gasoline outlets. Citgo -- the nation's largest gas station chain, now with more than 11,300 U.S. locations -- is owned by Petroleos de Venezuela, S.A., or PDVSA, the national oil company of Venezuela, member of OPEC. PDVSA also owns 4 U.S. refineries.

The Liability Left Behind

As major U.S. oil companies head abroad, however, they are leaving behind a giant oil mess -- deteriorating infrastructure, waste and pollution, and abandoned oil. The

¹¹ *Ibid.*, pp. 3-4.

¹² Caleb Solomon, "Texaco Project In Russia Gets U.S. Assistance," *The Wall Street Journal*, September 3, 1993, p. A-2; and, "Russian Oil Venture Gets Loan," *The Wall Street Journal*, September 16, 1993, p. A-11.

¹³ Timothy Holder, Environmental Studies Program, MMS Alaska Regional Office, Pers. Comm., 25 January 1993.

costs of the enormous environmental problems associated with this mess are becoming more apparent every day.

The U.S. Environmental Protection Agency (EPA) estimates the cost of cleaning up petroleum-contaminated groundwater will run about \$790 million a year.¹⁴ The Inspector General of the U.S. Department of the Interior has estimated that the cost of plugging 22,500 abandoned wells on the public lands will exceed \$300 million.¹⁵ Since February 1994, Pennsylvania consumers are now paying 2 cents more for every gallon of gasoline they buy to help pay the costs of cleaning up leaking underground storage tanks across the state. The fund will amount to \$122 million annually to help dealers clean up leaks and install new tanks.¹⁶

Public health costs, too, are typically left out of petroleum's benefit/cost calculus. Yet, increasingly, more and more Americans are being exposed to oil's ill effects.

In Austin, Texas, state authorities have found groundwater beneath a gasoline tank farm contaminated with benzene, toluene and xylene. Some nearby wells have yielded concentrations of benzene 200 times the maximum safe federal drinking water standard (5 parts per billion).¹⁷

In North Carolina last April, state cancer experts reported a leukemia rate double the normal level among residents of the Paw Creek community near Charlotte. A gasoline tank farm, with some 20 large storage tanks, has leaked or spilled at least 600,000 gallons into the ground over the years. Some 17 wells in the area have been contaminated.¹⁸

In Alaska, the cleanup from the Exxon Valdez oil spill resulted in significant health effects on cleanup workers. In 1989, 1,811 workers' compensation claims were filed related to the Valdez spill.¹⁹ The leading non-physical injury was respiratory system damage due to inhalation of oil mist at average levels that were twelve times the legal maximum exposure limit. Oil mist is well recognized as a cause of occupational

¹⁴ ABB Environmental Services, "The OPA Liner Study," Washington, D.C. for U.S. EPA, January 24, 1993, p. 57.

¹⁵ U.S. Department of Interior, Office of the Inspector General, Audit Report, *Inspection and Enforcement Program and Selected Activities, Bureau Of Land Management*, Report No. 90-18, November 1989.

¹⁶ Bucky Gleason, Associated Press, "Gas To Rise 2 Cents To Pay For Cleanups," *The Philadelphia Inquirer*, January 13, 1994, p. B-3.

¹⁷ Doyle, pp. 25-30.

¹⁸ John Hechinger and May Elizabeth DeAngelis, "Leaked Gasoline Shadows Neighbors' Lives," and, "People Fear Cancers Are Linked To Gas Leaks," *The Charlotte Observer*, A Special Report: Paw Creek's Cancer Scare, pp. 1-A, 8-A, 9-A.

¹⁹ Carl Reller, "Occupational Exposures to Oil Mist During the EXXON-VALDEZ Spill Clean-Up," *Alaska Health Bulletin*, Alaska Health Project, Vol. 9 No.2 June 1993, p.1.

respiratory damage. In addition, polynuclear aromatic hydrocarbons, a component of crude oil, were found at 170 times above the permissible exposure limit and benzene was found at 160 times the permissible exposure limit.

Lax Environmental Regulation

More than 2 billion tons of liquid and solid wastes from oil and gas extraction are generated each year -- the single largest source of waste in the United States -- more than all other categories of municipal, agricultural, and industrial waste put together.²⁰ Although much of this waste contains hazardous substances and/or radioactivity, only a small portion of it is regulated as hazardous. Congress exempted the rest under the Resources Conservation and Recovery Act (RCRA).

In fact, "petroleum exclusions," or other special oil and gas provisions, can be found in the Superfund law, the Clean Water Act, Clean Air Act, the Safe Drinking Water Act, the Hazardous Liquid Pipeline Safety Act, the Oil Pollution Act, and the Emergency Planning & Community Right-To-Know Act.

Although the Pipeline Safety Act of 1992 is now law, the Department of Transportation's Office of Pipeline Safety has already missed the May 1990 deadline for an inspection report that was to be delivered to Congress.²¹ Not surprisingly, the Office lacks even the necessary resources to focus on high risk pipelines, much less regular inspection of all pipelines.

Barges are exempt from the double hull requirement set for tankers under the Oil Pollution Act (OPA). Aboveground storage tanks (ASTs) have only recently come to the attention of federal agencies, and a new bill to regulate them has been tied up in Congress since 1987. Petroleum contaminated wastes are also exempt from hazardous waste export regulation. "Oil and grease" discharges in the Gulf of Mexico routinely violate NPDES permit levels yet there is little effective enforcement, and penalties are so low that they are incorporated into the cost of doing business.²²

²⁰ Doyle, p. 113.

²¹ *Ibid.*, p. 102.

²² In the Gulf of Mexico, Chevron operations were cited at least 26 times in 1990 and 1991 for exceeding the daily maximum discharge limit. In 1988, the U.S. Justice Department charged Chevron with violating oil and grease discharge standards in the Santa Barbara Channel. In June 1992, Chevron pled guilty to 65 violations of the Clean Water Act and agreed to pay \$6.5 million in criminal penalties and \$1.5 million in civil fines. Chevron pled guilty to 36 counts of knowingly exceeding oil and grease discharge limits between 1982 and 1987, 9 counts of diluting wastewater prior to sampling to understate the amount of oil and grease discharged, 7 counts of concealing wastewater test results from EPA, 7 counts of dumping untreated wastewater in to the ocean, and 6 counts of dumping sandblast waste into the ocean. (See *Crude Awakening* by Jack Doyle, Friends of the Earth, pp. 135-7, Tables 9-7 and 9-8, Appendix F.)

Generous Oil & Gas Tax Benefits

The list of tax incentives and/or subsidies currently enjoyed by the oil and gas industry is quite long. Direct oil and gas tax incentives are already more generous than those enjoyed by any other American industry and most taxpayers. They include:

- o deductions for the purchases of capital assets, known as intangible drilling costs, from taxable income;
- o percentage depletion allowances, which over time can exceed the value paid for the property itself;
- o an enhanced oil recovery tax credit equal to 15% of certain costs under nine eligible recovery methods;
- o special treatment for independent oil producers and royalty owners under the Alternative Minimum Tax;²³
- o a passive investment exception for oil and gas properties which allows investors to offset income with losses in oil and gas operations;
- o a nonconventional fuels tax credit, and
- o exemption from the uniform capitalization rules for intangible drilling costs.

These existing tax advantages, when coupled with other allowances, such as exemptions from certain environmental regulations, may encourage current tax shelters for wealthy investors in oil and gas activities which are damaging to the environment, energy inefficient, and/or damaging to other resources such as groundwater, and may also create future clean up costs for taxpayers.

Moreover, existing allowances under the tax laws for expensing oil spill clean-up costs, property damage, and certain legal expenses,²⁴ contribute to a "cost-of-doing-

²³ In general, costs such as intangible drilling costs cannot be expensed under the Alternative Minimum Tax (AMT), nor can they be expensed so as to reduce their earning calculation under the AMT. For independent producers and royalty owners however, neither one of these limitations apply. In addition, independents can use the percentage depletion method, rather than the less generous cost depletion method, in computing their earnings under the AMT.

²⁴ Under current tax law, companies that pollute the environment, whether by spilling or dumping toxic wastes illegally, are allowed to deduct all the costs associated with pollution as ordinary and necessary business expenses. In the 1991 *Exxon Valdez* \$1.025 billion oil spill settlement with the Federal government and the State of Alaska, Exxon was allowed to use \$1 billion of that amount - clean-up costs, legal fees, damages, and even the 11 million gallons of spilled oil - in figuring its tax deductions. As a result, Exxon was able to reduce its federal and state tax liability between \$279 million and \$298 million. See, A. Eriksson, R. Hertzog, J. Tiley, D. Williams, F. von Zeschwitz, *Taxation for Environmental Protection: A Multinational Legal Study*, eds. S.E. Gaines and R.A. Weston (Westport, CT: Quorum Books, 1991), pp. 187-189.

business" standard in the industry that actually rewards poor environmental performance, while passing on environmental costs and clean up expenses to taxpayers.

ROYALTY, REGULATORY, AND TAX "RELIEF"

The oil and gas industry is clamoring for royalty, regulatory, and tax relief. Much of the oil industry's tough talk about being denied access to America and the "you're-pushing-us-out-of-the-country" refrain because of onerous tax, royalty, and regulatory policies is driven by frustration over losing in its bid to open sensitive offshore and Alaskan areas to exploration as well as low prices. The industry has raised the specter of economic demise and job loss to create pressure for more giveaways. Unfortunately, their arguments are wrong. The industry is moving overseas, but not because it is being pushed out by regulation.

First, the industry is going abroad because it is being pulled by foreign governments offering attractive inducements. Second, the industry sees foreign lands as the next hydrocarbon frontier. Third, the industry is going abroad because that's where the fat fields are -- the ones with low-cost, natural "drive" (i.e. geological pressure) which forces oil to the surface easily and where existing extraction technologies can be used for a song.

Although industry claims that America's oil resources are in decline-- except for the protected Arctic National Wildlife Refuge and certain environmentally sensitive offshore regions they want to develop -- the Department of Energy and others have determined that there are billions of barrels of recoverable oil in the ground. Indeed, there is appreciably more oil in the domestic onshore U.S. (excluding environmentally sensitive areas) than there is in the entire U.S. offshore and Alaskan regions combined.

In September 1992, a select group of oil resource analysts concluded that the remaining recoverable crude oil in the U.S. ranges from 99 to 204 billion barrels, depending on oil prices and the technology used.²⁵ This amount of oil is equivalent to 35 to 75 years of continued U.S. crude oil production. Two-thirds of this remaining potential is onshore in the lower 48 states.

Some companies, like Meridian Oil and Winn Exploration, are using advanced techniques like horizontal drilling to hit modern-day gushers and big profits, even at oil prices below \$17 per barrel, in the "exhausted" southwest Texas oil patch.²⁶ If we can recover oil deep offshore, as the industry is anxious to do en masse, we can recover left in the ground in the lower 48 states.

²⁵ *An Assessment of the Oil Resource Base of the United States - Oil Resources Panel*, U.S. Department of Energy, Bartlesville Project Office, Bartlesville, OK, DOE/BC-93/1/SP, p.3.

²⁶ Doyle, pp. 222-4.

The major U.S. oil companies, rather than pulling up stakes and belly-aching about why they can't drill in the Arctic Refuge or offshore, should be leading a new assault on oilfield inefficiency; devising an industry-wide target and plan to recover more oil in America -- a plan that could create jobs, stimulate technology development, protect sensitive environmental areas, and secure more energy.

The U.S. oil industry has been astoundingly inefficient and sloppy in its use of energy and in its management of the energy resource base. It has drilled, produced, and processed oil without regard for the environment or the future, leaving behind a polluted landscape, mounting public health problems, and a neglected and riddled resource base.

As for price, oil prices have risen over the last three months from \$14 per barrel to \$20.75 on Tuesday. This increase has been significant enough to depress transportation stocks. What industry claims is uneconomical production may no longer be.

Deep-Water Drilling In The Current Market

Earlier this year, without the benefit of any additional royalty or regulatory relief, Shell Oil Company set a deep-water drilling record by placing its Auger platform into position in 2,860 feet of water in the Gulf of Mexico. The Auger platform, which cost Shell \$1.2 billion, is now producing about 2,200 barrels of oil and 3.7 million cubic feet of natural gas a day. Shell expects that its Auger operation will be producing 46,000 barrels of oil and 125 million cubic feet of natural gas a day by year end 1994.

Shell is using existing technology with this platform -- a tension-leg, floating platform structure that reduced construction costs -- but has been aided by improved seismic techniques and computer modeling of the geology in helping determine exactly where to drill.

According to Shell, there are at least 30 deep water locations in the Gulf where evidence of petroleum has been found. The combined reserves from those deposits -- which only represents about 15 percent of the leased acreage that has been explored -- is between 3 and 4 billion barrels. Some believe, in fact, that the deep-water Gulf may hold 15 billion barrels, more than Prudhoe Bay.

By 1996, Shell expects to spend an additional \$1.2 to bring another deep water platform into production in the Gulf -- this one, the Mars platform, will go even deeper, to 2,933 feet.

A Shell spokesperson said in April that the company was pressing ahead with the Auger and Mars projects despite oil prices that have been stuck at 5-year lows in the \$15-to-16-a-barrel range. "It is a profitable development," said the Shell spokesperson.

"We're looking at a long-term, 20-year project."²⁷

Royalty Relief

S. 318, the Outer Continental Shelf Deep Water Royalty Relief Act, as proposed by Senator Johnston, would give a new federal subsidy to big oil companies and would greatly increase development pressure on the environmentally sensitive coasts of Alaska, such as off the Arctic National Wildlife Refuge and the rich fishing grounds of Cook Inlet. This proposal not only represents a policy decision to develop oil in sensitive areas but also to subsidize that development.

This proposal as it passed the Senate Energy Committee would suspend the royalties on leases for development of new wells in deep waters (200 meters or greater) in the central and western Gulf of Mexico and in "frontier" areas of Alaska, which include any waters that periodically freeze, are far from pipeline or port, or are relatively untapped by drillers (i.e. virtually all of Alaska's coasts). The royalties would resume once the drilling company had sold enough oil or gas to recover the exploration and development costs it incurred after acquiring the lease.

Royalty relief could spur leasing and development in extremely sensitive areas of Alaska including in the Beaufort Sea only a few miles off the coast of the Arctic National Wildlife Refuge and the rich fishing grounds of Cook Inlet that are bordered by National Parks and National Wildlife Refuges.

By promoting oil development of Alaska's Arctic coast, the Alaska royalty "holiday" would increase pressure for onshore support facilities such as roads and pipelines in the Arctic Refuge coastal plain. A major oil spill here, for example, would foul the migratory routes of endangered bowhead whales and the wilderness shorelines in the Arctic Refuge used by denning polar bears and millions of birds. The environmental and Native subsistence cultural risks of oil production in the icy waters of the Arctic Ocean and along other coasts of Alaska are extraordinary.

The National Research Council concluded in a recent major study, *Environmental Information for Outer Continental Shelf Decisions in Alaska*, that information is often not sufficient to support decisions about development, production, transportation, and siting of onshore facilities. New subsidies encouraging OCS development in highly sensitive areas of the Alaska coast where there is inadequate environmental information and deep conflict between industry and affected communities are inappropriate.

Moreover, economic windfalls to the oil industry could be enormous. Original

²⁷ Caleb Solomon, "Royal Dutch/Shell Begins Pulling Oil From Gulf's Depths," *The Wall Street Journal*, April 21, 1994, p. A-9; and, Agis Salpukas, "2860 Feet Under The Sea, A Record-Breaking Well," *The New York Times*, April 24, 1994, p. F-9.

analysis of S. 318 by the MMS showed that royalty relief in the Gulf of Mexico alone would cost the federal government \$1.9 billion in lost revenue over the life of the producing fields. Subsequently, S. 318 was revised to require the Secretary of the Interior to determine whether new production from existing leases would be economic in the absence of royalty relief, but all new leases would still be given the royalty "holiday." The MMS has not even conducted specific economic analysis for Alaska.

It is not in the nation's best interest to be giving a new subsidy to very expensive offshore oil development in Alaska where a single offshore exploratory well costs roughly \$40 million. The MMS is already strapped to keep up with its regulatory demands. How can one realistically expect agency bureaucrats to be in a strong position to decide whether or not an oil company can afford to develop a field, when oil industry lawyers decide what information to provide them? Furthermore, the companies can ask for relief again and again, but the bill does not give the Secretary discretion to end the "holiday" from royalties if circumstances change.

The record high rig activity in the Gulf of Mexico sheds doubt on the need for "relief" in the Gulf. The MMS issued a press release on March 21, 1994 announcing a "definite upsurge in deep water rig activity" in the Gulf of Mexico. At a time when the price of oil is at a decidedly low point, fourteen rigs are operating in deep water compared to five rigs just one year ago, the release continued. "The deep Gulf is considered one of industry's hottest wildcat plays. Current high rig count is a reflection of the numerous good prospects."

The high profitability of the North Slope, in particular, belies the need for royalty relief in Alaska. According to Richard Fineberg, an Alaskan-based researcher who recently completed a report for the Alaska legislature on North Slope profits and production prospects, "the estimated after-tax profit on a barrel of North Slope crude oil produced in Alaska and shipped to Valdez exceeds \$4.50 per barrel." According to Fineberg, "profit of this magnitude puts North Slope operations on a par with the most profitable corporations in the United States. During 1991, North Slope producers earned profits, split among three producers, that equaled those of the second most profitable Fortune 500 company in the nation."²⁸

Fineberg found that Alaska's economic interests would be better served by developing the oil already discovered in existing fields closer to the pipeline, such as West Sak, than oil in the Arctic National Wildlife Refuge.

In general, profits in the oil industry have climbed, thereby raising the question

²⁸ "Truth about North Slope profits left out of summit," *Anchorage Daily News*, January 7, 1993, p. B8.

about the need for "relief" of any kind. According to the *Oil & Gas Journal* only last week, earnings for 22 large U.S. oil companies jumped sharply last year, increasing 78.6% from 1992.²⁹

Regulatory Relief

The oil and gas industry is seeking a laundry list of regulatory changes that would add to the already generous exemptions and lax treatment by Congress that the industry enjoys with regard to federal environmental laws. For example, the oil industry wants an exemption for Alaskan wetlands from the mitigation requirements in the Clean Water Act and is seeking to weaken the Act's wetland protection and water quality provisions generally.

Export ban on Alaskan crude oil

The industry also wants existing prohibitions against the export of domestic crude oil from the North Slope in Alaska to be eliminated. Ending the export ban would increase development pressure on sensitive areas like the Arctic National Wildlife Refuge and the Outer Continental Shelf off Alaska and even California. In addition, changed tanker routes would make Kodiak Island and the fisheries of the Bering Sea more vulnerable to chronic and disastrous spills.

Additional market demand for Alaskan oil would put more pressure on the aging Trans-Alaska Pipeline System, which already poses threats to the public and workers. Air and water pollution problems could worsen at the Valdez marine terminal.

Lifting the ban would clearly break the promise that North Slope oil would only go to U.S. markets when Congress sacrificed the Alaskan wilderness for oil development on the North Slope.

Risk assessment and cost-benefit analysis

The industry is pushing legislation requiring new regulatory proposals to be subject to risk assessment and cost-benefit analysis.

As members of this Committee know, the debate on the role of risk assessment and so-called cost-benefit analysis in environmental policymaking has been raised in many contexts. It is interesting, however, that the oil industry joins in the call for more cost-benefit analysis given that a recent cost-benefit analysis for an oil industry regulation reveals the pitfalls of this approach to environmental decision-making. In its recent cost-benefit analysis on water pollution rules for oil and gas drilling wastes, EPA valued the "benefits" of reducing lead poisoning in children as the "present value of lost earnings."

²⁹ *Oil & Gas Journal*, June 13, 1994, p.25.

which EPA calculated to be \$4,588 per lowered IQ point.

In addition, while EPA was able to estimate the full costs of the rule and did identify many risks from oil and gas discharges, it could not adequately quantify many of these risks. For example, one of the benefits that could be quantified to some extent was the reduction of lead exposure from consumption of contaminated seafood. EPA identified many health impacts from such exposure, including kidney dysfunction, central nervous system damage, infant mortality, reduced intelligence, hypertension, stroke and other cardiovascular illnesses. Of these risks, EPA could monetize only the benefits of reduced infant mortality, IQ loss in children (according to the arbitrary assignment of economic value cited above) and certain health benefits to adult males. EPA was unable to quantify many adverse impacts, including the impacts on women or on men between the ages of 40 and 59.

Thus, the "bottom-line" numbers produced by the exercise were seriously deficient and, if used as the sole basis for decision-making, could fall far short of the necessary environmental and human health protections.

Friends of the Earth understands that -- regardless of the shortcomings -- regulators will continue to assess the range of health and environmental risks posed by various polluting activities. In making decisions, they will also look at the economic

impacts of various regulatory options. The EPA undertakes those types of analyses now, and they will continue to do so. With that we have no fundamental objection.

What we object to, strenuously, is confining our environmental decision-making to a calculus of dollars and cents that we know does not represent all the factors which must be considered for reasoned and responsible environmental policy. We agree with Sally Katzen of the Office of Management and Budget that risk management decisions are "value-laden decisions that should be made not by "technocrats" but by the elected and appointed officials charged with the responsibility (and accountable to the public) for public policy."

In our view, these cries from the oil industry and others for cost-benefit analyses are not an effort to improve the information base from which environmental policy evolves but to simply remove difficult policy decisions from the public arena. We strongly oppose such moves.

Natural resource damage assessment

The industry wants to severely limit the use of ecological and non-human use values by the government when natural resource damages are assessed.

Under both the Oil Pollution Act (OPA) and Superfund, polluters are liable for

damages to natural resources. Holding polluters fully liable for these damages creates an important incentive for pollution prevention. A key component of assessing damages is calculating the value of resources that do not currently have a commercial or recreational value. These values are termed passive use or non-use values. Most of the damages suffered as a result of the Exxon Valdez spill were such values; if Exxon had not been held liable for these damages it would have ended up paying for only a small portion of the harm suffered. Currently, contingent valuation is the only method available to measure passive use values.

Efforts by the oil and gas industry to severely limit the use of contingent valuation in natural resource damage assessment would drastically limit rightful industry responsibility for a great deal of resource damage. Arbitrary restrictions on the use of contingent valuation should be rejected by the Department of Interior and the National Oceanic and Atmospheric Administration.

Financial responsibility for oil spills

The industry is trying to halt a final Coast Guard rulemaking regarding financial responsibility requirements for oil tankers and other vessels under the Oil Pollution Act (OPA) and to weaken OPA's financial responsibility requirements that apply to offshore facilities. These efforts should be rejected.

The principle that the "polluter pays" is at the heart of OPA and rests on both the statutory liability limits and the requirement that owners and operators demonstrate that they have the financial wherewithal to pay for a spill up to those limits. By ensuring that a potential spiller can pay for cleanup and damages up to the liability limits, financial responsibility requirements provide strong financial incentives to prevent spills and help to discourage "fly by night" operators.

We strongly support the Coast Guard's approach articulated in its proposed rule, which would require vessel owners and operators to demonstrate full financial responsibility as required by OPA. Despite oil industry claims that mechanisms for satisfying financial responsibility are not available, at least one insurer has indicated that it is ready and willing to provide insurance coverage that will fully meet the financial responsibility requirements.

Prompt implementation of the vessel financial responsibility rule is important because pre-existing financial responsibility regulations will remain in effect until the Coast Guard promulgates final regulations. Since existing regulations ensure financial responsibility at levels generally far lower than those required by OPA, claimants could fail to obtain OPA levels of compensation from a spiller. Thus, delays in the rulemaking increase the likelihood that consumers, not the spiller, would pay for cleanup and damages and reduces the financial incentive to minimize spill risks.

For offshore facilities, we believe that the Interior Department has sufficient discretion to administratively address the difficulties that some classes of offshore facilities might have with OPA's financial responsibility requirements. This can be done without undermining OPA's fundamental principles and without recommending that OPA be amended.

Underground Injection

Some segments of the oil industry are pushing to terminate an EPA rulemaking that would strengthen underground injection control regulations governing injection of oil industry waste. Serious deficiencies in the current regulations have resulted in documented cases of groundwater contamination from oil and gas injection wells. Improvements are necessary to prevent contamination of underground sources of drinking water with carcinogenic and other contaminants such as benzene and radium from injection wells.

It is our understanding that EPA's proposed rulemaking reflects the report of an advisory committee convened by the EPA that consists of environmental groups, oil companies, trade groups, states and federal agencies. The report, which was conditionally approved by all participants, concluded that injection wells should have improved construction standards, increased monitoring, and a system for identifying improperly plugged abandoned wells in the area around existing injection wells. Friends of the Earth participated in the advisory committee and believes its report represents the absolute minimum necessary to protect drinking water and the public. If the Administration now backs away from the approach outlined in the report based on pressure from some segments of the oil industry, it will cast serious doubt on the Administration's commitment to consensus-based attempts to resolve environmental disputes, as well as on its commitment to protect public health.

Multiple use versus ecosystem management

The industry is pushing the Interior Department to abandon the concept of ecosystem management of federal lands and return to the policy of multiple use. We believe that an ecosystem management approach to land management represents an important step forward that will, if implemented properly, help avoid conflicts and crises, such as those involving endangered species, and promote coherent and ecologically sound management of the nation's public lands. The concept should not be abandoned before it is even given the chance to work.

Tax Relief

Today, the oil and gas industry seeks further tax relief and government favor, including: a fee on oil imports; a tax credit for marginal and new production triggered by falling oil and gas prices; additional percentage depletion subsidies; expensing of

geological and geophysical costs; additional Alternative Minimum Tax relief; an import fee only on imported gasoline and blending stocks; a floor price for imported oil by charging an import fee that increases as barrel prices drop; a 30% tax credit for all costs associated with horizontal drilling; an allowance for limited partnerships to qualify for passive oil and gas investments; elimination of the year 2007 sunset on the non-conventional fuels production credit; a 10% investment tax credit for production on federal and tribal lands; a 20% tax credit for stripper well production; and a deep-water production tax credit.

As a nation, it is important that we take a long, hard look at the full spectrum of environmental, public health, and safety issues now facing the oil and gas industry before putting in place any additional incentives that may in fact encourage oil and gas development that is wasteful, energy or financially inefficient, environmentally damaging, and/or in direct contravention of the nation's long-term energy security.

Even Secretary Bentsen, once a champion of oil and gas tax breaks, last week expressed concern that any new incentives for the oil and gas industry could slow the economy.

It is also important to emphasize that emerging, clean renewable energy industries like wind and solar receive scant tax incentives for production and development compared to the mature oil and gas industry. According to the Alliance to Save Energy, in 1989, the oil industry received \$4.7 billion in tax breaks and \$4 billion in other kinds of federal government subsidies. The natural gas industry received \$3.1 billion in tax breaks and \$1.1 billion in other kinds of federal government subsidies.

In comparison, emerging renewables such as solar and wind energy received only \$548 million in tax subsidies and \$352 million in other kinds of federal government subsidies. Since 1989, other subsidies for the oil and gas industry have been adopted, including oil spill liability limits and alternative minimum tax relief for independent oil and gas producers. In addition, adding a mid-point estimate of the cost of defending oil imports would add an additional \$35 billion in subsidies.³⁰

Clearly, a more sound target for additional tax incentives as well as other federal subsidies would be the renewable energy sector as well as energy efficiency, not the oil and gas industry.

ENVIRONMENTALLY SUSTAINABLE ENERGY SECURITY

The answer to more environmentally sustainable energy security lies not with blind federal support of the oil and gas industry but a balanced approach with heavy emphasis on energy efficiency and renewable energy resources coupled with an environmentally

³⁰ Douglas N. Koplow, *Federal Energy Subsidies: Energy, Environmental, and Fiscal Impacts*, Alliance to Save Energy, 1993.

responsible, efficient oil and gas industry. This approach will not only be better for the environment but also for employment of America's workers.

Promote Energy Efficiency and Jobs

According to *Creating Jobs for the 90s*, a report commissioned from the Tellus Institute by The Wilderness Society, nearly ten times as many jobs on average would result from investments in energy efficiency measures compared with oil development in the coastal plain of the Arctic National Wildlife Refuge if oil was even discovered there. Within two to three years, over 250,000 jobs could be gained from efficiency compared with only 15,000 in oil drilling.

Even using overly optimistic estimates by the American Petroleum Institute, only 100,000 jobs would be created by drilling in the Arctic National Wildlife Refuge (if oil were to occur there) over a 17 year period versus 675,000 jobs over the same period due to cost-effective efficiency investments. This is the case because spending on energy-efficiency measures is far more job-intensive than is spending on oil drilling. More importantly, conservation investments will reduce the utility and fuel bills of households and businesses, thus allowing them to make other purchases from industries that are also more labor-intensive than the energy industry.

In addition, the quality and duration of jobs created by efficiency investments is much more stable than the "boom and bust" history of job development in the oil industry. Further, investing in energy efficiency, while initially costly, would result in energy savings almost twice as big as the original investment.

Prevent Petroleum Pollution and Waste

Much of the pollution and endangerment found in the U.S. oil industry today is preventable. Pollution, energy waste, and accident-prone refineries all have their origin, in some measure, in the lack of efficiency -- i.e., capturing waste before it becomes an environmental hazard; maintaining a catalytic cracker before it spews emissions into the community or endangers workers in the plant.³¹

Corrosion and mechanical wear and tear are predictable occurrences, remedied by timely maintenance and capital replacement. Fumes, emissions, oily wastes, and evaporative losses can be captured, and in fact, often re-used within the refining and petrochemical processes.

³¹ A few industry leaders have discovered that the necessary changes need not be all that earth-shaking and can have multiple benefits for company and nation. "...[W]e set out to improve stationary combustion safety at our refineries," reported British Petroleum's James Ross in a 1991 speech to petroleum analysts in Toronto. "The solution was to develop a new burner. This new burner not only increased safety, it also reduced nitrogen dioxide and particulate emissions -- and it provided a material improvement in efficiency. We now also provide that technology to our customers."

Some industrial hazard analysts, such as Nicholas Ashford at M.I.T., point out that existing accident prevention systems are grounded in "secondary prevention" -- measures that reduce the probability of accidents but do not really change the inherent risks associated with those technologies or processes. Ashford and others suggest that industry should move to a new level of safety and plant design -- known as "primary prevention" or "inherently safe technology," also applicable to the prevention of leaks, spills, and emissions.

Rebuild, Retool, Reinvest

At a minimum, there is a need to retool and rebuild the entire U.S. petrochemical complex; to build it new and leakproof, and make refineries and chemical plants models of clean, safe and efficient processing. In this process, the U.S. oil and gas industry could become a global leader in capital goods innovation -- in designing and installing "inherently safe" technologies that prevent pollution and accidents and reap greater efficiencies in production and processing.

Petroleum and petrochemicals will obviously continue to be important components in economic growth. Oil has been king of industrial substances for the longest time; it has created jobs, new businesses, and whole new industries. But today, the oil and petrochemical products around us are all too frequently public health, safety, or environmental threats. Also when burned, vented, leaked or spilled, oil and natural gas contribute directly and indirectly to the major dilemma facing all societies now using fossil energy: global warming.

Certainly in America -- which now purports to lead the world in stabilizing greenhouse gases -- oil and gas profligacy must end in all forms. A new era of maximizing hydrocarbon efficiency must begin, and Congress must lead the way by turning away from the old "production-only" model. Tax incentives that encourage reckless and wasteful oil and gas production without adequate environmental safeguards are only future costs disguised in economic growth jargon. They do not really "net" the nation any economic advantage, as the costs enumerated earlier in this statement indicate.

There has never been a sustained, well-coordinated program aimed at improving industrial energy efficiency throughout the entire oil and petrochemical complex. There has been no industry-wide initiative that has systematically and assiduously attacked the opportunities for improved energy performance from oil well to corner gas station; from feedstock to end use.

Now is the time to initiate such a program. The oil and gas industry should be charged with investing in their own "energy house" for the good of the U.S. economy and the environment. They should be pushed to initiate major processing and refining improvements -- to "mine" existing wells, transport, and refining operations for every

possible increment of efficiency — and to "push the envelope" on energy R&D and new recovery technologies. The emphasis, however, must be on efficiency — *not* on grandiose production schemes or new synthetic fuels projects. And existing resources must be developed under strict environmental compliance.

In any case, the long rule of hydrocarbon waste and inefficiency must end; a new era of efficiency, improved environmental performance, and economic renewal must begin. And national policies must begin to reflect that shift in emphasis.

RECOMMENDATIONS

Overall, the oil and gas industry and the government operate in a crisis mode when breakdowns in infrastructure that cause environmental damage occur. On the whole, there is a need for much stronger planning, oversight, and enforcement.

In addition to rebuilding, retooling, and reinvesting in America, the oil and gas industry should conduct and disclose company-wide energy and environmental audits. They should disclose environmental liabilities of oil properties sold, double wall pipelines, and hire full-time health and safety monitors. They should build tankers to the highest standards and prohibit projects in environmentally sensitive areas.

The Congress should review the record of the federal environmental agencies and the Department of Justice in bringing enforcement and noncompliance actions against oil industry violators. Congress should remove all exemptions for the oil and gas industry from environmental statutes. It should require the industry to disclose toxic releases. It should prohibit tax deductions for oil spill damages and clean up expenses as well as require the best available technology to obtain federal leases.

The Administration should audit the energy efficiency of the oil and gas industry and review industry subsidies and special allowances for consistency with environmental, efficiency, and deficit reduction goals. It should improve the spill reporting system and should issue a report on the industry and how it operates on public lands, including an accounting of pipeline leakage. It should review federal environmental enforcement in the industry and, through the Minerals Management Service, determine who owns what oil assets in the Gulf of Mexico.

Thank you for the opportunity to submit this testimony.

Mr. LEHMAN. I want to thank each panelist for excellent testimony.

Dr. Gordon, if I read figure 1 in your submitted testimony correctly, the cost per barrel of oil reserve added is close to an all-time low.

Mr. GORDON. Well, it is not close to an all-time low, but it is close to what I would call a cyclical low, that is, compared to the last instance where crude oil prices were this depressed.

Mr. LEHMAN. Does that suggest that companies have been more efficient in finding the oil, and perhaps they don't need more incentives?

Mr. GORDON. No, I don't. I think this is the point really that Dr. Fisher was driving at among others, and that is that technological improvement has dramatically improved the rate of discovery on wells that are still being drilled.

The point, however, I think is more one of, is the level of overall drilling, first of all, economically viable; and secondly, is it sufficient to even remotely replace this country's production?

Now, the problem was, much of the drilling that occurred in the boom of, say, 1979, 1980, 1981 was really economically viable only if crude oil prices were to continue to go up indefinitely. When those wells were no longer being drilled, you saw in part the improvement in the discovery rate. Those were more marginal wells being drilled, okay?

So economically we are talking about a better quality or class of well.

Mr. LEHMAN. Has it been your experience that large oil companies profit most by acquiring property during times like these, but not developing it until later and then getting a windfall?

Mr. GORDON. Most governments won't tolerate that. You have very little room for leeway.

For instance, if you were to take blocks in Indonesia, Egypt, Ecuador, almost any other country in the world, you probably are subject to a maximum three-year exploratory period. You have committed to a certain amount of exploration activity, and a certain minimum expenditure; you are not allowed to hold it. If you don't do it by the end of that period, it goes back to the government, and you still owe whatever you committed to spend.

Now, there are some exceptions, but basically most governments would not tolerate that. It is not even considered.

Mr. LEHMAN. What do you mean, "most governments wouldn't"?

Mr. GORDON. There are a few cases where there are very extended exploratory periods; there are a few cases where only limited exploration has—

Mr. LEHMAN. Which governments?

Mr. GORDON. The United Kingdom is one; there are delays that are allowed there for a period of time. The United States actually has fairly considerable delays as well.

Mr. LEHMAN. Okay. The United States, United Kingdom, and otherwise most policies would not allow that?

Mr. GORDON. That is right.

Mr. LEHMAN. Dr. Fisher, how do these recent discoveries in the Gulf of Mexico change estimates of oil reserves for Federal offshore areas in the years ahead?

Mr. FISHER. Well, it is a major new play, Mr. Chairman, and we do not at this particular point have a full assessment because it has not been developed.

One of the major companies estimates that the soft plate that you are referring to is probably on the order of 10 to 15 billion barrels of oil, or gas equivalent. That is probably reasonably on target, knowing what we know about the size of the area, its general geologic makeup; and that would be significant. That is a volume that is equal to the historical production of the Gulf, for example, or close to it. So that could be very, very significant.

But we will not know a fuller dimension of that deep water subsalt resource until there is further development.

Mr. LEHMAN. Further, you talk about all the new technology that has come into being recently, the 3-D applications, et cetera. Do the oil companies have the expertise to use that technology or are they going to require a period of time before they can fully utilize it?

Mr. FISHER. Well, the technology has been utilized by a significant portion of the industry. It is becoming much more widely used in recent years than perhaps it had in the past. An example that you mention of 3-D seismic was exclusively or almost exclusively an offshore activity used largely by major companies and the service companies there. That is in the process now of spreading rather substantially on land and even amongst independent operators.

So technology comes along and then its diffusion is an additional dimension of the impact that it can have.

Mr. LEHMAN. Ms. Erlandson, you mentioned the need for greater enforcement against violators. With respect to the Gulf, what do you think is the greatest area of noncompliance?

Ms. ERLANDSON. It is hard to know because we don't know what is going on. Enforcement is relatively weak in most of the areas, with pipelines, for example, there is a fair amount of leakage going on, and you can look in our report here, *Crude Awakening*, there is a whole section on pipelines, and it talks about pipelines in the Gulf, for example.

Mr. LEHMAN. One criticism the industry has of the OPA is that the financial responsibility requirements for offshore are too high and they say they can't get the insurance.

Have you found that to be the case?

Ms. ERLANDSON. No. In fact, in my written testimony, you will see that one insurance company has come forward and said that—this is on page 15—one insurer has indicated it is ready and willing to provide insurance coverage and it will fully meet the financial responsibility requirements, so I assume if there is one, there is probably more than one.

Mr. LEHMAN. What do you think is the greatest threat this legislation poses to the coastal regions of Alaska?

Ms. ERLANDSON. The royalty relief?

Mr. LEHMAN. Right.

Ms. ERLANDSON. Well, there are probably a couple. In terms of development of onshore facilities, they will threaten the Arctic National Wildlife Refuge and other areas—habitats of denning polar bears, for example, and wild birds that use these places as nesting grounds.

Also, there is potential for increased spillage obviously.

Mr. LEHMAN. You say that royalty relief would provide more incentive to develop, for instance, in ANWR. Why wouldn't the opposite be true if you were able to get more production in other areas without dealing with that? What is the logic you are putting forth?

Ms. ERLANDSON. Well, my sense is, it makes drilling and development of oil resources in Alaska more profitable overall, and there is already clearly pressure to drill in the Arctic National Wildlife Refuge. As you know, that effort was defeated a couple years ago in 1992 in the Congress, but my sense is that there would be a renewed effort, given the profitability that the companies foresee.

Mr. LEHMAN. Mr. Miller.

Mr. MILLER. Thank you.

Dr. Gordon, you and Ms. Erlandson seem to have a different view of the impact of the tax system on this industry. How do you square that?

And Ms. Erlandson, also, you respond, too.

Mr. GORDON. Well, my estimation is based on a couple of basic facts. One is the state of the geology in the United States, and it is not just simply a question of how many billions of barrels might be found or added through improved technology. It also has to do with the fact of how many millions of barrels can be found by a particular company in order to replace its own production.

Bear in mind, each oil company has the same dilemma the United States has: How do we replace our production? A company like an Exxon or a Chevron is hard pressed these days to even remotely replace oil production from exploration in the United States. For that matter, they are hard pressed to do it anywhere in the world.

Further, many of these larger companies you find moving internationally because they are looking, I think, as was said earlier today, for that next big discovery. That is a very fundamental driving force. The truth is, they have not found it.

Now what you are finding many of them doing is going into production deals or doing acquisitions, and that, I think, is going to be a growing trend. The second thing, though—and then I will conclude real quick here—is that it is not a question of some absolute standard here. There are tax distortions that occur if a government, say, for example, the United Kingdom offers dramatic exploration incentives, which at one time they did, and the United States Government stands idly by and does nothing.

There will be tax-induced distortion, and it has got nothing to do with whether or not the U.S. tax system is tax neutral or not. We could have a perfectly tax neutral system in the sense of my colleagues' definition, this is some of the mischief that has been caused, I think, in policy in recent years, and it would still be nonneutral; that is, we would still find other governments in effect siphoning resources off. That is basically my perspective.

Mr. MILLER. Ms. Erlandson.

Ms. ERLANDSON. In general, I think it is our view that the Tax Code right now is focused only on, how do we deal with production, and there is very little, if any, way that it addresses the consumption side; and as was stated earlier today in testimony, our oil import problem is as much a problem of consumption as it is production.

I don't think we have enough production ability here for long-term supply of the United States by their own oil. So to muddle around in the Tax Code, I think, is ignoring the bigger problem, which in our view is to deal with efficiency, particularly transportation efficiency; and there is probably some argument to be made to impose a user fee on people who use cheap oil. And the President had proposed that with the Btu tax, and as you know, the Congress rejected that.

But, you know, whether we have more depletion allowance than we already do or more AMT relief or whatever, when we look at the Code and we look at what other industries get in this country, it pales in comparison and it raises the eventual question of, is there enough we can do to stimulate this industry here? Maybe it is a lost cause; I don't know.

Mr. MILLER. I guess to go back to my previous question, Dr. Gordon, you are in the business of advising these firms. What is it that causes you to advise them to go to one country or another?

I assume that is a sum-total decision, you add up all of the factors?

Mr. GORDON. That is right. It is based on a large number of factors, but it fundamentally is rooted in the long-term strategy of the company and whether or not a particular region can be compatible with that strategy.

First and foremost, the companies have got to maintain profitability, reserves, production, and they cannot do that in certain countries under the current regime, the United States being a very prime example.

The disturbing thing, though, sir, is that it is not just the Exxons that are going international now. We are now talking about the Nobles, the Apaches, small Oklahoma companies taking a hike, quite frankly; and they are hiking to Kazakhstan for Christ's sake, and there is a reason. And partially in those cases we are talking distortions related to the differences in taxation.

If I could, just let me say one other thing, and that is, I again want to emphasize there is no free lunch, ladies and gentlemen, there is no free lunch. The oil industry understands that when they are doing business in Indonesia or Kazakhstan, but they have a tendency not to remember that when they come to you here in the United States.

If you get royalty relief in Norway, there will be a price somewhere. If you get a lower profit split in an Indonesian production-sharing contract, there will be a price somewhere else in that contract. That is where I think the balance needs to be brought in. Right now, we have got a very one-dimensional sort of policy.

Mr. MILLER. Aren't we also confronted when we look at this—and I think—as Miss Erlandson pointed out—that the Tax Code is replete with exceptions and exemptions, partial exemptions or what have you, that have built up over the years for this industry on the theory of doing it; but when you run into some Third World countries, developing countries and emerging countries and all the rest, there are different agendas.

I mean, Indonesia is not there to help you simply acquire a pool of oil and put it into your replacement pool. They are there to have you get into production.

Mr. GORDON. That is right.

Mr. MILLER. In some instances, it is conceivable that they don't really care what the price of oil is because they are getting nothing today, so they want production at \$14 a barrel, production at \$20 and \$27 and all the rest. But it doesn't matter today for them; that is why they have these huge incentives for you to bid, acquire, and explore and develop because they are looking for currency to do other chores in their economy that are necessary in terms of infrastructure, what have you, to bring other sectors.

The same is true of China. The same is true of almost every other country in the world today. Is that not so?

Mr. GORDON. That is, but if I could interject just one thing. There is a distinction between, for instance, an Ivory Coast that has no existing production. That is, they are a net oil importer, which is exactly what we are as a country as well.

The reality is, oil is very expensive if you are a net importer. It destroys your balance of payments, it destroys your currency, causes all sorts of distortions to be importing more oil or being a net importer of oil.

Mr. MILLER. Again, we are struggling with the balance, and of course, this comes with the Johnston bill. There is a question, is it revenue neutral because so is the internal deficit of this country? You apportion costs out across the society in different areas?

Mr. GORDON. Right. I frankly would go much further than just asking revenue neutrality. Quite frankly, for a bill that would call for a royalty holiday of that sort, I honestly believe—and I think you mentioned this earlier—that there needs to be compensatory higher profits, taxation as part and parcel of the package. That is, it should not be given as a pure bennie. That is what leads to this debate, and I think it is a misplaced debate over subsidy, tax subsidy, tax incentives and so on.

There needs to be balance in these proposals, and I think if we were to look at a number of other countries, you would find that they have successfully achieved that balance. The U.K. repealed royalties, and instead put greater weight on profits-based taxation and very high marginal tax rates and all the while, while U.S. drilling was collapsing, U.K. drilling was quite stable; so I think there are lessons to be learned.

Mr. MILLER. I think the lesson to be learned is, in some cases, some of our competitors, to the extent that they are, are somewhat better negotiators than we are. You know, I was looking, reading some of the oil, energy press about the negotiations over the North Sea gathering system, and the companies saying it is very difficult for us to put a billion dollars into this gathering system at the rate of return, what have you.

And they said, well, what are we going to get if we give you the relief, and when can we expect the investment and how soon will it be completed and when would we realize the higher yields from those fields that you can't gather from today?

Mr. GORDON. Precisely.

Mr. MILLER. You know what is in it for us.

Mr. GORDON. That is right.

Mr. MILLER. I think Ms. Erlandson's point is that we have gone through this process from time to time without asking that on the other side of the equation.

The assumption is, it is sort of good for us because they will be working out there, not necessarily so in terms of the long picture. And I am not sure that in terms of how much the energy picture worldwide has changed in the last five years—in the access to markets and the access to capacity that simply didn't exist five years ago—we are still asking sort of the same questions we were asking in the late 1970s. How do we get some sort of political blip from somebody opening up a well somewhere as opposed to, is this really going to lead us to sort of a long-term benefit in terms of energy production in this country?

Mr. GORDON. I absolutely agree. That is one of the fundamental issues, and you are right, most governments are far better negotiators, but our government—by the way we have structured our tax and licensing system—we do not give sufficient flexibility to achieve the sorts of objectives we need to achieve.

That is, if you take a look, for instance, at the royalty, it was imposed because farmers didn't want to be bothered. I mean, this was pointed out earlier. We are not a nation of illiterate farmers any longer. Why are we clinging to a royalty system which most governments have repealed or dramatically reduced in recent years?

We use signature bonuses, the first lesson we give to a country such as Ecuador or Egypt: Why rely on signature bonuses? You crowd out the market, you create excessive up-front capital requirements, and you in effect lose elsewhere; take it in the profits.

My point again, sir, there are considerable lessons to be learned, and if you look at the sorts of policy—not just developing countries, but already developed countries, countries that entered the oil business after the Gulf of Mexico was already going strong—they have learned a number of lessons that we could stand to benefit from, and that would tend to defuse, I think, some of the questions that begin to rise about whether this is a subsidy or compensation, or does it have some material benefit?

Mr. MILLER. What is the impact if we move to a royalty system, sharing of the profits, so to speak?

Mr. GORDON. Well.

Mr. MILLER. Is that a hurdle that makes it more attractive, less attractive to companies?

Mr. GORDON. If we were to switch away from a royalty-based system?

Mr. MILLER. Or a bonus-based system for entry.

Mr. GORDON. I think there are a number of potential impacts. It depends on how one structures it. That again leads you to the important point.

There are many, many options available in the form of some kind of royalty relief package. It is not necessary to do all or nothing, but rather one can structure it, one can target particular activities, but if, for instance, one were to take the deep water Gulf, just as an example, Indonesia just passed incentives for deep water drilling, Nigeria has deep water incentives—if we were to eliminate a royalty system and instead put some sort of progressive, profits-based tax. Remember now, gentlemen, almost every other govern-

ment in the world says oil is special. It is not just another product; we don't just tax it with the corporate income tax.

We have a special profits tax as well. We are one of the few countries that does not do that. I think that would be a way where you could seriously restructure it so that you encourage exploration in the deep water; notice you wouldn't have much up-front revenue loss because it is not producing properties yet anyway.

Finally, if, for example, the price of oil were to double five years from now and you have granted a royalty relief package, what is that going to look like when oil hits \$40 and there is no recapture package? It is going to look like holy hell, and there is going to be all hell to pay. I would suggest that with a profits-based add-on related to that, you defuse that entire issue because then if, five years from now, the price of oil doubles, quadruples or falls by half—by the way, the system adjusts to that, and that is really I think an essential message here—we lack that adjustment capability. That is why everyone is here and everyone keeps coming to you. It doesn't matter whether it is a consuming group or a producing group—they are always unhappy.

Mr. MILLER. Well, the other thing that I find sometimes is the reason they are always unhappy is because they don't all have the same problems. Some people will say to me, well, those boys at Shell with that Mars platform, they just made a wrong decision five years ago or ten years ago and they walked into a down market, and they are just looking to see if they can get some help. And the other people say, well, those people who went overseas, they are kind of stuck over there now, and of course they are going to say that about us; and so you have different corporate philosophies, and companies, in fact, when you read the financial pages, different times are affected different ways by world events because some people are trying to acquire oil on Wall Street, some people are trying to acquire oil in Russia, some people are trying to acquire oil at home, and it changes on a daily basis. And there are winners and losers all of the time based upon the same economic news, the same foreign policy considerations because people made choices about Shell and about Chevron and about ARCO and about Exxon and about independents, where they were going to go and what they were going to do. And a lot of those decisions were made a long time before anybody heard about royalty holiday.

It may advantage some companies. But as for other companies, it is not so good for them in their competitive place in the American economy because their competitor is getting something that they are not getting. And so it is not like we get to come up with this one policy because there have been people here with more strength in the Congress than other strengths, there have been States that have had more power than other powers, and it has ebbed and flowed back and forth. And we end up with a Tax Code that looks like this that has nothing again to do with the modern energy world.

So there are an awful lot of people that are coming in the back door saying, this is crazy, what you guys are talking about doing, this will make no difference. Yeah, it will make no difference to them and they have something else they want, and they would rather not spend the credits of the oil industry talking about roy-

alty relief when they don't have any royalties out there to begin with. They have got something else they see coming down the road. And so we act like this is a matter of national urgency and we won't make it as a country unless we get royalty relief.

No, some companies are going to have to drill their way through \$18 oil and hope and pray they get to \$24 some day, but in terms of the overall energy picture, \$20 a barrel is going to keep coming to the shores of this country, or whatever the international price is on that given day. But we build this into such a notion that we have one more in the long list of exemptions here for particular segments of this oil industry as opposed to what it is; it is flexible to what is going on in the rest of the world because the production is much greater elsewhere.

Thanks, Mr. Chairman.

Mr. LEHMAN. Thank you. I want to thank the panel for your testimony.

We have a vote on, I believe two votes in the House, and we have one more panel to go. We will break now, then, for the vote, and we will return at 10 minutes till 1:00.

[Recess.]

PANEL CONSISTING OF JOE B. FOSTER, CHAIRMAN AND CEO, NEWFIELD EXPLORATION CO., REPRESENTING THE INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA; RAYMOND E. GALVIN, PRESIDENT, CHEVRON USA PRODUCTION CO., REPRESENTING THE AMERICAN PETROLEUM INSTITUTE; ROBERT L. KEISER, PRESIDENT AND CHIEF OPERATING OFFICER, ORYX ENERGY CO., REPRESENTING THE DOMESTIC PETROLEUM COUNCIL; JAMES C. DAY, CHAIRMAN, PRESIDENT AND CEO, NOBLE DRILLING CORP., REPRESENTING NATIONAL OCEAN INDUSTRIES ASSOCIATION; FREDERICK H. ABREW, PRESIDENT AND CHIEF OPERATING OFFICER, EQUITABLE RESOURCES, INC., REPRESENTING THE AMERICAN GAS ASSOCIATION; AND, NICHOLAS J. BUSH, PRESIDENT, NATURAL GAS SUPPLY ASSOCIATION

Mr. LEHMAN. We are going to get started. It is my intention to move as quickly as possible, so we will begin to hear from this panel, and we will probably have to break in five or ten minutes to have one more quick vote, and then we should be able to come back.

Do any of you gentlemen have to leave very quickly?

Mr. FOSTER. Yes, sir.

Mr. LEHMAN. Mr. Foster, why don't we start with you, and we will let you give your testimony now and excuse you if that is the case.

STATEMENT OF JOE B. FOSTER

Mr. FOSTER. Okay, thank you very much. I do have a 2:15 plane to catch, so I will be departing early.

My name is Joe Foster. I am here on behalf of not only my company, Newfield Exploration Company, but the Independent Petroleum Association of America.

As you may or may not know, independents constitute a very important part of the Gulf of Mexico operations. The number of Gulf

of Mexico operators has doubled in the past 10 years, and that increase has come entirely from independent operators. Independents account for nearly 90 percent of the operators in the Gulf of Mexico; 23 percent of offshore oil production comes from independents, and 36 percent of natural gas; and since 1988, the majority of leases purchased, the majority of wells drilled, the majority of discoveries made and platforms installed have all been made by independents.

Newfield is one of those new independents offshore. We focus exclusively in the Gulf of Mexico; we don't operate onshore, we don't operate overseas. Our sole province is the Gulf of Mexico. We were founded in 1989 with \$9 million of equity capital, and since our founding, we have made eleven exploration discoveries; we have drilled 56 wells, 52 of them operated by Newfield. As a result of this drilling, we have made reserve additions in the Gulf of about 175 billion cubic feet of natural gas equivalent, and then we have purchased about 100 billion cubic feet of gas equivalent from other companies. All of these additions have been made on properties that were previously owned by major oil companies.

To put this in perspective, the amount of reserve we have added during this period of time represents enough energy equivalent to supply the natural gas for 500,000 homes for a period of five years, so we are a relatively small company, but on the other hand, that represents a substantial contribution to energy supply.

We operate 117 wells and 23 platforms in the Gulf. We want to continue to grow in the offshore. It makes sense for us; it ought to make sense for the government.

Last year, we paid \$25 million in royalties to the Federal Government. Since we have been in business, we have paid about \$45 million in royalties to the government, and yet we don't believe that we can continue in business if the Oil Pollution Act of 1990 is not amended or the regulations made very clear concerning the certificate of financial responsibility for \$150 million.

As I indicated, we started with \$9 million of net worth. At the end of 1993 we had \$153 million of net worth. We still could not qualify for a certificate of financial responsibility to operate in the Gulf of Mexico, that is, unless regulations are somehow devised to permit that or the Act is amended to permit that.

I would like to correct or at least add to a statement made by the witness from the Friends of the Earth in the earlier panel, in that there was an insurer that would provide insurance for that certificate of financial responsibility. That is not true with respect to offshore facilities. There may be an insurer that will do that with respect to tankers, which is what she mentioned in her testimony, but not for offshore facilities; and such insurance is not available to a company such as ours. Yet we have an excellent environmental record.

We have never spilled a significant amount of oil. We have always had \$35 million of oil spill contingency liability policy, we have been good environmental stewards, we have oil spills regularly, and I just question that it is good public policy to deny companies like Newfield the opportunity to explore for oil and gas and to produce it in the Gulf of Mexico. I really don't think there is a

rational argument for doing that, but that is exactly what OPA '90 will do.

If you want my diagnosis of the economic health of the offshore oil and gas business, particularly in the Gulf of Mexico, OPA '90 is a deadly tumor, and unless its offshore facility provisions are treated, companies like mine are going to be on a terminal list.

We concur with the Independent Petroleum Association of America, which made a statement earlier this year that the Oil Pollution Act of 1990 establishes an unworkable and uneconomic regime for offshore oil and natural gas exploration. The statute should be amended to reduce the level of financial responsibility, to clarify regulatory authority, to establish financial responsibility on a risk-weighted basis to assure a financial responsibility regime that is insurable and affordable, and to clarify the statute's ambiguous and overly broad definitions.

The energy supply of this Nation and the Federal Treasury, not to mention a lot of the people we do business with, our employees and our shareholders, have all benefited from Newfield being able to explore and operate in the Gulf of Mexico; and I think it would be very important for the legislation or the regulations to permit us to continue doing that.

Thank you very much.

Mr. LEHMAN. Thank you very much.

[Prepared statement of Mr. Foster follows:]

INDEPENDENT PETROLEUM



ASSOCIATION OF AMERICA

Statement by
Joe B. Foster
 Chairman and Chief Executive Officer
 Newfield Exploration Company
 before the
 House Committee on Natural Resources
 joint hearing of
 Subcommittee on Energy and Mineral Resources
 and
 Subcommittee on Oversight and Investigation

June 23, 1994

Mr. Chairman, I am Joe Foster, chairman and CEO of Newfield Exploration Company of Houston, Texas. I appear today on behalf of my company and the Independent Petroleum Association of America (IPAA). I welcome this opportunity to discuss the economic health of the offshore oil and natural gas industry.

The economic health of the offshore oil and natural gas industry depends upon the continued vitality of the nation's independent producers. The public and many policy makers are unaware of the large and growing role that independent producers have in the offshore.

The National Petroleum Council, in a December 1993 report to the Secretary of Energy offered this assessment:

"The number of operators in the federal offshore has roughly doubled over the past ten years. The increase has come entirely from independent operators....Independents account for nearly 90 percent of offshore operators, 23 percent of offshore oil production, and 36 percent of natural gas production....[S]ince 1988 independents have acquire more lease acreage, paid the majority of bonuses to the federal government, made the overwhelming number of new discoveries, placed the majority of new structures on the OCS, and, for most of this year (1993) have hired more than 70 percent of drilling contractors active offshore."

Newfield Exploration Company is one of those new independents offshore. My company explores for and produces oil and gas reserves exclusively in the Gulf of Mexico, but we could be forced to withdraw from the Gulf as a result of the provisions of the Oil Pollution Act of 1990.

Newfield started in 1989 with \$9 million of equity capital. Since its founding, Newfield has participated in eleven exploration discoveries (nine as operator)--that's new oil and gas reserves. We've drilled 56 wells, 52 of them as operator. As a result of this drilling activity and other operations, Newfield has added 174.5 billion cubic feet of gas equivalent (bcfge) reserves. All of these reserves additions have been on leases previously owned by other larger oil and gas companies. In addition, Newfield has acquired proved reserves from others totaling 98.7 bcfge.

We now operate 117 wells and 23 platforms in the Gulf. We want to continue to grow in the offshore, and it makes sense for the federal government to encourage that growth. Since its inception, Newfield has paid the Minerals Management Service OCS royalties and rentals totaling \$44.3 million. The majority of that, \$25.8 million, became due and was paid last year. Still, despite our growth, despite our contribution to the nation's energy supply and despite the royalties we are able to pay, federal law may just run us off, unless the Oil Pollution Act of 1990 is amended.

At year-end 1993, Newfield had a net worth of \$153 million, a sixteen fold increase in less than five years. Yet, unless regulations implementing OPA '90 are less severe than the Act, we cannot obtain a Certificate of Financial Responsibility to continue to operate in the Gulf.

We have an excellent environmental track record. Newfield has never spilled a significant amount of oil in the Gulf. We have always had a \$35 million oil spill liability policy. To us, being a good environmental steward makes good business sense. Oil spill prevention is basic part of how we do business, and we conduct oil spill drills regularly.

Is it good public policy to deny companies like Newfield the opportunity to explore and produce in the Gulf of Mexico? I don't think there is a rational argument for doing so, but that's what OPA '90 will do.

Newfield concurs with the IPAA that,

"...the Oil Pollution Act of 1990 establishes an unworkable and uneconomic regime for offshore oil and natural gas exploration. The statute should be amended to reduce the level of financial responsibility, to clarify regulatory authority to establish financial responsibility on a risk weighted basis, to assure a financial responsibility regime that is insurable and affordable, and to clarify the statute's ambiguous and overly broad definitions..."

My diagnosis of the economic health of the offshore oil and gas industry is this: OPA '90 is a deadly tumor, unless its offshore provisions are treated and cured, companies like mine will be on the terminal list.

The energy supply of this nation, and the Federal treasury, not to mention our shareholders, employees, and suppliers, (and, thereby, the U.S. economy), have all benefitted from Newfield -- and many companies like it -- operating in the Gulf of Mexico. You are the surgeon who must make sure OPA '90 doesn't consume companies like mine.

Mr. LEHMAN. Mr. Galvin.

STATEMENT OF RAYMOND E. GALVIN

Mr. GALVIN. Thank you, Mr. Chairman. My name is Ray Galvin. I am President of Chevron USA Production Company, and I appear today on behalf of the American Petroleum Institute; and I would mention as a side bar that, since Chevron's name has come up by Chairman Miller and Secretary White, we do spend money internationally, are active in a number of international companies, but we continue to spend \$2 million a day investing in exploration production investments in the U.S. We want to continue that. A large share of that is in the Gulf of Mexico.

Since the Federal offshore leasing program began in 1954, the natural gas and oil resources of the Federal OCS have contributed substantially to U.S. energy supplies; and it has been mentioned earlier today that OCS accounts for over 25 percent of our natural gas production and approximately 10 percent of domestic oil production. For Chevron, the Federal OCS makes up more than a third of our oil production and two-thirds of our gas production.

This hearing comes at a critical time as the U.S. oil and gas industry continues to experience difficulties. In 1992, well starts in the Federal offshore areas fell to the lowest level since they started in 1954. From 1983 to 1992, exploratory and development drilling have declined more than 50 percent, and as has been mentioned, total employment in our domestic industry has fallen by almost 500,000 since 1992.

When you add low prices and increasingly restrictive government policies to a mature producing profile, the basic question becomes, do we as a nation really want a viable domestic oil and gas industry that is capable of maximizing the recovery of the tremendous resources that Dr. Fisher mentioned that we have? If we do that, our OCS areas offer this vast potential resource that can help us maintain a viable domestic industry, but there are several problems that we face in attempting to realize this potential.

One of the big problems is access to OCS areas. Over 266 million acres are currently off limits to leasing, and the government and the industry both need to do a better job of assuring the public that their concerns about offshore drilling can be addressed; and one way to do that would be to provide adequate funding of the MMS's environmental studies program which would help us all address the public's concerns.

Another problem, after industry had spent over \$500 million in bonus bids alone to acquire acreage in areas off North Carolina, off southwest Florida and in Bristol Bay, Alaska, the government imposed entirely new statutory barriers which prevent us from exercising our rights under these leases. The money we spent has been tied up for years, and we are currently in litigation over these leases.

When the United States Government refuses to let us drill on leases we have paid for and refuses to return our money, it raises serious questions in our mind about the risk and advisability of investing in domestic energy projects. In fact, as has been stated, many companies are investing their money elsewhere. A measure

of that is that exploration expenditures in the U.S. have drastically declined.

In 1992, 20 leading U.S. oil companies spent 70 percent of their exploration budget on foreign projects and only 30 percent domestically. This is a complete reversal of the 70 percent domestic and 30 percent foreign level that we had some 10 years ago.

Another hurdle facing the OCS industry is regulatory delay and lack of coordination among Federal agencies. There were some questions asked of earlier panels raising implications about a company's delaying investment in their offshore properties until later times. Unfortunately, these delays do occur, and I have an example.

Our Chevron Destin Dome project off the Florida Panhandle, where we have discovered significant quantities of dry natural gas and are currently drilling our third exploratory well, the permitting process for this one well took three-and-a-half years, including a consistency appeal to the Department of Commerce that took almost two years from the initial filing of the appeal to the ultimate decision. To her credit, Secretary of Energy O'Leary's domestic gas and oil initiative recognized this problem and recommended better coordination among Federal agencies during the permitting process for energy projects. We certainly hope that the Secretary's recommendations are implemented.

And as has been mentioned, there are a number of incentive proposals that would encourage cost-efficient ways of achieving increased domestic oil and gas activities that should be considered.

Our industry stands ready and able to respond to the challenges facing us. We can produce crude oil and natural gas in a manner consistent with the highest environmental standards in the world, but we must have access to new areas of OCS to help replace reserves; and we need reason, certainty, and speed from the government in the regulatory arena. Implementation of such policies will help ensure that the OCS continues to provide a significant portion of this country's oil and gas.

Thank you, Mr. Chairman.

Mr. LEHMAN. Thank you very much.

[Prepared statement of Mr. Galvin follows:]

**STATEMENT OF THE
AMERICAN PETROLEUM INSTITUTE**

**SUBMITTED TO THE
ENERGY AND MINERAL RESOURCES SUBCOMMITTEE
AND THE
OVERSIGHT AND INVESTIGATIONS SUBCOMMITTEE
OF THE
HOUSE NATURAL RESOURCES COMMITTEE**

**FOR THE HEARING ON
THE STATE OF THE DOMESTIC OFFSHORE OIL AND GAS INDUSTRY**

WASHINGTON, D.C.

JUNE 23, 1994

The following statement, by R. E. Galvin, President of Chevron USA Production Company, is submitted to the Energy and Mineral Resources Subcommittee and the Oversight and Investigations Subcommittee of the House Natural Resources Committee on behalf of the American Petroleum Institute (API) for the record of the June 23, 1994 hearing on the State of the Domestic Offshore Oil and Gas Industry.

API represents approximately 300 companies involved in all aspects of the oil and gas industry, including exploration, production, transportation, refining and marketing.

In my testimony, I would like to discuss first, the increasing energy needs of the U.S. economy; second, the status of the domestic offshore oil and gas industry, and its ability to satisfy those energy needs; and third, how restrictions on access to offshore areas and regulatory policies are limiting our ability to satisfy America's future energy needs.

In the United States and in the world, there is every indication that sustained economic growth will require growing supplies of petroleum products. For the foreseeable future there are few practical alternatives to oil as a transportation fuel. In applications where alternatives to oil are available, such as industrial and electricity generation, the most economical and environmentally benign alternative is likely to be another product of our industry, namely natural gas. The Outer Continental Shelf contains a large share of this nation's best prospects for finding new oil and gas resources.

According to a projection published in January by the Department of Energy, even a relatively modest 2.5 percent annual growth in Gross Domestic Product between now and the year 2000 would create a demand for 2 million more barrels a day of refined product.

In addition to the projection for a 2 million barrel-a-day increase in demand, the Department of Energy projection assumes a 2 million barrel-a-day decrease in domestic production between now and then. As a result, DOE estimates that our dependence on imports may be as high as 57 percent of consumption by the year 2000.

Of course, oil imports are not a problem in themselves. When foreign oil costs less than domestic oil, the result can be beneficial for the U.S. economy. What's more, we cannot realistically expect to supply all of the oil required for the growth of this economy from domestic sources. Imports will be a part of any realistic scenario, and we need to accept that fact and manage its associated risks with the Strategic Petroleum Reserve and worldwide supply diversification.

Diversification of supply is the key to energy security, and the first and best place to develop that diversification is right here at home. America's best guarantee of secure and reasonably priced supplies of oil and natural gas is a strong U.S. petroleum industry, recognized around the world as the leader in exploration and production technologies, many of which are used offshore.

In the past decade, the industry has successfully adapted to one of the most difficult periods in its history. It has made enormous adjustments to meet challenges from a number of fronts -- from foreign competition, from changing product demand patterns, from rising standards of environmental performance, and from increasingly restrictive constraints on domestic exploration and development.

In the process, the industry has become smaller and cut its costs dramatically. At the same time, it has developed sophisticated new technology and has vastly strengthened its environmental performance. Both improvements have greatly enhanced its competitiveness in the international marketplace.

The record of the industry's accomplishments is impressive. This industry has been the leader in the development of sophisticated new technologies for exploration, development, and production. For example, new 3-D seismic surveys combined with new imaging technology, make our drilling methods far more precise. This new technology can identify and depict exploratory targets beneath a formation of salt. Horizontal salt occurs under as much as 60 percent of the Gulf of Mexico. Now that technology can pierce the veil of salt, exploratory wells have been returning to the Gulf, creating jobs for Americans, and finding new supplies of oil and gas for this country.

Another technological breakthrough, horizontal drilling, greatly improves the economics of certain types of prospects, often increasing several-fold the prospective

productivity of a well.

Such technological improvements mean that the U.S. industry has been able to maintain its competitive edge around the world. Other nations look to America's industry for its economic and environmental expertise. American oil companies are now looking for oil and gas in every corner of the earth -- in the northern reaches of Siberia and the waters of the South China Sea. My company, Chevron, is looking for oil in 25 countries, including Papua New Guinea, Namibia, Bolivia, and Trinidad and Tobago.

Yet, despite its preeminence in the world, the U.S. industry is in a fragile condition here at home. While continuing low oil prices have contributed to that condition, the staggering costs imposed by government regulations, rules, restrictions and mandates have also played a key role. The fact is, even under today's relatively low world oil prices, domestic oil and natural gas companies can find and develop a great deal of petroleum, offshore as well as onshore, if government policies allow them to do so.

Changing those policies would help slow down -- or stop -- the ominous trends of recent years. In 1992, in the federal offshore areas, well starts fell to the lowest level since the initiation of the federal offshore leasing program in 1954. Over the ten-year period, 1983-1992, offshore exploratory and development drilling has declined by more than 50 percent.

As domestic investment has dwindled, employment in the industry has declined. It has already fallen by nearly 470,000 since its peak in March of 1982. This decline in employment has been about two-and-a-half times the size of the decline in the U.S. automobile industry, since its peak in January of 1979.

Offshore drilling not only means more oil and gas, it means more jobs -- many of them high-paying, high-tech jobs. A recent study by DRI-McGraw-Hill found that for every \$1 million invested offshore, 20 jobs are created. For example, Shell's new Auger offshore tension-leg platform in the Gulf of Mexico has involved direct contracts with over 900 companies from 33 states and the District of Columbia. If you consider subcontracts from these companies, the economic and employment impact is very significant.

Offshore drilling can also mean an enormous amount of money for the federal treasury. Since the federal offshore

leasing program began in 1954, the natural gas and oil resources of the federal OCS have contributed substantially to federal revenues -- all told, more than \$100 billion in royalty and bonus payments. Yet in the last decade, federal OCS annual revenues have declined from \$10 billion to \$2 billion.

The \$100 billion was collected for leasing only a tiny fraction of all OCS lands, a mere 5 percent of the more than 1.4 billion offshore acres. Yet, these areas have produced more than 9 billion barrels of oil and 100 trillion cubic feet of natural gas. Today, more than 25 percent of domestic natural gas production and about 10 percent of domestic oil production comes from the Outer Continental Shelf. And I should add, 90 percent of that OCS production comes from the Central and Western Gulf of Mexico.

In contrast to the conventional wisdom, the offshore areas are hardly exhausted. According to the Department of the Interior, federal offshore areas could contain as much as 29.9 billion barrels of recoverable oil and 204.8 trillion cubic feet of recoverable natural gas.

The nation's OCS areas offer a vast potential resource that will help maintain a viable domestic industry. However, there are several problems we face in attempting to realize that potential.

The first is access to OCS areas. Over 266 million acres are currently off-limits to leasing. Because of congressional legislation and federal administrative actions, virtually all of the federal OCS outside of the Central and Western Gulf of Mexico and parts of Alaska is not available for leasing and development.

I am no expert in the area of public opinion, but it seems to me that many of these prohibitions result from a triumph of fear over science. In fact, there are no good scientific or engineering reasons to deny our industry access to these areas. We take great care in our operations to make sure that we leave the environment as clean and as attractive as we find it. And the statistics support that claim. For example, from 1982-1992, oil and natural gas activities in our nation's OCS waters spilled less than one-thousandth of one percent of what was produced.

The fears raised by the critics of offshore drilling mean untold billions of dollars worth of opportunities foregone, opportunities that could provide new supplies of domestic

petroleum that would mean more secure energy for the United States and lower-cost energy for the consumer. The oil industry has felt this burden even more directly. For example, it has spent over \$500 million in bonus bids alone to acquire acreage in areas off North Carolina, Southwest Florida, and Bristol Bay, Alaska. Having spent all that money to lease the prospective acreage, the government subsequently imposed entirely new statutory barriers which prevent us from exercising our rights under the leases.

Not only can we not drill on it, we cannot even get our money back. This money has been tied up for years, and we are currently in litigation on these leases. When the United States Government refuses to let us drill on leases we have paid for, and then refuses to return our money, it raises serious questions about the risks and advisability of investing in domestic energy projects. In fact, many companies are investing their money outside the United States.

In 1982, U.S. companies spent 70 percent of their exploration budgets on domestic projects and 30 percent on foreign projects. Today it is just the reverse.

There is still a lot of oil in the United States, but these reserves will retain their value only if we maintain the expertise and risk capital necessary to bring those resources to market. In periods of low oil prices, we must preserve at risk marginal production and stimulate development of new resources.

Toward that end, the industry has developed a modest tax incentive proposal in the form of a credit for existing marginal production (stripper, heavy oil, and high water cut) and new production, effective only when crude oil prices fall below a target price.

The API supports adoption of this proposal. But this modest step alone will not solve the problem. We urge that the Committee also look at additional tax measures such as expensing of geologic and geophysical costs, Alternative Minimum Tax relief, and enhanced oil recovery and deep water incentives to determine cost efficient ways to encourage increased petroleum activity.

Another hurdle facing the offshore industry in America is regulatory delay and a lack of coordination among various federal agencies. A good example of this problem is Chevron's Destin Dome project off the Florida Panhandle,

where we have discovered significant quantities of dry natural gas and are currently drilling our third exploratory well.

The permitting process for this well took three-and-a-half years. It included a consistency appeal to the Department of Commerce that took almost two years from the initial filing of the appeal to the ultimate conclusion. I do not want to fault individuals or a specific department, but clearly there is a lack of coordination among agencies in moving these projects forward.

Secretary of Energy Hazel O'Leary's domestic gas and oil initiative has recommended a speed-up in regulatory permitting for energy projects. We certainly hope that Secretary O'Leary's recommendations receive high level attention from the Clinton Administration and are put into effect. Speeding up the decision-making process is very important to companies who are committing huge amounts of money to develop this nation's OCS resources.

Our industry can produce oil and gas offshore, and we can do the job without harming the environment. But we must have access to new areas of the OCS to help replace our reserves and we need certainty and speed from the government in the regulatory arena. Implementation of these policies will help insure that the OCS will continue to provide a significant portion of this country's oil and gas for many years to come.

The moratoria on OCS leasing deprives the U.S. of one of the principal prospective sources of new supply that is needed to help stabilize U.S. output. In 1992, over a third of oil discoveries and over half of natural gas discoveries originated in Federal OCS waters.

For the many thousands who work in the offshore areas, for the companies that employ them, and for the American economy as a whole, these trends present legitimate cause for concern. So we believe that these hearings are especially timely.

This state of affairs is of concern not only to the petroleum industry, but should be of concern as well to the Clinton Administration, which has made it a policy objective to encourage the use of more domestic natural gas. The most promising areas for natural gas are on the Outer Continental Shelf. If these areas are off limits to exploration and production, domestic natural gas will be unable to keep up

with energy demand growth, let alone assume a larger role.

Let me use a few figures to demonstrate my point. According to the Department of Energy, Americans are expected to use about 12 percent more energy in the year 2000 than they did in 1992.

That's a big increase. Particularly when you consider the results of the 1993 National Petroleum Council study on natural gas. It showed that even if you assumed conditions that were far more ideal for encouraging the search for new gas, domestic production would yield only half the 2.1 trillion cubic feet per year of additional natural gas the American economy will need by the year 2000.

As an industry, we have already adapted to many changes in our market and regulatory environment, and will continue to do so. But we hope that policy makers understand that legislative and regulatory mandates are absorbing huge amounts of industry capital. The petroleum industry currently is spending more than \$8 billion annually in all of its operating areas on environmental quality and protection. By 1990, these expenditures exceeded industry spending on oil and gas exploration. By the end of this decade, API estimates that new costs already mandated may add \$17 to \$25 billion a year to this total.

There are a number of regulatory issues that serve to drive up costs and make less capital available for productive investment in the United States. Let me mention two that concern offshore operations.

The first is the issue of Natural Resource Damage Assessments, regulations which are under development by DOI and NOAA. Under the authority of CERCLA and OPA '90, the Departments of Interior and Commerce are developing regulations to impose liability when discharges of hazardous substances and petroleum harm the environment. The regulations could be interpreted to include damages for persons who do not actually live near or use the area affected by such spills, but who nonetheless claim to suffer an emotional loss.

The proposal to include such "non-use" damages relies on an economic methodology, known as contingent valuation for damage assessments, a methodology that is seriously flawed. A blue ribbon panel of economists created by NOAA to address the reliability of contingent valuation was not able to identify any study conducted to date which satisfied its

stated criteria of reliability. Final regulations for natural resource damages should not include liability for non-use value losses measured by the contingent valuation methodology.

The second regulatory issue concerns Financial Responsibility Regulations, as interpreted by the Minerals Management Service. API agrees that offshore lessees and permittees should continue to be required to demonstrate financial responsibility.

However, it is unreasonable that each offshore facility regardless of its size, location and risk of a spill has to demonstrate \$150 million evidence of financial responsibility. The recently published interim report by the National Petroleum Council shows that all but the most catastrophic discharges from offshore facilities result in costs much less than \$150 million and that requiring all facilities to demonstrate this amount will likely result in severe economic consequences.

In addition, to date, no insurers have indicated a willingness to serve as guarantors of financial responsibility to third parties, largely due to concerns over potential direct action suits. Under previous law, insurers and indemnitors have been effectively shielded from such actions because the lower liability limits associated with that law allowed many owners and operators to qualify as self-insurers.

Proper resolution of these issues will help reduce some of the unwarranted regulatory burdens this industry will face in the future and free up needed capital for productive investment. In addition, we would urge that as a matter of general principle, any new regulatory proposals should be subjected to thorough risk assessment, cost benefit analysis, peer-review science and economic impact statements.

Our industry recognizes the need for improving the environmental performance associated with our major products. We hope that government recognizes the extraordinary efforts we have already devoted and are continuing to devote to these efforts.

We are now world leaders in the technology and practice of producing oil and gas in the most environmentally benign manner possible. We are in a world market which values this capability, and which will require growing supplies of oil

and gas for continued prosperity.

We hope that these hearings and any legislative action resulting from them will assist us in gaining greater access to the sources of America's most important natural resource. With your help, America's petroleum industry can maintain its position as the world leader in cutting-edge exploration and production technologies, and will be in a better position to help Americans drive their cars, heat their homes, and power their factories.

* * *

Mr. LEHMAN. We will hear now from Mr. Keiser. Let me just tell you if there is a vote, all your statements will be inserted in the hearing record in their entirety.

Mr. Miller will be on his way as soon as that vote takes place, so I apologize for that, and we will let you begin.

Mr. KEISER. No problem.

[Prepared statements of Messrs. Keiser, Day, Abrew and Bush follow:]



DOMESTIC PETROLEUM COUNCIL

1015 18th Street, N.W. Suite 600 Washington, D.C. 20036 202/296-1709

MEMBERSHIP

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Apache Corporation
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Santa Fe Energy Resources, Inc.
SCANIA Petroleum Resources, Inc.
Union Pacific Resources Company

Statement of

ROBERT L. KEISER
President
DOMESTIC PETROLEUM COUNCIL
and
President and Chief Operating Officer
ORYX ENERGY COMPANY

on

The State of the Domestic Offshore Oil and Gas Industry

before the

**ENERGY AND MINERAL RESOURCES &
OVERSIGHT AND INVESTIGATIONS SUBCOMMITTEES
OF THE
HOUSE COMMITTEE ON NATURAL RESOURCES**

Washington, D. C.

June 23, 1994

Mr. Chairman and Members of the Subcommittees. I am Robert L. Keiser, President and Chief Operating Officer of Oryx Energy Company, headquartered in Dallas, Texas. Oryx Energy is one of the nation's largest independent explorers, producers and marketers of natural gas and oil.

I appreciate the opportunity to testify before you on the state of the domestic offshore oil and gas industry in my capacity as President of the Domestic Petroleum Council (DPC). The DPC is a national trade association organized in 1975 and represents 21 large independent oil and gas companies. Collectively, DPC members account for more than 50 percent of the total U. S. production not produced by major integrated oil companies.

Our objective is to be a constructive participant in the development of federal public policy from our unique perspective of being neither integrated oil and gas companies, with refining and retail marketing operations, nor small independents with limited geographic focus. By and large, DPC members are substantial, publicly-owned corporations of sufficient size to consider investment in international ventures as well as options in the domestic offshore when allocating increasingly scarce and critical corporate resources to a project. My remarks today are intended to reflect this perspective, and I welcome this opportunity to share with you our thoughts and observations.

Although the DPC as an organization seeks to represent the collective positions of its members on key issues, I can assure you that each of our 21 member companies truly fits the definition of "independent". Each of us has our own corporate philosophy and strategy with regard to maximizing the development of energy resources. For some that may mean focusing exclusively on domestic onshore prospects; for others it may include U. S. offshore opportunities; and for still others international ventures may be a part of the equation.

Regardless of the particular strategy or portfolio mix, every DPC member, as everyone in the industry, has had to confront and contend with the challenge of fluctuating world energy prices as to which there is little, if any, apparent rhyme or reason. This price instability and uncertainty has been the single most significant cause of the devastation which the energy industry has experienced over the last several years.

We have seen domestic production continue to decline. We have seen wells prematurely shut-in and abandoned. We have seen rigs rusting in the yards of service companies. We have seen more and more tankers loaded with foreign crude docking at U. S. ports, thereby increasing the risks of a serious tanker oil spill. We have seen what this reliance on foreign oil has done to our nation's trade balance (or imbalance) with imported oil accounting for over 50 percent of our 1992 trade deficit. We have seen investment capital and development opportunities dry up and disappear. And, tragically, and the most difficult to accept and be a part of, we have seen the loss of thousands and thousands of jobs in the oil and gas industry--over 400,000 in the last ten years. Add to that the loss of secondary jobs and those indirectly impacted by the downturn and the total number surely approaches one million.

In order to compete and survive, we have had to face this devastation and yet not regard it as insurmountable. Every DPC member has been confronted by this critical challenge and has been

required to target and re-focus its efforts. We have had to become even more competitive, creative and exert more initiative within our organizations in order to exist. And even with drastic downsizings, members of our industry are still experiencing less than spectacular returns on their exploration, development and production investments in this new low cost/low price environment.

As we view and assess the state of the domestic offshore oil and gas industry, it must be within the context of these business, economic and price conditions with which we are challenged. We can, and will, succeed in our offshore efforts to find, produce, and deliver U. S. energy resources to America's consumers.

In anticipation of this hearing, the DPC recently conducted a membership survey on domestic offshore activities. While many of these responses have been incorporated into and form the basis of my remarks today, I thought it might be productive to specifically mention some of the information and data which has been compiled based upon the responses received.

1. Employment by DPC companies has declined by nearly 23 percent in the past eight years--from nearly 15,000 employees in 1986 to a number less than 11,450 by the end of this year.
2. From 1986 to 1993, domestic production of oil by DPC members has increased by 3 percent while natural gas production increased by 54 percent during that same period.
3. From 1982 to 1993, total production by DPC members from Gulf of Mexico OCS leases increased 17 percent for oil and by over 70 percent for natural gas.
4. DPC members hold nearly 1600 leases in the Gulf of Mexico OCS, with over 80 percent in water depths of less than 200 meters; 10 percent in depths between 200 and 400 meters; and 5 percent in depths greater than 400 meters.

Based on the DPC production numbers, combined with data from the Minerals Management Service (MMS) and other readily available public information, the following points should be considered:

- Consistent with the support and encouragement which the Administration has given to it as a clean and environmentally preferred energy source, natural gas production by DPC members, both offshore and onshore, has increased significantly in the last 7 years;
- Production by DPC members from the Gulf of Mexico approaches 10 percent of the total amount produced from the area;
- If the production of major integrated companies from the Gulf of Mexico is excluded, the combined production by DPC members is more than 36 percent of the remaining amount produced from the Gulf of Mexico.

It is our belief that the national interest is being best served by the development of our own energy resources to lessen as much as possible our dependence on foreign sources of energy. That belief is based on reasons which relate to environmental protection, national security, trade deficits, federal royalties and revenues, economic development and employment, and maintaining some semblance of a viable domestic energy industry.

The offshore Gulf of Mexico, although a maturing province, continues to be an area with great potential for meeting our nation's energy needs. The federal government, particularly the Congress, has the power and authority to minimize, or maximize, the degree of difficulty to be overcome in order to achieve success in the offshore Gulf of Mexico. As we view the government's role in the state of the offshore, I would ask you to consider the following four essential elements: Access, Stability, Reasonable Requirements and Global Competition. Based upon the government's level of involvement and action, each of these elements can be perceived as an incentive or as a disincentive to a viable domestic offshore energy program.

I. ACCESS. From the total U. S. OCS acreage of 1.45 billion acres, approximately 14 percent or a little over 200 million acres are available for lease. The bulk of this acreage is located in the Central and Western planning regions of the Gulf of Mexico. This area has become identified as having the greatest potential for energy development combined with the least impediments to access.

Many of these offshore opportunities require significant expenditures not only in terms of cost for technological research and analysis but also in terms of time. From start to finish an offshore project timeline in this area may extend for three years or more. Prior to the investment of time, there needs to be sufficient assurances that there will be access to the acreage.

Any reduction in this access will discourage offshore development in the area. The industry's unanimous objection to potential changes in the current leasing system in response to the call for public comment by the Minerals Management Service reflects that concern over access.

In the comments filed by DPC and many of its members, there was the consistent theme that access to the offshore Gulf of Mexico was critical to its development. It was argued that the access provided under the current leasing system, (1) has doubled the number of companies, particularly independents, now participating in lease sales; (2) has encouraged investment in high-tech, state-of-the-art geophysics; (3) has opened up new areas such as the deepwater and sub-salt for exploration and development; (4) has generated revenues to the federal and local governments; and, (5) has provided economic incentives to all. And, although it came after the comment period closed, the success of the most recent Gulf of Mexico lease sale is a prime indicator of what this degree of access can mean.

DPC survey results further confirm the significance which access to the offshore Gulf of Mexico has had on our membership. Acreage under lease by DPC companies this year is over three and one-half times greater than the acreage amount held in 1982 when the current leasing system was

initiated. In spite of the volatility and industry downturn during the past twelve years, spending for 1994 in the Gulf of Mexico by DPC companies is projected to be over 80 percent greater than in 1982 and will exceed one billion dollars.

II. STABILITY. With the constant fluctuations in product price, which seem to be a daily occurrence, the offshore industry needs to regard the Gulf of Mexico as not only accessible but also needs to have confidence that there will be sufficient stability in the federal government's approach to its development. As previously mentioned, the timeline for many potential offshore projects can extend for a number of years. The analysis and economic assumptions developed in the planning stages for an offshore project require a high level of confidence on the impact of future legislative and regulatory parameters established by the government. Simply put, if the rules and regulations constantly change, such instability can significantly influence the business decisions made on a specific offshore prospect.

The best and most recent example of an issue which threatens the stability needed for offshore development is the Oil Pollution Act of 1990 (OPA '90) and its financial responsibility provisions. While DPC recognizes and endorses the intent of OPA '90, our recent comments on the advance notice of proposed rulemaking issued by the Minerals Management Service emphasized the concern we have with OPA '90 and its potential for causing instability. Many DPC members made sound business decisions prior to its passage based upon reasonable expectations of certain financial liability requirements. As now proposed, many DPC companies would be unable to meet the OPA '90 financial responsibility guidelines. The confusion and the instability which OPA '90 will create must be resolved within either the legislative or regulatory framework.

In addressing and resolving the OPA '90 issue, DPC recommends consideration of the following:

1. Granting regulatory discretion to lower the \$150 million level of financial responsibility to one based on the actual level of risk;
2. Applying the financial responsibility requirements only to those "offshore facilities" engaged in the exploration and production of gas and oil in the OCS;
3. Eliminating direct actions against guarantors; and,
4. Allowing for broad financial tests for qualification as a self-insurer, including bank lines of credit and insurance as a qualifying asset.

As other proposals which have a direct impact on industry activities in the offshore, such as the Gulf of Mexico Program, move through the legislative and regulatory process, DPC urges considerable attention be paid to the stability factor. Its consideration during the deliberative process would go a long way toward encouraging continued and active participation in the Gulf of Mexico.

III. REASONABLE REQUIREMENTS. Even if there is access to acreage and stability in the rules under which we operate in the offshore, future development will be hampered by unreasonable requirements and conditions placed upon the industry. In many instances these requirements lack common sense and fail to solve the problems for which they were initially designed.

Particularly with regard to environmental requirements, DPC endorses the concept of cost/benefit analyses in developing regulations. If we can be realistic in assessing the reasonably likely environmental impact of an activity in the offshore, then calculate the monetary cost and work to bring them into balance, a reasonable standard can be established which should be acceptable to everyone concerned about protecting the offshore environment.

The DPC is proud of its commitment, and that of its member companies, to the protection of the environment. While the DPC has chosen to limit its committees in order to focus on those issues of principal concern, our Environmental Committee is one of only two existing standing committees (the other is Tax). This past year DPC established an ad hoc task force on the OCS and Public Lands. These two groups will be working together on environmental issues which impact the offshore. Whether onshore or offshore, DPC recognizes that environmental regulation is often necessary to ensure environmental compliance and protection. What we ask is that environmental policy be based on scientific and technical facts. Particularly in the offshore where costs are even more critical to the success of a project, environmental regulations should be reasonable and based on consideration of the risks involved as well as the benefits received.

IV. GLOBAL COMPETITION. If we are to maintain a viable U. S. offshore energy industry, it must be recognized that international circumstances have changed so dramatically over the past few years that competition for the development of energy resources has become much more keen. In many countries and parts of the world, there are active natural gas and oil programs for their "expeditious and orderly development, subject to environmental safeguards, in a manner which is consistent with the maintenance of competition and other national needs;" [Language in quotations taken from the OCS Lands Act, 43 U.S.C. 1332(3)]. With limited available capital for investment, energy companies, including an increasing number of independents, are now adding international opportunities to their list of options.

Given that many of these areas of the world in the past had been closed to oil and gas exploration by U. S. companies, there is great potential for success. The size of the fields and the estimated reserves of natural gas and oil are of such magnitude that they merit consideration for investment. In many instances foreign governments are willing to negotiate for access and offer incentives that encourage economic development.

It is against this globally competitive backdrop that many DPC members are now evaluating international projects against opportunities in the Gulf of Mexico and other domestic plays. While DPC members' spending in the U.S. is projected to double this year from 1986, their projected international spending will exceed the amount spent in 1986 by four and one-half times.

Domestic spending by DPC companies is projected to be 65 percent of the total spent in 1994, with the remainder spent internationally. This compares to an 80 percent level of spending on U. S. projects in 1986.

Each project must now justify inclusion and be balanced among all others on criteria which each company's strategy establishes. While reserves and production can be higher internationally, there may be greater risks with regard to an existing infrastructure, access to markets, a trained workforce, taxation, government intervention and political stability. Nonetheless, 65 percent of DPC members indicate their future level of international activity will increase or remain the same.

For those whose strategy includes the domestic offshore, the prospects and potential still exist. Eighty percent of DPC members responding anticipated their future level of activity in the Gulf of Mexico would increase or remain the same. These offshore prospects may be less apparent and require a more focused effort and increased reliance on the latest and best available technology. It may require entering into new areas like the deep water or the sub-salt which may further increase costs. But an infrastructure is in place, and there is continued demand for natural gas and oil from the U. S. market.

What appears to be lacking is a recognition that the opportunity for developing energy resources has now expanded worldwide, and the federal government can play a key role in assuring that the Gulf of Mexico remains an inviting area for energy production and development. Whether by taking the initiative in using existing authority to suspend or reduce royalties on a case-by-case basis or by adopting incentives for encouraging development throughout the offshore Gulf of Mexico, the federal government can assist its domestic energy industry and create a positive climate as companies evaluate each potential prospect.

Specifically mentioned in your letter of invitation was a request for our thoughts on incentives and disincentives to the development of offshore resources. Our survey addressed those issues, and I would like to briefly share them with the committee.

DISINCENTIVES. In the DPC survey members were asked to identify the most important disincentives to development of Gulf OCS resources. Concern over environmental regulations which ignored any kind of risk assessment and cost/benefit analysis was the most frequently expressed response. This was followed closely by the requirements of OPA '90, instability in prices for natural gas and oil and the higher costs associated with the development of these offshore projects. Mention was also made of concern over changes in the offshore leasing system and the royalty and rental amounts paid to the federal government.

OCS PUBLIC POLICY INCENTIVES. In addition to the previous comments in support of changes to OPA '90 and its financial responsibility requirements and support for continuing the current leasing program in the Gulf of Mexico, DPC members responding to the offshore survey addressed a number of the public policy issues which may be considered by the Congress or the Administration. There is overwhelming support for the Interior Secretary to exercise existing

administrative authority to reduce or suspend royalties on existing leases in order to promote increased production. An amendment to the OCS Lands Act to clarify the authority to reduce or suspend royalties on non-producing leases to encourage production of marginal or uneconomic resources is also strongly supported.

Although the levels are not as great, there is support among some DPC members for an amendment to allow an optional sliding scale royalty rate for all new OCS leases which would be adjustable with movements in the price of natural gas or oil; enactment of a \$5 per barrel tax credit for production from leases in water depths greater than 400 meters; and for the suspension of royalties on new production from leases located in water depths greater than 200 meters until capital costs have been recovered.

In assessing the impact of these incentives, 70 percent of DPC members indicated that any of them could cause the drilling of additional wells or the developing of additional fields. It appears that positive actions on any of these incentives could enhance the prospects for further activity in the Gulf of Mexico rather than in other parts of the world.

In summary, the state of the offshore domestic energy industry has been better. But, the Domestic Petroleum Council is optimistic about the future of continued development and production from the Gulf of Mexico. Many of the challenges we face no one can predict. But we are learning to be flexible and adapt whenever possible. We firmly believe that continued access, stability for purposes of long-term planning, a reasonable regulatory scheme and recognition of world-wide competition are essential for a successful domestic offshore program. With your cooperation and commitment to these essential elements, you can help assure that the U. S. offshore can provide much of the energy needed to meet this nation's requirements well into the next century.

I appreciate this opportunity to testify and welcome your questions and comments.



National Ocean Industries Association

**Testimony of
James C. Day
on behalf of the
National Ocean Industries Association
before the
Oversight and Investigations Subcommittee
and the
Energy and Mineral Resources Subcommittee
House Natural Resources Committee
June 23, 1994**

Good morning, Mr. Chairman. My name is James C. Day, and I am Chairman, President and CEO of Noble Drilling Corporation. I am here today as the Chairman of the National Ocean Industries Association, which represents approximately 260 companies engaged in all aspects of exploration and production of oil and natural gas in the federal waters of the United States.

To avoid duplication with some of the other witnesses, I will confine my statement to

government policies and new technologies. On the positive side, we are encouraged by the introduction and consideration of legislation that would help increase domestic exploration and production offshore - specifically, royalty holiday bills in the House and Senate, and a deepwater production tax credit bill in the Senate.

The royalty bills would provide a holiday on royalty payments for new leases in water depths greater than 200 meters until capital costs are recovered. The tax credit bill would provide a \$5 per barrel tax credit for production from new leases in water depths greater than 400 meters. The deepwater Gulf of Mexico contains huge reserves - as high as 15 billion barrels of oil equivalent - and has the potential to dramatically increase exploration and production activities in the U.S. offshore. However, the costs to explore in and develop from the deepwater are extremely high, and incentives are necessary to realize the full benefits of job creation and domestic production.

In addition to this legislation, industry's commitment to continued research and development has increased E&P activity. While our industry has been criticized for "abandoning" the U.S., the reality is our commitment to environmentally safe operations in this country continues to grow. The recent breakthroughs that allow for drilling and production from the deepwater, horizontal drilling for more efficient penetration of reservoirs and use of three-dimensional seismic imaging to create a better "picture" of reservoirs have created an upswing in domestic activity. Three-D seismic and the use of supercomputers also have paved the way for industry to see clearly below large salt tablets that are prominent in the Gulf. One discovery already has been made in this subsalt area, creating additional interest in the Gulf. Evidence of this interest is displayed in the last Gulf lease sale, where more bids were offered than in the two previous sales combined, with

high bids totaling \$270 million.

Industry's interest in domestic exploration and production is high, but government policies, past, present and future, make working here difficult. After three quarters of a million acres offshore California were placed under a leasing moratorium for fiscal year 1982, Congress has continued the practice of using the appropriations process to deny the domestic offshore industry access to key areas. Combined with a Presidential ban, that moratorium offshore California has grown into 462 million acres covering all of the federal OCS except portions of the Central and Western Gulf of Mexico and Alaska. In addition to banning leasing, Congress also has denied leaseholders the right to explore certain leases already bought from the federal government. The government so far has failed to return the money it received from those companies when the leases were sold. Sadly, the matter is in litigation.

Another government action that has the potential to wreak havoc on the industry is implementation of the Oil Pollution Act of 1990. Using the government's definitions of offshore facility and navigable waters of the U.S., one could argue that the U.S. Capitol building is an offshore facility. Under the \$150 million certificate of financial responsibility requirements (COFR) of OPA, and given the budget deficit, the government likely would not be able to self-insure, just as most companies operating in the traditional offshore are unable to self-insure to meet the OPA '90 COFR requirement. According to the MMS, since 1969 there have been only two spills from producing fields or pipelines that have reached the existing limit of \$35 million, including damages and associated costs. It is not risk sensitive to require all operators in the federal offshore to maintain a \$150 million certificate of financial responsibility without regard

to the nature and extent of their operations.

Finally, I would like to address an environmental myth. Offshore development is not the main source of oil in the oceans. In fact, natural seeps put more than four times the amount of oil into the oceans than offshore exploration and production. Tanker traffic, which brings in our growing levels of imported oil, is a much higher risk. Do-it-yourself oil changers place more oil into the oceans than offshore exploration and production. A good example of how this myth can translate into policy is occurring Florida. The Florida Power and Light Company signed a long-term contract to buy Orimulsion from Venezuela as a fuel for power generation. Orimulsion is a mix of water and tar-like crude oil, and will be imported into Florida in tankers. The state of Florida and most of Florida's Congressional delegation are opposed to development offshore Florida, where a large natural gas field has been discovered. Natural gas is a clean-burning alternative to coal or petroleum for power generation, and is readily available off the coast. Natural gas does not spill, and has been singled out by the Clinton administration as a leading alternative fuel. In addition to the environmental benefits of using domestically produced natural gas for power generation instead of petroleum, there are economic benefits. If the gas field offshore Florida is developed, more jobs are created in the U.S. and revenue to the federal government increases. After all, why should we provide jobs and money to a foreign country in a gamble that could produce another tanker spill when that same money could be spent in the U.S., creating jobs for Americans while significantly decreasing the chance of an environmental disaster?

In conclusion, the domestic offshore industry remains committed to the continued safe development of the oil and natural gas resources of the OCS. Our commitment shows daily

through our safe operations and our technological breakthroughs that create new opportunities for work in the U.S. We need a similar commitment from the government to work with us to safely develop these resources and to be sure the public has a clear picture of the results of offshore development.

Thank you for this opportunity to testify, and I am happy to answer any questions you may have.

**STATEMENT OF
FREDERICK H. ABREW, PRESIDENT & COO
EQUITABLE RESOURCES, INC.
ON BEHALF OF
THE AMERICAN GAS ASSOCIATION
BEFORE THE
SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES
AND THE
SUBCOMMITTEE ON OVERSIGHT AND INVESTIGATIONS
COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES
ON THE
STATE OF DOMESTIC OFFSHORE GAS AND OIL INDUSTRY
June 23, 1994**

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SUMMARY

- The American Gas Association (A.G.A.) believes the domestic offshore natural gas and oil industry is critical to the long-term economic health and security of the United States. Natural gas use contributes to a cleaner environment, domestic security, energy efficiency and conservation. In 1992, offshore production of natural gas from federal waters alone was nearly 5 trillion cubic feet (Tcf). A.G.A. estimates that in the long run natural gas will comprise about 27 percent of the nation's total energy mix.
- The Outer Continental Shelf (OCS) of the Gulf of Mexico (Gulf) represents a significant portion of the domestic natural gas resource base. Two-thirds of the hydrocarbons produced from the OCS are natural gas. Approximately 25 percent of domestic gas and 10 percent of domestic oil is produced from the OCS. That region contains nearly a fourth of all estimated domestic gas and oil resources.
- Louisiana waters in the Gulf are responsible for about 20 percent of U.S. natural gas production, placing it second behind onshore Texas. Natural gas production in the Louisiana offshore declined from 4.6 Tcf in 1981 to 3.2 Tcf in 1992. For the period 1988-1991, reserve replacement was 99 percent of production in the Louisiana offshore. It is estimated that 73 Tcf of natural gas is undiscovered in this area.
- Offshore Texas has been an area of exciting discovery and infrastructural growth for natural gas in recent years. For the 10-year period 1983 to 1992, the Texas offshore has accounted for 7.6 percent of all U.S. natural gas production and about 5 percent of U.S. proven reserves. For this period, 98 percent of natural gas production in the Texas offshore has been replaced by reserve additions. However, early indications are that Texas offshore production declined up to 6 percent from 1992 levels.
- There is virtually no industry that has suffered the economic devastation borne by the gas and oil industry over the past decade. This industry has experienced a reduction in jobs, competitive bids on federal leases, rig count and drilling activities over the last decade. Over 450,000 jobs have been lost in part due to low wellhead prices -- a job loss rate higher than that of the automobile and steel industries combined. Fluctuating wellhead prices have affected rig activity, where annual rig activity has ranged from 256 rigs operating to as few as 52 more recently for all offshore areas.
- Recent technologies, such as 3-D seismic imaging and horizontal drilling, have reduced the risk of drilling dry holes and helped sustain current production levels. Exciting exploration plays as the recent subsalt discovery have rejuvenated interest in Gulf drilling.
- A.G.A. opposes moratoria on natural gas leasing, exploration and production activities offshore. Legislative, regulatory, tax and other production incentives are needed to stimulate exploration and production activities and to make them more economically feasible. These include: 1) providing royalty relief for all marginal wells; (2) providing tax incentives for new offshore production; (3) clarifying that geological and geophysical costs are deductible in the year incurred; (4) eliminating the "taxable income limitations" on percentage depletion; (5) supporting DOE's budget request for research, development and demonstration of exploration and production technology; and, (6) adopting a flexible and practical approach in applying the mandates of the Oil Pollution Act of 1990.

I. Introduction

I am Frederick H. Abrew, President and COO of the Equitable Resources, Inc. (Equitable). Equitable is a diversified natural gas company, conducting business through two segments, the Utility Services and Energy Resource Groups. Utility Services purchases, gathers, transports, stores and distributes natural gas to more than 265,000 customers in Pennsylvania, West Virginia and Kentucky. Energy Resource Group explores for, develops and purchases natural gas and oil in the offshore Gulf of Mexico (Gulf), Appalachian Basin, Rocky Mountain region including Canada and in Columbia, South America. The company currently aggregates and resells in excess of 2 billion cubic feet of gas daily.

I am appearing on behalf of the American Gas Association (A.G.A.). A.G.A. is a national trade association comprising some 275 natural gas distribution and transmission companies throughout the United States, Canada and Mexico. These firms deliver gas energy from the wellhead and various unconventional sources to the burner tip, serving over 56 million customers. Collectively, 90 percent of the gas consumers in this country are served by A.G.A.'s members. A number of A.G.A. member companies have affiliates which are engaged in natural gas and oil exploration and production in the Gulf. Thus, A.G.A. and its member companies have a direct and substantial interest in this hearing pertaining to the state and health of the domestic offshore gas and oil industry.

A.G.A. would like to take this opportunity to present its views and concerns regarding the respective subcommittees' consideration of: (1) the level of exploration and production (E&P) activity in the Gulf; (2) the general health of the domestic gas and oil industry in relation to international activity; (3) incentives and disincentives to the development of offshore resources; and, (4) the manner in which government policy affects business decisions.

A.G.A. believes that maintaining the health of the production sector of the natural gas industry is vitally essential for the industry to preserve the important role envisioned for it. Natural gas is an abundant resource that can be utilized to help the nation attain cleaner air, energy efficiency and domestic energy security. The domestic natural gas and oil industry is critical to the long-term economic health and security of the United States. Yet, there is virtually no industry that has suffered the economic devastation borne by the gas and oil industry over the past decade.

The Outer Continental Shelf (OCS) of the Gulf is a resource base of abundant natural gas supply. The Louisiana portion of state and federal waters in the Gulf is a preeminent domestic gas producing region, while offshore Texas has become an area of exciting discovery and infrastructural growth for natural gas in recent years. However, the economics of developing natural gas and oil discoveries, particularly in the OCS, are difficult in this era of fluctuating natural gas wellhead prices. While relatively low prices at the wellhead have slowed E&P activity in the Gulf, advances

in technology have served to reduce the risk of drilling dry holes and have reduced some of the costs.

A.G.A. opposes all moratoria on natural gas leasing, exploration and production in the offshore. In addition, A.G.A. believes the following administrative and regulatory initiatives can make the offshore program more successful and beneficial: (1) reassessing U.S. royalty laws to provide relief for all marginal leases, regardless of water depths where production occurs; (2) providing tax incentives for new wells drilled after June 1, 1994; (3) clarifying that geological and geophysical costs are deductible in the year incurred; (4) eliminating the "taxable income limitations" on percentage depletion; (5) supporting the Department of Energy's (DOE) budget for research, development and demonstration of E&P technology; and, (6) adopting a flexible and practical approach in applying the mandates of the Oil Pollution Act of 1990.

II. State of Domestic Natural Gas Offshore E&P Activity

A. Outer Continental Shelf (OCS)

The OCS represents a significant portion of the domestic natural gas resource base. Two-thirds of the hydrocarbons produced from the OCS are natural gas, an environmentally clean fuel. Approximately 25 percent of domestic gas and 10 percent of domestic oil is produced from the OCS. That region contains approximately one-fourth of all estimated domestic gas and oil resources. The central and western Gulf account for 99 percent of the gas and 90 percent of the oil produced from the OCS.

The federal offshore is becoming increasingly gas-prone. The nation receives more energy in the form of natural gas than oil from the OCS. Since 1986, total new gas discovered in the federal offshore has been more than three times than oil (on a Btu basis). In 1988, federal gas offshore production was 4.4 trillion cubic feet (Tcf) or 28 percent of the national production. In 1992, offshore production of natural gas from federal waters alone was nearly 5 Tcf, down from 5.3 Tcf in 1990¹. A.G.A. estimates that in the long run natural gas will comprise about 27 percent of the nation's total energy mix.

1. Production Offshore Louisiana

The Louisiana portion of state and federal waters in the Gulf is responsible for about 20 percent of U.S. natural gas production, placing it second behind onshore Texas on the list of preeminent domestic gas producing regions. Natural gas production in the Louisiana state waters and federal offshore declined from 4.6 Tcf

¹American Gas Association, Gas Facts 1992 Data.

in 1981 to 3.2 Tcf in 1992. See Appendix A. However, the 1991 production from Louisiana waters accounted for 20 percent of natural gas production for that year.

Natural gas reserves have changed for the Louisiana offshore between 1981 and 1991. New field discoveries exceeded 1 Tcf in 1990, the highest volume since 1984, but fell to 199 billion cubic feet (Bcf) in 1991. However, for the four-year period 1988 to 1991, nearly 9 Tcf of new gas (extensions, new field discoveries and new reservoirs in old fields) were added to national inventories from Louisiana waters.² More remarkable for an area often described as "mature," total reserve additions (including reservoirs) nearly replaced production in the Louisiana offshore from 1988 to 1991. In other words, reserve replacement was 99 percent of production during those years.

New technologies have enhanced capabilities to estimating undiscovered resources. The Potential Gas Committee of the Colorado School of Mines estimates that 73 Tcf of natural gas is undiscovered in the Louisiana portion of the Gulf and the Louisiana/Texas deepwaters of the OCS.³ Coupled with proven reserves of over 22 Tcf, the Louisiana portion of the Gulf may have a resource base in excess of 95 Tcf. Part of this potential is associated with the deep water environment of the commercially undrilled OCS (where water depths exceed 3,000 feet). As much as 65 Tcf of the total resource, however, may be found in drilling environments that have already been commercially exploited.

2. Production Offshore Texas

Offshore Texas, which constitutes the bulk of the Western Planning Area of the Gulf OCS, has been an area of new discoveries and infrastructural growth for natural gas in recent years. For the 10-year period 1983 to 1992, the Texas offshore has accounted for 7.6 percent of all U.S. natural gas production and about 5 percent of U.S. proven reserves.⁴ For this period, 98 percent of natural gas production in the Texas offshore has been replaced by reserve additions. By year-end 1992, productive offshore Texas fields numbered 200 and proved reserves exceeded 7 Tcf.

²U.S. Department of Energy's Energy Information Administration, U.S. Crude Oil, Natural Gas, Natural Gas Liquids Reserves-Annual Reports, 1981-1991.

³ American Gas Association, "Offshore Louisiana: Maturity and Opportunity In the Gulf of Mexico," Policy & Analysis Issue Brief 1992-10 (Oct. 30, 1992), Arlington, VA.

⁴ Note, supra note 2.

Natural gas production in the Texas portion of the Gulf increased from 984 Bcf in 1983 to 1.3 Tcf in 1992.⁵ By year-end 1992, there were 200 producing fields in the western Gulf. Only seven of the fields were located on the deeper water slope. However, early indications for 1993 are that Texas offshore production declined up to 6 percent from 1992 levels. As production has risen during the past decade, reserves have dropped slightly. On the average for the decade, reserve additions were 98 percent of production. Additions consisted of about one-third revisions and adjustments and two-thirds new gas (gas from extensions, new field discoveries and new reservoirs in old fields).

The development of drilling prospects in offshore Texas waters has been slower than in Louisiana. However, infrastructural growth and pipeline additions in recent years have made deeper water areas more accessible to exploration. Nearly 3,000 miles of pipeline have been placed in the Texas offshore compared to over 16,000 in the Louisiana portion of the Gulf.⁶ The Potential Gas Committee estimates that 18 Tcf of undiscovered gas is recoverable from Texas shelf and slope locations. See Appendix B.⁷

B. Health of Industry

The domestic gas and oil industry is one of the most important to the long-term economic health and security of the U.S. This industry has experienced a reduction in leasing activities, jobs, active rotary rig count and drilling activities over the past 10 years. Over 450,000 jobs have been lost in the gas and oil industry during the past decade, a number higher than the automobile and steel industries combined. Many of the job losses have been in high paying, specialized scientific and engineering positions. Only a small amount of new blood is being brought into the engineering and geological ranks of the industry.

Some of the job loss is attributable to falling wellhead prices. Natural gas prices have fallen consistently between 1989 and 1991 in the wake of deregulation and the imposition of market forces. Since 1984, the average gas wellhead price has

⁵Id.

⁶U.S. Department of Interior's Minerals Management Service, Federal Offshore Statistics: 1001 MMS 92-0056, p. 72.

⁷American Gas Association, "Offshore Texas: Natural Gas Reserves, Resources, Leasing and Drilling Activity," Policy & Analysis Issue Brief 1993-11 (Dec. 10, 1993), Arlington, VA.

declined from \$2.66 per thousand cubic feet (Mcf) sold to \$1.86/Mcf for 1992.⁸ During this period, production fell in Louisiana waters. Between 1984 and 1992, the average natural gas price to residential customers expressed in dollars adjusted for inflation declined from \$6.12/Mcf to \$5.84/Mcf.⁹ While beneficial to gas consumers, these falling prices at the wellhead and to end-users have made it more difficult for the natural gas production sector to maintain activity levels needed to fully replace production with new reserves.

Declining wellhead prices have affected rig activity, where there has been significant fluctuation in the offshore since 1973. Annual rig activity has ranged from 256 rigs operating to as few as 52 more recently for all offshore areas of the U.S. The greatest share of these offshore rigs are located in Louisiana waters. In October of 1993, only 17 rigs were operating in Texas waters -- up from five rigs in October of 1992.¹⁰ The rig rate count has not justified building new equipment for many years. Few, if any companies, are delivering to shareholders a return commensurate with the inherent risks they face in gas and oil production.

Recent lease sales for Gulf tracts are further indicative of the deteriorating state of the domestic gas and oil industry. For example, only 375 blocks (1,784,479 acres) of 5,759 blocks (30.9 million acres) offered for lease received bids in the Central Gulf of Mexico Oil and Gas Lease Sale No. 147 on March 30, 1994. A total of 598 bids were placed, with the highest bid reaching \$40 million. The total amount of money exposed was \$374.8 million. These totals continue a low trend of activity for the MMS sponsored area-wide leasing program.¹¹ The level of bidding activity is attributable to the economic uncertainty associated with large offshore leases, high costs of exploration and production and the assumed quality of the leases.

C. Technological Advances

Although relatively low prices at the wellhead have slowed Gulf exploration and production, new technologies have made some projects possible and served to reduce the risk of drilling dry holes. Recent technological advances, such as 3-D seismic analysis, horizontal drilling, deepwater development and subsalt exploration, have created the potential to increase gas and oil from offshore areas. For example, progress in seismic data interpretation has been instrumental in revitalizing many

⁸American Gas Association, "Price Impacts of Structural Changes in the Natural Gas Industry," Policy & Analysis Issue Brief 1992-2 (March 18, 1992), Arlington, VA.

⁹Id.

¹⁰The Oil Daily, Oct. 20, 1993, p. 4.

¹¹Oil and Gas Journal, June 29, 1992, pp. 42 - 44.

mature drilling areas through discoveries between existing fields and new reservoir finds in oil fields (often deeper than existing production). Seismic imaging enables producers to search for gas and oil below thick layers of salt that are prevalent in the Gulf. Subsalt exploration also has the potential to transform a sizeable portion of the Gulf into a frontier area.

Ten years ago, producers lacked the technology to explore or produce in the deepwaters of the OCS. Today, there are several deepwater projects in various stages of development. For example, Enserch Exploration Partners, Ltd. plans to use a floating platform system at its Garden Banks Block 388 Unit in over 2,000 feet of water. Production is expected to commence from one well by 1995. While technological advances have helped sustain current production levels, more needs to be done.

D. Economic Benefits of Domestic Gas Production

The United States is still highly dependent upon foreign oil sources. Last year, the U.S. imported half of the oil consumed in this country. In 1990, the nation spent \$65 billion on oil imports, which amounted to 64 percent of the United States' total trade deficit. The nation simply cannot afford to allow these imports to increase and the gas and oil industry to stagnate while there are domestic resources left offshore to be discovered and produced.

The use of natural gas can displace significant amounts of imported oil. In stationary sources, A.G.A. estimates that natural gas has the potential to substitute for 1,475,000 barrels per day.¹² If the natural gas vehicle market is developed to a level of 1.7 Tcf annually by the year 2010, 850,000 barrels per day of crude oil would be displaced. This equates to approximately \$21.2 billion in constant 1994 dollars per year in payments through year 2,010 for foreign sources for both stationary and mobil sources. Domestic natural gas production and consumption not only helps America's trade deficit, but also jobs will be saved. A.G.A. estimates that each Tcf of natural gas produced domestically will result in nearly 11,000 direct production jobs. As those workers are employed, local economies will prosper.

III. Incentives and Disincentives to Offshore E&P

A. Moratoria on Leasing

A.G.A. opposes all moratoria on natural gas leasing, exploration and production in the offshore. Resources of the offshore need to be accessed to assure an adequate

¹²American Gas Association, "Role of Natural Gas in Offsetting Oil," Planning and Analysis Energy Analysis 1991-3 (March 21, 1991), Arlington, VA.

supply of natural gas in the future. Without access to the offshore, the U.S. could face future supply and delivery problems at a time when the use of natural gas in the United States is on an increase. The Department of Energy's Energy Information Administration projects U.S. natural gas consumption to rise by 5.4 percent by 1995 and another 7 percent by the year 2000. If the nation is to reap the environmental and economic benefits of increased natural gas use, access must be granted without further political or regulatory delay.

Drilling for natural gas is an environmentally safe operation. The unfortunate wreck of the Exxon Valdez and resultant oil spill along Alaska's coast heightened fears about oil pollution. We believe such fears are misplaced. Most offshore production reaches the mainland by pipeline, which has sustained an exemplary safety record in the OCS.

If offshore areas are precluded from further gas and oil development, more supplies will have to be acquired from abroad. For instance, only about two percent of the world's oil spills are the result from OCS development. In contrast, nearly 45 percent of the world's oil spills come from tanker spills. The more imports, the higher will be the risks of large oil spills. Reliance on foreign oil will only exacerbate national security problems. The United States is already importing more than 50 percent of its oil needs.

Natural gas is an environmentally clean fuel that does not "spill" when released. Because of modern exploration and production technology, such as directional drilling, the need for multiple platforms and the potential for spills or releases is greatly reduced. Also, offshore producers must comply with a number of safety standards and regulations and lengthy federal and state and local permitting processes. Stringent environmental stipulations further ensure that the coastal and marine environment will be fully protected.

B. Royalty Relief

A.G.A. encourages legislation and Administration policy that would provide royalty relief on offshore production. In that regard, the legislative and regulatory initiatives should provide royalty relief for all marginal leases, regardless of the depth of water where production occurs. Currently, a royalty rate of 16.7 percent applies to production from shallow waters and a rate of 12.5 percent applies to deepwaters and frontier areas, such as Alaska and parts of the Atlantic Coast. The Secretary of Interior has discretion to reduce or eliminate royalties in order to promote increased production from existing leases.¹³

¹³43 U.S.C. §1333(3).

A.G.A. supports royalty relief for all marginal leases since that would be most equitable for both integrated companies that tend to have substantial resources and drill in deeper waters of the OCS and independent and small producers who tend to concentrate their efforts in shallower waters. While A.G.A. supports S. 318, the *Outer Continental Shelf Deep Water Royalty Relief Act*, introduced by Sen. J. Bennett Johnston, deepwater royalty relief alone is not broad enough to encourage and sustain the level of exploration and production needed to enhance domestic energy security. Moreover, that legislation, which would enable rigs that are drilling in water of 200 meters or more to recover costs before beginning to pay royalties to the United States, would benefit large international companies over smaller domestic companies. Such smaller companies drilling in the shallower waters of the Gulf tend not to produce, refine and market gas and oil worldwide.

There is some concern that royalty relief to deepwater production may cause certain reserves in shallow water to be overlooked. Deepwater drilling would result in the construction of pipelines through shallow waters that may make production in those waters more feasible. Again, A.G.A. believes that royalty relief should be available to all economically marginal offshore resources.

A.G.A. believes royalty relief will reduce some of the risks and costs associated with drilling offshore and enable producers to attract more capital for such projects. Producers have made enormous payments for leases and royalties in the OCS over the years. Since 1954, producers have paid more than \$56 billion in revenue to the federal government throughout the United States for OCS tracts.¹⁴

Producers have also incurred substantial costs in their E&P activities by paying the federal government royalties on their natural gas and oil production. For example, \$1.1 billion was collected in royalties from gas production in federal Louisiana waters in 1990 and nearly \$329 million was collected from Texas federal waters in 1991. Presently, the federal government receives about \$2.4 billion a year in offshore royalties. For the entire OCS, royalties paid between 1954 and 1991 for gas have exceeded \$22.6 billion, while oil royalty revenues have been nearly \$20 billion.¹⁵

These lease and royalty payments coupled with E&P costs have made many projects uneconomic to develop. Economic conditions do not permit shareholders to earn a fair rate of return on their investments. This thwarts efforts to raise capital for a vital industry. A reduction in royalties will not only make it more profitable to drill, but will also make it feasible for some producers to sustain production over a longer period of time. This reduction in royalties should not affect federal revenues since any

¹⁴Note, *supra* note 4, p. 8.

¹⁵Minerals Management Service, *Minerals Revenues 1991*, pp. 34 - 38.

reduction should be offset by increased revenues from higher employment, production and consumer spending.

In addition, lowering royalties will increase domestic energy security by reducing the nation's dependency on foreign oil. Royalty reduction will complement the nation's efforts in addition to the Strategic Petroleum Reserve in maintaining supplies for energy emergency conditions. S. 318, expanded to include all marginal leases, is an innovative approach, which would provide the economic incentive to develop already discovered domestic hydrocarbons. It would be particularly important to independents which are becoming more prevalent in the Gulf, but who do not have the financial resources of the major integrated oil companies.

C. Tax Incentives for Offshore Production

A.G.A. supports legislative initiatives that provide tax incentives for new offshore wells drilled after June 1, 1994. We support legislation that will allow \$0.50 per Mcf tax credit for the first 300 Mcf per day for marginal gas wells and \$3 per barrel of daily production for new marginal oil wells.

In addition, A.G.A. believes legislation aimed exclusively at providing tax incentives for deepwater production is too limited to stimulate production in the Gulf. While we believe S. 403, the *Domestic Energy Security Act*, introduced by Sen. John Breaux, is a step in the right direction, this legislation should have a broader focus to include shallower waters to encourage drilling by both integrated and smaller production companies. The benefits of S. 403 are limited to drilling in deepwaters of the OCS and frontier areas. That legislation, as presently drafted, would allow a \$5 per barrel tax credit for fuels produced by offshore drilling in waters at least 400 meters deep.

Tax incentives are needed to make offshore ventures economically feasible, to reduce the nation's reliance on foreign oil, reduce the trade deficit, maintain a vital infrastructure, create jobs and minimize the risk of oil spills. Much of the new production in the OCS will not be economically feasible without a tax credit, particularly those projects that would be undertaken by independent producers.

First, the capital costs of production and pipeline facilities are higher offshore, while wellhead prices have fallen. For example, in 1990, the average cost after drilling an oil well offshore was about \$300 per foot, compared with an average cost of about \$50 per foot onshore.¹⁶ These costs of installing or expanding production capacity offshore include drilling and equipping wells, constructing and installing

¹⁶U.S. Department of Energy's Energy Information Administration, Petroleum -- An Energy Profile, DOE/EIA-0545 (1991), Figure 14.

platforms, laying undersea pipelines and pumping equipment and constructing onshore processing plants for separating and storing products.

However, prices on the spot market for Gulf production fell to as low as \$1.03 per million Btu (MMBtu) in May 1991 and \$.78 in February 1992. While wellhead prices rebounded to over \$1.86 per MMBtu by September 1992, fluctuations in wellhead pricing have put a great deal of economic pressure on the cost of offshore ventures.

Secondly, the delay for signing a lease to starting production is longer offshore (from 5 to 10 years offshore versus from 1 to 2 years onshore). The time for making changes to existing facilities is longer for offshore sites as well. Thus, tax incentives for offshore production is vitally needed.

D. Geological and Geophysical Costs

A.G.A. urges Congress provide guidance to the courts and Internal Revenue Service (IRS or Service) that geological and geophysical (G&G costs) are deductible in the year incurred. The proper tax treatment of G&G costs has been the subject of a number of court decisions and administrative rulings. G&G costs are incurred by the taxpayer for the purpose of obtaining and accumulating data that will serve as a basis for the acquisition and retention of mineral properties by taxpayers exploring for minerals. Courts have ruled that such costs are capital in nature and are not currently deductible as "ordinary and necessary business expenses," under Section 162 of the Internal Revenue Code. Accordingly, the costs attributable to such exploration are allocable to the cost of the property acquired or retained and are deducted as the property is depleted.

In Revenue Ruling 77-188, the Service provided some guidance regarding the proper tax treatment of G&G costs.¹⁷ However, that ruling did not go far enough to properly characterize these costs.¹⁸ The position taken by the Service in its rulings makes the cost of accumulating such data more expensive for taxpayers. In light of the IRS position, A.G.A. supports clarification from Congress on this issue.

¹⁷The ruling held that G&G costs are to be capitalized where the taxpayer conducts an exploration program and locates and identifies an area of interest in a project area. However, if the data obtained by exploratory operations identifies no areas of interest within the original project area, the entire amount of G&G costs are deductible as a loss.

¹⁸ In 1983, the IRS issued Revenue Ruling 83-105 to elaborate on Revenue Ruling 77-188, See 1983-2 C.B.51). Revenue Ruling 83-105 sets forth several factual situations and applies the principles of the 1977 ruling to those fact patterns.

The deductibility of G&G costs is an essential link in the exploration and production chain.

E. Elimination of Taxable Income Limitations on Percentage Depletion

A.G.A. supports legislation to eliminate the taxable income limitations on percentage depletion. Currently, the depletion deduction cannot exceed 100 percent of the net income from a property in any year or 65 percent of the taxpayer's overall taxable income (determined before such deduction and adjusted for certain loss carrybacks and trust distributions).

A.G.A. supports elimination of the taxable income limitations because they further restrict the value of the independent producer's deduction. The net income limitation plus the producer's low profit margins on offshore wells make less capital available for investment.

Under percentage depletion, a flat percentage of gross income is taken as the depletion deduction. A 15 percent depletion rate applies to independent producers and royalty owners with limitations based on average daily production. This rate applies to an average daily production of 1,000 barrels of oil and six million cubic feet of gas. Persons who are retailers or refiners are excluded from independent status and are not allowed percentage depletion with respect to gas and oil production.

F. RD&D Funding for E&P Technology

A.G.A. supports increased research, development and demonstration funding for natural gas E&P technology. Technological advances have been instrumental in reducing the risks of exploration and production in the OCS and sustaining current levels of production. The DOE budget for FY95 requests \$39 million for natural gas E&P technology. We urge Congress to approve DOE's funding request. These appropriations will advance technology for the natural gas industry.

We believe further that additional funding is needed for natural gas RD&D to promote technologies helpful to the nation attaining energy security. Historically, the focus of DOE's RD&D activities has been on coal and nuclear energy. While natural gas provides approximately 24 percent of all primary energy consumed in this country, it has received about 6.5 percent of DOE's RD&D budget. Coal, on the other hand, provides an equal energy share to the country, but receives nearly 30 percent of DOE's RD&D budget. That is a federal spending level of over four times that of natural gas.

G. Implementation of the Oil Pollution Act of 1990 (OPA)

A.G.A. believes the financial responsibility provisions of the OPA are onerous and unnecessary. The OPA was enacted to establish an oil spill liability fund to pay for the prompt removal of any oil spilled or discharged as a result of activities on the OCS and for damages to public or private interests caused by such spills. According to that Act, the owner or operator of an offshore facility which: (1) is used in drilling for, producing, or processing oil; or, (2) has the capacity to transport, store, transfer or handle more than 1,000 barrels of oil at any one time must establish evidence of financial responsibility of at least \$35 million. A.G.A. supports a reduction in the dollar limits. While A.G.A. understands and supports the basic objectives of requiring offshore operators to demonstrate that they are capable of withstanding reasonable risks and liabilities, many independents are precluded from drilling by the Act's stringent standards.

A.G.A. also supports improving the financial responsibility provisions of the OPA by not holding insurers secondarily liable for the insured's debts. Insurers function as indemnitors, rather than guarantors.

We urge Congress to work with MMS in developing reasonable standards under the OPA that produce flexible, practical and achievable results -- those which meet the goals of the statute without devastating the gas and oil industry. A.G.A. does not believe offshore producers should have to demonstrate financial capabilities far in excess of any reasonable estimate of liability which may be actually involved in a spill. It would seem appropriate that each situation should be "risk assessed" to determine its potential liability. Further, because not all claims under the OPA are payable on the day of a spill, A.G.A. supports a thorough examination of resources to identify those that are available for immediate cleanup and those that are available in the longer term to pay any damage claims and restoration costs.

IV. Conclusion

The domestic gas and oil industry is an important national asset, and we should not let it be destroyed, either by foreign imports or by a regulatory and administrative stranglehold within our own country. Natural gas is an abundant fuel that can contribute to a cleaner environment, domestic security, energy efficiency and technological development. The OCS represents a significant base of natural gas. The domestic offshore gas and oil industry has experienced fluctuating wellhead prices, job loss, falling rig activity and lower production in the Louisiana waters of the Gulf.

There are many things which can be done to bolster the financial health of the offshore industry. Congress should remove moratoria to offshore drilling, provide incentives for drilling, such as a tax credit for new wells and royalty relief, and reduce

regulatory burdens to exploration and production. Without the government and industry working together, significant gas and oil reserves will remain in the ground and potential new jobs will never be created. A.G.A. looks forward to continuing to work with Congress, the MMS and all other stakeholders in the offshore program to move forward with its development.



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OFFSHORE LOUISIANA: MATURITY AND OPPORTUNITY IN THE GULF OF MEXICO

Introduction

The events of August 1992 related to Hurricane Andrew placed the Louisiana portion of the Gulf of Mexico squarely in the public eye as a premier gas and oil producing region in the United States. In fact, the Louisiana portion of state and federal waters in the Gulf of Mexico is responsible for 20 percent of U.S. natural gas production, placing it second behind onshore Texas on the list of preeminent domestic gas producing regions. While generally viewed as a mature hydrocarbon region, advances in technology and economic conditions have continued to impact the region. New technologies such as 3-D seismic have reinvigorated exploratory and development activities in traditional areas, while providing additional tools for exploration in new frontiers (primarily in deep waters). However, the economics of developing gas and oil discoveries, particularly in thousands of feet of water, are difficult at best in this time of uncertain natural gas wellhead prices.

This study examines several key topics regarding exploratory and development activity in the Louisiana portion of the Gulf of Mexico. Reserves, undiscovered resources, wellhead pricing and recent drilling activity are discussed within the context of recent history and expected trends.

Geologic Background

The area that includes shallow and deep water extending from the Louisiana shoreline southward into the Gulf of Mexico is one of the most prolific gas producing regions in the United States. Two portions of the Louisiana offshore (the shelf and upper continental slope) have received nearly all of the exploratory and development attention of the past fifty years.

Generalized Geologic Time Scale

Era	Period	Epoch	Million Years Ago	
CENOZOIC	Quaternary	Holocene (Recent)	0-0.01	
		Pleistocene (Glacial)	1.8-2.8	
	Tertiary	Pliocene	4.9-5.3	
		Miocene	23-26	
	Tertiary	Oligocene		34-38
			Eocene	54-56
		Paleocene		63-65
	MESOZOIC	Cretaceous		135-141
			Jurassic	200-215
Triassic			240	
PALEOZOIC	Permian		290-305	
		Pennsylvanian (Upper Carboniferous)	330	
	Mississippian (Lower Carboniferous)		360-365	
		Devonian	405-415	
	Silurian		435-440	
		Ordovician	485-510	
	Cambrian		570	
PRECAMBRIAN				

Source: OCS National Compendium-October 1990, U.S. Department of the Interior, Minerals Management Service, June 1991.

The shelf, which is only 20 miles wide at the farthest extent of the Mississippi delta, but to the west is nearly 130 miles wide at the Texas/Louisiana border, has seen the most leasing and drilling activity. Water depths for shelf plays are generally less than 650 feet. Map 1 (page 12) shows the Louisiana shelf to be sectioned into offshore subdivisions such as South Pass and Main Pass near the Mississippi River delta to East and West Cameron near the Texas border. As the Louisiana offshore was developed, drilling first began in near-shore locations. Technology and the industry's appetite for exploratory frontiers pushed drilling activities into deeper and deeper water until more recent flexure trend discoveries have come in water depths greater than a thousand feet. These deepwater plays are located not on the relatively shallow shelf, but rather on the upper continental slope, which grades eventually to the deep ocean basin. Map 1 shows this area to include Viosca Knoll and Mississippi Canyon in the east to Garden Banks, offshore of western Louisiana.

The geologic circumstances leading to the deposition of sediments and organic material conducive to the generation and accumulation of oil and gas in the subsurface can be seen, in part, even today as the Mississippi River delta continues to build out into the gulf. Reservoir rocks in the Louisiana offshore (also originally deposited in primarily deltaic sequences) are generally fine grained sandstones interbedded with shales.¹ In the subsurface, the older Miocene and Pliocene age reservoir rocks are found in the near-shore areas. The sediments that make up these rocks were deposited from 3 to 26 million years ago (see the generalized geologic time scale). Over time, the Mississippi River has continued to build (prograde) basinward into the gulf depositing younger and younger sediments. Therefore, the deeper water reservoir rocks are made up of these younger Pleistocene age sediments. Along with the sandstones found in the subsurface are bituminous rich shales, which act as source rocks for the oil and gas accumulations found in the Louisiana offshore. Without examining the individual circumstances surrounding each key hydrocarbon producing play of the gulf, it can be said that the combination of geologic setting, faulting and salt movements and chemical and thermal properties of the subsurface have made the Gulf of Mexico one of America's most prolific oil and gas producing regions.

Reserves and Production History

Table 1 lists Energy Information Administration data on natural gas reserves and production in Louisiana state waters and the federal offshore. Production in 1991 reached 3,394 Bcf, up from a demand constrained volume of 3,128 Bcf in 1986. 1991 production from Louisiana waters was 20 percent of national gas production during that year. Table 1 also shows that a decade ago natural gas production was about 4.5 Tcf from the Louisiana offshore and the reserve life index was slightly less than 7.0 years. The reserves to production ratio was still about 6.7 in 1991.

Table 2 further examines the changes in natural gas reserves for the Louisiana offshore from 1980-1991. New field discoveries were in excess of 1.0 Tcf in 1990, the highest volume since 1984, but fell to 199 Bcf in 1991. However, for the four-year period 1988-1991, nearly 9 Tcf of new gas (extensions, new field discoveries and new reservoirs in old fields) were added to national inventories from Louisiana waters. Even more

TABLE 1

Louisiana
State and Federal Offshore Reserves

<u>Year</u>	<u>Bcf</u>		<u>Reserve Life Index</u>	<u>Bcf</u>
	<u>Proved Reserves</u>	<u>Production</u>		<u>Wet Gas in Nonproducing Reservoirs</u>
1991	22,635	3,394	6.67	NA
1990	23,648	3,654	6.47	11,247
1989	25,406	3,521	7.21	12,084
1988	24,643	3,394	7.26	12,179
1987	24,691	3,413	7.23	11,500
1986	26,766	3,128	8.56	12,269
1985	27,756	3,324	8.35	12,157 ¹
1984	28,574	3,988	7.16	10,172 ¹
1983	28,480	3,518	8.10	10,804 ¹
1982	30,203	4,295	7.03	10,434 ¹
1981	31,462	4,617	6.81	11,026 ¹
1980	31,223	4,546	6.87	9,361 ¹

¹Estimated for Louisiana Offshore (Computed by taking 37 percent of total reported Nonproducing Reserves)

NOTE: Data includes federal offshore Alabama.

SOURCE: DOE/EIA, *U.S. Crude Oil, Natural Gas and Natural Gas Liquids Reserves - Annual Reports*.

remarkably for an area often described as "mature", total reserve additions (including revisions) nearly replaced production in the Louisiana offshore from 1988 to 1991. Stated in another way, reserve replacement was 99 percent of production during those years.

Table 3 further breaks out reserves and field data for the Mineral Management Service's Central Planning Area including Louisiana, Mississippi and Alabama waters. In addition, Figure 1 shows that the Louisiana offshore has remained a strong producing region. Since 1980, production from offshore Louisiana has accounted for 20 to 24 percent of national totals. Recent estimates of the undiscovered resource base in the Gulf of Mexico imply that it will continue to be a key producing region for many years to come.

TABLE 2
Louisiana
State and Federal Offshore
Changes in Reserves

Year	Bcf						Bcf		Percent of L-48 Proved Reserves
	Adjustments/ Revisions	Extensions	New Field Discoveries	New Reservoirs in Old Fields	Production	Percent of L-48 Production	Proved Reserves	Proved Reserves	
1991	738	905	199	539	3,394	20.1	22,635	14.4	
1990	1,365	549	1,047	877	3,654	21.6	23,648	14.8	
1989	1,762	656	889	977	3,521	21.2	25,406	16.1	
1988	1,168	1,169	441	571	3,394	20.8	24,643	15.5	
1987	-259	484	710	403	3,413	21.6	24,691	16.0	
1986	229	753	772	384	3,128	20.5	26,766	16.8	
1985	584	819	243	860	3,324	21.2	27,756	17.4	
1984	752	1,208	1,391	731	3,988	23.7	28,574	17.5	
1983	-504	711	759	829	3,518	22.7	28,480	17.2	
1982	228	822	730	1,256	4,295	24.9	30,203	18.1	
1981	2,032	1,050	666	1,108	4,617	25.0	31,462	18.6	
1980	141	946	537	895	4,546	24.6	31,223	18.8	
1980-1991 Average	686	839	699	786	3,733	22.4	27,124	16.8	

NOTE: Data includes federal offshore Alabama.

SOURCE: DOE/EIA, U.S. Crude Oil, Natural Gas, and Natural Gas Liquids Reserves - Annual Reports.

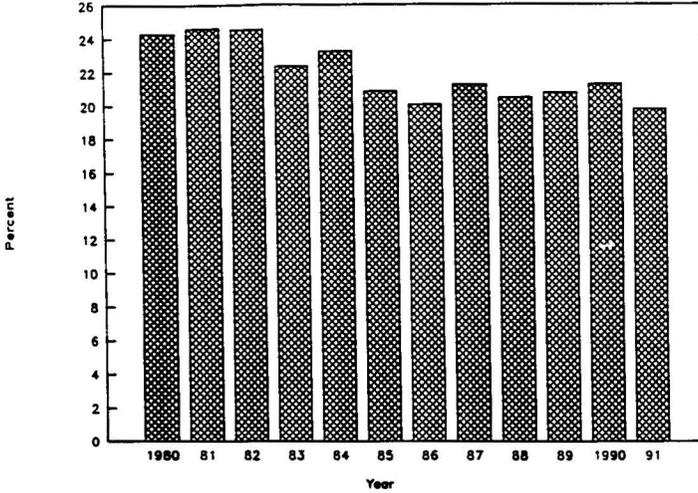
TABLE 3
 Estimated Oil and Gas Reserves by Area
 Offshore Louisiana December 31, 1990
 (millions of barrels - Bcf)

Area(s)	Number of fields						Original recoverable reserves		Cumulative production through 1990		Remaining recoverable reserves	
	Proved active prod.	Proved active	Unproved active	Unproved expired 1990	Unproved expired 1990	Unproved depleted	Oil	Gas	Oil	Gas	Oil	Gas
Central Planning Area												
Chandeleur, Mobile, and Vioeca Knoll	7	24	0	0	0	1	1,971	0	201	1	1,770	
Eau Cameron	47	0	8	1	1	269	8,934	194	7,073	75	1,861	
Eugene Island	54	1	7	0	0	1,325	15,623	1,048	12,092	277	3,531	
Grand Isle	10	1	2	0	0	901	3,869	784	3,268	117	601	
Main Pass and Breton Sound	39	3	3	1	1	807	4,246	631	3,083	176	1,163	
South Pelto	5	0	2	0	0	128	683	97	482	31	201	
South Marsh Island	37	2	4	0	0	767	12,028	586	9,445	181	2,583	
South Pass	11	1	0	1	0	925	3,101	729	2,196	196	905	
Ship Shoal	48	2	5	1	1	1,191	10,390	944	8,279	247	2,311	
South Timbalier	35	0	1	2	3	1,292	7,426	1,083	5,012	209	2,414	
Vermilion	59	6	5	4	0	458	14,572	343	11,714	115	2,858	
West Cameron and Sabine Pass	85	1	10	5	1	164	16,577	121	12,823	43	3,754	
West Delta	19	0	1	2	0	1,204	4,361	1,067	3,696	137	665	
Central Slope†	11	8	1	24	4	700	3,107	231	912	469	2,195	
Central Planning Area	467	49	49	78	11	10,152	107,088	7,858	60,276	2,274	26,812	

Source: Estimated Oil and Gas Reserves, Gulf of Mexico, December 31, 1990, MMS.

FIGURE 1

Louisiana Offshore Natural Gas Production
as a Percentage of
Total U.S. Production



Undiscovered Resources

Recent work by the Energy Information Administration indicates that oil and gas field distribution in the Gulf of Mexico is immature with some large fields yet to be discovered and many more medium sized fields still to be found. There is a pronounced effect of economic conditions that has influenced exploitation in the gulf, even though the area is one of continued technological development that tends to reduce costs.² That is, when natural gas wellhead prices are extremely low, the economics of high cost offshore operations deteriorate.

Oil and gas development in the Louisiana offshore began in 1938. The 1950s was the peak decade of oil discoveries, while the peak for gas field discoveries did not come until the 1970s. Table 4 shows undiscovered resource estimates for the Louisiana offshore (including some additional offshore areas). The Potential Gas Committee estimates that 73 Tcf is yet undiscovered in the Louisiana portion of the gulf and the Louisiana/Texas deepwater outer continental slope. Coupled with proved reserves of over 22 Tcf, the Louisiana portion of the Gulf of Mexico may have a resource base in excess of 95 Tcf. Part of this potential is associated with the deep water environment of the commercially undrilled

outer continental slope (where water depths exceed 3000 feet). However, as much as 65 Tcf of the total resource may yet be found in drilling environments that have already been commercially exploited.

TABLE 4
Louisiana Offshore
Undiscovered Resources

	Tcf		
	Federal Offshore	State Waters	Total
USGS/MMS	100.3 ¹	14.4 ²	114.7 ^{1,2}
PGC	73.0 ³	-	73.0 ³

¹Includes Texas Federal Offshore.

²Includes Mississippi Federal Offshore.

³Includes Texas Outer Continental Slope.

Federal Offshore Lease and Royalty Statistics

The second largest source of revenue to the federal government behind income taxes are lease bonuses and royalties from hydrocarbon production in the federal offshore. As of year-end 1990, the Central Planning Area of the federal offshore (including Louisiana, Alabama and Mississippi) held 1,359 producing and producible leases containing just over six million acres (see Table 5). The lease bonus system and royalties from oil and gas industry activities have long been a significant revenue producer for the federal government. For example, during 1990 \$1.1 billion was collected as royalties from gas production in federal Louisiana waters alone. Coupled with oil production, revenues for 1990 exceeded \$2 billion. In fact, royalties from natural gas production in the Louisiana offshore from 1953 to 1990 totalled \$16.6 billion.³

In addition to royalties from producing properties, bonuses paid at lease sales are a source of revenue to the treasury from the federal offshore. Before a company can drill exploratory wells in federal waters, the company must first obtain the rights to a lease block through a competitive bidding process. The Minerals Management Service (MMS) announces dates in advance, then conducts sealed bid lease sales in which the right to explore and develop a property normally goes to the highest bidder. In many instances,

TABLE 5
Status of Oil and Gas Leases
Offshore Louisiana
December 31, 1990

Area(s)	Number of leases studied		Number of leases		Number of active completions	
	Active	Prospect*	Unapproved qualified	Expired		
	Abandoned		Exploratory	Drilled	Abandoned	
Central Planning Area						
Chauvelier, Mobile, and Viosca Knoll	47	0	16	79	98	56
East Cameron	101	35	7	149	234	1,563
Engene Island	181	38	3	124	214	843
Grand Isle	46	8	3	40	59	3,459
Main Pass and Breton Sound	115	15	5	78	192	1,111
Ship Shoal	142	21	4	126	210	1,781
South Marsh Island	99	15	3	76	133	2,006
South Pass	40	2	2	22	47	2,689
South Pelto	10	4	0	10	13	1,558
South Timberline	103	11	3	126	195	269
Vermilion	136	38	4	165	234	2,107
West Cameron and Sabine Pass	218	49	5	203	361	2,088
West Delta	73	11	2	57	85	2,439
Central Slope ¹	48	4	32	1,084	317	2,245
Central Planning Area	1,359	251	89	2,339	2,392	1,018
						634
						11,977
						24,493
						13,878

Source: Estimated Oil and Gas Reserves, Gulf of Mexico, December 31, 1990, MMS.

companies form partnerships to spread their coverage of potential properties and to divide the expense of large bonus bids. Sale no. 123 (March 1990) in the Central Planning Area resulted in the leasing of 525 federal offshore tracts (2.6 million acres) with a total of \$424.3 million paid in bonuses. The Central Planning Area lease sale in March 1991 resulted in bids on 464 tracts with high bids totaling \$320.5 million. There was less interest in the May 1992 Outer Continental Lease Sale 139. Of the 5,213 blocks offered for lease, only 151 received bids with apparent high bids reaching \$56.2 million. The totals were the lowest since MMS sponsored area-wide leasing began in 1983⁴ and were likely low because of the assumed quality of the leases offered, as well as economic uncertainty associated with large offshore investments. However since 1954, federal lease sales have yielded in excess of \$55 billion in bonus payments for offshore tracts throughout the lower-48 states and Alaska.⁵

Drilling Activity and Wellhead Prices

Offshore rotary rig activity has fluctuated over the past decade both in the number of rigs operating and the percentage of total rigs attributable to the offshore specifically.

FIGURE 2
Offshore Rotary Rigs Operating
as a Percentage of
Total Rotary Rigs Operating

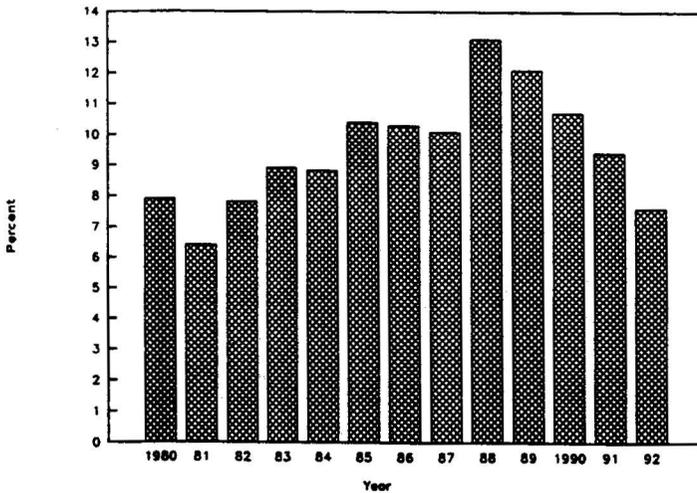


Figure 2 plots the percentage of rotary rigs operating offshore compared to total rigs operating annually from 1980 through July 1992. The graph shows that offshore rig operations have been 6 to 13 percent of all rotary rig operations since 1980. In real terms, this means that offshore rigs have fluctuated from a low of 50 rigs operating offshore on average for the first seven months of 1992 to a high of 256 rigs operating in offshore areas during 1981.⁶ The greatest share of these offshore activities can be placed in Louisiana waters. For 1992, approximately 35 of the 50 rigs previously referenced operated in the Louisiana offshore. As recently as May 1988, 90 rigs or more could be found to be drilling in Louisiana offshore waters during a given week.⁷

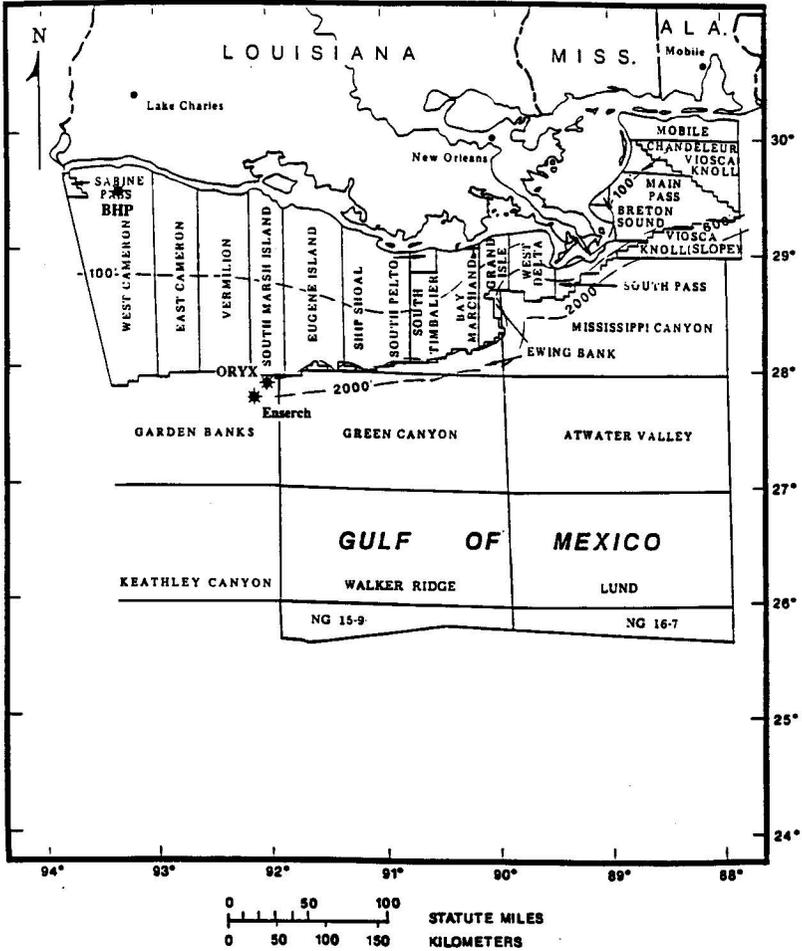
Although relatively low prices at the wellhead have slowed Gulf of Mexico exploratory and development projects, natural gas discoveries in the Louisiana gulf continue to target both nearshore and deep water offshore areas. Projects have been aided by advances in technology that have served to reduce the risk of drilling dry holes and have reduced some costs. For example, progress in seismic data interpretation has not only been helpful in rank wildcat areas, but has also revitalized many mature drilling areas through discoveries between existing fields and new reservoir finds in old fields (often deeper than existing production). For example, BHP has confirmed a significant gas discovery nearshore in the West Cameron area of the Louisiana offshore. The *Clarinet Prospect*, which is in less than 60 feet of water, extends over blocks 60, 61, 76 and 77 (see Map 1). The company plans to be producing between 50 and 60 MMcf per day from two wells by October 1992. A nine-slot development platform is planned with additional drilling to begin in late 1992 or early 1993.⁸

Numerous other shallow water discoveries have been made in recent years, but it is often the deep water drilling successes that get a great deal of attention. Some clear examples can be cited. In early 1992, Oryx Energy announced a significant deep water (about 1,600 feet) discovery in Garden Banks Block 260. The OCS-G-7462 No. 1 well flowed at a daily rate of 24.5 MMcf and 6,496 barrels of oil. Oryx estimates that gross reserves may be between 550 Bcf and 1,125 Bcf equivalent making the prospect a top priority for the company.⁹ Other Garden Banks activity is proceeding, even during this time of economic uncertainty surrounding the long-term outlook for wellhead prices of natural gas. Indeed, Enserch Exploration Partners Ltd. plans to use a floating platform system at the Garden Banks Block 388 Unit in over 2,000 feet of water. Production is expected to commence from one well by 1995. Additional development from the Pliocene-Pleistocene sands will continue with peak production to be achieved in 1999. Production equipment will be designed to handle 40,000 barrels of liquid per day and 120 MMcf daily of gas. Total costs of development drilling and facilities could exceed \$300 million.¹⁰

There are many more examples of recent drilling activity that could be cited in the Louisiana portion of the gulf. High delivery rates and the potential for large discoveries still attract independent and major operators to the area. However, offshore activity has declined just as all drilling activity has for the past several years. And of course, offshore operations are expensive.

MAP 1

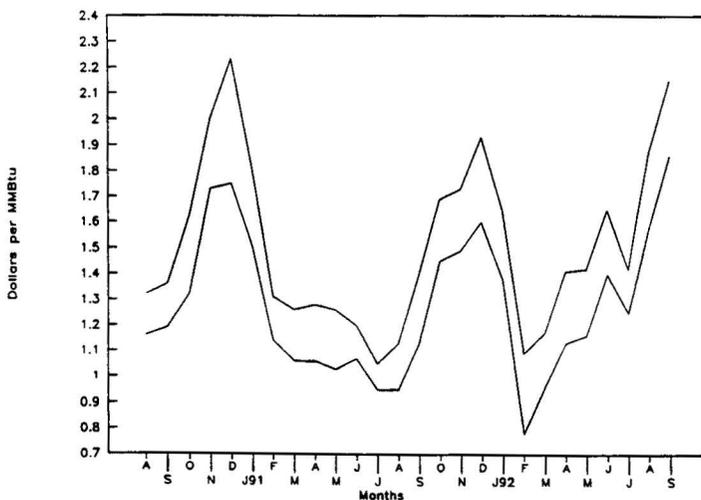
OCS Subdivisions
Louisiana Offshore



Source: *Estimated Oil and Gas Reserves, Gulf of Mexico, December 31, 1990, MMS.*

The average offshore gas well in 1990, for example, at a total depth of 10,301 feet cost \$3.8 million to drill and complete.¹¹ Yet prices on the spot market for Gulf of Mexico production fell to as low as \$1.03 per MMBtu in May 1991 and even to \$.78 in February 1992. Although wellhead prices rebounded to over \$1.86 per MMBtu by September 1992 (see Figure 3), it is the fluctuations in wellhead pricing (and anticipated revenue) that puts a great deal of economic pressure on high cost (and possibly high risk) offshore ventures. Remember that offshore project costs can include significant bonus expenses just to acquire a lease, can include the expense of drilling multi-million dollar wells and can require

FIGURE 3
Gulf of Mexico
Spot Market Wellhead Price Range



Source: Natural Gas Intelligence.

production facilities that, depending on water depth and processing requirements, can cost hundreds of millions of dollars to construct and operate. This does not even include the costs of moving the gas to shore via pipeline. If these requirements seem insurmountable, they are not. Many companies operate in the gulf because of the upside potential for discovery that may manifest itself, as well as the infrastructure already in place to move gas to markets. But the issue of marginal economic justification for some offshore projects will continue to be a problem for many companies during this time of unpredictable wellhead pricing trends.

Hurricane Andrew

In late August 1992, Hurricane Andrew (a force 4 storm with winds up to 160 miles per hour) crossed southern Florida, entered the Gulf of Mexico and proceeded on a path through the central gulf that brought it ashore near Vermilion Bay in south Louisiana. Damage onshore in south Florida and Louisiana was extensive. The power of the storm was also felt by the oil and gas facilities in the gulf, particularly in the Ship Shoal and South Timbalier offshore areas (see Map 1).

A.G.A. estimates of disruptions to gas production approximated 1.0 to 1.5 Bcf per day shortly after the storm. Though temporary, 1.0 Bcf per day represents about 10 percent of Louisiana offshore production and two percent of national gas production. Damage to offshore platforms was varied. There are 3,900 platforms in the Gulf of Mexico. MMS has estimated that 241 platforms were destroyed or damaged as a result of the storm. Damage included loss of power, pipeline disconnections, wind damage to platform facilities and in some cases total destruction. The most severe damage was to facilities in shallow water and generally to older facilities. Those platforms erected since 1976 under the standards required by MMS for a "100-year storm" did not report extensive damage. Some gas flow disruption estimates by MMS reported in the weeks following Hurricane Andrew reached 2.5 Bcf per day. However, even these reports normally included the caveat that a large portion of that flow would be restored within weeks.

In some cases, repairs to offshore facilities were expected to take just days, weeks or several months. The worst case is that some platforms would not be replaced at all. In general, these are facilities that are at the end of their productive life. Of the approximately 1.0-1.5 Bcf interrupted for some period of time after the hurricane, most of the capacity was expected to be available within several weeks. In fact, five weeks after the storm, A.G.A. estimated that only 600 MMcf per day of capability was still unavailable.

Endnotes

- ¹*Potential Supply of Natural Gas in the United States (December 31, 1990)*, Potential Gas Committee, May 1991, p.59.
- ²*Geologic Distributions of U.S. Oil and Gas*, DOE/EIA-0557, July 1992, pp. 22-23.
- ³*Mineral Revenues 1990*, Minerals Management Service, pp. 32-33, 98.
- ⁴*Oil and Gas Journal*, May 18,1992, p.25.
- ⁵*Mineral Revenues 1990*, Minerals Management Service, pp.42-43.
- ⁶*Monthly Energy Review*, DOE/EIA, August 1992, p. 88.
- ⁷*Rotary Rigs Actually Making Hole in the United States and Canada*, International Association of Drilling Contractors, 1990-1992.
- ⁸*The Oil Daily*, June 18, 1992, p. 1.
- ⁹*Wall Street Journal*, January 28, 1992, p.B4.
- ¹⁰*Oil and Gas Journal*, June 29, 1992, pp. 42-44.
- ¹¹*1990 Joint Association Survey on Drilling Costs*, American Petroleum Institute, November 1991.



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OFFSHORE TEXAS: NATURAL GAS RESERVES, RESOURCES, LEASING AND DRILLING ACTIVITY

Introduction

Offshore Texas, which constitutes the bulk of the Western Planning Area of the Gulf of Mexico Outer Continental Shelf (OCS), has been an area of exciting discovery and infrastructural growth for natural gas in recent years. For the ten-year period 1983-1992, the Texas offshore has accounted for 7.6 percent of all U.S. natural gas production and about five percent of U.S. proved reserves. For the same ten-year period, 98 percent of natural gas production in the Texas offshore has been replaced by reserve additions. At year-end 1992, productive offshore Texas fields numbered 200 and proved reserves exceeded 7 Tcf.

The western portion of the Gulf of Mexico is not as mature in terms of wells drilled and pipeline infrastructure as is the Louisiana portion of the gulf. However, infrastructural growth has followed the discovery of significant gas accumulations by majors and independents, alike. This study examines several key topics regarding exploratory and development activity in the Texas portion of the Gulf of Mexico. Reserves, undiscovered resources, leasing activities and recent drilling are discussed within the context of recent history and expected trends.

Geologic Background

The Texas offshore in the Gulf of Mexico is a significant hydrocarbon producing region of the United States, which to date has tended to be gas prone. Undiscovered potential is also expected to be mostly gas. Initial development of gas resources has been heavily concentrated on the near-shore shelf, with the deeper water slope only lightly explored. To date, fewer than 6,000 wells have been drilled on the 15 million acre shelf. For those wells that lead to gas discoveries, resulting fields tend to be 20 to 50 Bcf in size.¹

Generalized Geologic Time Scale

Era	Period	Epoch	Million Years Age
CENOZOIC		Holocene (Recent)	
	Quaternary		0-0.01
		Pleistocene (Glacial)	
			1.8-2.8
		Pliocene	
			4.9-5.3
		Miocene	
			23-28
	Tertiary	Oligocene	
			34-38
MESOZOIC		Eocene	
			54-58
		Paleocene	
			63-66
PALEOZOIC	Cretaceous		135-141
	Jurassic		200-215
	Triassic		240
	Permian		290-305
	Pennsylvanian (Upper Carboniferous)		330
PRECAMBRIAN	Mississippian (Lower Carboniferous)		360-365
	Devonian		405-415
	Silurian		435-440
	Ordovician		495-510
	Cambrian		570

Source: OCS National Compendium-October 1990, U.S. Department of the Interior, Minerals Management Service, June 1991.

Producing rocks in the Texas offshore are sandstones not designated by individual formation names, but rather identified by their geologic age as determined by paleontological markers. Productive zones range from Oligocene to Pleistocene in age (see generalized geologic time scale) and tend to be productive as shallow as 1,500 feet to as deep as 15,000 feet.

Texas offshore sediments were deposited further away from the sedimentary source (in this case the Mississippi River delta complex) than sediments deposited in offshore Louisiana waters and are, therefore, finer grained with a higher percentage of shale present. Because of the diverse depositional environments associated with the Texas Gulf Coast, permeability and porosity vary widely in many of the strata.

Subsurface gas and oil traps occur associated with anticlines, faulted anticlines, shale and salt intrusions and growth faults. Slightly older Miocene shales are probably the source rocks for hydrocarbon accumulations, with oil and gas migrating vertically upward to the younger Pliocene and Pleistocene strata.²

Reserves and Production History

Table 1 lists Energy Information Administration (EIA) data on natural gas reserves and production in Texas state and federal waters for the ten-year period 1983-1992. Production in 1992 was 1,349 Bcf, up from the ten-year low of 959 Bcf in 1985, but less than the peak year (1990) when 1,542 Bcf was produced. Table 1 also shows that as production has risen during the past decade, reserves have dropped slightly causing the reserves life index to fall from 7.7 years in 1983 to 5.4 years in 1992.

Table 2 provides an opportunity to more closely examine changes in reserves from 1983 to 1992 in the Texas offshore. On average for the ten-year period, reserve additions were 98 percent of production. Additions were composed of about one-third revisions and adjustments and two-thirds new gas (gas from extensions, new field discoveries and new reservoirs in old fields). Although total proved reserves have fluctuated during the past ten years, reserves in the Texas offshore have generally accounted for 4-5 percent of all U.S. gas reserves.

Table 3 further delineates reserves and productive fields in the western Gulf of Mexico. By year-end 1992, there were 200 producing fields in the western gulf. Only seven of the fields were located on the deeper water slope. The western OCS areas with the largest number of producing fields are High Island and Sabine Pass with a combined 89 fields producing gas, oil or both (see Figure 1 for OCS area locations). According to the Minerals Management Service, the Texas offshore produced 17.8 Tcf of casinghead and dry gas from 1954-1991. Seventy-nine percent of the production originated from federal waters, with the balance coming from state locations.³

TABLE 1
Texas
State and Federal Offshore Reserves

Year	Bcf		Reserve Life Index	Bcf
	Proved Reserves	Production		Wet Gas in Nonproducing Reservoirs
1992	7,344	1,349	5.4	3,205
1991	7,150	1,470	4.9	2,446
1990	7,758	1,542	5.0	2,131
1989	7,573	1,414	5.4	2,869
1988	7,802	1,351	5.8	3,559
1987	7,846	1,313	6.0	3,170
1986	8,176	1,159	7.1	3,572
1985	8,129	959	8.5	NA
1984	8,452	1,064	7.9	3,852
1983	7,562	984	7.7	3,367

Source: *U.S. Crude Oil, Natural Gas and Natural Gas Liquids Reserves - Annual Reports* DOE/EIA.

TABLE 2
Texas State and Federal Offshore
Changes in Reserves

Year	Bcf					Percent of U.S. Production	Bcf	
	Adjustments/ Revisions	Extensions	New Field Discoveries	New Reservoir in Old Fields	Production		Proved Reserves	Percent of U.S. Proved Reserves
1992	1,128	204	70	141	1,349	7.7	7,344	4.5
1991	-37	252	366	281	1,470	8.5	7,150	4.3
1990	1,065	281	205	176	1,542	8.9	7,758	4.6
1989	311	453	201	220	1,414	8.3	7,573	4.5
1988	162	511	430	204	1,351	8.1	7,802	4.6
1987	552	198	56	177	1,313	8.1	7,846	4.2
1986	544	432	60	170	1,159	7.4	8,176	4.3
1985	-395	449	125	457	959	6.0	8,129	4.2
1984	542	654	522	236	1,064	6.2	8,452	4.3
1983	151	353	134	350	984	6.2	7,562	3.8
Ten-Year Average	402	379	217	241	1,261	7.6	7,779	4.3

Source: U.S. Crude Oil, Natural Gas and Natural Gas Liquids Reserves - Annual Reports, DOE/EIA.

Undiscovered Resources

Recent work by the EIA indicates that oil and gas field distribution in the Gulf of Mexico is immature with some large fields yet to be discovered and many more medium sized fields still to be found. There is a pronounced effect of economic conditions on the exploitation of gas in the gulf, even though the area is one of continual technological development that tends to reduce costs.⁴ That is, when natural gas wellhead prices are extremely low, the economics of high cost offshore operations deteriorate.

As indicated previously, development of drilling prospects in offshore Texas waters has been slower than in Louisiana. However, infrastructural growth and pipeline additions in recent years have made deeper water plays more accessible to exploitation. Nearly 3,000 miles of pipeline have been placed in the Texas offshore compared to over 16,000 in the Louisiana portion of the Gulf of Mexico.⁵ Three times since 1983, the gas resource base in the Texas offshore has yielded more than 600 Bcf of new field discoveries and new reservoirs in old fields during a year (1984, 1988 and 1991). In addition, extensions to existing fields were particularly strong in 1984 and 1988. At year-end 1992, the Potential Gas Agency of the Colorado School of Mines estimated that 18 Tcf of undiscovered gas resource was recoverable from Texas shelf and slope locations.

Table 3
 Estimated Oil and Gas Reserves by Area
 Offshore Texas
 December 31, 1992

(millions of barrels - Bcf)

Area(s)	Number of fields				Original recoverable reserves		Cumulative production through 1992		Remaining recoverable reserves	
	Proved active prod	Proved active unimpd	Unproved active 1992	Unproved expired 1992	Oil	Gas	Oil	Gas	Oil	Gas
Western Planning Area										
Brazos	26	3	5	2	10	2,840	6	1,669	4	1,171
Galveston	27	1	8	2	28	1,383	24	1,465	4	318
High Island and Sabine Pass	89	0	16	0	295	11,909	223	9,634	72	2,275
Matagorda Island	28	0	0	0	20	4,437	11	2,485	9	1,952
Mustang Island and N. & S. Padre Island	23	0	4	1	8	1,960	3	1,033	5	927
Western Slope*	7	2	0	7	226	1,371	34	323	192	1,054
200	6	33	12	2	587	23,906	301	16,209	286	7,697

*Western Slope includes Alaminos Canyon, Corpus Christi, East Breaks, Garden Banks, Kaulthley Canyon, and Port Isabel.

Source: Estimated Proved Oil and Gas Reserves, Gulf of Mexico, December 31, 1992, MMS 93-0050.

Table 4
 Status of Oil and Gas Leases
 Offshore Texas
 December 31, 1992

Area(s) (Figs. 3, 4, and 5)	Proved active	Proved depleted	Number of leases			Number of boreholes Drilled	Number of active completions
			Unproved qualified	Unproved active	Unproved expired		
Western Planning Area							
Brazos	52	10	2	86	148	424	244
Galveston	45	13	2	106	345	478	346
High Island and Sabine Pass	179	45	0	170	561	2,264	1,224
Matagorda Island	62	4	0	40	83	450	186
Mustang Island and N. & S. Padre Island	41	5	1	167	403	399	254
Western Slope*	24	0	8	552	445	345	211
	403	77	13	1,121	1,985	4,360	2,465

*Western Slope includes Alaminos Canyon, Corpus Christi, East Breaks, Garden Banks, Keathley Canyon, and Port Isabel.

Source: Estimated Proved Oil and Gas Reserves, Gulf of Mexico,
 December 31, 1992, MMS 93-0050.

In addition to that resource, 30 Tcf is also attributed to the outer continental slope (very deep water) in the Gulf of Mexico by the Potential Gas Agency and a portion of the resource is located in Texas waters. The outer continental slope is defined by water depths greater than 1,000 meters down to 3,000 meters. Reservoir rocks are likely to be Cenozoic sandstones deposited in submarine fans and channels. Salt and fault structures are probably the most prominent trapping mechanisms.

Federal Offshore Lease and Royalty Statistics

The western Gulf of Mexico (see Figure 1) contains approximately 36 million acres of submerged area. As of December 31, 1991, producing and producible leases in the western federal offshore totaled 359 leases and 1.9 million acres.

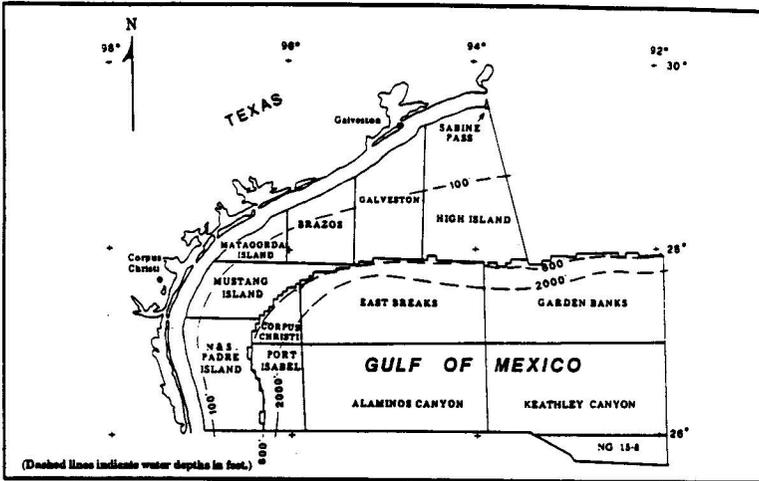
Before a company can drill exploratory wells in federal waters, the company must first obtain the rights to a lease block through a competitive bidding process. The Mineral Management Service announces dates in advance, then conducts sealed bid lease sales in which the right to explore and develop a property normally goes to the highest bidder. In many instances, the companies form partnerships to spread coverage of potential properties and to divide the expense of large bonus bids. The most recent western Gulf of Mexico lease sale (OCS Sale 143) placed 25.6 million acres up for bid. Nearly 850,000 acres actually received bids. This represented 197 bids on 157 blocks, with apparent winning bids reaching \$64.3 million. For Sale 143, BP America won the most tracts (23) on bidding in deep water only. The highest bid was placed on Mustang Island Block 783 (\$5.1 million) by Hall-Houston, Global Natural and Sante Fe Energy. Enron and Brooklyn Union captured two of the next three blocks receiving high bids, Mustang Island Block 759 (\$4.2 million) and Mustang Island Block 807 (\$2.4 million). Other companies such as CNG Operating had multiple winning bids (four winning bids with a net exposure of \$4.2 million).⁶ Since 1954, the process of offering OCS tracts for competitive bidding throughout the United States has generated over \$56 billion in revenue for the federal government.

The federal government receives substantial funds not only from leasing activity in federal waters, but also from royalties paid for natural gas and oil production. In 1991 alone, the sales value of gas produced from offshore Texas was nearly \$2 billion. Royalties paid to the federal government were more than \$329 million. From 1954 through 1991, the sales value of the gas produced from the Texas offshore has approximated \$28.7 billion. Resulting royalties have been \$4.8 billion during the same period. For the entire OCS, royalties received from 1954-1991 for gas have exceeded \$22.6 billion, while oil royalty revenues have been nearly \$20 billion.⁷

Drilling Activity

Exploring for and producing natural gas and oil in offshore locations is normally a long-term process. Leases must be acquired, seismic data must be evaluated and exploratory wells must be drilled. Development wells and production platform fabrication follows. Often, this results in expenses that exceed comparable onshore projects. However, even though these projects must be viewed in the long-term, they are susceptible to short-term

Figure 1
 Western Planning Area
 Gulf of Mexico



Source: *Estimated Proved Oil and Gas Reserves, Gulf of Mexico, December 31, 1992, MMS 93-0050.*

fluctuations in wellhead prices. By year-end 1991, over 4,100 wells had been drilled in the Western Planning Area, with nearly 1,600 completed for production. This compares to the Central Planning Area (primarily offshore Louisiana) where over 25,000 wells were drilled prior to January 1992 and nearly 11,000 were completed and producing.⁸

Rig activity in offshore regions of the United States has fluctuated significantly since 1973. Annual rig activity has ranged from 256 rigs operating to 52 for all offshore areas of the U.S. Recent activity has been in the low end of that range.⁹ On October 23, 1993, seventeen rigs were operating in Texas waters -- up from five rigs on October 22, 1992.¹⁰

Drilling for gas in the Texas offshore continues to result in significant discoveries. Exploration successes in 1993 demonstrated the tendency for key discoveries to be gas prone. For example, Enron Oil and Gas Co. announced a discovery in Matagorda Island Block 556 (see map location 1). Well No. A-9 is now flowing at 10 MMcf per day with 20 barrels of condensate. The well encountered 100 feet of net pay in four sands below 7,800 feet. The discovery has already been extended about one mile to the east by a confirmation test.¹¹

Seagull Energy, which has grown in recent years to become one of the top 30 domestic natural gas reserves holders, has also been very active in the Texas offshore. During the first quarter of 1993, Seagull announced the extension of an earlier discovery on Galveston Block 273 (see map location 2). The OCS-G-9035 No. 5 encountered 60 feet of net pay in four zones. Two of the zones were tested and produced a combined flow of 11.2 MMcf per day.¹² At map location 3 in the Brazos area, Seagull opened pay from nine zones in Block 552. 100 feet of net pay was found in the OCS-G-11283 No. 1 well, with one zone 20 feet thick testing at 9.4 MMcf per day by itself.¹³

In deeper water, Exxon is developing a project named Diana Prospect in the East Breaks area (see map location 4). The prospect is located in 4,645 feet of water and will not be producing until 2002.¹⁴ These drilling highlights touch on the remaining potential for discovery in the Texas offshore.

Endnotes

- ¹*Potential Supply of Natural Gas in the United States*, Potential Gas Committee, Potential Gas Agency, May 1993, p.59.
- ²*Potential Supply of Natural Gas in the United States*, Potential Gas Committee, Potential Gas Agency, May 1993, p.60.
- ³*Federal Offshore Statistics: 1991*, MMS 92-0056, p. 88.
- ⁴*Geologic Distributions of U.S. Oil and Gas*, DOE/EIA-0557, July 1992, pp. 22-23.
- ⁵*Federal Offshore Statistics: 1991*, MMS 92-0056, p. 72.
- ⁶*Oil and Gas Journal*, September 20, 1993, p. 44.
- ⁷*Mineral Revenues 1991*, Minerals Management Service, pp. 34-38.
- ⁸*Federal Offshore Statistics: 1991*, MMS 92-0056, p. 48.
- ⁹*Monthly Energy Review*, DOE/EIA, July 1993, p. 82.
- ¹⁰*International Association of Drilling Contractors Rig Count Report*, October 22, 1993.
- ¹¹*The Oil Daily*, October 20, 1993, p. 4.
- ¹²*Natural Gas Intelligence*, March 29, 1993, p. 11.
- ¹³*Oil and Gas Journal*, June 28, 1993, p. 44.
- ¹⁴*AAPG Explorer*, October 1993, p. 6.

**TESTIMONY OF
NICHOLAS J. BUSH
PRESIDENT
NATURAL GAS SUPPLY ASSOCIATION**

**JOINT OVERSIGHT HEARING BEFORE THE
ENERGY AND MINERAL RESOURCES SUBCOMMITTEE
AND
OVERSIGHT AND INVESTIGATIONS SUBCOMMITTEE
OF THE
HOUSE COMMITTEE ON NATURAL RESOURCES**

**FOR THE HEARING ON
THE STATE OF THE DOMESTIC OFFSHORE
OIL AND GAS INDUSTRY**

**WASHINGTON, D.C.
JUNE 23, 1994**

**WRITTEN TESTIMONY OF
NICHOLAS J. BUSH
PRESIDENT
NATURAL GAS SUPPLY ASSOCIATION
JOINT OVERSIGHT HEARING BEFORE THE
ENERGY AND MINERAL RESOURCES SUBCOMMITTEE
AND
OVERSIGHT AND INVESTIGATIONS SUBCOMMITTEE
OF THE
HOUSE COMMITTEE ON NATURAL RESOURCES
FOR THE HEARING ON
THE STATE OF THE DOMESTIC OFFSHORE
OIL AND GAS INDUSTRY**

JUNE 23, 1994

GOOD MORNING. MY NAME IS NICHOLAS J. BUSH AND I AM THE PRESIDENT OF THE NATURAL GAS SUPPLY ASSOCIATION (NGSA). N-G-S-A'S MEMBERS ARE DOMESTIC COMPANIES RESPONSIBLE FOR APPROXIMATELY 90 PERCENT OF THE NATURAL GAS PRODUCED AND MARKETED IN THE UNITED STATES.

MR. CHAIRMAN, CURRENT GOVERNMENT POLICIES TOWARD OFFSHORE NATURAL GAS PRODUCTION -- MOST PARTICULARLY, MORATORIA ON OFFSHORE LEASING AND DRILLING -- ARE DAMAGING THE DOMESTIC PRODUCING INDUSTRY AND MORE IMPORTANTLY, THE NATION AS A WHOLE.

THE DOMESTIC NATURAL GAS AND OIL INDUSTRY IS VITAL TO THE UNITED STATES ECONOMY, ACCOUNTING FOR APPROXIMATELY FIVE AND A HALF PERCENT OF THE GROSS DOMESTIC PRODUCT.

EXPANDING U.S. NATURAL GAS PRODUCTION STIMULATES ECONOMIC ACTIVITY AND THUS JOB GROWTH. IT INCREASES GOVERNMENT REVENUES, REDUCES THE TRADE DEFICIT, AND HELPS MAINTAIN U.S. TECHNOLOGICAL LEADERSHIP. IMPORTANTLY, IT ALSO BRINGS SIGNIFICANT ENVIRONMENTAL BENEFITS.

THESE OBJECTIVES WILL BE REALIZED ONLY IF THE DOMESTIC PRODUCING INDUSTRY IS HEALTHY -- AND RIGHT NOW, THAT INDUSTRY FACES SIGNIFICANT CHALLENGES IF IT IS TO REGAIN ITS HEALTH. MANY OF THESE CHALLENGES ARE COMMON TO ALL BUSINESSES, SUCH AS UNPREDICTABLE MARKETS SWINGS, OR WORLD EVENTS BEYOND CONTROL. IN ADDITION, THERE ARE UNIQUE RISKS AND UNCERTAINTIES PARTICULAR TO THE PRODUCING INDUSTRY, SUCH AS LOCATING NATURAL GAS RESERVES BURIED IN DEEP WATER AND OTHER DEMANDING ENVIRONMENTS.

PRODUCERS HAVE NO ILLUSIONS ABOUT THE DIFFICULTIES INHERENT IN THEIR BUSINESS. IT IS A HIGHLY COMPETITIVE AND RISK-INTENSIVE ENTERPRISE, REQUIRING CONSIDERABLE TOLERANCE FOR SETBACKS. MANY OF THE UNCERTAINTIES ENDEMIC TO THE PRODUCING INDUSTRY, SUCH AS

GEOLOGICAL UNKNOWNNS, FINANCING PROBLEMS, AND FLUCTUATING PRICES, CAN BE SUCCESSFULLY NAVIGATED THROUGH INGENUITY AND PERSISTENCE. AS A RESULT, EVEN DURING LEAN YEARS, GAS PRODUCERS HAVE BEEN ABLE TO MAINTAIN PRODUCTION AT LEVELS SUFFICIENT TO SATISFY DEMAND.

MANY OF THE PROBLEMS FACING PRODUCERS TODAY, HOWEVER, ARE NOT TRADITIONAL BUSINESS PROBLEMS. PRODUCERS HAVE NOT, FOR EXAMPLE, BEEN ENTIRELY SUCCESSFUL IN MANAGING THE ENORMOUS OPERATING COST INCREASES THAT HAVE STEMMED FROM SHIFTING GOVERNMENTAL POLICIES, INCREASINGLY COMPLEX AND OFTEN REDUNDANT ENVIRONMENTAL REGULATIONS, AND DRILLING MORATORIA ON THE MOST PROMISING AREAS FOR DISCOVERING ADDITIONAL RESERVES.

IT IS CONDITIONS LIKE THESE THAT ARE LENDING AN URGENT TONE TO PRODUCING INDUSTRY REQUESTS FOR A RE-EXAMINATION OF NATIONAL PRIORITIES WITH REGARDS TO OFFSHORE PRODUCTION. VARIOUS PROPOSALS AIMED AT ADDRESSING PRODUCER CONCERNS HAVE BEEN DISCUSSED IN RECENT MONTHS. N-G-S-A RESPECTFULLY REQUESTS THAT ALL OF THEM RECEIVE CAREFUL CONSIDERATION -- PARTICULARLY SOME FORM OF PRODUCTION INCENTIVE TO PROMOTE THE AVAILABILITY OF A FUEL THAT ENJOYS WIDE SUPPORT FROM INDUSTRY, GOVERNMENT, AND CONSUMERS.

THE MOST COUNTERPRODUCTIVE ASPECT OF CURRENT GOVERNMENT POLICY IS THE CONTINUED CALL FOR INCREASED USE OF NATURAL GAS, EVEN WHILE OTHER POLICIES -- MOST PARTICULARLY OFFSHORE LEASING MORATORIA -- PREVENT INCREASED PRICE-COMPETITIVE GAS PRODUCTION. THE FACTS UNDERLYING THIS SITUATION ARE THESE:

* OFFSHORE TERRITORY IS PRIMARILY A NATURAL GAS PRODUCING REGION: TWO THIRDS OF THE ENERGY PRODUCED OFFSHORE COMES IN THE FORM OF NATURAL GAS. WHEN YOU RENEW MORATORIA ON OFFSHORE AREAS, YOU CONSTRAIN THE COUNTRY'S SUPPLY OF NATURAL GAS.

* THIS IS CLEAR WHEN YOU CONSIDER THIS CHART. FROM 1955 THROUGH 1982, WHEN MORATORIA AGAINST GAS EXPLORATION BECAME A STANDARD PREREQUISITE TO THE DEPARTMENT OF INTERIOR'S ANNUAL APPROPRIATIONS, FEDERAL OFFSHORE NATURAL GAS PRODUCTION INCREASED EACH YEAR. SINCE THAT TIME, HOWEVER, FEDERAL OFFSHORE PRODUCTION HAS LEVELED OUT AND REMAINED FLAT.

* FURTHER, AS THIS SECOND CHART SHOWS, SINCE THE ONSET OF MORATORIA, THE CONTRIBUTION OF FEDERAL OFFSHORE PRODUCTION TO TOTAL OFFSHORE PRODUCTION HAS ALSO STAGNATED. ALTHOUGH

THE MARKET TELLS PRODUCERS TO PURSUE THE LARGE, ECONOMIC GAS RESERVES LIKELY TO BE FOUND IN THE DEEPER FEDERAL OFFSHORE WATERS, MANY OF THESE POTENTIAL RESERVES ARE BEING DENIED TO CONSUMERS BY FEDERAL MORATORIA.

* SO FAR, REMARKABLE TECHNOLOGICAL ADVANCES HAVE ENABLED PRODUCERS TO MAINTAIN FEDERAL OFFSHORE GAS PRODUCTION AT LEVELS DEMANDED BY CONSUMERS. CURRENTLY, NATURAL GAS FROM ACCESSIBLE FEDERAL OFFSHORE TERRITORIES PROVIDES 24 PERCENT OF TOTAL U.S. GAS CONSUMPTION. WITHOUT ACCESS TO HIGHLY PROMISING OFFSHORE AREAS, HOWEVER, THIS OUTPUT CANNOT BE SUSTAINED INDEFINITELY AT PRICE LEVELS TO WHICH CONSUMERS ARE ACCUSTOMED. IF THE MOST PRICE-COMPETITIVE RESERVES CONTINUE TO BE OFF LIMITS, THAT REALITY WILL IMPACT THE MARKETPLACE.

* EVIDENCE OF THE IMPORTANCE OF OFFSHORE GAS SUPPLIES IN A HIGHLY COMPETITIVE MARKET IS EXEMPLIFIED THE 1994 NATURAL GAS SUPPLY ASSOCIATION DELIVERABILITY SURVEY. THAT SURVEY CONCLUDES THAT 80 PERCENT OF THE INDUSTRY'S INCREASE IN PRODUCTION CAPACITY DURING 1993 OCCURRED IN THE GULF OF MEXICO.

* LASTLY, IN 1992, FEDERAL OFFSHORE PRODUCTION REPRESENTED \$8.1 BILLION DOLLARS' WORTH OF ENERGY. IF THIS PRODUCTION IS PERMITTED TO DWINDLE, IT WILL NECESSARILY BE REPLACED WITH ANOTHER FUEL -- ONE THAT IS UNLIKELY TO BE DOMESTIC OR AS ENVIRONMENTALLY BENIGN. CUMULATIVELY, NATURAL GAS FROM FEDERAL OFFSHORE TERRITORIES HAS PROVIDED OVER 250 BILLION DOLLARS' WORTH OF GROSS ECONOMIC BENEFITS TO THE NATION, IN TERMS OF THE VALUE OF PRODUCTION AND ROYALTIES PAID.

IN SUMMARY, PRODUCERS TAKE RESPONSIBILITY FOR MANAGING THE UNCERTAINTIES INHERENT IN THEIR BUSINESSES, BUT THEY NEED COOPERATION FROM THE GOVERNMENT TO MANAGE THE RISKS AND COSTS BEING IMPOSED ON THEIR OPERATIONS BY GROWING REGULATORY RESTRAINTS -- PARTICULARLY ONGOING LEASING MORATORIA ON MOST OFFSHORE TERRITORIES. THE NATURAL GAS INDUSTRY IS IN POSITION TO PROVIDE RELIABLE SUPPLIES OF A FUEL THAT EVERYBODY IS DEMANDING -- THE ONLY THING THAT WILL PREVENT US FROM SATISFYING THIS DEMAND IS IF WE ARE PROHIBITED FROM DOING SO.

THANK YOU FOR THE OPPORTUNITY TO APPEAR HERE TODAY.

Mr. LEHMAN. Why don't we withhold? The vote is being called? We will quit. Due to time restraints, additional questions will be submitted to you.

[EDITOR'S NOTE.—See appendix.]

[Whereupon, at 1:23 p.m., the subcommittee was adjourned, due to scheduled votes.]

A P P E N D I X

JUNE 23, 1994

ADDITIONAL MATERIAL SUBMITTED FOR THE HEARING RECORD

OPENING STATEMENT

of

THE HONORABLE JAY DICKEY

Fourth District - Arkansas

Regarding

Subcommittee on Energy and Mineral Resources and

Subcommittee on Oversight and Investigations

Hearing on

Status of the Domestic Offshore Oil and Gas Industry

June 23, 1994

Thank you for holding this joint subcommittee hearing today on the status of the domestic offshore oil and gas industry.

I was among a large group of House and Senate Members who met with the President last week to share with him and other members of the Administration, our concerns about the status of the domestic oil and gas industry. Although this hearing is apparently going to focus on offshore oil and gas issues, urge that independent oil and gas operators working in the interior of the country will be considered in any overall solutions that may be proposed to reverse the decline in domestic oil and gas production.

Both onshore and offshore production increases are needed to keep America from becoming even more dependent on foreign sources of crude oil. The relatively low world oil prices and the high production costs, including high regulatory and related production overhead costs, are causing very difficult times for independent oil producers in southern Arkansas and other parts of the country.

I look forward to reviewing the testimony and working with the committee to remove disincentives and provide production incentives to help revive all of America's oil and gas industry.



The Deputy Secretary of Energy

1000 Independence Avenue., S.W.
 Washington, D.C. 20585
 (202) 586-5500 • FAX (202) 586-0148

July 6, 1994

The Honorable George Miller
 U.S. House of Representatives
 2205 Rayburn House Office Building
 Washington, D.C. 20515

RE: RELATIVE ATTRACTIVENESS OF
 U.S. OIL AND GAS INVESTMENT

Dear Chairman Miller,

At hearings a couple of weeks ago, you asked Bob Armstrong and me why American oil companies were investing so much offshore. The answer is complicated, and geology certainly plays a role. However, U.S. finding costs for oil and gas have been decreasing significantly during the last decade. This has occurred principally because of technological innovation and reduced overhead following the consolidation of the industry. You will note that environmental regulations were increasing throughout the time that average finding costs in the United States decreased. That shows that sound environmental practices and a competitive U.S. industry are not incompatible.

You might also be interested in the fact that the Department of Energy recently sponsored a workshop on environmentally sound offshore practices. Many people are of the belief that the environmental record of state-owned oil companies such as Petrobras and Pemex can be much improved. They traditionally have wielded much more political power than have their regulators, and at least Pemex has been associated with one of the larger offshore environmental disasters in history. It was a "first" when they began discussing with their counterparts, among environmentally more mature U.S. firms, the nature of the ES&H programs.

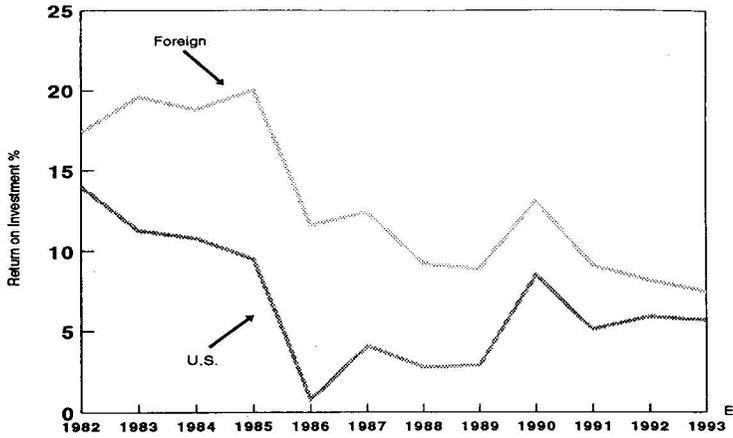
Sincerely,

A handwritten signature in dark ink, appearing to read "Bill White".

Bill White

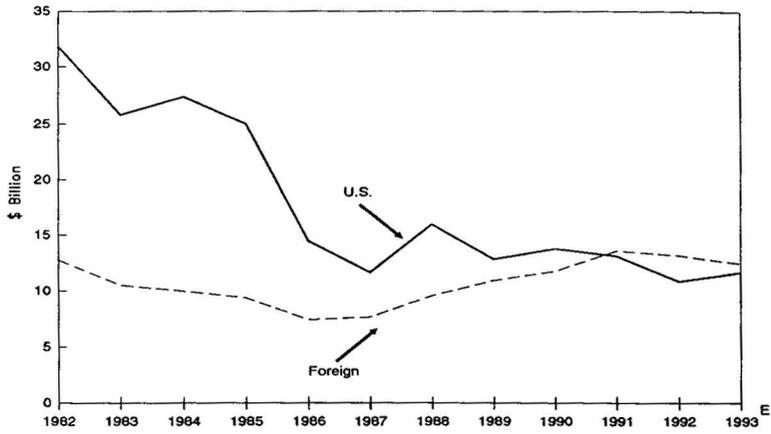


Figure 6. Return on Oil and Gas Production Investment for 25 Major Energy Companies, 1982-1993



Source: 1982-1992 data, Energy Information Administration, *Performance Profiles of Major Energy Producers, 1992*, DOE/EIA-0206(92) (Washington, DC, January 1994). 1993 data were estimated from information in company quarterly earnings press releases for Q493.

Figure 7. Exploration and Development Expenditures for 25 Major Energy Companies, 1982-1993



Source: 1982-1992 data, Energy Information Administration, *Performance Profiles of Major Energy Producers, 1992*, DOE/EIA-0206(92) (Washington, DC, January 1994). 1993 data were estimated from information in company quarterly earnings press releases for Q493.

Hearing on the Economic Health
of the Domestic Offshore Oil and Gas Industry

June 23, 1994

Additional Questions for
Panel III: Industry

1. MMS has looked at a variety of different leasing procedures over the past years. Aside from eliminating royalties, is there a consensus that the current system is working, or does industry advocate changes?
2. Another complaint is that many of the regulations pertaining to offshore drilling are unnecessary. In particular, which regulations could be removed, and what is the factual basis for doing so?
3. A recent GAO report entitled "Interior Can Improve Its Management of Lease Abandonment" criticized the use of explosives to remove offshore structures. Is industry taking steps to utilize non-explosive methods in order to protect marine life?
4. There are currently in place different tax incentives for majors versus independents. Would you comment on whether either group has an advantage when it comes to OCS drilling with reference to the tax code.
5. The Department of Interior and Department of Energy are undertaking considerable efforts to increase cooperation not only between themselves, but between state agencies and industry. Would you comment on those areas in which you have seen improvement, and in what areas the agencies should focus efforts to better interact with industry.

Your prompt attention to these inquiries will be most appreciated. Please address responses to:

Subcommittee on Energy and Mineral Resources
818 O'Neill HOB
Washington, D.C. 20515

Fax: (202) 225-4273, Attn: Dave Nelson

RESPONSES TO QUESTIONS FOR RAYMOND GALVIN, PRESIDENT
CHEVRON, USA PRODUCTION COMPANY

HEARING OF JUNE 23, 1994 ON THE ECONOMIC HEALTH
OF THE DOMESTIC OFFSHORE OIL AND GAS INDUSTRY

1. MMS has looked at a variety of different leasing procedures over the past years. Aside from eliminating royalties, is there a consensus that the current system is working, or does industry advocate changes?

API and its member companies strongly believe that the current system of annual area-wide lease sales in the Central and Western Gulf of Mexico (GOM) provides the most effective and efficient system for identification of critically needed new resources and insuring continuation of the resulting national economic benefits. Industry must have the flexibility and predictability the current leasing system provides to warrant continued investment and to permit adequate planning and evaluation. Systems which artificially limit the application and testing of creative geologic interpretations and new exploration technologies do not serve the nation's best interest. API strongly urges the continuation of the current annual area-wide leasing system.

A viable OCS leasing and development program is a critical component of the U.S. economy. To maintain this viability, the U.S. oil and natural gas industry must have access to those areas which offer the greatest potential for new hydrocarbon discoveries. The Central and Western GOM have been the most productive areas of the OCS and, by the Minerals Management Service's (MMS) own estimates, remain the most prospective for significant new domestic natural gas and oil discoveries. These areas are particularly critical in view of the vast areas of the OCS placed under congressional and administrative leasing and drilling moratoria.

Innovation is the key to successful exploration and development efforts on both the shelf and deepwater Gulf of Mexico through the application of creative geologic interpretations and new technology. Multiple exploration and development strategies employed by a large number of companies offer the greatest opportunity for new discoveries and resulting new production. Area-wide leasing facilitates this effort through offering the widest opportunity for industry to employ diverse, competitive approaches. As evidence of the diversity of strategies and enhanced competition stimulated by the current leasing system, the number of oil and gas operators in the GOM has more than doubled since the advent of area-wide leasing in 1983, increasing from 60 in 1983 to 133 in 1992. This growth has come from independent operators moving into the Gulf of Mexico stimulated by area-wide leasing and the current \$25 per acre minimum bid.

Area-wide leasing has also served to facilitate environmental assessments associated with OCS leasing. The area-wide environmental impact studies required under the

current leasing program allow the evaluation of the entire ecosystem. This provides broader knowledge of geohazards, marine biology, physical oceanography, and environmental baselines, thus accelerating data acquisition in the MMS Environmental Studies Program. Furthermore, area-wide leasing did not change the environmental responsibilities of OCS operators nor was the broad authority of the Secretary to require environmental safeguards during the entire term of a lease in any way diminished.

2. **Another complaint is that many of the regulations pertaining to offshore drilling are unnecessary. In particular, which regulations could be removed, and what is the factual basis for doing so?**

The Offshore Operators Committee, an organization of over 90 companies representing 95% of the OCS exploration and production activities in the GOM and an organization to which many API member companies belong, has reviewed Department of the Interior regulations that may affect offshore operations. The Offshore Operators Committee recently submitted a list of regulatory reform issues to the Department of the Interior and API would be pleased to provide these comments to the committee.

3. **A recent GAO report entitled "Interior Can Improve Its Management of Lease Abandonment" criticized the use of explosives to remove offshore structures. Is industry taking steps to utilize non-explosive methods in order to protect marine life?**

Industry is continuing to evaluate use of non-explosive methods to remove offshore structures in order to protect marine life. Our member companies who operate in the offshore environment believe that it is important to evaluate the potential safety, environmental, operational and economic impacts of various structural removal technologies in both shallow and deep waters. Industry is aware of the concerns for the marine environment as a result of platform removal activities and attempts to minimize their potential impacts.

Last year, the Subcommittee on Oceanography, Gulf of Mexico and the Outer Continental Shelf and the Subcommittee on Merchant Marine and Fisheries held a hearing on well and facility abandonment and site clearance for offshore oil and gas operations in the Gulf of Mexico. API participated in the hearing and discussed structure removal technologies and regulatory requirements.

API is aware that companies operating offshore are evaluating means other than explosives to effectively and safely remove platforms and other subsurface equipment during abandonment operations. In addition to explosives, companies have used mechanical, high pressure and abrasive cutters to sever equipment from the ocean floor.

Many considerations must be taken into account when severing platform equipment fifteen feet below the mud line or the ocean floor. In addition to marine impacts, a company must look at the safety of its employees, as well as contractors, during the operation; the configuration of equipment surrounding the site (both below the ocean, e.g. nearby pipelines, as well as other structures); the size of the platform legs/pilings to be removed; the water depth; the need to use divers; overall effectiveness of the removal technique; and, the costs of different technologies. Further, when explosives are used to sever the wells and piles MMS will consult with the National Marine Fisheries Service as required by the Endangered Species Act. The consultation requires the preparation of an Incidental Take Statement.

Finally, according to the GAO report, the National Marine Fisheries Service currently is conducting a study for MMS on the effects of explosives on fish. The study is expected to be completed at the end of the year.

4. **There are currently in place different tax incentives for majors versus independents. Would you comment on whether either group has an advantage when it comes to OCS drilling with reference to the tax code?**

There currently exists in the tax code disparate treatment of oil and gas producers based upon size. Independent producers may expense 100% of the intangible drilling costs (IDCs) they incur. Majors may expense 70% of their IDCs and must amortize the remaining 30% over sixty months. Independents may take a deduction for percentage depletion while majors are limited to a deduction for cost depletion. Cost depletion is a slower method of cost recovery. Majors must include a preference item for IDCs in computing alternative minimum tax. Independents need not include this preference item in computing AMT. These differences apply to all domestic operations of independents and majors; they are not limited to operations on the OCS.

5. **The Department of Interior and Department of Energy are undertaking considerable efforts to increase cooperation not only between themselves, but between state agencies and industry. Would you comment on those areas in which you have seen improvement, and in what areas the agencies should focus efforts to better interact with industry?**

API is aware of several areas wherein the Department of the Interior and the Department of Energy have actively sought to increase cooperation between themselves, but also to improve participation of industry in development of policies and programs.

A recent example of that cooperation is exhibited in the development of voluntary safety and environmental management practices for industry implementation in offshore operations by the MMS, U.S. Coast Guard and API. The program, called the Safety and Environmental Management Plan (SEMP), is a unique program to

improve safety and environmental performance in OCS operations. The program successfully developed a standard (RP75) with the participation of MMS and the US Coast Guard. Both agencies have indicated that satisfactory industry voluntary implementation of RP75 may preclude the need for regulations in this area. API is developing a self-assessment program wherein OCS operating companies will be surveyed to determine their current status in voluntary implementation of RP75. MMS is working with industry in monitoring and assessing industry's success in implementing RP75.

If the committee would like a copy of the program, we would be pleased to provide you with copies.



DOMESTIC PETROLEUM COUNCIL

1015 18th Street, N.W. Suite 600 Washington, D.C. 20036 202/296-1709

MEMBERSHIP

Anadarko Petroleum Corporation
 Apache Corporation
 BHP Petroleum (Americas) Inc.
 Cabot Oil and Gas Corporation
 Columbia Gas Development Corporation
 Devon Energy Corporation
 Energy Development Corporation
 Exxon Oil and Gas Company
 Enserch Exploration, Inc.
 Louisiana Land and Exploration Company
 Maxus Energy Corporation
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 Mitchell Energy & Development Corporation
 Oryx Energy Company
 Parker & Parsley Development Company
 PG&E Resources Company
 Pogo Producing Company
 Qumtana Petroleum Corporation
 Santa Fe Energy Resources, Inc.
 SCANA Petroleum Resources, Inc.
 Union Pacific Resources Company

July 22, 1994

Office of the President
 Robert L. Keiser
 Oryx Energy Company
 P.O. Box 2880
 Dallas, TX 75221-288
 214/715-8904

**The Honorable Richard H. Lehman
 Chairman, Subcommittee on
 Energy and Mineral Resources
 Committee on Natural Resources
 U. S. House of Representatives
 Washington, D. C. 20515-6201**

**The Honorable George Miller
 Chairman, Subcommittee on
 Oversight and Investigations
 Committee on Natural Resources
 U. S. House of Representatives
 Washington, D. C. 20515-6201**

Dear Chairmen Lehman and Miller:

In behalf of the Domestic Petroleum Council, I am pleased to enclose responses to the questions intended to be raised before the industry panel at the June 23rd hearing on the economic health of the domestic offshore oil and gas industry.

Although time constraints due to the level of activity and record votes on the House Floor precluded the opportunity to present my oral statement before the subcommittees, I would have urged your continued interest and support for access and development in the Gulf of Mexico by the oil and gas industry. It is an area critical to meeting the energy and security needs of this country. Your decision to call for this hearing reflects your recognition of its significance and I would welcome a future opportunity to provide you with the perspective of the larger independents.

In your letter, reference was made to how recent proposals targeting deep water might negatively impact shallower production. While the deep water proposals are not adverse to the shallower production, they obviously do not provide the lessees in the shallower waters royalty relief for which there may be equally compelling reasons to grant. As my testimony indicates, DPC members are also supportive of other relief measures which would be applicable in both the shallower and deeper waters of the Gulf of Mexico. For example, DPC strongly supports clarifying the Secretary of the Interior's authority to reduce or suspend royalties on non-producing leases to encourage production of marginal or uneconomic resources.

Finally, let me express my appreciation for being invited to participate and testify at the hearing. I look forward to meeting with you and to providing the assistance which the DPC can offer to the subcommittees in your future deliberations.

Sincerely,

Hearing on the Economic Health
of the Domestic Offshore Oil and Gas Industry

June 23, 1994

Additional Questions for
Panel III: Industry

**RESPONSES OF THE
DOMESTIC PETROLEUM COUNCIL**

1. MMS has looked at a variety of different leasing procedures over the past years. Aside from eliminating royalties, is there a consensus that the current system is working, or does industry advocate changes?

In response to the MMS' call for public comment on General Leasing Policies in the Central and Western Gulf of Mexico, dated December 7, 1993, industry groups and individual companies unanimously supported the current leasing system. As indicated in the Domestic Petroleum Council's (DPC) prepared remarks for the June 23rd hearing, reduction in access to the Gulf of Mexico will further discourage offshore development.

The present leasing system is consistent with the purposes of the Outer Continental Shelf Lands Act. The success of the current leasing system is evidenced by, (1) the number of companies participating in lease sales, particularly independents, has doubled; (2) new investment in high-tech, state-of-the-art geophysics has been encouraged; (3) new areas for exploration and development, such as the deep water and sub-salt, have been opened; (4) additional revenues have been generated for federal, state and local governments; and, (5) economic incentives and employment have been provided for many living and working in the area.

Industry's unanimous opposition to further restrictions in acreage available for lease in the Gulf of Mexico is based on the predictability of the current system and the reduction in investment opportunities which would result from significant changes in the system. It has proven to be a successful and highly competitive leasing program which allows for the expeditious and orderly development of the area's energy resources while maintaining compatibility with the other natural resources of the Gulf of Mexico.

2. Another complaint is that many of the regulations pertaining to offshore drilling are unnecessary. In particular, which regulations could be removed, and what is the factual basis for doing so?

The following three regulations currently imposed on offshore oil and gas operations could be revised to allow for a more reasonable approach to compliance without jeopardizing the intent of the regulations.

A. Blowout Preventer Testing (BOP); 30 CFR 250.57, .86 and .106. Revisions to BOP testing regulations should allow for less frequent and shorter test periods. Rather than the current 7 day interval between required testing, a 14 day BOP test interval would be more appropriate.

Further, the current 5 minute pressure hold now required should be reduced to 2 minutes.

BOP testing essentially consumes an entire work day in terms of preparation, monitoring, actual testing and final completion. The reliability of the equipment and the improvements in technology justify increasing the period of time between the frequency of testing and the degree of holding time required.

B. Directional Surveys; 30 CFR 250.51. These surveys are required to show inclination when drilling directional wells. If current regulations could be revised to allow a composite measurement while drilling (MWD) directional survey to be an acceptable option in fulfilling the survey requirements for directional wells, industry cost and effort could be reduced.

The accuracy of MWD directional surveys has been demonstrated and is another example of an improvement based on new technology developed for use in offshore operations. MWD directional surveys are highly reliable while also minimizing the rig time and other costs required to complete these surveys under the current regulatory scheme.

C. Chemosynthetic Communities; Notice To Lessees (NTL), 88-11. Industry is now required to demonstrate avoidance of areas where conditions may indicate the possible existence of chemosynthetic communities in water depths greater than 400 meters. The NTL issued in 1988 was designed to protect a new and poorly understood biological phenomenon in the Gulf of Mexico. At that time, chemosynthetic communities had been documented at approximately 6 sites and it was uncertain whether these organisms were widely distributed.

The study of chemosynthetic communities in the Gulf has now indicated the presence of the organisms and the natural seepage of hydrocarbons on which they depend are a widespread phenomena. Since the NTL was issued, at least 45 separate sites where chemosynthetic communities are present have been documented across the continental slope.

As these organisms are neither an endangered species nor an economic resource, the requirement to demonstrate avoidance in areas where the presence of these organisms in high density has not been documented submits the industry to undue costs and delay.

3. A recent GAO report entitled "Interior Can Improve Its Management of Lease Abandonment" criticized the use of explosives to remove offshore structures. Is industry taking steps to utilize non-explosive methods in order to protect marine life?

There is no question that offshore platforms and other structures have proven to be a source for the creation of enhanced ecosystems for marine life in the OCS. Undersea divers and those fishing around offshore platforms can attest to the abundance and variety of marine life which occurs in and around these structures. From an environmental standpoint, removal of a platform structure has a much greater negative impact on the ecosystem than the technique used.

When removal is required, the options are limited. While several alternative techniques have been suggested in lieu of the use of explosives for severing platform pilings and conductors, none have been shown to be more protective for marine life without incurring costs which make such techniques economically prohibitive.

It should be noted that the greatest area of concern is for endangered sea turtles. Prior to platform removal, boat searches and relocation efforts are required in areas where sea turtles are known to frequent. For most platforms internal explosives are used rather than placing them on the outside of the structure. These explosives are generally placed below the mud line to further minimize the impact on the marine environment.

There must be some balance between the possible damage and the cost involved in any suggested alternative for structure removal. The potential for endangering human life should also be a factor in assessing any proposal.

4. There are currently in place different tax incentives for majors versus independents. Would you comment on whether either group has an advantage when it comes to OCS drilling with reference to the tax code.

The tax code does not provide any specific advantages or incentives to either majors or independents when drilling in the OCS. The most significant provision available to independents in the tax code is the ability to deduct 100% of domestic U. S. intangible drilling and development costs (IDCs). But this treatment of IDCs has application wherever an independent may drill and is not limited specifically to the OCS.

5. The Department of Interior and Department of Energy are undertaking considerable efforts to increase cooperation not only between themselves, but between state agencies and industry. Would you comment on those areas in which you have seen improvement, and in what areas the agencies should focus efforts to better interact with industry.

There has been some improvement in the level of cooperation between competing federal agencies as well as with comparable state regulatory agencies and industry. A recent example of this was the Memorandum of Understanding (MOU) establishing jurisdictional responsibilities for offshore facilities (Federal Register, Volume 59, No. 39, Page 9494; February 28, 1994). The MOU, signed by the Departments of Interior and Transportation and the EPA, sought to avoid the unnecessary confusion resulting from the definition of "offshore facilities" under the Oil Pollution Act of 1990. It divided responsibilities associated with offshore facilities and provided some degree of confidence to those in industry as they seek to comply with the Act.

If these governmental efforts at cooperation are to continue, the following are suggested as those which should be given priority:

- > Avoiding/minimizing overlapping jurisdictions;

- > **Where overlapping jurisdictions exist, avoiding duplicating regulations which are inconsistent with one another;**
- > **Adopting a universally accepted nomenclature and terminology for jobs and functions used in industry in order to avoid each agency creating its own;**
- > **Establishing offshore pipeline regulations which are sensible and consistent. One pipeline can move from regulation by DOI or DOT without sufficient justification; and,**
- > **Establishing a true one-call reporting system for pollution incidents in navigable waters.**

**RESPONSES OF
FREDERICK H. ABREW, PRESIDENT & COO
EQUITABLE RESOURCES, INC.
ON BEHALF OF
THE AMERICAN GAS ASSOCIATION
BEFORE THE
SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES
COMMITTEE ON NATURAL RESOURCES
U.S. HOUSE OF REPRESENTATIVES
ON THE
STATE OF DOMESTIC OFFSHORE GAS AND OIL INDUSTRY**

August 4, 1994

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**ADDITIONAL QUESTIONS FOR
PANEL III: INDUSTRY**

Question 1: MMS has looked at a variety of different leasing procedures over the past years. Aside from eliminating royalties, is there a consensus that the current system is working, or does industry advocate changes?

Response 1: The current MMS leasing system in the Gulf of Mexico (Gulf) has been quite successful. Few federal programs have worked as effectively in accomplishing their mission as has this program during the last decade. A.G.A. strongly encourages the continuation of the Gulf leasing program. The "open" leasing concept has played a major role in the development of deep water exploration and production technology and in newly emerging subsalt exploration technology.

The industry is concerned by indications that MMS might be rethinking its whole approach to offshore leasing. We are particularly concerned by reports that MMS was contemplating a return to the old nominated leasing approach or some other method which would limit the number of tracts offered for lease each year. More recent pronouncements by Director Tom Fry have indicated that MMS is not anticipating any sweeping changes. While the natural gas industry take some comfort in his assurance that any significant changes in the leasing program would be fully aired and carefully considered, we do not see a need for change.

Question 2: Another complaint is that many of the regulations pertaining to offshore drilling are unnecessary. In particular, which regulations could be removed, and what is the factual basis for doing so?

Response 2:

A. Oil Pollution Act of 1990 (OPA)

A.G.A. believes the financial responsibility provisions of the OPA are onerous and unnecessary. The OPA was enacted to establish an oil spill liability fund to pay for the prompt removal of any oil spilled or discharged as a result of activities on the Outer Continental Shelf and for damages to public or private interests caused by such spills. According to that Act, the owner or operator of an offshore facility which: (1) is used in drilling for, producing, or processing oil; or, (2) has the capacity to transport, store, transfer or handle more than 1,000 barrels of oil at any one time must establish evidence of financial responsibility of at least \$150 million.

A.G.A. supports a reduction in the dollar limits of the \$150 million financial responsibility that owners and operators of offshore facilities must establish. While A.G.A. understands and supports the basic objectives of requiring offshore operators

to demonstrate that they are capable of withstanding reasonable risks and liabilities, many independents are precluded from drilling by the Act's stringent standards.

A.G.A. also supports improving the financial responsibility provisions of the OPA in a number of ways. First, MMS should not hold insurers secondarily liable for the insured's debts under the Act. Insurers function as indemnitors, rather than guarantors, and therefore are not secondarily liable for all the insured's debts.

Second, A.G.A. does not believe offshore producers should have to demonstrate financial capabilities far in excess of any reasonable estimate of liability which may be actually involved in a spill. It would seem appropriate that each situation should be "risk assessed" to determine its potential liability. Further, because not all claims under the OPA are payable on the day of a spill, A.G.A. supports a thorough examination of resources to identify those that are available for immediate cleanup and those that are available in the longer term to pay any damage claims and restoration costs.

Third, we believe the MMS should develop a regulation regarding *de minimis* quantities. Finally, MMS' definition of "navigable waters" under the OPA should be reasonable and appropriately narrow in light of Congressional intent to apply the Act to true "offshore facilities" and not facilities onshore.

We urge Congress to work with MMS in developing reasonable standards under the OPA that produce flexible, practical and achievable results -- those which meet the goals of the statute without devastating the gas and oil industry.

B. Other Concerns

The natural gas industry is concerned by the growing complexity of the total regulatory scheme and by the numerous instances of multiple jurisdictions and conflicting requirements. The industry faces more stringent environmental and pipeline safety requirements which have costs far in excess of any benefits they purport to achieve. For example, the Pipeline Safety Act of 1992 requires the Department of Transportation to consider environmental impacts as well as safety impacts when developing pipeline safety regulations. The costly and/or duplicative nature of regulations are illustrated in the enactment of the Underwater Pipeline Safety Act of 1990. The costs of implementing that law, which requires operators of pipeline systems to inspect all underwater pipe and to maintain a minimum of 18 inches of seabed cover over the pipe, outweigh the benefits.

A.G.A. strongly urges Congress to support innovative and efficient approaches to industry regulation and to require cost-benefit analysis for all environmental regulations. We encourage Congress and the MMS to promote "customer friendly" regulations, which the President sets forth in his Reinventing the Government

Initiative.

Question 3: A recent GAO report entitled "Interior Can Improve Its Management of Lease Abandonment" criticized the use of explosives to remove offshore structures. Is industry taking steps to utilize non-explosive methods in order to protect marine life?

Response 3: A.G.A. is surveying member companies and will provide a response when data becomes available.

Question 4: There are currently in place different tax incentives for majors versus independents. Would you comment on whether either group has an advantage when it comes to OCS drilling with reference to the tax code.

Response 4: We do not believe there are material advantages in the present tax code to favor drilling by either group when it comes to OCS drilling. While independent producers have certain tax benefits as percentage depletion and full deduction of intangible drilling costs as well as some alternative minimum tax relief, they still tend to drill in the shallower waters of the Gulf. That is because the integrated producers tend to have greater financial resources and operating capabilities to undertake the enormous costs and regulatory delays needed to drill in the deeper waters of the OCS. While percentage depletion and other tax benefits are only available to independent producers, these tax incentives have not been enough to offset the enormous costs of drilling in the deep waters of the OCS for many independents.

Moreover, these tax incentives for independents were designed to place them on a more equal footing with integrated producers. While there is limited legislative history, it appears that Congress determined to treat integrated producers differently from independents during enactment of the Tax Reform Act of 1975. Section 613A of the Code was added by that Act as a reaction to increases in energy prices brought on by the foreign oil embargo. The House Ways and Means Committee Report states that the Committee believed the percentage depletion tax benefit was no longer necessary for the "25 large oil companies" that had reaped windfall profits from foreign oil price increases. H.R. Rep. No. 93-1502, 93d Cong., Sess. (1974). The Committee decided to exempt the "smaller producers, or virtually all independents" from general repeal of the percentage depletion provisions because it was believed these companies needed the incentive to continue their exploration of domestic oil. Id. at 6.

With regard to proposed legislation, A.G.A. supports initiatives that will provide tax incentives for new offshore wells. We support legislation that will allow a tax credit for production from all marginal gas wells. In addition, A.G.A. believes legislation aimed exclusively at providing tax incentives for deepwater production is too limited to stimulate production in the Gulf. We believe S. 403, the *Domestic*

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Energy Security Act, introduced by Sen. John Breaux, is a positive step. However, this legislation should have a broader focus to include shallower waters to encourage drilling by both integrated and smaller production companies. The benefits of S. 403 as drafted would be limited to drilling in deepwaters of the OCS and frontier areas.

Question 5: The Department of Interior and Department of Energy are undertaking considerable efforts to increase cooperation not only between themselves, but between state agencies and industry. Would you comment on those areas in which you have seen improvement, and in what areas the agencies should focus efforts to better interact with industry.

Response 5: A.G.A. believes there is a need for better coordination of regulation between the Departments of Transportation and Interior regarding offshore pipelines. There is a need to eliminate overlapping jurisdictions and redundant regulations. DOT's Office of Pipeline Safety and the U.S. Army Corps of Engineers both have jurisdiction over pipelines in the near shore, shallow waters of the Gulf. The Department of Interior also prescribes standards for pipelines in the OCS.



National Ocean Industries Association

James C. Day
Chairman

Chairman, President & CEO
Noble Drilling Corporation

July 19, 1994

The Honorable Richard H. Lehman
Chairman, Subcommittee on
Energy and Mineral Resources
United States House of Representatives
Washington, D.C. 20515

The Honorable George Miller
Chairman, Subcommittee on
Oversight and Investigations
United States House of Representatives
Washington, D.C. 20515

Dear Chairmen Lehman and Miller:

Attached are answers to the questions posed by your subcommittees to the industry panel subsequent to your June 23rd hearing on the state of the domestic offshore oil and gas industry. The National Ocean Industries Association (NOIA) appreciates your invitation to participate in the hearing. I regret that time constraints did not allow me to present an oral statement. Nevertheless, I hope to have other opportunities to present NOIA's views on issues of concern to your subcommittees.

Sincerely,

James C. Day

Enclosure

ANSWERS TO WRITTEN QUESTIONS POSED BY THE SUBCOMMITTEES ON ENERGY AND MINERAL RESOURCES AND OVERSIGHT AND INVESTIGATIONS TO THE NATIONAL OCEAN INDUSTRIES ASSOCIATION FOLLOWING THE SUBCOMMITTEE'S JUNE 23, 1994 HEARING ON THE STATE OF THE DOMESTIC OFFSHORE OIL AND GAS INDUSTRY.

1. MMS has looked at a variety of different leasing procedures over the past years. Aside from eliminating royalties, is there a consensus that the current system is working, or does industry advocate changes?

In December of 1993, MMS published a call for public comment in the Federal Register. Specifically, MMS was seeking comment on the leasing procedures practices in the Central and Western Gulf of Mexico planning areas. The National Ocean Industries Association (NOIA) formed a special committee representing a cross-section of our membership to formulate an association response. There was a strong consensus among the members of that committee, as I believe there is within the industry, that the annual area-wide lease sales in the Central and Western Gulf of Mexico should not be changed. We shared that view with MMS in our written comments.

NOIA believes that the success of the annual area-wide sales can be seen in the steady growth of leasing, exploration and development by the independent segment of the producing industry. The increased participation of independents creates new and desirable levels of competition but also results in a more varied approach to exploration leading to greater reserve additions than would otherwise be the case.

2. Another complaint is that many of the regulations pertaining to offshore drilling are unnecessary. In particular, which regulations could be removed, and what is the factual basis for doing so?

At this time, we are not prepared to suggest removal of any specific regulations. NOIA is forming a working group to examine regulatory costs and burdens and to determine whether there might be more efficient and less costly methods of achieving the regulatory objectives already in place. Because this effort is just now getting underway, it is too early to tell what the effort will produce. Nevertheless, we will be pleased to share the results with the subcommittee as soon as they are available.

3. A recent GAO report entitled "Interior Can Improve Its Management of Lease Abandonment" criticized the use of explosives to remove offshore structures. Is industry taking steps to utilize non-explosive methods in order to protect marine life?

The use of explosives to remove offshore structures has been significantly refined over the past decade. The size of the

charges is more precisely calculated resulting in smaller charges being used. Shaped charges which direct the energy to the area being severed coupled with the fact that the charges at set at least 15 feet below the mud line pose a minimal threat to marine life in the vicinity.

The National Marine Fisheries Service (NMFS) has proposed a regulation that would permit the use of explosives in removing offshore structures provided certain mitigating steps are taken. Operations would be delayed if dolphins are seen in the area. Aerial surveys before and after explosives are used would be required to determine the presence of dolphins in the area. Also, A NMFS approved observer would be required to monitor the site before, during and after removal operations. NOIA filed comments with NMFS in which we supported the proposed rules.

There are structure removal techniques that do not involve the use of explosives but they are not as reliable, economical and may involve unwarranted risks to human safety.

4. There are currently in place different tax incentives for majors versus independents. Would you comment on whether either group has an advantage when it comes to OCS drilling with reference to the tax code.

Although independent producers are eligible to take percentage depletion to reduce federal income tax liability, the limitations placed on this provision result in no serious advantage for independents in the context of OCS operations. Overall, we don't believe either independent or major producers enjoy significant tax advantages over their competitors.

5. The Department of the Interior and the Department of Energy are undertaking considerable efforts to increase cooperation not only between themselves, but between state agencies and industry. Would you comment on those areas in which you have seen improvement, and in what areas the agencies should focus efforts to better interact with industry.

We have been pleased with the willingness of individuals in both departments to give attention to the concerns of the offshore natural gas and oil industry. We assume that other parties interested in marine businesses and the environmental community are having similar experiences. We would also include EPA, NOAA and the Coast Guard among the agencies that should communicate and cooperate in the development of policies related to the OCS.

An example of the kind of cooperation that can prove fruitful can be seen in the approach taken by DOE to bring together industry and the responsible federal agencies to examine a new environmentally friendly drilling fluid. Current regulation

are impeding full development and use of this new technology in U.S. waters. DOE took the lead in scheduling a joint meeting with EPA, MMS, DOE and NOIA and several of our member companies. While the issue is not yet resolved, the first steps toward resolution have been taken.

Another example falls in the area of energy education. NOIA has had encouraging conversations with officials both at DOE and DOI and we look forward to further cooperation in this area.



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