

HURRICANES KATRINA AND RITA

HEARINGS BEFORE THE COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE ONE HUNDRED NINTH CONGRESS

FIRST SESSION

TO

RECEIVE AN UPDATE ON HURRICANES KATRINA AND RITA'S EFFECTS
ON ENERGY INFRASTRUCTURE AND THE STATUS OF RECOVERY EF-
FORTS IN THE GULF COAST REGION

OCTOBER 6, 2005
OCTOBER 27, 2005



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HURRICANES KATRINA AND RITA

THURSDAY, OCTOBER 6, 2005

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

The committee met, pursuant to notice, at 10 a.m., in room SD-366, Dirksen Senate Office Building, Hon. Pete V. Domenici, chairman, presiding.

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

The CHAIRMAN. Let us get started.

First, thank you, everyone, for coming, in particular the Senators who are here, and I assume there will be a few more.

I would like to take a few moments to make a few observations and then yield to Senator Bingaman and to any of you Senators who would like to comment.

Yesterday Senator Bingaman, Senator Akaka, and I returned from Baton Rouge. We went down there to see and hear and, first-hand, to review the hurricane Katrina and Rita damages to the energy infrastructure and whatever else came to our attention that might be relevant to us either in this assignment or as Senators when we begin to address the problems that have come.

We spent time at Exxon Mobil's Baton Rouge refinery, the second largest in the country, with the capacity of 500,000 barrels a day. Although that refinery did not sustain major damage in the storms, its access to oil and its ability to move products was severely harmed. In addition to loss of electricity that set the refinery back, many times throughout the trip we heard about the need to ensure some kind of redundant and robust power grid if possible.

We met with Colonial Pipeline, which is a 5,500-mile interstate pipeline, that originates in Houston and terminates in New York, and delivers millions of gallons of gasoline, home heating oil, and aviation fuel and other refined products over that distance and that geography of the United States. Right now Colonial is operating at about 70 percent of its normal mainline capacity from Houston. Lack of supply and lack of commercial power, due to both the storms, are major impediments to getting that pipeline back to 100 percent.

We went to Dow's St. Charles petrochemical complex and talked to them about the high cost of natural gas prices after we had discussed the disaster and how they responded, which was really something to hear in terms of how they responded. But the interesting thing was a discussion with this industry which is so vital

to America because it is good jobs, it is products that they can compete in and technology that is American, that is modern and has great workers.

With all of that, they are implicitly tied to the price of natural gas such that, for instance, every \$1 increase of cost of natural gas for this plant means an additional \$35 million in fuel costs per year. Senator Alexander, you have been working on this. Now, add it all up and they say how far it goes up could be the difference between whether they can stay there or not. It is rather frightening. Obviously, natural gas should be used there. No question. But will it? Maybe not.

At each of these energy facilities, I believe we were universally impressed by the employees' dedication and the company's concern for the well-being of their employees and the extraordinary efforts and extraordinary competence that they put into preparing for the storm and afterwards.

There is a great deal of work to be done and there is a great deal of courage and confidence that it can be done, which was rather surprising. I do not think it should have been because Americans generally are that way, but this was so devastating I wondered. Nonetheless it is there. The "can do," "we will do," the hope is there.

Hurricanes Katrina and Rita did not just hit the gulf coast region. Those natural disasters impacted our entire energy chain in all regions of the economy. As we prepare to help, we have to understand it is not just helping the coastal regions. It is helping to maximize the positive impact of the great energy base that is there and the facilities that make it usable. We need to have realistic expectations about how long we should expect high prices of natural gas and related products, and we need to prepare for the potential for shortages. I hate to say that. I hate to say both of those statements, but I think it is important to us that we get the facts out and that we attempt to produce facts that indicate what I just said is a reality. And I will repeat it. We need to have realistic expectations about how long we should expect high prices and, I might add, ever-increasing prices, and we need to prepare for potential shortages.

Earlier this week Secretary Norton said that substantial portions of the oil and gas production in the gulf coast affected by the hurricanes could take several months to resume, with major repairs extending into next year. She also noted that some of the hurricanes' most significant energy impacts were to onshore natural gas processing facilities. Natural gas prices closed above \$14 yesterday, and uncertainty about the supplies may keep those prices painfully high. I do not believe just a few months ago anybody believed that was possible. I believe there is genuine concern that that not only is possible but probable, and rising is probable also.

The storm impacts have also affected our inventories. Yesterday the EIA reported that total motor gasoline inventories fell by 4.3 million barrels last week and distillate fuels like diesel fell by 5.6 million barrels last week. Although our inventories are still within the range for this time last year, these kinds of drops cause serious concern and most probably cannot be sustained.

Our purpose today is to hear from some of the industries that have been impacted by the hurricanes. They will tell us about the damage assessments and the recovery efforts. We know we have a number of experts and we have a number of Senators interested. So while we are going to listen, we would very much like to be as brief as possible and leave us as much information as you can.

In addition to learning about the physical damage, this committee will hold hearings on economic effects of the hurricanes and the price expectations for consumers this winter. I have alluded to that in general terms, but we will have hearings on that subject.

We are also planning to convene a hearing where we can hear from the administration witnesses, DOE and Interior as examples, about emergency preparations and response, as well as steps that can be taken to improve the supply/demand picture. I am impressed with Secretary Bodman's efforts that he has launched, especially in the campaign to highlight how American families, business, and the Federal Government can save energy in response to rising winter costs. I know for some, they still do not think that is necessary, but I for one think it is absolutely vital, and I commend them for it and hope they will do more and do it better.

The President has made it clear that conservation is going to be one of our most effective tools in this crisis. I agree with that and hope we can continue on a bipartisan effort to strengthen conservation in the short term.

I thank the witnesses in advance for today. Senators, we have Mr. Red Cavaney, CEO of American Petroleum; Mr. Christopher Helms, president of Pipeline Group, NiSource, Inc., on behalf of the Interstate Natural Gas Association of America; Mr. Andrew Liveris, president and CEO of Dow Chemical. We thank you for the visit to your plant yesterday. We have Kevin Curtis, senior vice president for programs, National Environmental Trust; and we have Mr. Curtis Hébert, executive vice president of external affairs for Entergy.

Now, with that, I will yield to Senator Bingaman. Senator Bingaman, thank you for going with me and accompanying me on the trip. I think it was very good for all of us and I hope it will help us in our efforts.

[The prepared statements of Senators Corzine and Feinstein follow:]

PREPARED STATEMENT OF HON. JON S. CORZINE, U.S. SENATOR FROM NEW JERSEY

I would first like to thank Senators Domenici and Bingaman for holding this hearing. Our nation has been dealt a substantial blow by Hurricanes Katrina and Rita and we have an enormous undertaking ahead of us. First and foremost, we must take care of the immediate needs of the victims of these terrible tragedies.

In addition to the lives lost and the devastation that so many Gulf Coast residents have experienced, the storms greatly impacted our energy infrastructure. Our offshore production and refining capacity were severely disrupted and we must take deliberate yet careful steps to get our supply back on-line.

Mr. Chairman, we must make every effort to repair the devastated Gulf Coast as quickly as possible and mitigate the immediate effects of the hurricane on our energy system and gas prices. We must be careful, however, not to trade effective long-term policies for damaging short-term policies.

First of all, we absolutely cannot take the route of drilling for more oil. Many of my colleagues have cited the events in the Gulf as a reason to open the Outer Continental Shelf and ANWR to drilling. I wholeheartedly disagree—the interruption to

our energy supply is not a reason to drill for more oil. Instead, it is a wake up call underscoring the need to reduce U.S. dependence on oil.

Secondly, many of my colleagues have already made proposals that will do nothing to address the vulnerabilities in our energy system. Instead, proposals that would provide the President or the EPA Administrator with the blanket authority to waive or modify federal, state, or local statutes or regulations will only prove to be harmful in the long-run. I urge my colleagues to reject these short-sighted policies that undermine existing environmental and public health protections.

Mr. Chairman, Hurricanes Katrina and Rita exposed the fragility of our energy infrastructure and highlighted the inadequacies in the energy bill passed by Congress this summer. The Senate had a chance to increase fuel efficiency in the energy bill, but unfortunately my colleagues voted the CAFE amendment down. This was a blatant missed opportunity to create a policy that will reduce this nation's reliance on oil. In addition, it is frustrating that the final energy bill did not include an oil savings provision. Mr. Chairman, it would take savings of at least three to five million barrels per day to truly reduce our energy dependence. Therefore, I supported an amendment on the floor of the Senate that would reduce imports of foreign oil by 40 percent over the next 20 years, but unfortunately most of my Senate colleagues did not—again another missed opportunity. It is my hope that we no longer ignore such obvious ways to increase our energy independence.

Mr. Chairman, while I am pleased that President Bush has asked the American people to focus on conservation, I am frustrated that it took the devastation of Hurricanes Katrina and Rita for this Administration to realize that conservation is key to weaning this country off its unhealthy dependence on oil. It is essential that the federal government take the lead in this regard and set an example for the rest of the country. In fact, I joined many of my colleagues in signing a letter to President Bush urging him to require a 40 percent commitment to federal petroleum savings by 2020. We must take these types of steps to ensure that we are prepared for similar disasters of this magnitude in the future.

Again, I thank the Chairman for holding this hearing and I thank the witnesses for being here. I look forward to hearing the testimonies today. It is my hope that we learn from the terrible tragedies that have happened in the Gulf Coast to create an energy system that will make us less vulnerable to these tragedies in the future.

PREPARED STATEMENT OF HON. DIANNE FEINSTEIN, U.S. SENATOR FROM CALIFORNIA

Mr. Chairman, thank you for holding this timely hearing.

The one-two punch of Hurricanes Katrina and Rita showed us how dependent we are on the Gulf Coast for our energy supplies. I would like to thank the witnesses for being here today to give us a status report on the energy infrastructure in the Gulf.

While I know that natural gas prices are going to soar because of the damage to the energy infrastructure, I think it is important to note that prices were rising even before the hurricanes hit.

In California, PG&E expects that utility bills in their service territory will rise 40 to 50 percent this winter compared with last winter. In other words, average residential gas bill in January will likely rise to \$154 from \$108 last year.

Southern California Edison expects those rates to rise between 30 and 40 percent, or the average bill will rise from \$83 to \$110 or more.

Higher energy prices means less money for consumers to buy food, rent, or other necessities.

I know that most of the witnesses today will be talking about supply side solutions, but I want to take a few minutes to point out that drilling will not help us get through the price spikes this winter. What will help us in the near-term are two things: energy efficiency and diversifying our fuel mix.

While the rest of the nation's per capita energy consumption has risen by nearly 50% over the past 50 years, California has kept the per capita average flat.

The State has successfully curbed electricity usage by implementing:

- cost-effective building and appliance standards;
- effective energy efficiency programs, including aggressive energy savings targets for both electricity and natural gas; and
- public education programs about the importance of energy efficiency.

In addition, the State has the most aggressive renewable portfolio standard in the nation—requiring that 20% of California's electricity come from renewable resources—not including large hydropower—by 2010.

Further, the Governor has endorsed increasing the renewable standard to 33% by 2020.

I do not disagree that we need new supply. That was why we included federal loan guarantees for the Alaska Natural Gas Pipeline as part of the Fiscal Year 2005 Military Construction Appropriations Bill.

The Alaska pipeline would provide 4.5 billion cubic feet of natural gas a day, or about 7 percent of current consumption. Yet the pipeline project sponsors have not even been selected, further delaying the construction of the pipeline.

It seems to me that we can reduce demand for natural gas if we:

- bring to market natural gas from areas where we already drill for oil, namely Alaska;
- fully implement the energy efficiency standards and tax incentives in the energy bill, and extend those incentives for another three years;
- and implement a national renewable portfolio standard.

I look forward to hearing from the witnesses. Thank you, Mr. Chairman.

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

Senator BINGAMAN. Well, thank you very much, Mr. Chairman, and thank you for having this hearing. I thought the trip that you and Senator Akaka and I took to this area was very informative, and thank you and your staff for organizing it.

Obviously, we did see a lot of heroic effort going on there by many companies trying to recover from the damage that was caused by these two hurricanes, and a lot of employees who were working very long hours trying to restore service and get the situation back to one of normalcy.

What I am interested in—I think all of us are—is wanting to know, are there things that we in Congress could be doing to assist with the recovery that we are not engaged in right now? Second, are there ways that we could be helping with the mitigation of the effects of these hurricanes on people in the region, consumers of various kinds in the region, and also nationwide mitigation of the high prices? And third, are there ways to mitigate damage from future hurricanes? Are there things that we can do to be smarter in this rebuilding, in this recovery, which will lessen the extent of the damage and the extent of the disruption that we will encounter in the future? Those are issues that I think I am anxious to learn more about.

I welcome all the witnesses. Thank you for having the hearing.

The CHAIRMAN. Thank you very much, Senator.

Mr. Hébert, I had difficulty with your French name and I apologize.

Mr. HÉBERT. I understand that.

The CHAIRMAN. If it helps, it took them 10 years to say Doménici.

[Laughter.]

The CHAIRMAN. Anyway, I am not going to say it. I am going to call you Curt because I am still going to mess it up. I am not that familiar with you, so excuse me.

Does any other Senator desire to comment?

Senator Akaka, you were on the trip and I thank you for coming on the visit.

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

Senator AKAKA. Mr. Chairman, thank you very much for giving me this opportunity to make a very brief statement and for holding this hearing today. I just came from a Homeland Security hearing with FEMA, and I will be returning to that after this hearing. We are also investigating Katrina and Rita.

I thank you, Mr. Chairman, for organizing the committee tour of the damages and challenges to the Nation's and gulf coast's energy infrastructure.

Mr. Chairman, my immediate impression is that we have a national crisis on our hands in the aftermath of Katrina and Rita and that the needs are complex. More than 30 percent of the Nation's domestic oil comes from the gulf. 10 percent of our refining capacity has been knocked out. Entergy's New Orleans subsidiary filed for bankruptcy on September 21. Natural gas pipeline companies were severely challenged to keep their supplies going throughout the South and up to the Northeast, fueling the likelihood of even higher natural gas prices.

For 2 days, we visited energy and chemical companies in the gulf. I was really impressed and moved by the heroic untold stories of humanitarian actions by company employees. Companies deployed their own resources, both personnel and supplies, to save people from flooding homes, all this as they were fighting to save the energy infrastructure so vital to our Nation.

The first phase in this national disaster was to assist the victims with their immediate needs. As we continue to assist the people displaced by hurricanes, we must also move to the second phase, which we are doing now, of rebuilding the energy infrastructure which underlies the economy of the Nation and the region.

Mr. Chairman, I thank you for setting up that trip. It was enlightening for me, and I can now tell you that we need to really focus on restructuring and moving our Nation forward with respect to energy infrastructure. Thank you very much.

The CHAIRMAN. Thank you very much.

Would any other Senator like to comment?
Senator Smith.

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

Senator SMITH. Mr. Chairman, I would like to put a statement in the record and indicate to my colleagues my concern about not just these refineries, but also natural gas prices that are affecting so many industries, and obviously refineries for home heating oil. It poses a very real problem for us in this coming winter.

I appreciate your holding this hearing.

[The prepared statement of Senator Smith follows:]

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

Mr. Chairman, I appreciate your convening this hearing to examine further the impacts of Hurricanes Katrina and Rita on the nation's energy infrastructure. While we must continue to aid those directly affected by these disastrous storms, we must not forget that every family and business in America feels the effects of these storms. Gasoline and natural gas are at historically high prices, and those prices are expected to continue into the foreseeable future.

The most recent report is that almost 90 percent of the oil production in the Gulf of Mexico remains shut in, and 70 percent of the region's natural gas production remains off-line. The damage is more extensive than originally estimated. The Interior Department projects it will take several months and billions of dollars to restore damaged refineries, transmission lines and pipelines in the region.

While we will hear today about the impact on the Gulf, I am hearing from constituents who are concerned about their family budgets and livelihoods.

My agricultural constituents, particularly in eastern Oregon, are facing lower commodity prices, higher transportation costs, and higher fertilizer costs. Families that have farmed for generations are getting out of the business, and selling their land. High energy costs will not help us revitalize rural America.

Because natural gas is such an important feedstock for the fertilizer and petrochemical industries, those industries are being decimated by natural gas prices that are now seven times higher than they were a few years ago.

The United States has the highest natural gas prices of any industrialized nation, and industries that rely on natural gas are finding it increasingly difficult to remain competitive in a global economy.

As we head into the winter heating months, high natural gas prices will also affect the 55 percent of American households that heat their homes with natural gas. It is estimated that the average household can expect to spend \$700 to \$1200 more to heat a home this coming winter.

I am pleased that the Administration is urging Americans to conserve energy, and requiring federal agencies to conserve.

However, the federal government is also a major producer of electricity. I urge the Energy Department to examine the operation of all federal generation assets to see if those assets can produce more electricity this winter, so that less natural gas will be needed.

I firmly believe that the recently enacted Energy Policy Act will enhance our nation's energy security over time. The Act provides numerous incentives for the development of renewable energy and cleaner, more fuel-efficient vehicles, as well as incentives for new electric transmission and natural gas infrastructure.

These incentives are even more critical as we seek to rebuild the Gulf Coast region.

The Energy Policy Act will not, however, see us through the tight energy supplies we are facing today. I am committed to working with you, Mr. Chairman, to examine options to meet our nation's current energy demands in an environmentally responsible manner.

I want to thank each of the witnesses who have agreed to testify here today, and I look forward to your statements.

Senator BURNS. Mr. Chairman?

The CHAIRMAN. Yes, indeed.

STATEMENT OF HON. CONRAD BURNS, U.S. SENATOR FROM MONTANA

Senator BURNS. I do not know whether I am going to get down to my turn or not. I wanted to hear the testimony this morning.

We are having problems getting to our supplies of natural gas, as you well know. We have billions and billions of cubic feet of natural gas in this country that we are unable to access right now.

I will be holding a hearing on October 25, oversight on Interior Appropriations on Public Lands and the impediments that we are running into in accessing and permitting on Federal lands. I think it is long overdue. When we look at the staggering figures that we have in front of us, I think it is time that we took a common sense approach on access to natural gas.

I represent a large agricultural sector. Not only are we impacted by transportation and transportation fuels, we are impacted in fertilizer and the operation of our ranches. I want to tell you the squeeze that we are in real quickly, and this illustrates.

The other day a young farmer walked up to me and had the scale tickets from his father's wheat in 1948. Today it is the same price.

Now, there is not anybody in this room that is not making more money or getting more for their produce and their production personally or in goods, even at the basic level, today than American agriculture is.

We are in a bind, and I want to talk about the basics. It is the way we feed our country. That is the second thing we do every morning when we get up. Now, with the first thing you do, you have got lots of options, but the second thing you do is eat. I will tell you we are in a bind.

So this is a very important hearing. I think it is a very important thing not only to venture into new technologies. I was one of the first ones that appropriated money for fuel cell development because I knew 1 day we are going to need them. It was inevitable.

But I think this acute problem that we have right now, Mr. Chairman, I think has to be addressed in a very realistic and common-sensical way, and we are going to do that on October 25 for the folks who will be interested in giving input into that hearing on oversight on our access to our energy sources. Thank you very much.

The CHAIRMAN. Thank you, Senator.

All right. With that, we are going to proceed. The first witness is president and CEO of the American Petroleum Institute. Please proceed.

**STATEMENT OF RED CAVANEY, PRESIDENT AND CEO,
AMERICAN PETROLEUM INSTITUTE**

Mr. CAVANEY. Thank you, Mr. Chairman, members of the committee.

The U.S. oil and natural gas industry recognizes the catastrophic impact of hurricanes Katrina and Rita on millions of Americans. The gulf coast is the very heartland of our industry, as you have indicated, and we are not just responding to this disaster, we are actually living it. Thousands of our workers are suffering hardships of living in this devastated region they call home, many now without their own homes. In concert with fire and police, friends and neighbors, suppliers, government officials, our employees are restoring production, bringing refineries back on line and restarting the pipelines.

Our companies have made much progress in recovering from the hurricanes, but let us be frank. Much remains to be done. Let us remember this was a once-in-a-century natural disaster of monumental impact. It has been 90 years since two hurricanes of this magnitude struck the gulf coast in the same year, and Katrina and Rita came within 1 month of one another. If you look at the chart to my right, what you will see is the impact was literally side by side, affecting directly 99 percent of the gulf facilities, quite an extraordinary occurrence.

So while many refineries, pipelines, and other facilities are back in operation, some facilities are still out of service, either because of the lack of electricity or because of damage. Fuels are flowing to consumers nationwide, but below normal levels in some areas.

At this time, energy conservation and energy efficiency are critically important. We support the recent calls to conserve energy by President Bush, by the Alliance to Save Energy, and others. API

has run full-page ads in major metropolitan newspapers across the Nation urging consumers to use available supplies efficiently. We have urged them to use such things as common sense steps in planning trips carefully, properly maintaining their cars, driving efficiently, and using energy wisely in their homes.

Access to crude oil from the Strategic Petroleum Reserve and various government waivers to expedite the flow of fuels, particularly to emergency responders, have been vital in speeding this recovery.

The gulf region includes some 4,000 offshore platforms in Federal waters, two dozen refineries, and hundreds of production, transportation, and marketing facilities. These Federal waters account for nearly 30 percent of our Nation's crude oil production and approximately 20 percent of our Nation's natural gas production.

There is a reason for this geographic concentration in a high-risk weather area. Government policies have largely limited offshore exploration and production to the central and western gulf, and our onshore facilities, including refineries, have been welcomed by the communities in the region. Unfortunately, offshore oil and natural gas development has been barred elsewhere, specifically the eastern half of the gulf, and the entire Atlantic and Pacific coasts.

In my written testimony, I provided you with the latest detailed information, along with lessons we have learned. The situation can change markedly from day to day.

In summary, here is where we stand today. Offshore shut-in oil production is 1.3 million barrels per day, or 86.7 percent of the daily Gulf of Mexico production, which is down from 100 percent a week ago. Shut-in natural gas production is 6.9 billion cubic feet per day, which is 69 percent of the daily gulf production, also down from 80.4 percent last week. Companies continue to assess damage to offshore platforms, on rigs, and throughout the infrastructure. Of the Nation's refining capacity, 20 percent remains offline or is in the process of restarting in the aftermath of both Katrina and Rita. Eight of those refineries are down due to Rita and four of them remain down due to Katrina. The restoration of electricity services is a priority for getting refineries back up and running.

Many pipelines have recovered rapidly with only limited damage to those pipelines. The double hit of Katrina and Rita has negatively impacted several key pipelines that are currently closed or operating partially. I am pleased to announce that Colonial this morning has indicated they have gone from 70 up to 90 percent of capacity, which is very, very helpful to us all.

We know that the hurricanes have had a huge nationwide impact through skyrocketing prices for gasoline and other fuels. We understand the concerns consumers have expressed, and our companies are doing everything in their power and are working 24/7 to restore operations and to get supply back to normal levels. This work, wise energy use by consumers, and a "do no harm" approach by government officials provide the quickest path to consumer relief from tight supplies.

In conclusion, we remain very focused on the serious work needed to ensure Americans continue to get the fuels that they need, and we look forward to working with the committee in this regard. Thank you, Mr. Chairman.

[The prepared statement of Mr. Cavaney follows:]

PREPARED STATEMENT OF RED CAVANEY, PRESIDENT AND CEO,
AMERICAN PETROLEUM INSTITUTE

I am Red Cavaney, President and CEO of the American Petroleum Institute—the national trade association for the U.S. oil and natural gas industry, representing all sectors of the industry, including companies that make, transport, and market gasoline.

I. INTRODUCTION

The oil and natural gas industry recognizes the catastrophic impact of Hurricanes Katrina and Rita on millions of Americans, and our industry has been working around the clock with all levels of government and the private sector to restore operations and ensure that consumers have adequate fuel supplies.

As I will explain, our companies have made much progress in recovering from the hurricanes, but much remains to be done. While many refineries, pipelines, and other facilities are back in operation, or are about to be, some facilities remain damaged and out of service. Fuels are flowing to consumers nationwide, but not at the normal levels. Thus, our companies are facing a more difficult challenge in keeping up with demand for gasoline and other products. We are facing tight supplies, making it all the more important to heed the President's recent call for consumers to use energy wisely.

Energy conservation and efficiency in this time of tight supply are crucial—as important as our efforts to bolster supply. Companies are working 24/7 to get fuels to where they are needed in the quantities they are needed. And they are supplementing domestic production with increased imports of gasoline to help alleviate tight supplies.

API has run full page ads in major metropolitan newspapers across the nation urging industry and consumers to use available supplies wisely. We have urged these steps:

- Plan trips carefully. Combine multiple trips into one to do your errands. Minimize stop-and-go driving by avoiding rush hours. Consider car pooling.
- Maintain your car. Under-inflated tires can rob up to one mile per gallon from fuel economy.
- Drive efficiently. Unnecessary speedups and slowdowns can decrease fuel economy by up to two miles per gallon. Accelerate slowly and avoid engine idling.
- Slow down. Typically the faster you drive, the more fuel you use.
- Use energy wisely at home. Turn down thermostats, seal window and door leaks, clean furnace filters and replace less-efficient furnaces and hot water heaters.

The Gulf Coast is the very heartland of our industry. We are not just responding to this disaster, we are living it. Thousands of our employees and their families and friends are also suffering the hardships of living in this devastated region they call home. In concert with fire and police officials, neighbors, suppliers, and government authorities, our companies are restoring the production, bringing the refineries back online, and restarting the pipelines—while at the same time grieving over the loss of homes, neighborhoods, and even loved ones.

The Gulf Coast region includes some 4,000 offshore platforms in federal waters, dozens of refineries, and hundreds of production, transportation and marketing facilities. These federal waters account for nearly 30 percent of the nation's crude oil production and approximately 20 percent of the natural gas production. There is a reason for this geographic concentration in a high-risk weather area. Government policies have largely limited offshore exploration and production to the Central and Western Gulf—and our onshore facilities, including refineries, have been welcomed in communities in the region. Unfortunately, offshore oil and natural gas development has been barred elsewhere—including the eastern half of the Gulf and the entire Atlantic and Pacific Coasts. Onshore construction has been held back by government restrictions, permitting delays, and not-in-my-backyard (NIMBY) sentiments.

It is ironic that we talk so much about diversifying the sources of our energy supplies from abroad, yet we have done so little to geographically diversify our oil and natural gas industry here at home.

An area of much recent concern is the need to bring additional clean-burning natural gas to industries and consumers nationwide. Yet, efforts to increase domestic natural gas production, both in the Rocky Mountain West and offshore, have been stymied—and efforts to build more terminals outside the Gulf region to permit increased imports of liquefied natural gas (LNG) have also been largely blocked.

II. THE IMPACT OF HURRICANES KATRINA AND RITA ON THE
U.S. OIL AND NATURAL GAS INDUSTRY

I know that I speak for every one of our member companies when I say that our first concern—from the moment it becomes evident that a hurricane is approaching the Gulf—is for the well-being and safety of the thousands of men and women from across the country who work on offshore facilities, on the vessels that serve them, and in the refineries, distribution networks, and retail outlets around the Gulf coast.

Equally as important is the welfare and recovery of the communities in the Gulf region. Millions of people in the area are experiencing firsthand the physical and emotional hardship of the death and devastation caused by these two hurricanes, and our hearts and our prayers are with them.

API is working with the American Red Cross to facilitate U.S. oil and natural gas industry efforts to help people throughout the Gulf region. Our member companies are helping relief efforts through corporate contributions and by encouraging customer and employee contributions.

The companies are donating millions of dollars to humanitarian relief efforts to assist evacuees and help rebuild lives and communities. They are supporting national, state and local initiatives in recovery and relief through contributions of products, services, and technology. API and its members, in conjunction with the Gulf Coast Workforce Board and the U.S. Department of Labor, are working with employers in Texas and the surrounding states to help people displaced by the hurricanes to find new jobs.

We want to thank President Bush for making available more than 24 million barrels of crude oil from the Strategic Petroleum Reserve (SPR) to help offset supply shortfalls after Katrina and Rita—truly a circumstance for which the SPR was intended—and we appreciate the International Energy Agency (IEA) member nations' contributions of additional strategic reserves. We are also grateful that the Environmental Protection Agency (EPA) and the Department of Transportation, in conjunction with the involved states, have granted waivers to expedite the flow of fuels, particularly to emergency responders—an action that is very helpful at a time when logistics and distribution of fuels are extremely difficult and critical.

In addition, the Department of Homeland Security's waivers of the Jones Act have helped to provide fuel supplies by enabling foreign as well as U.S. vessels to transport crude oil and refined petroleum products between domestic ports. And, through both hurricanes, the Department of Energy has played a central and invaluable role in leading and coordinating overall efforts by all levels of government to respond to the energy impacts of Katrina and Rita.

These and other positive steps by government are most helpful in dealing with this catastrophe. We also believe it is particularly important for government officials at the federal, state and local levels to urge citizens nationwide to use energy wisely, particularly in terms of not hoarding gasoline and not "topping off" their vehicle tanks. We welcomed the President's recent comments on the need to use fuel wisely and avoid unnecessary travel.

In attempting to meet the challenges we face, it is also most important to do no harm. The worst thing Congress could do in these challenging times would be to repeat the mistakes of some past energy policies by overriding the structures of the free marketplace. Imposing new controls, allocation schemes, new taxes on industry, or other obstacles will only serve to make the situation much worse—for the very individuals who are being relied upon to bring our energy systems back to full operating order.

Effects of Hurricanes Katrina and Rita on Industry Facilities

While our companies are still assessing the full effects of the hurricanes on production, refining, and pipeline facilities in the Gulf region, the storms clearly had a significant and widespread impact on our operations. Thanks to the around-the-clock work of company employees and contractors, facilities are coming back online and fuel is flowing from refineries through pipelines to consumers.

While I will attempt to provide you with the latest information we have, I would caution you that the situation can change markedly from day to day, from the standpoint of what we know and what actual progress has been made.

Our latest information from the Department of Energy (DOE), the Minerals Management Service (MMS), the Association of Oil Pipe Lines (AOPL), and member companies on the status of our industry and its facilities is as follows:

OFFSHORE PRODUCTION

Summary of Impact of Hurricanes Katrina and Rita

Recent hurricanes have reinforced the important role domestic energy supplies play in our economy. Shut-in oil and natural gas production from Hurricanes Ivan (2004) and Katrina and Rita this year, combined with growing demand for petroleum products and natural gas, have increased costs for all energy consumers. And, the tight supply/demand balance has made energy markets more volatile.

It had taken almost a year for the last of the offshore facilities to near recovery from Hurricane Ivan, when Katrina struck. Cumulative shut-in production from Ivan was 40 million barrels of oil and 160 billion cubic feet of natural gas. Ironically, API, along with the Minerals Management Service and Coast Guard, had just convened a workshop at the end of July to evaluate the experiences of Hurricane Ivan and examine whether new policies/practices should be considered.

Hurricane Katrina initially shut in virtually all oil production (about 1.5 million barrels per day) from the Gulf of Mexico (GOM) and 88 percent (about 8.8 billion cubic feet per day) of the Gulf's natural gas production. Just prior to Hurricane Rita's entry into the region, oil production had recovered with about 55.8 percent (837.6 MMB/D) still shut in and about 33.7 percent of GOM natural gas shut in (3.375 billion cubic feet per day).

The advent of Hurricane Rita forced offshore facilities to shut down again to protect employees. It has been estimated that about 75 percent of the offshore facilities in the Gulf were in the path of Hurricane Rita. Once again, as of 9/30/05, virtually all (97.8 percent) GOM oil production was offline (1.47 million barrels per day) and about 80 percent of the natural gas (7.9 billion cubic feet per day). This situation has begun to improve slowly. As of 10/3, shut-in oil production was equivalent to 92.8 percent (1.39 MMB/D) of daily Gulf production and almost 75 percent (about 7.5 billion cubic feet per day) of natural gas production. The cumulative production shut-in from both Katrina and Rita (8/26/05—10/3/05) is 45.1 million barrels of oil (about 8.2 percent of yearly GOM production) and almost 219.6 billion cubic feet of natural gas, which is about 6 percent of yearly production.

At present, this situation continues as companies diligently assess their platforms and subsea production and delivery systems to assess damage and ensure that it is safe for employees to return to offshore structures and that production can resume without any environmental impacts. Considering the magnitude of the hurricane and its path, damage to offshore platforms seems less than anticipated. However, while damage reports are still being collected, we do know that Chevron's Typhoon platform was severed from its moorings and suffered severe damage. According to news reports, Typhoon produced about 40 MB/D of oil and 600 million cubic feet per day of natural gas.

Recovery from Hurricane Rita in terms of offshore oil and gas production will be dependent on the other vital parts of the supply chain downstream of the production site. Subsea gathering pipelines and delivery systems must be operable. For natural gas, onshore processing plants must be up and running before that gas can be placed in pipelines for delivery to consumers. For crude oil, pipelines and terminals associated with shipping the oil must be working—not to mention the refineries that will transform the oil into products like gasoline, heating oil and jet fuel as well as the pipelines that will deliver those products to consumers.

It may seem self-evident, but it is worth remembering that every hurricane is unique and their impacts can differ substantially. Last year, Hurricane Ivan's impacts were most notable on the seafloor, as it triggered undersea mudslides. Hurricane Katrina seemed to have its greatest impacts onshore, although it did damage deepwater facilities serving the Mars, Ursa, Cognac and West Delta 143 fields. Shell had indicated that production from these fields may not be feasible the rest of this year. According to Bloomberg News, Mars produced 220 MB/D of oil and 220 million cubic feet per day of natural gas. Prior to Hurricane Rita, Shell had indicated that about 60 percent of total production would be restored to pre-Katrina level within the fourth quarter.

Katrina's impact was also notable in terms of damage to older facilities operating in shallower waters. These were mostly low-volume producing wells. Overall, Katrina destroyed about 45 producing structures and 20 structures incurred extensive damage.

While the industry is working around the clock to restore production, damage from Hurricane Rita is still being assessed. And, damage to the drilling fleet and platforms may turn out to be somewhat greater than initially thought.

In all of the hurricanes, drilling rigs were impacted—often photographs of drifting rigs were the most visible impact in terms of news coverage. Putting this in perspective, during Ivan, five rigs went adrift; six during Katrina; and eight during Rita.

In terms of damage, Katrina destroyed four drilling rigs, while nine incurred extensive damage. Based on preliminary reports, Rita inflicted major damage on five drilling rigs and minor damage on 10. [Source: Reports from *Rigzone.com*]

Offshore Production Observations/Lessons Learned

It is important to remember that the offshore infrastructure (4,000 platforms and 33,000 miles of pipeline) is sturdy and has weathered three powerful storms in the last 13 months without widespread major damage or environmental pollution. The majority of structures damaged by these hurricanes were older, lower volume producing facilities in shallower waters.

Not only is resumption of production dependent on the downstream oil and gas supply chain, all parts of our infrastructure depend on other critical links such as electrical power. We must continue to make recovery of all parts of this critical infrastructure a primary priority.

Additional attention should be placed on securing and tracking drilling rigs. We will incorporate the lessons of Katrina and Rita in our ongoing work initiated to assess and learn from Ivan. We will continue to work cooperatively with government to find ways to improve performance.

Communication and coordination between government at all levels and industry is vital to recovery. Prompt actions by government to, where necessary, temporarily remove regulatory obstacles have proved essential.

As a nation, we also must confront our energy needs and take the necessary steps to enhance domestic production of oil and natural gas. We can no longer afford to place “off limits” vast areas of the Eastern Gulf of Mexico, off the Atlantic and Pacific coasts, and offshore Alaska. Similarly, we cannot afford to deny Americans consumers the benefits that will come from opening the Arctic National Wildlife Refuge and from improving and expediting approval processed for developing the substantial resources on federal, multi-use lands in the West.

For example, there are about 300 trillion cubic feet of natural gas and 50 billion barrels of oil (technically recoverable resources) on the federal Outer Continental Shelf (OCS) off the lower 48 states with additional resources on the Alaskan OCS of 122 TCF of natural gas and 25 billion barrels of oil. Thus, the total recoverable with today’s technology is equivalent to the oil resources of Canada and Mexico combined and nearly three times the natural gas resources of these two countries. Yet, these estimates may be conservative since these areas are largely unexplored. Generally, the more an area is explored, the more its resource estimates grow. For example, the U.S. Geological Survey (USGS) estimates of undiscovered oil resources in the Central and Western Gulf of Mexico increased from 6.32 billion barrels of oil in 1995 to 33.39 billion barrels in 2003—an increase of more than 400 percent. And, USGS estimates of undiscovered natural gas resources in those same areas increased from 88.1 TCF to 180.2 TCF over the same time period—an increase of more than 100 percent.

Natural Gas

The natural gas situation deserves special attention due to its key role in so many sectors of our economy and especially given its importance in heating homes throughout the nation. More than 60 million homes rely on natural gas. On September 29, natural gas prices set a record. Although they have settled down a bit (\$14.017 per MMBtu on October 4—down 28.4 cents from the record), natural gas prices are more than double what they were this time last year—\$7.15 above last year. And, winter has yet to arrive.

Unlike petroleum products where increased imports can help enhance available supplies, the ability to do that for natural gas is limited. Hurricanes Katrina and Rita have not only shut in a significant portion of the nation’s natural gas supplies, the hurricanes have damaged natural gas processing plants which must be restored. Major issues affecting repairs and start-up of these plants include: access to facilities (standing water remains; some roads are not open); access to materials needed for repairs; and manpower issues.

Facilities in and near Houston do not appear to have sustained much damage. The Mont Belvieu area (about 25 miles east of Houston) is in the process of restarting. Natural gas liquid import/export facilities around the Houston Ship Channel have returned to service. Overall, Texas natural gas processing plants seem to have incurred little damage although some remain closed due to lack of electricity.

The area most impacted from a gas processing standpoint is Louisiana. A number of these plants were just recovering from damage due to Hurricane Katrina when Rita approached. Even those that did not sustain additional damage have been affected by the mandatory evacuations and other issues (e.g., access to Cameron Parish) related to Hurricane Rita. Repairs are resuming as conditions allow workers to

return. In Alabama and Mississippi, plants in Mobile Bay and Pascagoula have been at heavily reduced recovery levels since the Tri-States pipeline has been out of service since Hurricane Katrina. This line crosses Lake Pontchartrain and many problems have been encountered in trying to return this line to service.

REFINERIES

Summary of Impact of Hurricanes Katrina and Rita

Based on the latest assessments (as of 10/4), 24.4 percent of U.S. refining capacity remains off-line or is restarting in the aftermath of Hurricanes Katrina and Rita. This includes 5 percent of U.S. refining capacity that remains off-line because of damage caused by Katrina in Louisiana and Mississippi. Refineries with approximately 6.8 percent of U.S. refining capacity are in the process of restarting operations, while refineries with approximately 12.6 percent of U.S. refining capacity are still awaiting power, continuing to assess damages, or making necessary repairs. The following is the latest information we have on Texas/Louisiana refineries:

Houston area (2,291,850 barrel/day capacity)		
BP/Texas City	437,000	Shutdown; no restart date estimate
Marathon/Texas City	72,000	Normal operations
Valero/Texas City	209,950	Reduced runs to 203,000 b/d
Pasadena Refining/Pasadena	100,000	Normal operations
Valero/Houston	83,000	Normal operations
Lyondell-Citgo/Houston	270,200	Restarting
Shell/Deer Park	333,700	Restarting
ExxonMobil/Baytown	557,000	Restarting
ConocoPhillips/Sweeney	229,000	Normal operations.
Beaumont/Port Arthur (1,122,000 barrel/day capacity)		
Total Petrochemical	233,500	Shutdown
Motiva	285,000	Shutdown; no restart date estimate
Valero	255,000	Shutdown; estimate restart within 1 month
ExxonMobil	348,500	Shutdown; no restart date estimate
Lake Charles (593,800 barrel/day capacity)		
Citgo	324,300	Shutdown; no restart date estimate
ConocoPhillips	239,400	Shutdown; estimate restart in mid-October
Calcasieu Refining	30,000	Shutdown
Total	4,007,550	

Refinery Observations / Lessons Learned

Refineries are complex. It takes more than a flip of a switch to get a refinery back up and running. In a normal situation, once the decision has been made that it is safe to start-up the refinery, it can take several days before the facility is back to full operating levels. This is because the process units and the associated equipment must be returned to operations in a staged manner to ensure a safe and successful start-up.

Once a hurricane leaves the region, refinery managers assess what impact the hurricane had on their facilities. If any damage has occurred, repairs will need to be made before the refinery can be brought back online. Also, any flooding—a potentially significant problem—that has occurred will need to be dealt with before restarting the refinery.

In the case of a start-up following a hurricane, other factors could cause further delay. These factors include the availability of crude oil, electricity to run the plant, and water used for cooling the process units. A refinery requires electricity to operate; if it is flooded, it cannot use electricity and cannot restart.

Refineries have been prepared with hurricane preparedness and response plans for a very long time. Safety for neighboring communities and employees is a top priority. It takes a few days to shut down a refinery, and the better job done at shutdown, the more likely will be a smooth and safe startup.

Most damage to refineries requires minor repairs, but it may take some time to completely assess and finish those repairs. Some refineries have been harder hit and are still awaiting power or repairing floor damage, and it will take more time to enable them to safely restart.

Employees have shown incredible dedication, working on bringing the refineries back online. Some have lost their homes and are still focused on getting their refineries back up and running. Our member companies are proud of these efforts and are dedicated to finding employees temporary housing in cases where homes are lost.

For example, ConocoPhillips' Alliance Refinery brought in two vessels to support operations. One sleeps 700. The company is operating the refinery like an offshore platform and sharing the vessel with some National Guardsmen to provide them shelter as well.

Another example is at Shell's Deer Park refinery, where the company gave one operator an emergency vehicle to join his distraught wife who had already evacuated the area. The company filled the vehicle with extra gasoline so he could help those whom he passed who had run out of gasoline.

At ExxonMobil's Baton Rouge refinery, managers relied on creativity and improvisation to keep the facility functioning during and after Katrina. For example, loss of electric power shut off imports, particularly those coming through the Louisiana Offshore Oil Port (LOOP), which are vital to the refinery. As a stopgap, company officials located a foreign tanker full of oil that had ridden out the storm south of Baton Rouge and brought it to the refinery—after quickly obtaining a waiver from the Jones Act that prohibits a foreign-flagged vessel from traveling between two U.S. ports. The company also created a ferry system using company barges to bring Strategic Petroleum Reserve (SPR) oil across the river from a Port Allen, Louisiana, refinery, which was the nearest location to which a pipeline could bring the SPR oil.

PIPELINES

Summary of Impact of Hurricanes Katrina and Rita

Despite the severe conditions caused by Hurricanes Katrina and Rita, most pipelines recovered rapidly, with only limited damage done to the pipeline system—indicating that this is a robust, durable system capable of withstanding considerable stress. After Hurricane Katrina, the industry worked around the clock to restore full operations at all major crude oil and petroleum product pipelines. However, Hurricane Rita impacted many of these pipelines again, and several key pipelines currently are closed or operating at partial capacity.

The following is the status of hazardous liquids pipelines as reported by the Association of Oil Pipe Lines (as of 9/27):

- Capline, a major crude oil pipeline from the Gulf region to the Midwest, is operating at 80 percent capacity.
- Centennial Pipeline, which transports refined products from Beaumont, Texas to the Midwest, is closed;
- Colonial Pipeline is operating at full capacity from Krotz Springs, Louisiana eastward, but operations are limited in its origin pipeline segments in Houston and Pasadena, Texas;
- Dixie Pipeline, a 1,300-mile propane pipeline originating in Mont Belvieu, Texas to eastern transmission points in North Carolina and Georgia, is operating.
- Explorer Pipeline, which ships refined products from the Houston area to the Midwest, is now undertaking partial operations;
- Longhorn Pipeline is open; a 700-mile common-carrier pipeline, it can transport up to 72,000 barrels per day of refined products.
- LOOP, the Louisiana Offshore Oil Port, has stopped offloading tankers, but is continuing to deliver crude oil to customers. The port facility is located in the Gulf of Mexico, 18 miles south of Grand Isle, Louisiana, in 110 feet of water. LOOP is the only port in the U.S. capable of offloading deep draft tankers.
- Magellan Pipeline is fully operational. Magellan is a refined products system consisting of 8,500 miles of pipelines supplying 13 Midwestern states.
- Marathon Pipeline has portions closed; the Texas City to Pasadena system is shut down.
- Plantation Pipeline, a 3,100-mile pipeline from Baton Rouge, Louisiana to the Washington, D.C. area, is operating.
- Seaway Pipeline, from the Texas Gulf Coast to Cushing, Oklahoma is operating.
- TEPPCO Pipeline, which moves petroleum products from Beaumont, Texas to New York, is operating at limited capacity.

API has been provided with the following additional information:

Colonial Pipeline: Colonial was able to restore service at reduced rates on its lines from the Gulf Coast after a two-day interruption. Colonial is currently (9/29) pumping at an average rate of 65 percent of its normal volumes on these lines from the Gulf Coast. The constraint on Colonial is not its capacity but the availability of product to lift from Gulf Coast refineries and origin terminals. At present, Colonial is without commercial power at five consecutive pumping stations in the Beaumont, Texas-Lake Charles, Louisiana area. Commercial power will likely not be available at some of these pumping stations for at least two weeks.

Explorer Pipeline: The main line from Houston/Pasadena has been ready to run at the full rate since 9/26. Explorer is currently (9/29) running at about half of its capacity due to lack of availability of product. The Port Arthur to Houston segment is still not operating.

Shell Pipeline Company LP: In Texas (as of 9/29), onshore crude oil and product pipelines, stations and terminals in the Port Arthur area are flooded and without power and onshore crude oil. Onshore crude oil pipelines, stations and terminals in the Port Neches area are flooded and without power. In Louisiana (as of 9/29), onshore crude oil pipelines, stations and terminals in the Houma and Erath areas are flooded and without power. The offshore central crude gathering system sustained platform damage. Offshore crude systems in Eastern, Central, and Western corridors are being assessed for damage. Some chemical systems and delivery points in Lake Charles are without power.

Marathon Pipe Line LLC

Hurricane Katrina

Garyville-Zachary 20" System was shut down on 8/29/05; on 8/30/05, power out at Zachary facility; house power only at Garyville facility; helicopter over-flight of system showed no damage. On 8/31/05, power and SCADA communications restored at Garyville, Plantation Junction and Zachary; restarted 9/1/05.

St. James-Garyville 30" System was shut down on 8/28/05; on 8/29/05, power out at St. James and Garyville; on 8/30/05, house power restored at Garyville; helicopter over-flights showed no damage. On 8/31/05, system remained shutdown. Power and SCADA communication restored at St. James. Waiting on LOCAP and Garyville; restarted 9/4/05.

Offshore Gulf of Mexico Crude System was shut down on 8/28/05; on 8/30/05, helicopter over-flight of system showed damage at West Delta Receiving Station. On 9/3/05, MPL Assessment Team traveled via boat and completed a preliminary assessment on the West Delta Receiving Station; platform and all station equipment submerged; no mechanical damage; electrical gear and instrumentation destroyed; security fence destroyed; on 9/30/05, South Pass West Delta System remains down.

Midwest Crude System, on 8/29/05, crude lines from Patola, Illinois, terminating at Robinson, Illinois, Cattlesburg, Kentucky, and Lima, Ohio, slowed down as a result of refinery slowdowns due to uncertainty of crude supply. By 9/4/05, those systems were resuming normal operations.

Hurricane Rita

Texas City-Pasadena 16" System shut down on 9/21/05; on 9/26/05, preliminary assessments made to Texas City and Pasadena facilities noted no damage; restarted 9/26/05.

Centennial 28" System (Marathon operator) shut down on 9/22/05; on 9/27/05, commercial power out with 2-6 weeks repair time; preliminary assessments indicated little or no damage at all sites; on 9/30/05, four temporary generators in place; Entergy reports that electrical service (at reduced levels) may return in the next few days to the Beaumont area; on 9/30/05, remains shut down.

Offshore Gulf of Mexico Crude (operated by Marathon).

East Cameron Lateral shut down on 9/20/05; on 9/27/05, initial reports indicated significant damage to platform facilities with potential for involvement of underwater pipelines; undersea and riser inspection will be required; as of 9/30/05, remains shut down.

Eugene Island Lateral shut down on 9/20/05; on 9/27/05, some platform damage has been noted from initial aerial inspection; undersea and riser inspections will be required; as of 9/30/05, remains shut down.

Vermillion Lateral shut down on 9/20/05; on 9/27/05, some platform damage has been noted from initial aerial inspection; undersea and riser inspections will be required; as of 9/30/05, remains shut down.

Pipeline Observations/Lessons Learned

Electricity. Commercial power availability is essential to pipeline operation. The ability of emergency response officials at the federal, state and local levels to facilitate, coordinate and prioritize the response of electric power utilities is essential. In-place backup generation equipment would be just as vulnerable as the local utility to major storm or attack, costly and difficult to accommodate in pipeline facilities.

Communications. The lack of reliable telecommunications was a major issue in slowing response to the storms. In many cases land lines were out and cell coverage was spotty at best. Even when land lines were available, A/C-powered phones were useless. Satellite communication worked well, but the number of units available was limited. Loss of computing services removed email as a viable communications tool, except in some instances where personal data assistants (blackberries, etc.) allowed personnel to keep in touch. More clearly delineated contact points within the federal government made Rita response easier than Katrina response—there were fewer duplicate requests for updates and better use of designated contacts. This also made it easier to get federal help when needed as we had much improved channels into the government.

Physical Security. Personnel and critical infrastructure assets must be protected—generators and fuel supplies (to name only two) become valuable in a natural disaster.

Aerial Reconnaissance. Many operators had difficulty getting clearance to conduct flyovers of their facilities to assess damage and stage repairs. It would be helpful if FAA could determine priorities and inform companies of what they are.

Federal Fuel Waivers. The use of fuel quality waivers to allow the allocation of available fuels appeared to be helpful.

Effects Extend Beyond Regional. Impacts can be wide ranging

Operations. A backup control center in a different building in the same city may be suitable in the event of terrorist attack (especially with backup generation capability), but not when dealing with a major area-wide event like a hurricane. The New Orleans pipelines that had a backup control center outside of the area and Houston pipelines with the same did not experience the same upset / contingency planning problems as did pipelines that had their backup centers in the same city.

Government-related Issues

In the aftermath of Hurricanes Katrina and Rita, consideration should be given to:

- Improve telecommunications and electric power contingency operations for crude and petroleum product lines and establish protocols for continued service and prioritized restoration of service in emergencies.
- Governments should be prepared to provide security around critical infrastructure and military or police escorts for response personnel, critical equipment transport, and fuel delivery.
- Short-term relaxation of federal, state and local regulatory and permit requirements in the event of natural disasters to expedite recovery of pipeline service.
- Permit streamlining with DOT's Pipeline and Hazardous Materials Safety Administration (PHMSA) as the lead coordinating agency for oil pipelines, would be helpful in speeding repairs and making capacity expansion projects more attractive.
- Support for industry recommendations on FERC oil pipeline rates.
- Designation of National Energy Corridors for rights-of-way would encourage increased pipeline and electrical capacity.
- FAA should determine priorities and request procedures for flyovers to aid in assessment and repair of critical infrastructure and better communicate those priorities.
- Expedite and streamline deployment of housing for emergency responders.
- Develop an integrated refueling strategy for emergency responders (FEMA, National Guard, state and local authorities) and stranded motorists to minimize conflicting priorities, prioritize short-term emergency (re)supply focus, and ensure emergency responder refueling equipment is compatible with industry safety standards.
- Deployment of government-owned power generation and pump units.

MARINE TRANSPORTATION

Impact of Hurricanes Katrina and Rita

The Houston Ship Channel and Texas City Channel have reopened for 24-hour navigation.

The Gulf Intercoastal Waterway is fully open as a result of the operational agreements reached with the Corps of Engineers. The flooding in the Texas/Louisiana border area temporarily shut down the Calcasieu Locks in Calcasieu Parish, Louisiana, and the Leland Bowman Locks in Vermillion Parish. The Gulf Intercoastal Waterway is a critically important artery for both the oil and chemical industries. API worked with various government entities to ensure top priority for returning these locks to normal operations.

Marine Transportation Observations/Lessons Learned

In responding to the hurricanes, the industry has worked in close cooperation with the U.S. Coast Guard, the Department of Energy, and the Maritime Administration to address marine transportation concerns. It has built on strong relationships that already existed between the industry and government in this area.

Government-related Issues

It was helpful to the industry's efforts that the President directed Homeland Security Secretary Chertoff to waive the Jones Act to facilitate transportation of materials from the Gulf Coast in the aftermath of Hurricanes Katrina and Rita. The Jones Act requires that all vessels used to transport cargo and passengers between U.S. ports be owned by U.S. citizens, built in U.S., shipyards, and manned by U.S. citizen crews. The original Hurricane Katrina waiver was through September 19; following Hurricane Rita, the waiver was extended until October 24 for both crude oil and products.

It was also helpful that the Coast Guard gave port captains permission to waive requirements related to Oil Spill Response Operator requirements in the Gulf. Shippers were faced with possibly being out of compliance with their Vessel Response Plans because of the widespread commitment of response equipment for hurricane clean-up operations.

INDUSTRY SECURITY/EMERGENCY RESPONSE

Impact of Hurricanes Katrina and Rita

Providing security in the aftermath of a hurricane is particularly important and difficult. In the aftermath of Katrina and Rita, the ranks of local law enforcement were significantly depleted as officers elected to look after their families, which in many instances meant leaving the area. There are, of course, a great number of other interests competing with the need to protect critical infrastructure. Nevertheless, refineries and other similar infrastructure are at an elevated risk during a hurricane emergency and require protection by local law enforcement, state police, National Guard, or other entities that can fill the void.

In the aftermath of a hurricane, companies' priorities are to gain access to the facility to conduct an assessment of the damage, provide security and control access to the site, facilitate any immediate safety and/or environmental remediation, undertake cleanup, make repairs of critical operating elements, and initiate restart of the facility.

The first requirement is to conduct an assessment of the site. This necessitates access by personnel to the site. In some instances, public sector personnel attempt to restrict access based upon the need to maintain law and order. In the aftermath of Katrina and Rita, roadblocks and other impediments were established to ensure that only first responders were provided access.

However, it did pose some challenges for companies attempting to transport necessary supplies via ground transport. Generally, these challenges involved coordinating with law enforcement officials to obtain permits authorizing access into affected areas.

One concern was that emergency electrical generators, gas, food, and other necessities that companies were attempting to deliver to their locations would be seized by local agencies. Companies made special arrangements for materials to be carried in convoys comprising several vehicles and escorted by local law enforcement.

Industry Security/Emergency Response Lessons Learned

Housing for rescue, response and facility and infrastructure repair personnel in the storm-affected areas can be a major bottleneck to beginning recovery operations.

Development of a formal communications channel into governmental response organizations/departments would be helpful.

Development of an established process to expedite access to those areas shut down after a major disaster to begin rebuilding of critical industries is needed.

Additional Industry Security/Emergency Response Observations

Companies report that the U.S. Coast Guard did an outstanding job in every area and on every level in responding to Hurricanes Katrina and Rita. Considering its diverse and demanding portfolio, which includes search and rescue, safety and security of ports and waterways, vessel inspections and response plans, the Coast Guard continues to provide the necessary leadership for a comprehensive and effective response.

Companies provided their own officers for their facilities' protection in the affected areas and in support of their relief efforts; local law enforcement priority was public health and safety.

Companies provided humanitarian response for their employees and contractors in the high impact areas due to lack of other support and response. Support was also provided to some police and other emergency responders from company distribution sites.

ConocoPhillips provided fuel to National Guard and local government (including police) in storm-affected areas. The company is working with local hotels in storm-affected areas, providing generator power to allow them to open up prior to the power grid being restored. The hotels are being used to lodge response and repair crews.

ConocoPhillips has been operating a toll-free phone number for employees since before Hurricane Rita. Employees are encouraged to call the toll-free number to update the company on their welfare and status. The company is offering financial assistance to employees displaced by Rita.

Government-related Issues

In general, need more coordination and more timely issue of information about the situation on the ground.

Companies need assurances that materials intended for production and delivery of gasoline, diesel, and other fuels necessary for operation of emergency generators and vehicles would not be diverted from their intended purpose.

Difficulty was experienced in getting air restrictions lifted in a timely manner to fly over affected areas and operations to assess damage to our facilities, although government agencies were requesting information.

III. GASOLINE PRICES AND RELATED ISSUES

Impact of Hurricanes on Gasoline Prices

We know that the effects of Hurricanes Katrina and Rita on our industry are having a nationwide impact. We understand how Americans throughout the country have faced increased prices for gasoline and other fuels. However, we believe the market is working, as prices have moderated in recent weeks and are now well under the post-Katrina highs. What follows is background on two key components of the price of gasoline: crude oil price and taxes.

Crude Oil Price. Before Hurricanes Katrina and Rita struck, the price of gasoline was rising primarily because U.S. refiners are paying more for crude oil, the principal cost component of a gallon of gasoline. In fact, the Federal Trade Commission noted this exact point in a report this July: "To understand U.S. gasoline prices over the past three decades, including why gasoline prices rose so high and sharply in 2004 and 2005, we must begin with crude oil. The world price of crude oil is the most important factor in the price of gasoline. Over the last 20 years, changes in crude oil prices have explained 85 percent of the changes in the price of gasoline in the U.S." The crude oil price is set in the international oil marketplace by the forces of supply and demand for oil worldwide.

Tax Component. While more than half the cost of gasoline is for crude oil, every time a motorist pulls up at the pump, he or she pays 46 cents in federal and state taxes per gallon of gasoline. The remainder is the cost to refine and market the gasoline. The average price of a gallon of regular gasoline reached \$2.81 on September 27, according to AAA. When the price of a barrel of crude oil is \$66, as it was at the end of September, a refiner paid about \$1.57 per gallon for the crude oil in order to make a single gallon of gasoline. As noted above, taxes average 46 cents per gallon nationwide. The remaining 78 cents per gallon includes the cost of running refineries, transporting the finished gasoline to markets via pipelines and tank trucks, and operating retail outlets. The cost to refine, market and distribute gasoline has been trending downward for many years. The recent price spikes are a direct con-

sequence of disruptions in crude oil and gasoline supplies. (Attached is a chart showing combined federal, state and local gasoline taxes for each state.)*

Our industry has never experienced back-to-back events like Hurricanes Katrina and Rita and their brutal aftermath. The hurricanes hit an industry that was already stretched to its limit by an extraordinarily tight global supply and demand balance. As the U.S. Energy Information Administration (EIA) noted in its September *Short-Term Energy Outlook*, "Continued high crude oil prices were expected prior to Hurricane Katrina." Even before Rita hit the industry, EIA anticipated crude oil prices to average between \$67 and \$69 per barrel during the fourth quarter, depending on the pace at which damaged facilities are restarted. The damage wrought by Katrina and Rita has clearly exacerbated the very market conditions that have led to today's higher prices.

Oil and gasoline prices jumped immediately after Katrina due to the widespread damage to energy infrastructure, but have moderated slightly as the industry restores operations. Oil prices rose to nearly \$70 per barrel, but have moderated somewhat to around \$66 per barrel. Similarly, the average price for gasoline nationwide jumped 46 cents per gallon in the week after Katrina hit, rising from \$2.65 to \$3.11 per gallon. However, as companies restarted some affected refineries and pipelines and the damage from Rita appeared less severe than expected, gasoline prices moderated. As of September 27, nationwide gasoline prices averaged \$2.81 per gallon. Over the past week the average price of gasoline has increased 12 cents per gallon to \$2.97 per gallon.

Zero Tolerance for Price Gouging

In the aftermath of Hurricanes Katrina and Rita and their effects on gasoline prices, some accused the oil and natural gas industry of price gouging. Let me be clear and direct: the American Petroleum Institute and its member companies condemn price gouging. There is zero tolerance for those who break the law.

History provides an important guide here. Our industry has been repeatedly investigated over many decades by the Federal Trade Commission, other federal agencies, and state attorneys-general. None has ever found evidence that our companies have engaged in any anti-competitive behavior to drive up fuel prices.

The gasoline marketing system has the complexity and flexibility required to meet the varying needs of both companies and consumers. Companies have three basic types of outlet options and may employ any and all in their marketing strategies to maximize efficiencies and compete in the marketplace. First, they can own and operate the retail outlets themselves (company owned and operated outlets). The second option is to franchise the outlet to an independent dealer and directly supply it with gasoline. This option may have three different forms of property ownership: The operator can lease from the refiner, lease from a third party, or own the outlet outright. The third option is to utilize a "jobber," who gains the right to franchise the brand in a particular area. Jobbers can choose to operate some of their outlets with their own employees and franchise other outlets to dealers. The mix of distribution methods varies widely across firms. Different refiners, depending on which type is perceived as most efficient, use different types of outlets.

Retailers are typically categorized as branded and unbranded sellers of fuel. Those who are retailers of unbranded gasoline generally pay lower wholesale prices for gasoline and they attract customers with generally lower retail prices. These retailers price gasoline at retail based on an unbranded "rack" price. They typically shop around in the marketplace, without any binding long-term contracts, in order to obtain the best price. Understanding up-front that there is a certain degree of supply and price risk associated with this method of petroleum retailing, gasoline purchased by an unbranded retailer and priced off an unbranded rack price thus entails no long-term relationship or security of supply between buyer and seller. Most importantly, unbranded purchases do not typically allow the purchaser the use of the supplier's brand name.

In contrast, a branded retailer is obligated by a contract to buy branded gasoline and pay a "dealer tank wagon" (DTW) price, which is generally higher than the rack price. Branded product is typically priced somewhat higher because it offers the dealer greater security of supply and the right to use the supplier's brand name. This makes sense when one considers the investment in the brand name and the importance to both the supplier and retailer of assuring reliable and uninterrupted supply to customers.

In periods of market tightness, however, when a supplier may not have enough product to supply all branded dealers plus the unaffiliated, unbranded buyers, the unbranded retailers, without supply contracts, may pay higher wholesale prices

*The chart has been retained in committee files.

than name-brand retailers. This typically occurs when there is a supply disruption caused by a pipeline or refinery breakdown—such as was caused by the two recent hurricanes.

Gasoline Prices and the World Oil Market

As noted above, prices are rising because of the forces of supply and demand in the global crude oil market. Supply and demand is in a razor-thin balance in the global market. Small changes in this market have a big impact.

World oil demand reached unprecedented levels in 2004 and continues to grow. Strong economic growth, particularly in China and the United States, is fueling a surge in oil demand. The U.S. Energy Information Administration (EIA) reports that global oil demand in 2004 grew by 3.2 percent—the strongest growth since 1978—and projects growth to increase by about 2.1 percent this year and next. By comparison, world demand between 1993 and 2003 grew at an average rate of 1.6 percent.

At the same time, world oil spare production capacity—crude that can be brought online quickly during a supply emergency or during surges in demand—is at its lowest level in 30 years. Current spare capacity is equal to about 1 percent of world demand. EIA projects spare capacity for 2005 at just over 1 million barrels a day. Thus, the world's oil production has lagged, forcing suppliers to struggle to keep up with the strong growth in demand.

The delicate supply/demand balance in the global crude oil market makes this market extremely sensitive to political and economic uncertainty, unusual weather conditions, and other factors. Over the past several years, we have seen how the market has reacted to such diverse developments as dollar depreciation, cold winters, the post-war insurgency in Iraq, hurricanes in the Gulf of Mexico, the Venezuelan oil workers' strike in 2002-2003, uncertainty in the Russian oil patch, ongoing ethnic and civil strife in Nigeria's key oil producing region, and decisions by OPEC.

While consumer concern about high gasoline prices is very understandable, we must recognize that gasoline prices mirror crude oil prices. Crude oil costs make up more than 50 percent of the cost of gasoline. Retail gasoline prices and crude oil prices have historically tracked, rising and falling together. When supply is abundant and demand is low, we see the opposite of today's situation: only six years ago, crude oil was selling at \$10 per barrel—and gasoline was selling for less than \$1.00 a gallon.

We currently import more than 60 percent of the crude oil and petroleum products we consume. American refiners pay the world price for crude and distributors pay the world price for imported petroleum products. U.S. oil companies don't set crude oil prices. The world market does. Whether a barrel is produced in Texas or Saudi Arabia, it is sold on the world market, which is comprised of hundreds of thousands of buyers and sellers of crude oil from around the world.

Earnings

There is considerable misunderstanding about the oil and natural gas industry's earnings and how they compare with other industries. The oil and natural gas industry is among the world's largest industries. Its revenues are large, but so are its costs of providing consumers with the energy they need. Included are the costs of finding and producing oil and natural gas and the costs of refining, distributing and marketing it.

The energy Americans consume today is brought to us by investments made years or even decades ago. Today's oil and natural gas industry earnings are invested in new technology, new production, and environmental and product quality improvements to meet tomorrow's energy needs. *Oil & Gas Journal* estimates that the industry's total U.S. spending this year will be \$85.7 billion, compared with \$80.7 billion in 2004 and \$75.5 billion in 2003. It also estimates that exploration and production spending in the U.S. will grow 6 percent this year and that total upstream oil and gas spending in the U.S. will reach nearly \$66 billion.

The industry's earnings are very much in line with other industries and often they are lower. This fact is not well understood, in part, because the reports typically focus on only half the story—the total earnings reported. Earnings reflect the size of an industry, but they're not necessarily a good reflection of financial performance. Earnings per dollar of sales (measured as net income divided by sales) provide a more relevant and accurate measure of a company's or an industry's health, and also provide a useful way of comparing financial performance between industries, large and small.

For the second quarter of 2005, the oil and natural gas industry earned 7.7 cents for every dollar of sales compared to an average of 7.9 cents for all U.S. industry.¹ Many industries earned better returns in the second quarter than the oil and natural gas industry. For example, banks realized earnings of 19.6 cents on the dollar. Pharmaceuticals reached 18.6 cents, software and services averaged 17 cents, consumer services earned 10.9 cents and insurance saw 10.7 cents for every dollar of sales. Last year, the oil and natural gas industry realized earnings of 7 percent compared to an average of 7.2 percent for all U.S. industry. Over the last five years, the oil and natural gas industry's earnings averaged 5.7 cents compared to an average for all U.S. industry of 5.5 cents for every dollar of sales.

Some are calling for reinstatement of a windfall profits tax as a response to the nation's energy challenges. However, our industry's earnings are hardly a "windfall." Strong earnings enable our industry to remain competitive globally, benefit millions of shareholders and enable the industry to invest in innovative technologies that improve our environment and increase energy production to provide for America's future energy needs. Levying new taxes would likely end up harming consumers. As *The Wall Street Journal* editorialized recently, ("China Does Carternomics," August 19), "A windfall profits tax only discourages increases in supply by disincentivizing further production."

According to the Congressional Research Service (CRS), the windfall profits tax drained \$79 billion in industry revenues during the 1980s that could have been used to invest in new oil and natural gas production. In fact, 1.6 billion fewer barrels of oil were produced domestically due to the windfall profits tax—barrels that instead had to be secured from foreign sources. CRS found that the tax reduced domestic oil production from between 3 and 6 percent, and increased oil imports from between 8 and 16 percent.

Gasoline Prices: What Can Be Done?

The solution to high gasoline prices is more supply of crude oil and gasoline and less demand, but there is no simple strategy to make that happen. The United States is at a critical turning point in shaping its future energy policy. The legislation signed by the President signals a first step in a much-needed effort to enhance energy security and ensure the reliable delivery of affordable energy to consumers. But much remains to be done.

The problems we face are very real: growing world demand for energy at a time when many oil-producing countries around the world are increasingly limiting or restricting our industry's access to new resources; a lack of national commitment to develop our abundant domestic energy resources and critical infrastructure; and scant attention to energy efficiency. These factors have resulted in a tight supply/demand balance for U.S. consumers, causing recurring price spikes, greater market volatility, and overall strain on the nation's energy production and delivery systems.

Energy demand continues to grow. The Energy Information Administration (EIA) forecast that by 2025, U.S. energy consumption will increase by 35 percent, with petroleum demand up by 39 percent and natural gas up by 34 percent. These demand increases occur despite expected energy efficiency improvements of 33 percent and renewable energy supply increases of 41 percent.

Additional EIA forecasts point out our basic problem: Domestic energy supplies are not keeping up with increased demand; and we are relying more and more heavily on imports to meet our energy needs. EIA projects that U.S. crude oil production will fall by 17 percent by 2025 (assuming no production from ANWR), while crude oil imports will increase by 67 percent, and net petroleum product imports increase by 90 percent. Given these trends, it comes as no surprise that EIA forecasts that our nation's dependency on foreign sources of petroleum will rise from 59 percent today to 68 percent in 2025.

This increase, to the extent that it reflects import costs lower than domestic supply costs, would represent a gain from trade which should be encouraged. However, when we have resources that can be developed at prices competitive to imports, and we choose not to do so, we place a wasteful and unnecessary burden on our own consumers.

In fact, we do have an abundance of competitive domestic oil and gas resources in the U.S. According to the latest published estimates, there are more than 131 billion barrels of oil and more than 1000 TCF of natural gas remaining to be discovered in the U.S.

However, 78 percent of this oil and 62 percent of this gas are expected to be found beneath federal lands and coastal waters.

¹Earnings equal profits divided by sales calculated from "Corporate Scorecard," *Business Week*, August 22/29, 2005; and from company financial reports for oil and natural gas figures.

Federal restrictions on leasing put significant volumes of these resources off limits, while post-lease restrictions on operations effectively preclude development of both federal and non-federal resources. The most comprehensive study of the effects of such constraints was the 2003 National Petroleum Council study of natural gas, which included an analysis of federal constraints on U.S. gas supply in two key areas—the Outer Continental Shelf (OCS) and the Rockies. The study found that in key areas of greatest supply potential, federal policy precludes or seriously constrains development. For instance, of the 209 TCF of estimated undiscovered gas in the Rockies, 69 TCF is completely off limits, while another 56 TCF is seriously constrained by federal policy. On the OCS, the entire Atlantic, Pacific, and most of the Eastern Gulf of Mexico are off limits to development. Furthermore, the study found that sustaining these constraints over the next 20 years would cost U.S. consumers more than \$300 billion in increased energy costs.

We are aware that opponents of oil and natural gas development still raise environmental concerns. However, we would point out that history provides overwhelming evidence that our industry can find and develop oil and natural gas resources safely and with full protection of the environment, both on land and offshore. For example, according to the U.S. Coast Guard, for the 1980-1999 period, 7.4 billion barrels of oil were produced in federal offshore waters, with less than 0.001 percent spilled. That's a 99.999 percent record for clean operations—a statistic few others can likely match or best, and far less than the volumes of natural seeps that occur on ocean and gulf floors. The industry's leak prevention performance in offshore production during Hurricanes Ivan, Katrina and Rita continues this remarkable environmental record.

Using advanced technology and sound operational practices, our industry has steadily reduced the environmental impact of oil and gas development, both onshore and offshore. The surface presence for exploration and development wells has shrunk significantly. For example, a drilling pad the size of Capitol Hill is all that is needed to access any oil reserves that might exist in the entire 68.2 square mile District of Columbia. Horizontal and directional drilling now enables our industry to drill multiple underground wells from a single pad, sometimes reaching sites as far away as 10 miles from the drilling pad.

Additionally, the U.S. oil and natural gas industry is among the most heavily regulated industries in our country. Every lease contains a standard stipulation to protect air, water, wildlife and historic and cultural resources, but leases may also include any number of additional stipulations to further protect resources.

The recently enacted energy legislation takes a positive step by requiring an inventory of OCS oil and natural gas resources. It will not, by itself, result in new energy supplies.

We need to build on the energy legislation by encouraging the flow of more natural gas and oil to the marketplace. And, while we must focus on producing more energy here at home, we do not have the luxury of ignoring the global energy situation. In the world of energy, the U.S. operates in a global marketplace. What others do in that market matters greatly.

For the U.S. to secure energy for our economy, government policies must create a level playing field for U.S. companies to ensure international supply competitiveness. With the net effect of current U.S. policy serving to decrease U.S. oil and gas production and to increase our reliance on imports, this international competitiveness point is vital. In fact, it is a matter of national security.

We can no longer wait 12 years, as we just did, to address our nation's energy policy. The energy legislation is a foundation, but it must be built upon. More needs to be done and more quickly, particularly increasing access to offshore resources. We have the ingenuity, the technology, and environmental protections. If enactment of the energy legislation means we have a commitment to continued action, then it will truly be a turning point in reshaping U.S. energy policy.

Refineries

We cannot understand or deal with high gasoline prices if we do not consider the state of refineries in the United States. During the 1980s-90s, the oil industry earned relatively poor rates of return on their investments. This was especially true in the refining sector, which was hard hit with the need for new investment in technology and equipment to produce cleaner burning fuels to meet clean air standards set by the Clean Air Act of 1990. The Act had a major impact on the operation of refineries in the U.S. and the return on investment realized at the time.

From 1994 to 2003, the industry spent \$47.4 billion to bring refineries into compliance with environmental regulations. That included \$15.9 billion in capital costs and \$31.4 billion in operations and maintenance costs to comply with regulations covering air, water and waste rules. Moreover, by 2010, the U.S. refining industry

will have invested upwards of \$20 billion to comply with new clean fuel regulations. This is an addition to the cost of compliance with many dozens of other environmental, health, safety and security regulations. All this investment severely reduces the funds available for discretionary capacity expansion projects.

Technological advancements have helped refineries produce more from existing facilities than they did in the past. Refineries are doing a better job of bringing product to market for less—and the consumer has benefited. Even though a new refinery has not been built from scratch in 30 years, existing refineries are continually being upgraded and reworked to improve efficiency. Inefficient process units are replaced and new units are built to provide more fuel processing flexibility.

We can see this in the decline in the refiner/market margin (measured as the difference between the retail price of gasoline minus taxes and minus the refiner's composite crude oil price). Back in 1980, the cost to refine and market and distribute gasoline averaged about 95 cents per gallon (in inflation-adjusted terms). By 1990, it averaged more than 61 cents per gallon, and, by 2000, it was 52 cents per gallon, which is about where it has averaged over the last five years. Multiplying these reductions by the 330 billion gallons of petroleum products consumed translates into billions of dollars of savings for consumers. We all benefit every day from these improvements and efficiency gains.

The Need to Remove Refinery Capacity Constraints

The record-high gasoline prices, while primarily caused by increased crude oil prices and exacerbated by Hurricanes Katrina and Rita, have underscored the fact that U.S. demand for petroleum products has been growing faster than—and even exceeds—domestic refining capacity. While refiners have increased the efficiency, utilization and capacity of existing refineries, these efforts have not enabled the U.S. refining industry to keep up with growing demand.

The fact is that—faced with increasingly more challenging fuels regulations—only major refineries have the resources needed to expand their capacity. Smaller refineries are increasingly unable to afford to expand. Moreover, local opposition and not in my backyard (NIMBY) attitudes persist and prevent new refineries from being constructed.

The U.S. refining industry has been expanding at a rate of approximately 1 percent over the past decade—the equivalent of a mid-size refinery. In order to create the opportunity for increasing the growth of U.S. refinery capacity, government policies are needed to create a climate conducive to investments to expand domestic refining capacity.

In addition, many of the steps the federal government could take to help the refinery capacity situation are covered in the December 2004 National Petroleum Council (NPC) study, *Observations on Petroleum Product Supply—A Supplement to the NPC Reports "U.S. Petroleum Product Supply—Inventory Dynamics, 1998" and "U.S. Petroleum Refining—Assuring the Adequacy and Affordability of Cleaner Fuels, 2000."* For example, that NPC study suggested that the federal government should take steps to streamline the permitting process to ensure the timely review of federal, state and local permits to expand capacity at existing refineries.

New source review regulations could be reformed to clarify what triggers these reviews. Some refineries may be able to increase capacity with relatively minor adjustments, but are unsure if the entire facility's permit review would be triggered—a burdensome and time-consuming process.

In addition to the myriad of other issues deterring new refining capacity investments, there are financial constraints as well. Attracting capital for new refinery capacity has been difficult with refining rates of return historically averaging well below the average for S&P Industrials. Over the 10-year 1994-2003 period, the return on investment for the refining and marketing sector was 6.2 percent or less than half as much as the 13.5 percent for S&P Industrials. In only one year between 1977 and 2003 did the average return of refiners exceed the average for the S&P Industrials.

It is important to remember that the oil and natural gas industry operates in a global marketplace. Many oil and gas companies are global companies, whose U.S. investment decisions compete not only with decisions as to how to allocate capital investments in the U.S. among various sectors of the industry, but also with competing demands and investment needs overseas. In a global marketplace, companies will make the best economic investment decisions in order to bring affordable petroleum products to consumers. Imports may be the more economical option than new U.S. refineries, but that is a decision to be left to the global marketplace. Government policies must encourage, not interfere with, the global marketplace.

Conclusion

The U.S. oil and natural gas industry recognizes the catastrophic impact that Hurricanes Katrina and Rita have had on millions of Americans and our industry is working with government and others in the private sector to do all we can to alleviate their suffering.

If we all do our part—industry providing supplies and repairs as expeditiously as possible, government facilitating needed approvals, and consumers adjusting their driving habits to consume less fuel—Americans can overcome this challenge as we have others in our nation's history.

The CHAIRMAN. Thank you very much.

Let us proceed then to senior vice president of programs, National Environmental Trust, Kevin Curtis. Thank you for coming.

**STATEMENT OF KEVIN S. CURTIS, SENIOR VICE PRESIDENT
FOR PROGRAMS, NATIONAL ENVIRONMENTAL TRUST**

Mr. CURTIS. Thank you very much for having me here. I have had the pleasure of working with this committee for 25 years, my entire career in Washington, and it is truly an honor to be here testifying. It is also a terrible shame that the topic of the hearing is the impact of hurricanes Katrina and Rita.

In my testimony, I will try to touch on a couple of points related to the environmental and public health impacts of the hurricanes and then three policy points as it relates to energy policy. I will not even try and describe the devastation that you have seen and that these gentlemen whose companies are working on. They are doing a terrific job. We thank them. It needs to be dealt with. Again, I just cannot put words to it.

What I can try to touch on, though, is from an environmental and public health perspective, the biggest threat facing people is from the toxics and pollutants that they will be dealing with as they move back into the area, both the first move back, then clean-up, and then get on with their lives. Those pollutants will be in the air, the soil, the water, and the fact is we simply do not know where they are yet. So I think the appropriate governmental response in such a situation is to go overboard in terms of providing testing and information to people about what you know and about what you do not know is in the air.

Fortunately, the Government has a lot of experience in this area from Superfund, from Brown Fields, from some of the DOE cleanup efforts that this committee has overseen over the years, and I think those lessons should be learned from and applied to government efforts to fund the cleanup and convince people that it's safe to live there—not convince them, but be assured that it is safe.

The second point I would like to make related to the cleanup effort is there is an opportunity here. There is an opportunity to rebuild using the best lessons learned for energy efficiency, building smarter, and many of the other topics that fall under the heading of sustainable development. NET and the rest of the environmental community would strongly encourage Congress to direct and mandate that the rebuilding efforts incorporate these lessons so that the rebuilt gulf region can become a model for the future rather than an example of the many problems associated with industrial and energy development from the past.

Now my policy recommendations.

Energy policy. This is the golden moment, if you will, for energy efficiency and conservation. I have watched the debates for 25-plus years, and I cannot remember an occasion when industry, government, both Congress and the administration, and the environmental groups are all in massive agreement about the role of energy efficiency and conservation. It is the only short-term tool we have available to us to help this Nation get through this crisis.

So I think the challenge to this committee and to others, including the environmental community, is to seize this moment and not let it pass by, not let it simply be a 2-week PR effort by the administration or others. The ads are great, but the ads have to be followed up by action. They have to be followed up by full funding of the energy conservation and renewables efforts laid out in the act you passed a couple months ago. We need to monitor it and this committee needs to hold the Department of Energy accountable. Again, it is more than just PR. It is a good start, but there are appliance efficiency standards that need to be met. There are people that need to be hired. That needs to happen.

For the long term, I would not be doing my job as an environmentalist if I did not say this committee, which does not have the jurisdiction, can lead the way in Congress to deal with the issue of automobile fuel efficiency. 70 percent of our Nation's oil goes to the transportation sector. It is just an embarrassment to this country that we do not have a policy in place that will mandate significantly higher levels of fuel efficiency for our Nation's consumers and businesses. They will help the farmers in Montana. They will help everybody.

The second policy point is over in the House of Representatives, there is currently an effort to address the refinery issue by rolling back many of the clean air laws. We simply do not believe that is the appropriate response. This Nation clearly does need more refinery capacity, but I think by no means are environmental laws the reason we have not had an increase in refinery capacity. In fact, I think business and industry should be commended for having taken the rational economic steps in the last 10-15 years by consolidating operations, by becoming more efficient, by getting more production out of a fewer number of refineries. That is terrific. That was the right thing to do.

It is now time to build more refineries. A silver lining for industry, if you will, out of the last 2 years is profits are high. There is lots of money in the system. There is no reason, I believe from an environmental group perspective, that refineries cannot be built and should not be built, but they should meet all existing laws and they should actually stand out as a model for the future, involving the best technologies and really be built with the state-of-the-art technology mind set.

Finally, let me just conclude by asking this committee to be thoughtful and careful, as you always are, in your deliberations. There is an old maxim that to go fast, you must go slow. This is that time. Just 2 months ago, this committee and its members participated in the signing ceremony for an energy bill that took 5 years to pass. Two months later, many people are talking about energy bill two. Now is not the time to do that. Now is the time to

implement that energy bill and find some short-term efforts to work on, the one place being energy efficiency and conservation.

Let me stop with that. Thank you.

[The prepared statement of Mr. Curtis follows:]

PREPARED STATEMENT OF KEVIN S. CURTIS, SENIOR VICE PRESIDENT FOR PROGRAMS,
NATIONAL ENVIRONMENTAL TRUST

Thank you very much for the opportunity to testify in front of this committee. I first worked with this committee in the mid-1970's when I was a very young political appointee at the newly created Department of Energy representing the Carter administration to Congress during the debate over the Synfuels Corporation, Wind-fall Profits Tax Act, Energy Mobilization Board and the various other titles of that decade's comprehensive energy package. Every decade since then, I have observed and/or participated in the renewed efforts at setting national energy policy by the administration and Congress. I have drawn as much from that experience as from my current position with the National Environmental Trust for this testimony.

The National Environmental Trust is a non-profit, non-partisan organization established in 1994 to inform citizens about environmental problems and how they affect our health and quality of life. NET's public education campaigns use modern communication techniques and the latest scientific studies to translate complex environmental issues for citizens. Furthermore, NET works in states across the country to localize the impacts of national problems, as well as to highlight opportunities for Americans to engage in the policymaking process. Energy policy has been an important area of focus for NET since its inception because of its far reaching implications for the environment.

Katrina is certainly among the worst environmental catastrophes to befall our country and its citizens. The human toll is tremendous and the physical damage is only now starting to be truly catalogued and understood. In other words, it is much too early to make definitive statements about the ultimate scope of this disaster. That said, part of my charge for this testimony was to address the environmental impacts of the storm, which I have tried to do below with an eye towards our nation's energy infrastructure and policies.

I would also like to make three energy policy points in my testimony today. First, a focused commitment to energy efficiency and conservation is the most effective and least utilized option available to this country to deal with the short and long term energy issues facing us. Second, waivers of existing law, including environmental statutes, are not a trivial exercise. The cacophony of waivers being proposed for post-Katrina energy infrastructure building and rebuilding efforts are neither necessary nor justified. Third, don't jump on the "Energy Bill II" mentality that seems to be driving much of the current debate in the House of Representatives.

BRIEF SUMMARY OF THE ENVIRONMENTAL IMPACT OF THE HURRICANES

As noted above, Katrina ranks as one of the nation's largest environmental catastrophes due to natural disasters. I have listed below a few statistics and anecdotes designed to help convey the scale of its impact:

- At least seven million gallons of oil were spilled from known, identifiable sources. Estimates add another one to three million gallons from disparate sources. By way of comparison, the Exxon Valdez spill released 11 million gallons.
- Early estimates of the amount of debris to be disposed of range up to 100 million cubic yards. Such an amount would be enough to cover 1,000 football fields 50-feet deep in waste.
- Up to 350,000 automobiles are estimated to have been ruined due to the flooding.

In the flood's aftermath, the primary threats to public health are posed by exposure to pollutants and toxic materials in the air, soil, water as well as the general muck being cleaned up. These pollutants come from a wide variety of sources, including energy production, refining and infrastructure facilities.

Another potentially major source of pollution seems to be the sediments from the bottom of various lakes, canals, and other waterways that were stirred up and distributed by the flood waters. A considerable amount of pollutants appears to have been stored in these sediments.

A future potential source of pollutants and toxics is likely to arise from the ultimate disposal of the debris from the storm. Early estimates of this waste are simply mind-boggling. Whether it is burned or buried, there are major environmental and

public health implications and concerns that must be factored into the upcoming disposal decisions.

Given this tremendous amount of uncertainty, it strikes me that the most prudent course of action by the government is to spend a considerable amount of time and resources sampling and monitoring the environment in New Orleans and the rest of the impacted Gulf region. Furthermore, there is clearly a need for this monitoring to be done in as transparent and inclusive a manner as possible, so that all the citizens of the region can feel comfortable with the conclusions. The EPA and CDC have considerable experience through the Superfund and other programs in involving impacted citizens and communities in the monitoring of their immediate environment for toxic and chemical pollutants. Such a monitoring effort must also take into account the environmental justice concerns due to the demographics of those left most vulnerable by the region's prior chemical and petroleum industry development.

ENVIRONMENTAL OR ECOLOGICAL ISSUES

In addition to the storm's well publicized impact on wetlands and the general consensus that rebuilding and restoring the wetlands is an important part of preparing for the future, the impact on the region's fisheries is also starting to emerge. Just this week, NOAA's Fisheries Service declared a fishery failure for Texas and Louisiana following Hurricane Rita, with a similar declaration made in the wake of Hurricane Katrina extending from Pensacola, Florida to the Texas/Louisiana border. This disaster declaration authorizes assistance to assess the impacts and assist fishermen, but we have yet to determine the extent of the storms' impacts on the marine ecology of the Gulf.

There are high levels of bacteria present in the water, and testing continues to determine the extent to which oil and other toxics may be impacting Gulf fisheries. Because some pollutants accumulate in sediments or are persistent and tend to build up over time, it may be months before we are aware of the full impact on the marine species in the region.

Only extensive long-term monitoring will ensure that we have the most accurate assessments, and it is critical that Congress considers the cost of monitoring and assessment programs on NOAA's budget, particularly in light of the budget cuts proposed for NOAA in the House version of the fiscal 2006 appropriations bill.

THE PROMISE AND POTENTIAL OF ENERGY EFFICIENCY AND CONSERVATION

I will not attempt to recreate in my testimony all the information, arguments and policy proposals in support of energy efficiency and conservation that have been provided to this committee during the past five years of congressional debate on energy. (Instead, please find attached a reasonably thorough review of recent recommendations by a variety of groups focused on energy efficiency and the environment.) Rather, I would like to underscore the rather remarkable political situation we find ourselves in today, where the entire range of stakeholders in energy policy seems to be in agreement about the need for conservation and an increased focus on energy efficiency. Just this week, the nation's leading newspapers printed full page advertisements from the American Petroleum Institute, Chevron Oil Company and other major players in the oil and gas industry extolling the virtues of conservation. On Tuesday, a headline in the Washington Post business section announced, "White House Renews Call for Conservation." Senators Domenici, Bingaman and others on this committee have all issued public statements over the past month noting the importance of energy efficiency and conservation. This is the moment in time to actually turn the promise of energy efficiency and conservation into reality.

Beginning today, you can accomplish this by using the authority of this committee to educate the rest of Congress, the press and the public about the immediate gains available from increased efficiency and conservation. For the longer term, you can pursue and build the legislative record and political support necessary to establish additional incentives for the adoption of energy efficiency and conservation policies. As you well know, the most fundamental challenge facing efficiency and conservation is that the powerful array of energy suppliers tend to view energy efficiency as a revenue loser even though our nation's consumers and businesses would benefit from it. And while I certainly appreciate and applaud the fact that oil companies and their trade association are preaching conservation, I would not expect their shareholders to encourage them to stay with that position for an extended period of time. After all, they are in the business of producing and selling oil and natural gas.

A very concrete way in which this committee can help promote energy efficiency is to hold the US Department of Energy accountable for its track record on energy

efficiency. Recent PR efforts notwithstanding, the department's track record is rather poor in this area. Examples include: 1) the department has so lagged in implementing the appliance efficiency standards that it's being sued, 2) just last week, the DOE supported rolling back energy efficiency standards for new building construction and 3) the department was stopped from rolling back efficiency standards for air conditioners only by court order. I would be much more optimistic about its recent commitment to energy efficiency if its leadership were to announce a large scale public education campaign at the funding levels authorized by the energy bill and it planned to hire the additional staff necessary to finalize the pending appliance efficiency rules.

It is one thing for the administration to opposed regulations for energy efficiency on philosophical grounds. Yet its record on energy efficiency technology R&D is also disappointing. EOS's FY 2006 budget request for spending is significantly lower than the amount authorized by the new energy bill. In order to take advantage of the unique political opportunity facing them, congress and the administration must pursue an aggressive agenda to expand the pipeline for new energy technologies that represent the real and long-term solutions to our energy problems.

Finally, I would be remiss if I did not mention the need for increased efficiency from our automobile and truck fleets. Transportation accounts for approximately 70% of our nation's oil use, and it is a national embarrassment that we have not significantly adjusted CAFE standards for close to 20 years. Not only will adopting significantly higher fuel efficiency standards help consumers at the gasoline pump, but it will contribute to our national security by reducing our reliance on imported oil. Moreover, there is ample evidence to suggest that adopting these technologies is also key to the survival of the U.S. auto industry. I have attached a recent NET-sponsored study documenting the potential employment gains available to the domestic industry by producing more fuel efficient vehicles. Now is the time for Congress to exert leadership on this issue.

CONCERNS ABOUT H.R. 3893 AND THE LARGER ISSUE OF ENVIRONMENTAL WAIVERS

The House of Representatives is scheduled to consider this coming Friday, a bill, H.R. 3983, that passed out of the Energy and Commerce Committee last week. This bill, and its companion from the House Resources Committee, represent a blatant attempt by the chairmen of those committees to exploit the genuine public concerns about high gasoline prices following Hurricanes Katrina and Rita to pursue legislative goals that were rejected just months ago in the House-Senate energy conference committee process.

Fortunately, the Resources Committee bill has already run into political difficulties in the House, as 25 of the 27 members of the Florida delegation objected to the offshore drilling provisions contained in the legislation. Unfortunately, H.R. 3893 appears to be moving ahead. While I have attached a detailed critique of the legislation by the environmental community for your review, I would like to touch upon a few of the more objectionable aspects of this legislation in hopes of convincing the Senate to avoid its pitfalls.

KEY CRITICISMS OF H.R. 3983

1. Backers of the bill often suggest that environmental regulations are to blame for our current shortfall in refining capacity. This premise is flawed. The U.S. is facing limits on its refining capacity largely because over the past few decades the refining industry has been a mature, low profit-margin business. Consequently, it was significantly more profitable to consolidate operations and increase the output at existing refineries than to build new refineries. The attached fact sheet documents the industry's success at increasing production while at the same time reducing the number of refineries. It is clearly time for industry to build new refineries, and there is no doubt that oil companies have the financial resources to build new, state-of-the-art facilities while complying with all applicable laws.

2. The environmental waivers contained in the bill are too broad and pose a significant public health risk. For example, the delays contained in Section 109 (Attainment Dates for Downwind Ozone Non-attainment Areas) will result in the following additional public health problems, according to Abt Associates, EPA's leading air pollution consulting firm. For each year of delay, the nation will experience an additional:

- 387,000 or more asthma attacks
- Almost 4,900 hospitalizations due to respiratory distress
- 573,000 missed school days

3. The legislation would also essentially eliminate the New Source Review program for up to 20,000 facilities (Sec. 106); undermine the diesel rule that was successfully negotiated between the Bush administration, diesel engine manufacturers and the environmental community several years ago (Sec. 108); and arbitrarily limit the number of cleaner burning, boutique fuels to six (Sec. 108).

CONGRESS SHOULD NOT RUSH INTO A "NATIONAL ENERGY POLICY II"

Less than three months ago the President signed the National Energy Policy Act of 2005 into law. This legislation took over five years to pass and contains a wide range of provisions designed to promote the oil, gas, coal and nuclear power industries. It also contains a major new initiative for biofuels, but provides far less support for renewables and energy conservation. According to a recent report I read, the legislation contains over 500 congressionally mandated deadlines for everything ranging from studies to regulations. Nothing in these 500 directives or the legislation as a whole, however, would meaningfully increase in fuel efficiency standards for cars and trucks, establish a renewable portfolio standard or address global warming. I raise this not to cover old ground but rather to point out a new opportunity. The ink is not even dry on the latest national energy plan and nothing I have seen indicates that the political dynamic has changed for the very important but politically difficult issues that did not make it into the national energy plan, with one key exception—energy efficiency and conservation.

CONCLUSION

Energy efficiency and conservation are now "in." It would be a major contribution by this committee to our nation's future if you were to focus your prestige and political strength on ensuring that this attention is not fleeting and that meaningful commitments to energy efficiency are actually adopted.

Thank you.

ATTACHMENTS*

The CHAIRMAN. Thank you very much.

The president and CEO of Dow Chemical. Let me repeat we had a very good visit. We were sorry we could not spend more time. We want to publicly commend your company for all the work that was done to preserve life, to take care of your workers, and to do everything possible to maintain the facility in a method and manner that it could be opened as soon as possible. It was also a pleasure to see the modern facilities. Many think that the kinds of things you do are very risky and dangerous and have heavy pollutants. What we saw were very, very modern facilities with all the pollution controls you could imagine. We are very worried that with all that, you are now as good as there is in the world, but the price of natural gas may be the negative trump card over all those good things. We welcome your testimony here today.

**STATEMENT OF ANDREW LIVERIS, PRESIDENT AND CEO,
DOW CHEMICAL COMPANY, MIDLAND, MI**

Mr. LIVERIS. Thank you, Chairman Domenici. I burst with pride at your words and I will transmit them to our people. Thank you for your visit with Senator Bingaman and Senator Akaka yesterday.

As you say, I am Andrew Liveris, CEO of the Dow Chemical Company. Dow has been in business since 1897 and is the world's leading manufacturer of chemicals and plastics around the world. I thank you for the opportunity to testify here on behalf of our company, but also the American Chemistry Council which employs

*All attachments have been retained in committee files.

900,000 people and is responsible for \$500 billion of value-add in our economy here in the United States. We are also here testifying on behalf of the Consumers Alliance for Affordable Energy and Natural Gas.

Let me start by saying, where the chairman left off, that my heart and the hearts of all our people in our industry go to the victims of Katrina and Rita. The devastation was first a human tragedy and, second, an economic challenge for this great Nation.

Our priorities have been to help our employees and our communities recover and to ensure that our facilities return to safe and normal operations. Texas and Louisiana are home to 81 percent of Dow Chemical's production in the United States, and 11,500 of our people reside there, over half of our employee base in the country.

The hurricanes' disruptions will be, indeed, short-term. Our company will recover. Our communities will rebuild. The American spirit is alive and well. Our industry will continue to produce the products that are essential to the quality of our lives. And a far greater threat, as the chairman has noted, to the U.S. chemical industry and to the entire U.S. manufacturing sector is the serious vulnerability that this has posed to the Nation's energy supply.

We say it unequivocally, the United States is in a natural gas crisis. The hurricanes have dramatically underscored the problem, but they did not cause it. Dow, the ACC, and others have spoken repeatedly of the supply/demand imbalance that is at the root of this crisis, actually since the year 2000. The price of natural gas, once \$2 per million Btu, as noted, closed yesterday at \$14. If that was put in gasoline terms, the gasoline price at the pump would be \$7 a gallon right this minute, and we are all alarmed at \$3, as you well know. This price of \$14, simply put, renders the entire U.S. chemical industry uncompetitive. And why? Because we not only use it as a fuel, we use it as a raw material. We simply cannot compete with the rest of the world at these prices. It undermines all U.S. manufacturing because we supply all of U.S. manufacturing.

Today energy and raw materials in my company constitute 50 percent of my costs, the highest in our history. Even though we have improved our energy efficiency by 42 percent since 1990, we have raised our prices. We have shut down 23 inefficient plants in North America since 2002. We and others are now investing in China and the Middle East where energy is much cheaper to our incredulity. In short, in a very short time, we know we will rehabilitate. Our company, our industry will continue to grow. It is simply a question of where we will grow.

Two weeks ago, I went to Louisiana to survey our sites. I met with our people there. Many of them lost their homes and more to Katrina. They came back to work. They kept our plants safe. They worked around the clock to bring them back on line. They did the heroics. They made the products that are essential to restore the communities and to the rebuilding of the area. These are hard-working people. They earn wages and salaries far higher than in any other industry, \$70,000 a year on average for every worker.

They are counting on me to secure their jobs and to retain our strong presence in this country. As their leader, I am going to do everything in my power to make that happen. Yet, when faced with

a choice of investing in the United States at \$14 gas versus \$2 to \$3 elsewhere, how can I recommend investing here?

Dow does not face this decision alone. There are 120 world-scale chemical plants being built around the world with price tags of \$1 billion or more, only one in this country. China alone has 50.

Congress can make America competitive again. The Energy Policy Act of 2005 was a great start. I commend you all for it, but more can be done.

And our policy recommendations. Four of them.

Promote environmentally responsible production in the Outer Continental Shelf, giving coastal States a greater role, and sharing new production revenues with them.

Two, expedite development in Sale Lease 181, at least for areas greater than 100 miles off the Florida coast.

Three, declare a national emergency, as the Energy Secretary did and the President did this week, that mobilizes every American to save energy.

And four, assure that the most efficiently generated energy is dispatched to the power grid first.

Our written testimony has many more things.

Let me say in closing that everywhere I go, the Middle East, Asia, the government wants our industry. They want the investments. They want the high-paying jobs that go with it. They want the science graduates. They want the living standards. Everywhere I go except here. This cannot be the case.

Tomorrow I am leaving for China where they have put in place a sound energy policy. I urge us all to take the next step and build on the great Energy Act of 2005 so we can keep investing in this great Nation. Thank you, sir.

[The prepared statement of Mr. Liveris follows:]

PREPARED STATEMENT OF DOW CHEMICAL COMPANY

SECTION I—INTRODUCTION AND EXECUTIVE SUMMARY

“After Katrina we got a call from a bottled water company in the South scrambling to get some HDPE (high density polyethylene plastic). His regular supplier curtailed him. He needed the plastic to make bottles so he could supply bottled water to FEMA. Our Louisiana plants were still restarting, gas supply was curtailed and we were closing our TX plants in anticipation of Rita. We couldn’t help him.”

—Chemical Company Executive Located in Hurricane Zone

The Dow Chemical Company and the American Chemistry Council welcome the opportunity to provide the Committee with an update on Hurricanes Katrina and Rita’s effects on energy infrastructure and the status of recovery efforts in the Gulf Coast region.

This topic is of acute interest to the US chemical industry because the Gulf Coast is home to the world’s largest concentration of chemical manufacturing capacity. The Gulf is to chemical manufacturing as Wall Street is to finance.

The chemical industry has been operating in the Gulf for more than seven decades. Our engineers and operators are experts in hurricane preparedness. Plants are designed and built to withstand Category Five storms. All members of the American Chemistry Council (ACC), under our trademark health, safety, environment and security program, Responsible Care®, have long-established hurricane plans that operate before, during and after storms. Facilities cooperate with local, state and national authorities, other businesses and transportation systems, along the path of the storms and through recovery. Companies will evaluate and enhance those plans to incorporate learnings from Katrina and Rita as part of their ongoing performance improvement process.

Typically, these emergency plans include the safe shutdown and lockdown of facilities, removal of vehicles and other equipment, evacuation and accounting of employees, and placement of emergency “ride-out” crews on-site, when feasible. We then carefully assess post-storm conditions to allow facilities to resume operations safely.

Having said that, our industry has also been severely damaged by the hurricanes. Not by the high winds and not by the storm surges and floodwaters, but by the high cost and limited availability of natural gas.

Natural gas is of vital importance to our industry. It heats and powers our facilities, but it is also our most important raw material. We process natural gas molecules into thousands of products that can be found everywhere in the economy.

Today, most chemical plants in the Gulf Coast are closed or are operating at reduced rates. For some, it is because they are without power. For others, they have been cut off from their gas supply or they are choosing not to pay today’s prices. Soon the loss of chemical manufacturing in the Gulf will ripple through the economy in the form of shortages and higher prices.

The industry faces hard choices on how and where it will base its operations in the future. On September 30, 2005 the wholesale spot price of natural gas was \$14.50 per MMBtu. In Europe natural gas costs about \$7.00. In China, it’s less than \$5.00. In Saudi Arabia, it’s less than \$1.00. US manufacturers must compete in global markets. Companies must decide where to locate production, where to locate jobs, where to pay taxes and support communities. When US production costs two to twenty times more than it does in the rest of the world, it is hard to justify investing in America.

Public policy makers will exert enormous influence on how those decisions are made. It is well documented how certain policies bid up demand for natural gas to make electricity in the US and other policies restrict access to supply. What is not as well known is that the manufacturing sector pays the price for those policy decisions. In the recent past, policy decisions costs the US chemical industry dearly. Policy induced price gyrations between 2000 and 2005 handed overseas chemical operations a huge competitive advantage: The US chemical industry went from posting the largest trade surpluses in the nation’s history in the late 1990’s to becoming a net importer. In that time, the industry lost more than \$50 billion in business to overseas operations and more than 100,000 good-paying jobs in our industry have disappeared. The National Association of Manufacturers reports that 2.9 million American manufacturing jobs disappeared in that time.

Policy makers are again in a position to influence the US manufacturing environment. The short-term outlook for natural gas consumers is grim. Until very recently, government officials had severely underestimated the combined impact of the two hurricanes (especially Rita) on the nation’s energy infrastructure. As of this writing, nearly 100 percent of the Gulf of Mexico oil production and 80 percent of natural gas output remain shut in. More than 20 natural gas processing plants on shore are closed, some are damaged, some have no power. Pipelines are not fully operational. Eight refineries remained closed and eight are restarting. Power remains out in the Beaumont-Port Arthur-Lake Charles area.

ACC is doubtful that the Gulf’s energy infrastructure will be fully restored before the winter heating season starts. There is no surplus natural gas production capacity available to fill the void. There is not a “Strategic Natural Gas Reserve” available to make up for supply disruptions. Natural Gas will be in short supply this winter.

Natural Gas consumers will be competing for a scarce commodity. Policy makers can cushion the blow, if swift action is taken to stretch the supply and curb consumption. We recommend the following:

1. Send a powerful message to the markets by eliminating barriers to energy production in the Outer Continental Shelf (OCS) and share revenues on new production with states.
2. Expedite leasing in the area of the eastern Gulf of Mexico known as Lease Sale 181, at least for areas greater than 100 miles from the coast of Florida.
3. Declare a national emergency before winter, shock national awareness of supply problem and mobilize federal resources
4. Give priority to dispatching highly efficient CHP and Natural Gas Combined Cycle generating capacity to the grid.
5. Restore service to damaged natural gas processing plants on the Louisiana coast.

More detailed policy recommendations are contained in Section V.

If the right responses are put in place right away, tensions in the market can be eased and gas consumers can weather the current crisis. If prices remain at or near

current levels, manufacturers will be driven out of the market and many may not return.

SECTION II—THE US CHEMICAL INDUSTRY AT A GLANCE

The chemical industry fuels the American economy.

- The chemical industry is the leading American export industry accounting for 10% of all U.S. exports.
- We generate more than half a trillion dollars to the U.S. economy each year.
- The chemical industry has created a \$154 billion trade surplus over the past ten years.
- The industry directly employs more than 885,000 people, a figure larger than the combined populations of Boston and Buffalo.
- Chemistry dependent industries account for nearly 37 million jobs or 26.6% of the entire workforce.

The chemical industry improves our health and keeps our families safe.

- New drugs and medicines made possible by chemistry have increased life expectancy in the US by more than 30-years over the past century.
- A plastic bicycle helmet, one of the chemistry industry's most popular innovations, can reduce a child's risk of head injury by 85% according to Safe Kids USA.
- 98% of all U.S. public drinking water is safe to use because of chemistry.
- According to the National Highway Traffic Safety Administration, more than 14,000 lives have been saved thanks to airbags, a product of chemistry.

Chemistry is essential to U.S. business and industry.

- The chemical industry supplies the raw materials used by virtually every industry from aircraft construction to zoo management.
- More than 80% of the materials used to formulate all medicine come from the chemistry industry.
- The chemical industry is America's second largest rail shipper.
- The major innovations over the past century that have increased productivity from the phone, computer and Blackberry exist because of chemistry.

Chemistry is at the heart of innovation, helping to make our lives better, healthier and safer.

- The chemical industry invests more than \$22 billion a year in research and development—the most of any single industry outside of national defense.
- One out of every eight new patents is awarded to the chemistry industry.
- The American chemical industry employs the highest percentage of knowledge workers of any industry and employs more than 80,000 chemists, scientists and engineers.

SECTION III—HURRICANE KATRINA & RITA: RIPPLE EFFECTS FROM SHORTAGES

Potential Product Shortages Following Hurricanes Katrina and Rita

Some of the most commonly used consumer and industrial products may be in short supply in coming months due to North American chemical capacity shut-ins following the hurricanes in the Gulf of Mexico. Following are some examples of products for which there may be shortages.

- Tires, radiator and other hoses, fan belts, and bumpers; seals and gaskets; automotive belts and hoses, asphalt binder and roofing. (62 percent of North American butadiene capacity, used to make these products, is down)
- Oil, milk, detergent bottles; gasoline tanks; corrugated and drainage pipe. (55 percent of North American high density polyethylene capacity, used to make these products, is down.)
- Syringes, medical fabrics, automotive battery cases, dairy containers, diaper coverstock, and food packaging. (55 percent of North American polypropylene capacity used to make these products, is down).
- Diaper liners, shrink film and bread bags. (46 percent of North American low density polyethylene capacity, used to make these products, is down).
- Plastic resins, films and bottles; automobile antifreeze blends, including those for military vehicles, and for de-icing runways and aircraft; fire extinguishers and sprinkler systems. (39 percent of North American ethylene glycol capacity, used to make these products, is down)

Source: CMAI, petrochemicals consultant (www.cmaiglobal.com)

SECTION IV—BACKGROUND: THE IMPORTANCE OF AFFORDABLE ENERGY TO THE U.S. CHEMICAL INDUSTRY, HOW THE NATURAL GAS CRISIS DEVELOPED, AND WHAT THE ENERGY POLICY ACT OF 2005 ACCOMPLISHES

America's chemical industry is the nation's largest energy consumer. We use energy—especially natural gas—to heat and power our facilities, and as a raw material to make thousands of products consumers use every day. Chemical companies use more natural gas than California and more electricity than the state of New York. The chemical industry consumes enough natural gas to heat 30 million homes a year—almost half of the nation's home heating needs.

Natural gas can do amazing things. It can be used to heat and cool a home, to make electricity and as a key ingredient in products—lots and lots of products. These include medicines, medical equipment, packaged goods, military applications and others. Numerous “downstream” industries rely on natural gas-produced chemistry products, including agriculture, steel, aluminum, and cement.

Advances in Energy Efficiency

Fortunately, the chemical industry has made great strides in energy efficiency. For example, we can make a pound of product with half as much energy as it took a generation ago. But even with these efficiency improvements, an immense amount of energy is still required for chemical manufacturing. Chemical makers need more energy than the entire country of Mexico, and roughly the same amount as Brazil.

Many chemistry products that are made with natural gas help make other parts of the economy more energy efficient. Energy-saving products such as insulation, lightweight vehicle parts, advanced window systems and reflective coatings are all made from chemicals made from natural gas.

Supply/Demand Imbalance Leads to Skyrocketing Natural Gas Costs

The problem is, America is using more and more natural gas and producing less and less. As a result, the price of natural gas has increased by 700 percent since the late 1990's. If the same thing happened to gasoline, prices at the pump would be more than \$7.00 a gallon.

For industries like ours, those high prices hurt. In 1999, the chemical industry paid about \$25 billion for all of its energy inputs—fuel, power and feedstocks such as natural gas. Last year, the tab topped \$52 billion. Beginning in 2000, the industry has shelled out \$80 billion more for energy than it was paying in the 1990's.

The effect of those additional costs—think of it as a huge energy tax—has been severe. We've seen a 20 percent decline in natural gas consumption in the chemical industry. Call it demand destruction. Dozens of plants around the country have closed their doors and gone away—and are never coming back.

U.S. chemical industry domestic operations lost \$50 billion in business to overseas operations since 2000. We went from posting trade surpluses in excess of \$20 billion—the most successful export industry in the history of this nation—to becoming a net importer of chemicals. More than 100,000 American jobs have been displaced, in large part due to the hidden “energy tax.”

Not long ago, *Business Week* noted that of the 120 large-scale chemical plants under construction around the globe, only one is being built in the United States. The plants under construction are located in places where natural gas supply is abundant, reliable and affordable.

Unlike oil, natural gas is a regional commodity, not a global one. And US natural gas prices are the highest in the world—at the moment, US gas prices are 20 times higher than in Saudi Arabia.

Impact of Government Policies on Natural Gas Supply, Price

In the 1990's, new government regulations began driving electric utilities to reduce air emissions by burning natural gas to make power. An enormous amount of gas-fired power generation capacity came on line in the past decade. Utility consumption of natural gas grew by 31 percent in a few short years.

The nation's appetite for electricity is rapidly growing and is expected to increase by as much as 50 percent in the next 20 years. Natural gas supply cannot meet incremental demand. The government says that new supplies of domestically produced natural gas will only meet 30 percent of future demand growth. Quite simply, there's not enough gas to go around. To meet this challenge, the U.S. must meet its growing energy needs by investing in new technologies that produce power from renewables (for example wind and solar), non-polluting nuclear, agricultural sources of energy (sometimes called biomass) and low-polluting coal power.

Energy Policy Act of 2005

In August of 2005, the president signed into law a sweeping new energy bill called the Energy Policy Act of 2005. On balance, it is a very good policy and, over the long haul, it can change the way the nation makes and uses power. The legislation breaks new ground in the area of energy efficiency: We will see new standards of performance for appliances, homes and buildings as a result of the legislation's efficiency measures.

It also makes a serious effort to diversify the energy supply—to move away from the natural gas-is-the-answer-to-everything mentality that dominates current policy. The legislation will launch a new generation of technologies used to make power, including coal gasification, renewable energy and nuclear power.

The nation's energy infrastructure will get a much-needed facelift. The legislation will lead to new investment in gas pipelines and storage facilities and will result in new LNG terminals.

SECTION V—UNFINISHED BUSINESS. NEW POLICIES NEEDED IN THE
POST-HURRICANE PERIOD

Expand natural gas supplies and reduce concentration of nation's energy infrastructure in three ways:

- eliminate barriers to energy production in OCS and share revenues on new production with states. MMS estimates that OCS contains 406 TCF of recoverable natural gas. More than 85 percent of OCS is off-limits to use as a result of federal policies set in place 25 years ago when NG was cheap and plentiful;
- increase gas production on shore by removing red tape and seasonal restrictions;
- accelerate and increase tax credits and guarantees for investing in gasification technologies for the production of fuels and feedstocks;
- expedite leasing in the area of the eastern Gulf of Mexico known as Lease Sale 181, at least for areas greater than 100 miles from the coast of Florida.
- Site new LNG terminals, especially on Atlantic and Pacific coasts. Set a goal of four new terminals (not all on Gulf Coast) by 2010.

Restore lost gas and oil production. The government should use its authority to speed emergency reconstruction of damaged pipelines (Emergency Reconstruction of Interstate Pipeline ruling of 2003) and implement other red-tape cutting measures to restore damaged drilling rigs and production platforms. The government should also employ the Coast Guard, Army Corps of Engineer and other federal assets as needed to speed repairs of damaged production sites and infrastructure. *Priority should be given to restoring service to damaged natural gas processing plants on the Louisiana coast.* In addition to removing sulfur and other impurities, these plants also remove natural gas liquids, such as ethane and propane, primary chemical feedstocks. Three of those damaged plants process the equivalent of three LNG terminals. Help is needed to transport and house repair crews, pump out the plants, restore power, repair damages and resume operations.

Encourage Efficient Consumption. To avert shortages this winter and in future years, actions are needed now to ease the strain on natural gas markets. In the short term emphasis should be placed on reducing gas demand through *conservation and efficiency measures*. These immediate actions are needed:

- Declare a national emergency before winter, shock national awareness of supply problem and mobilize federal resources, including . . .
- Fund in 05 the national public education campaign authorized in Title I of EPACT05. Doing so will harness the American people's strong desire to "do something" to help recovery efforts. Little actions can achieve big results. If all Americans turned down their thermostats by 2 degree this winter, it would free up 3 BCF of gas per day.
- Move up to Oct. 1, 2005 effective date for tax credits authorized in EPACT05 for homeowners, builders and commercial building owners for investment in energy efficiency.
- Require up-to-date building codes in states using federal funds to recover from the hurricanes and encourage all states to use most current codes.
- Accelerate completion of tardy appliance codes and development of new codes authorized in the energy bill.
- Expand and spotlight The Partnership for Home Energy Efficiency (DOE, HUD, EPA).
- Expand funding for weatherization programs and dispatch crews to go into homes, audit energy consumption, and install weatherization materials and equipment as needed.

Encourage Efficient Generation: In many parts of the country inefficient natural gas power generators supply baseload power and highly efficient generation is reserved for peak demand. To make power generation more efficient, the following actions are needed:

- Build new and efficient transmission capacity in order to remove system constraints.
- Retire or put in reserve inefficient single-cycle generation capacity.
- Give priority to dispatching CHP and Natural Gas Combined Cycle capacity . . . restore CHP tax incentives.

Diversify Fuel Supplies. The large build up of natural gas fired power generation in recent years is putting an unsustainable strain on natural gas supplies. Gas consumption for power generation increased by 25 percent this summer, driving prices up from \$6.00 to nearly \$10.00 per million BTU. Utilities should be encouraged to make power from other fuel sources, by:

- Accelerating coal and biomass gasification. The US has the world's largest reserves of coal and (potentially) biomass. Gasification technology is ready for deployment and the government should help speed up commercial use by utilities.
- Site new nuclear power. Nuclear answers environmental and energy questions. The government should consider building new reactors on federal lands.

Distribute energy supply and power generation. The Hurricanes proved that the entire nation can be affected by regional disruptions and the energy infrastructure is highly reliant on the integrity of the electrical grid. To reduce economic and national security vulnerabilities government should:

- Create incentives for refineries, pipelines and large energy using industrial, institutional and commercial facilities to produce heat and power on site
- Encourage all states to implement "efficient portfolio standards" defined to include renewables, CHP, gasification and other low-polluting means.

Increase Natural Gas storage capacity to make the natural gas system more resilient. The Strategic Petroleum Reserve did its job and restored calm to jittery oil markets. Natural gas does not have adequate reserve capacity and that contributes to price volatility. Additional storage capacity would help the market adjust to temporary supply shortages.

[Note: The following attachments have been retained in committee files: Hurricane Katrina & Rita: Ripple Effects From Shortages (Source: CMAI and ACC); Notable Quotes; and the Dow Chemical Company and the U.S. Natural Gas Crisis: Update on Actions Taken to Remain Globally Competitive.]

The CHAIRMAN. Christopher Helms, president of the Pipeline Group, testifying on behalf of the Interstate Natural Gas Association of Merrillville. Where are you from, Merrillville?

STATEMENT OF CHRISTOPHER A. HELMS, PRESIDENT, PIPELINE GROUP, NiSOURCE INC., ON BEHALF OF THE INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA, MERRILLVILLE, IN

Mr. HELMS. Merrillville, Indiana, Senator, the Heartland of the United States.

I want to thank you, Mr. Chairman and the members of the committee, for giving us an opportunity to visit with you this morning. The company that I am privileged to be with has significant Gulf of Mexico pipelines, but more importantly, we transport that gas to middle America, to the Mid-Atlantic States, to the Northeast. We are the third largest underground storage operator in the United States. We have over 16,000 miles of pipelines.

Like my colleagues to the right, I had the opportunity to go to Louisiana last Friday and meet with the employees, many of whom have lost their homes, whose parents have lost their homes, whose brothers and sisters have lost their homes, and they showed up to work the next morning. And they are working to get this vital energy infrastructure back into place. I really want to commend them

for doing that. There are a number of challenges that we have seen in getting the infrastructure back into place.

We appreciate the opportunity to be here with you this morning.

I am also representing the Interstate Natural Gas Association of America, which is the association that represents, if you will, the middle link of the energy chain. In our association are those pipeline and storage operators that are federally regulated. Our opportunity is to move the gas from the point where it is produced, through the processors, and then downstream ultimately to the consumers.

We have filed our testimony and rather than go ahead and refer to it, I would like to make a couple points, if I can.

The first point is I believe we are going to face some very serious challenges this winter. Now, of course, the thing that could cooperate the most for us is that we have a mild winter, and a mild winter will really solve some of the near-term issues we have. If we have a normal to colder winter, however, I think we have to be prepared for a number of significant operational challenges, which I am more than happy to discuss this morning.

One of the other things I would like to make in my presentation this morning is the point that the natural gas industry is not a vertically integrated industry. We provide but one link in the energy chain getting to the ultimate consumer. Upstream of us are the gas processors and the producers, and the reality is all three of us are competing for limited resources of crews, supply boats, helicopters, generating capability to get our infrastructure on line.

But the reality is we cannot put all of the focus on fixing but one chain of the energy supply. If we do not have producers bringing production back on line, if we do not do something to process the gas when the gas gets to the beach, if we do not do something to put the pipelines back in shape, we are not going to be getting molecules to our customers and our consumers. And we have got to be working together.

The issue today is we cannot afford to lose natural gas supply, and our industry is doing everything we can to bring it back in. We are in recovery mode, and that is really where we are focusing right now.

The supply/demand balance is very tenuous, and we have seen that. Today, as Mr. Cavanaugh pointed out, we are probably about 7 billion cubic feet short of the supply that we had pre Katrina and pre Rita. What does that mean? What that means is we are going to lose a certain amount of that production this winter when we need it. The way our system works is about 65 percent of the peak-day demand is met by storage and 35 percent is met by flowing pipeline gas. We believe that although everybody along the chain is working very diligently to get the production back on line, we may be facing this winter with a significant amount of supply from the Gulf of Mexico not flowing in the pipelines.

So what does that mean? What it means is we are going to have a greater reliance on storage. Storage is going to have to meet those daily demands and the real challenge is going to be in the late winter when storage deliverability is declining and we do not have the same amount of gas flowing.

One of the things that I think we really have to recognize is that natural gas processing is so critical to the chain. The natural gas that is produced offshore of Louisiana and Texas and Alabama and Mississippi is not of what is called pipeline quality. We cannot pipe that gas directly from a well into a person's home. It just will not burn. There are heavy liquids in the gas. There is CO₂. There is sulfur. The gas has to be processed.

And I want to at least alert this committee to the issue of this winter, if people start saying, well, those natural gas pipelines are not taking gas that is available, we really have to point to the fact that we have to get the gas processing infrastructure up and running. It is not that we do not want production on. We have no interest in keeping production off the market. We are federally regulated. Our rates are reviewed by the FERC. Our job is to get the gas from those processing plants to the ultimate consumer. So those are the things that we really have to realize, that there are physical, chemical reasons why we cannot take that gas.

As we bring the pipes back into supply, there are a couple of things we need. One, we need some Federal coordination, quite frankly, because we are so disaggregated, if you will. We need an agency like DOE to be a clearinghouse for us. We really need to start talking about where we can prioritize, repair equipment, lay barges, those sorts of things to get our industry back in shape. We think there are things, obviously, you can do.

Mid-term conservation is very important to us.

We think funding for LIHEAP is going to be a very challenging year for our fellow Americans that have low income issues going forward.

I think as Andrew had mentioned to my right, I think access is a real issue. We cannot ignore it. It is the elephant in the room. We really do need to have public policies that allow us to have access to reserves we have in this country. We are not running out of natural gas. We are running out of the capability to find and to develop the reserves that are in areas that can be environmentally and economically developed.

Mr. Chairman, thank you, and I look forward to answering questions from the committee.

[The prepared statement of Mr. Helms follows:]

PREPARED STATEMENT OF CHRISTOPHER A. HELMS, PRESIDENT, PIPELINE GROUP, NiSOURCE, INC., ON BEHALF OF THE INTERSTATE NATURAL GAS ASSOCIATION OF AMERICA

Mr. Chairman and Members of the Committee: Thank you for the opportunity to testify on this important topic. My name is Chris Helms, and I am President of the NiSource Inc. Pipeline Group. NiSource Inc. is a fully integrated energy company engaged in natural gas transmission, storage and distribution, as well as electric generation, transmission and distribution. Our operating companies deliver energy to 3.7 million customers located within the high demand energy corridor that runs from the Gulf Coast through the Midwest to New England. One of our pipelines, the Columbia Gulf Transmission Pipeline, operates in the central Gulf of Mexico and brings natural gas on-shore in central Louisiana.

I am here today on behalf of the Interstate Natural Gas Association of America (INGAA). INGAA is a trade organization that represents virtually all of the interstate natural gas transmission pipeline companies operating in the U.S., as well as comparable companies in Canada and Mexico. Its members transport over 95 percent of the nation's natural gas through a network of 180,000 miles of pipelines. Many of these pipeline systems operate in the Gulf region—either off-shore or along the coastal area that includes Texas, Louisiana, Mississippi and Alabama.

Before discussing the recent hurricanes and their effects on our industry, I first want to make a few points about the structure of the natural gas industry. The natural gas industry has never been as vertically integrated as the oil and electric power industries. Put differently, it is the exception and not the rule for a single company to be significantly involved in all segments of the industry. These segments can generally be broken down into the following categories: production, gathering and processing (also known as midstream services), interstate pipelines, marketing, and local distribution. Some of these segments are subject to economic (i.e., rate) regulation at the federal or state level, while others are not subject to any rate regulation.

INGAA represents the interstate pipeline segment, which is regulated economically by the Federal Energy Regulatory Commission (FERC). As part of the natural gas industry restructuring that occurred during the 1980s and early 1990s, the interstate pipeline industry gave up its merchant role as the provider of bundled wholesale natural gas services. Under the current industry structure, interstate pipelines transport and store natural gas, but do not produce, purchase or sell the commodity itself. We are analogous to a trucking company that provides both transportation and warehousing services for goods, but does not take title to the goods themselves. The maximum rate an interstate pipeline may charge for transportation and storage is set on a pipeline-by-pipeline basis by the FERC, based upon the costs incurred by that pipeline to provide those services.

Despite the disaggregated structure of the natural gas industry, significant interdependencies remain. This is especially true for off-shore production in the Gulf. Generally speaking, the chain of delivery is as follows: Natural gas is first produced at off-shore platform or wellhead facilities; it is then gathered and transported through smaller diameter gathering pipelines for redelivery to FERC-regulated transmission pipelines for transportation to onshore processing plants. There, the natural gas is processed to remove hydrocarbon liquids, such as propane and ethane. Those liquids must be transported, via dedicated pipeline, barge or truck, to markets for those products, such as refineries and petrochemical facilities. Once the liquids are removed, the natural gas is fit for consumption and is delivered into the interstate pipeline network where it is transported to end-use customers. All of these systems must work together in order for natural gas to flow onshore, and from there to the millions of customers downstream. If any link in this delivery chain is disrupted, the remaining links in the chain will be affected in some way.

I point this out to emphasize that Hurricanes Katrina and Rita have highlighted these interdependencies. Links in the delivery chain have sustained major damage. In cases where multiple links have been damaged, we cannot repair just a single link and expect natural gas supplies to return to pre-hurricane levels. All of the links must be working in order to achieve that result.

Mr. Chairman, I think it is safe to say that two major hurricanes striking back-to-back at the heart of our nation's energy system have caused an unprecedented disruption in our Gulf-based natural gas infrastructure. As many of you know, the federal waters in the Gulf of Mexico account for about 10 billion cubic feet (bcf) per day of natural gas production, which is about 20 percent of total U.S. demand. As of early this week, about 72 percent of this daily production, about 7.5 bcf per day, remained "shut-in" due to the storms. To place this number in some perspective, the United States typically consumes on average 61 bcf per day nationwide. Given the tight supply/demand situation we were already facing before the hurricanes, this loss of supply—even temporarily—is cause for concern as we approach the winter heating season.

The media, and indeed most Americans, have focused on how the twin hurricanes have affected the price and supply of gasoline. Gulf Coast oil production and refineries are a critical part of the nation's infrastructure for obtaining supplies of gasoline, jet fuel and fuel oil. Nonetheless, the United States imports almost 60 percent of our petroleum supplies from overseas. This means that a short-term increase in imports can mitigate some portion of the impact of the hurricanes on petroleum supplies. However, when it comes to natural gas, the United States still produces 85 percent of the total supplies needed to meet domestic demand, while most of the remaining supply needed to meet demand comes from Canada. Our ability to import natural gas from outside North America is far more limited than with petroleum, given the limited number (5) of operational liquefied natural gas (LNG) import terminals in the U.S. Therefore, even as the country continues to be focused on gasoline prices, we believe the hurricanes will have a greater and more protracted impact on natural gas prices and supplies.

I also want to challenge the notion that Hurricane Rita produced far less damage to energy infrastructure than did Hurricane Katrina. While this might be true with respect to the oil refinery complex in the Gulf region, it is not the case with natural

gas. In fact, for operations in the Western Gulf including my company's pipeline, the Columbia Gulf Transmission Pipeline, Rita had more impact than Katrina. For example, our offshore system was able to redirect some natural gas produced in the central Gulf that was not able to reach the shore due to damage from Katrina. This worked well for a few weeks, but the impacts of Rita only compounded the difficulties associated with bringing more gas production back on line. The "one-two punch" nature of these storms means that repairs will take longer than normal, because the limited manpower and equipment resources for assessing damage and making repairs are being stretched far beyond normal capacity. Damage sustained during Rita that, for example, normally might take a week or two to repair is taking much longer, due to the limited availability of crews, boats and equipment that were already working on Katrina-related damage.

I want to assure the Committee that we are doing all we can. The dedication of our employees, in the face of losing their homes and possessions and having their families uprooted, has been phenomenal. Across the industry, people are showing up to work long hours even as they have no place to go home to. Finding temporary housing within the region so our employees can continue to repair critical energy facilities is crucial to speeding the pace at which natural gas supplies in the Gulf can be brought back online.

Let me now turn to our outlook for the winter heating season. While assessments are continuing, there can be no doubt that, compared to last winter, there will be less natural gas delivered from the Gulf of Mexico region this winter. The damage is too widespread, and the amount of repair work too great, for everything to be made right within a month or two. The fundamentals of supply and demand in the North American natural gas market already were tight before hurricanes Katrina and Rita. Consequently, any loss of supply—even a relatively small one—can have a disproportionate impact on natural gas prices over the winter. All of this puts an extra emphasis on natural gas storage levels.

While it is largely invisible to the public, the United States has a significant amount of natural gas storage scattered throughout the country. These storage facilities, typically located in depleted oil and gas fields, are usually filled during the warmer months of the year when there is excess natural gas supply and pipeline capacity to move it. Storage fills are generally completed by November 1, which is the beginning of the winter heating season. During the coldest winter days which typically are the days of peak natural gas demand, storage withdrawals can meet more than 50 percent of the daily natural gas load.

Prior to the hurricanes, storage fills were proceeding at total volumes above the five year average. The hurricanes have slowed storage fills somewhat, but volumes still remain ahead of the five-year average.

Still, storage is a supplement to—not a replacement for—natural gas flowing through the interstate pipeline network. Many of the pipelines serving the Midwest, Northeast and Southeast draw their primary supplies from the Gulf region. If pipelines are not flowing their full volumes of natural gas, and the winter is normal to colder-than-normal, greater volumes of natural gas are likely to be withdrawn from storage earlier in the winter season than is the norm. Should this occur, storage would be depleted more quickly and there could be an even greater dependence on flowing pipeline gas to make up the difference. This could create significant operational challenges for pipelines in late winter, particularly if cold weather, limited supply availability, and low storage drive customers to attempt to take more natural gas off a given pipeline than is available.

I should also mention the importance of returning damaged natural gas processing facilities to service. As mentioned previously, natural gas processing plants remove the heavier hydrocarbons entrained within produced natural gas. These "natural gas liquids" include propane, ethane and butane. Once removed, there is a separate market for these liquids, principally in the petrochemical industry. Just as with oil refineries in the Gulf region, however, a number of natural gas processing plants were damaged by the hurricanes. Several of these facilities may be out of operation during most, if not all, of the winter.

This presents another operational challenge for pipelines. A certain amount of unprocessed natural gas can be accepted into the natural gas pipeline network. If the quantity of heavier hydrocarbons in the gas stream becomes too high, these substances can "drop out" of the natural gas stream as liquids and collect in pipelines and end-use equipment. This is a particular concern during the winter heating season when the lower ambient temperatures cause the temperature of the flowing gas to drop, increasing the amount of heavy hydrocarbons that will convert to liquids. This phenomenon can cause safety and operational problems as slugs of liquids work their way through sensitive equipment. Therefore, as off-shore production facilities come back on line, it is also important to bring corresponding processing ca-

capacity back on line as well; otherwise, pipelines may be compelled to limit the volumes of unprocessed natural gas that can be accepted during the winter heating season in order to preserve the operational integrity of the transmission and distribution pipelines and in order to protect end-users.

How high will natural gas prices go this winter? While a number of factors will affect the answer to this question, the most important factor is completely outside of our control. It is the weather. The single most significant factor in determining natural gas demand, and therefore prices, will be the weather. Peak winter demand is driven by space heating needs. If it is a mild winter, there will be less demand for natural gas and prices will almost certainly moderate, even with the effect of the hurricanes. Conversely, if the winter is normal or colder-than-normal, then the supply disruptions caused by the hurricanes will be reflected in higher natural gas prices.

Another factor affecting the ultimate price level will be the rate at which demand is reduced in response to higher prices. Price allocates supply in a demand-constrained market. At what price will a consumer choose to conserve and reduce use of natural gas? The industrial sector is the most price sensitive consumer of natural gas; and at a certain price level, it can be anticipated that industrial gas consumers will choose either to curtail production or to switch to an alternative fuel rather than purchase natural gas. The market clearing price for natural gas will be driven by how much a customer is willing to pay for the last molecule of natural gas available. My colleague from Dow Chemical, who is already facing some of these challenges, can explain this better than any of the other witnesses at the table today.

For most residential and commercial consumers the price paid for natural gas this winter will depend on the purchasing strategy employed by the local natural gas distribution company (LDC) that serves their community. For example, to what degree has the LDC hedged the price of its natural gas purchases using either long-term purchase contracts or financial instruments? How much natural gas does the LDC have in storage, and at what price was that gas purchased before it was placed into storage? The price paid by the average consumer will be a blended price, taking into account these factors, and not just the spot price for natural gas on a given day.

The ripple effects of higher natural gas prices will be felt across the economy. All of us expect to pay more for natural gas this winter to heat homes and businesses. Electricity prices also will be affected, particularly in regions where gas-fired power plants make up a significant part of the generating fleet. And, as I mentioned, higher natural gas prices will affect the cost of manufactured products.

What can be done? The short-term imperative is repairing the infrastructure as quickly as possible. That means expediting permitting and approvals for repair work. It also means the various levels of government should consider the value of granting individual companies some forbearance from legal restrictions that might frustrate their ability to coordinate assessment and repair activities. The twin hurricanes have resulted in extraordinary damage, and extraordinary measures are needed to get systems repaired on a timely basis.

Also in the short-term, both the energy industry and the government must educate consumers in advance so they are prepared for higher bills and have the ability to implement strategies for conserving energy. This is important, because unlike the gasoline price that is posted at the local gas station, the consumer sees the price of natural gas after the fact when he or she receives a bill for the previous month's consumption. Many of you are already familiar with some of these measures, including weatherization of homes, regular inspections of furnaces and changing of filters, installing programmable thermostats and setting them a couple of degrees cooler. The funding of the Low Income Heating Energy Assistance (LIHEAP) program is also critical in helping needy families cope with rising heating costs.

In the long-term, Mr. Chairman, we agree that more needs to be done to diversify our supplies of natural gas. Katrina and Rita have clearly demonstrated the high degree of our reliance as a nation on the Gulf region to supply our energy needs. Other regions of the country can and should be a part of our overall energy resource development. Yes, many groups have complained about the environmental risks associated with expanding offshore energy to include waters outside the western Gulf of Mexico. After three significant hurricanes in two years, it is time to concede that apprehensions about the environmental consequences of offshore energy development are greatly overstated. The fact that we have not had significant environmental incidents after Ivan, Katrina and Rita must stand for something! Our national energy policy should not be premised on hypothetical problems or on assumptions based on incidents from 40 years ago.

In addition, the United States will need to build new liquefied natural gas import terminals to keep pace with our demand for this fuel. Most of the new terminals

that have been approved by the FERC in recent years have been located in the Gulf of Mexico. There are good reasons why the Gulf is attractive, such as access to an extensive pipeline network, but it is also true that the Gulf has been the “path of least resistance” in terms of NIMBY-type opposition. Perhaps the hurricanes, and the effects this winter on natural gas prices and the larger economy, will finally convince other regions of the country of the importance of having a geographically diverse mix of these facilities.

Finally, it is worth examining the factors that have precluded electric generators from installing dual-fuel capability when building a gas-fired power plant. Over the last decade, dual-fueled facilities—facilities that can operate on both natural gas and fuel oil—have been discouraged by emissions limits and by the difficulty in siting oil storage facilities on site. Also, the rules in some electric power markets provide such generators no assurances that the additional capital cost of such facilities can be recovered in the price received for electricity. These factors have compelled developers to build power plants totally dependent on natural gas. Should natural gas supplies remain tight this winter, these facilities will face the choice of either paying huge fuel charges, or not running at all.

Before I conclude, I want to suggest some responses that should not be undertaken. During times of crisis, it is easy to overreact in ways that are ultimately counterproductive. The first suggestion I would like to leave you with is this: please do not try to regulate commodity prices. This country actually did regulate natural gas prices for many years, resulting in artificial supply shortages and a misallocation of resources. Similarly, the government should not attempt to pick winners and losers in allocating scarce supplies among end-users. Some debate has surrounded the notion of limiting the use of natural gas for generation. Mr. Chairman, you and Senator Bingaman were present when Congress debated the deregulation of wellhead natural gas prices and the Fuel Use Act, so you remember the problems that existed at the time. While it can be painful in the short run, the market really does the best job of efficiently allocating scarce resources and sending the right price signals that will solve supply problems.

Mr. Chairman and Member of the Committee, I thank you once again for the opportunity to testify, and I will be happy to answer your questions.

The CHAIRMAN. Thank you very much.

Mr. Hébert, I know that you have been chairman of the FERC in your earlier life. I had an opportunity for the first time to talk to you about some of these problems on this visit. I very much appreciate your helping us today. I know you wear an industry hat, but frankly, we need good ideas. We need to understand our problems, and from my standpoint, I am appreciative of your thoughtfulness. Thank you for coming today. We will probably be talking to you more in the future. Thank you.

STATEMENT OF CURT HÉBERT, JR., EXECUTIVE VICE PRESIDENT, EXTERNAL AFFAIRS, ENTERGY, NEW ORLEANS, LA

Mr. HÉBERT. Thank you, Mr. Chairman. I am always glad to be here and have always been happy to be at the committee’s disposal.

I also want to thank this committee and your leadership as well for the vision with the Energy Policy Act of 2005. I hate to think of where we believe we would be in the future but for that step forward, and it is a step forward.

But one of my colleagues put it best in the very beginning: “once in a century.” I think that is what this has to be about, and I am going to wear a customer hat, if I can, today for a little while. I am glad to answer any questions about natural gas and where we think that may be going, why it is where it is, what levers we can pull to aid and assist, but for 5 minutes I would like to be here for Entergy Corporation, our CEO, Wayne Leonard, and our customers.

We have had a once-in-a-century event. That event was actually three events almost. It was hurricane Katrina. It was the levee that broke, and it was hurricane Rita.

As you know, Entergy Corporation has several different operating companies. We have Entergy-New Orleans, Entergy-Louisiana, Entergy-Mississippi, Entergy-Arkansas. We have Texas. We also operate in New York, Vermont, Massachusetts, and Nebraska. So we are spread out. We have 14,000 employees. We had 1,400 basically displaced through the storm as we tried to put it back together in the gulf south region.

What Katrina did was it basically took the center to the east side of our service territories and it tore them apart, leaving nothing in New Orleans, no revenues, no customers, very little infrastructure, certainly no lights, and much less even in other areas right outside of that in Mississippi and Louisiana.

Rita came and it took the west side of those service territories, hitting the areas in Beaumont and Lake Charles, knocking them out as well.

I do not have to tell you—it has already been covered—how many refineries, how many platforms that we provide energy for that have to be a priority.

But I do want to tell you this. We, like everyone else here, put our folks on the ground. Our folks were committed. We made an early decision at Entergy to tell all 14,000 employees you have a job. You are going to be paid. And as important, if you have been displaced, if you lost your home, you are going to have something over your head and we are going to pay for it. So do not worry about it because what is important is that we take care of the gulf south region. What is important is that we take care of America because this is an American problem once in a century.

We need help for the consumers and the customers because we lost cumulatively 1.8 million customers through those storms and disasters. We lost 1.1 million with Katrina. We lost over 700,000 with Rita, and we leave a city called New Orleans something less than a city.

I have a couple of exhibits up here. The first one, the out of service, tells you what the numbers are. I am not going to spend a lot of time on them. You can see them and I have exhibits for you.

I am not going to read through this, Mr. Chairman. There is a lot in here. I know how much you have to read, all these members. I know how much is put in front of you. If you do not read anything else this year, I hope you read this because it will tell you what has happened and it will tell you the need that is there.

If you look at the transmission piece, which I think is over here, 520 transmission lines down, 6,700 miles of transmission that had to be brought back up. The distribution I think he is putting up now. 25,000 poles. If we could think of you as our bosses, and telling this group of business people, what I need you to do in the next 3 to 4 weeks is put up 25,000 utility poles, can you do that for me, I think we would all get our heads together and, with all due respect, we would tell you we think you had lost your mind. It cannot be done. It is impossible. And then, Mr. Chairman, you would have to come back. You would say, well, now, Curt, what I need you to do is understand it is not just about 25,000 poles, but where those

poles go, there are poles already there and there is line wrapped around it and there are trees on top of it and there are flooded waters above that. And I need you to do it in 3 to 4 weeks' time. And, oh, and by the way, can you put the wires back up when you are done? And by the way, can you do it safely? And by the way, when you are done, can it be reliable so that when people flip their switch, the light comes on? And I would have to tell you, Mr. Chairman, I am not sure that can be done. But it has been done.

It is incredible to see what these people do, how they can be focused and how they can get it done when their house is under water, when their aunts and uncles have died, their parents. But they do it. We are focused on restoration and we will rebuild the gulf south, my home.

The cost of that restoration is going to be as much as \$1.6 billion. \$1.6 billion. Just in New Orleans alone, it could be as much as almost \$500 million for the restoration costs.

The CHAIRMAN. You said in New Orleans?

Mr. HÉBERT. Just in New Orleans, that operating company alone.

The bulk of our costs is transmission and distribution. We do have some generation costs. Some of those are insurable. Obviously, we would attempt to recover that. But we are not certain about those numbers yet, but it could be as much as \$1.6 billion.

Having said that, I know you have to ask yourself why do you come to the Federal Government and why does the Federal Government owe these people in New Orleans, why do they owe the people in the gulf south, and why should they come and take care of their needs.

Well, we are trying to do some of that ourselves, Mr. Chairman. At Entergy-New Orleans, that operating company right there, as you know, we had to file bankruptcy, and we had to file bankruptcy for several reasons. One, you understand that the SEC has borrowing limits from a short-term perspective. We were downgraded on our credit ratings. So accessing the capital markets was something that was very tough on us. So we filed for bankruptcy protection, and Entergy Corporation was obligated to spend \$100 million there. We have already spent \$60 million of that in debtor-in-possession financing.

We are going to do everything we can—and that is what the bankruptcy is all about—to make certain that the restoration continues and that we do have electricity there so that all these people here can do their job and so that we can do what we can to not only take that crude, but refine it and make certain there is as much in America as possible.

Senator Burns is right. Let me tell you when we hurt a farmer, we hurt America. My grandmother and grandfather were farmers. You know those farmers in the Midwest—what they do, Senator Burns—and you know this as well as anybody—is they take these barges and they fill them with grain and they fill them with corn and they ship it down the Mississippi River and they ship it to that port down in New Orleans and they put it on ships and they send it out everywhere. That is going to be tough to do right now.

Senator BURNS. They send fertilizer back up.

Mr. HÉBERT. Absolutely. It goes both ways, does it not?

My point is it is an American problem. It is not just a New Orleans problem. It is not just a Mississippi problem. It is not just a Louisiana problem.

But as a regulated utility, what we at Entergy have to do is have all these restoration costs go into the rate base, and if that is done in New Orleans without assistance from the Federal Government, their rates will double.

When we talk about these people and we look at these customers—and I tell you that there are 1.8 million customers that lost service during our storms—I know you think of that as people, but I want you to think of it as meters. I want you to think of it as maybe 4 million or 5 million people. As we look at Entergy-New Orleans and we look at rate increases, which by the way, double, they not only double on Boudreaux down in the parish, but they double on small business, they double on industry, which right now has rates they cannot afford and be competitive in the American economy, much less a world economy.

So we need your help. America needs your help. We need the direct assistance and we need the indirect assistance. But most importantly, we need it as quickly as we can get it.

There are several different options here, and then I will close out, Mr. Chairman, and answer any questions.

One, there is what is called the Airline Stabilization Act, which was used after 9/11, and that has been recrafted into a bill put forth by Senator Landrieu, who I know right now is on the floor arguing for Louisiana and the gulf south region, and Senator Vitter. It is called the Utilities Stabilization Act, but it is modeled on what was done after 9/11 for the airlines. There are moneys that would be put in there for direct costs and for indirect costs. We think that is one vehicle, and we think it is a useful vehicle. It would get us money quickly if that legislation were passed.

Another option is the Stafford Act. I know you are all familiar with the Stafford Act. But the problem with the Stafford Act is the folks that I live around and the folks that I work with, quite frankly, down in New Orleans and in parts of Mississippi and Louisiana and Texas do not get help from FEMA due to the Stafford Act because when the Stafford Act was put together, since our customers are investor-owned customers, the Stafford Act said we will give to co-ops and municipals and public power, but we will not give to investor-owned.

And I did not understand that. I had quite an education as I went through this process. What I learned from meeting with folks like yourself on the Hill and your staffs, which work so hard, is that the Stafford Act was made that way for a reason because they said investor-owned can get insurance. And that makes sense to me. All of a sudden, I said, well, that makes sense. That is fair.

But what we did not understand at that time was two things. One, you cannot get insurance, after hurricane Andrew in 1992, on transmission and distribution. So it does not apply there. And how important is our transmission and distribution? And for the folks I have shared it with, they said, well, that makes sense. We ought to be treating them the same. How do we say one customer who lives in a rural community or lives somewhere served by a co-op or a municipal or a public power system gets to keep their rates

low, but another customer does not keep their rates low because they have to absorb these costs? That is not fair. And I agree, that is not fair.

And the other side of that is this. So many of these public power systems, certainly the co-ops and the municipals, are transmission-dependent on investor-owned utilities like Entergy, like CLECO, like Southern. So it does not matter how much Federal money we give to these co-ops and municipals in some circumstances. If they rebuild their systems, it would not matter if they gold-plated them. And I am not saying they do that. They certainly do not. But if our transmission line is down because we do not get it up because our customers cannot afford it and we cannot do it quickly enough, you cannot light the first light bulb in those areas.

So it is important that we rethink that. A waiver of the Stafford Act for a necessary element of our economy, like electricity and gas, is something that I think you should entertain. And I know you are going to say, once we waive it, how do we waive it for anybody? Where do we draw the line? I think you have to draw the line on energy.

I will tell you I have friends and family that are in the medical business. Hospitals are important. They are important. Telephone companies are important. They are very important. Refineries, very important. But you do not pump through pumping stations that are electric crude. You do not light up hospitals, much less make them run, and you do not make telephones ring unless you have electricity first. If you do not get that right and if you do not keep that competitive and if you tell the folks in New Orleans that their rates are going to be doubled because they are treated differently, you are not going to rebuild that economy. You are not going to get people to go back in there.

There is a third alternative: community development block grants.

The CHAIRMAN. Can I just remind you your time has expired and would you wrap it up please?

Mr. HÉBERT. I will wrap up with this, Mr. Chairman. I apologize.

Community development block grants were used after 9/11. ConEd—there was a block of money put in, about \$250 million, of which, let me say, they have only collected, \$93 million, for customers there in that region. I do not mean to compare 9/11 and Katrina and Rita. They are certainly different events. But for a cost analysis, I want to draw this comparison. If you look at ConEd, that was less than 1 percent of their revenues. It was around 12,000 customers. I have told you how many customers we are talking about here. We would like to look at the same opportunity for our customers. We think that is a great way to do it.

Immediate waiver of Stafford or the Utility Stabilization or the community development block grants would all be a way to do it. This is a destitute city. It is empty and we are doing everything that we can to rebuild it, but we cannot rebuild it on the backs of folks who can least afford it. And we cannot rebuild it on an economy that sends its crude and its refined product everywhere throughout the United States and expect them to absorb that cost.

Once in a century, Mr. Chairman. Thank you.

[The prepared statement of Mr. Hébert follows:]

PREPARED STATEMENT OF CURT HÉBERT, JR., EXECUTIVE VICE PRESIDENT,
ENTERGY CORPORATION

Good morning. I am Curt Hébert, Jr., Executive Vice President of Entergy Corporation, and I appreciate the opportunity to appear this morning on behalf of Entergy, its CEO Wayne Leonard, and the thousands of Entergy employees who have been working tirelessly since late August to respond to the destruction wrought by hurricanes Katrina and Rita. I've never been more proud to represent Entergy than I am today. As I sit before you, thousands of dedicated Entergy employees are basically working non-stop to restore service to the more than 1.8 million of our customers whose lives have been disrupted, many permanently, by Katrina and Rita. Entergy's employees have been joined by thousands of other, equally committed personnel from our sister utilities throughout the region and the nation. We have come together on a scale unprecedented in American history—as a company and as an industry—to meet this challenge.

The purpose of my testimony is three-fold. First, I summarize the devastating effect of these catastrophic storms on our infrastructure. Second, I summarize our efforts to date in restoring service and the unique challenges being faced by the City of New Orleans. Finally, I discuss what federal financial assistance is needed so that our restoration efforts can be completed successfully.

THE EFFECTS OF THE STORMS

The two hurricanes and the flooding that resulted when the levees in southeastern Louisiana failed were more devastating than any natural disaster previously experienced in this country. The effects on the energy industry and upon the utilities in the area, whose customers are severely burdened by the loss of their jobs, homes, and property, have been unusually severe. This emotional and financial stress will have a damaging and long lasting effect upon the economy of the Gulf South region, including particularly the City of New Orleans.

These unprecedented events require an immediate federal response so that utilities such as Entergy can promptly and efficiently address the massive damage and destruction that has occurred. This assistance must take the form of federal legislation that provides immediate financial aid to the electric and gas utilities affected by Katrina and Rita in order to ensure that storm restoration and recovery occur timely and without imposing additional financial burdens on the citizens of these areas.

By any measure, Hurricane Katrina is the most costly and one of the most deadly hurricanes to strike the United States in recorded history. Hurricane Andrew, the previous benchmark, carved a much narrower path of destruction across south Florida in 1992. During Andrew, one of the hardest hit areas was Homestead, Florida. Of 26,000 homes in Homestead, 7,500 were destroyed completely. By comparison (and without minimizing the impact on the good people of Homestead), all 26,000 homes in St. Bernard Parish, Louisiana have been lost, along with the destruction of much of the housing stock of the City of New Orleans and large segments of the Mississippi Gulf Coast. In the area of southeast Louisiana that Entergy serves, nearly 170,000 homes or businesses were damaged so badly that those structures will not be able to accept electric service for an extended period of time. This will severely restrict the long-term recovery and economic prosperity of the region.

The effect of these hurricanes on the energy industry is a matter of national importance that can be measured by economic barometers. In contrast, the effect of the storms on the citizens of the Gulf Coast region will be measured by their suffering and the loss of their families, their belongings, their homes, their businesses, and their jobs. Helping the people of this region rebuild must be our main focus at this time, and I am here today to request your support of our efforts.

Katrina devastated the electric utility infrastructure across much of the Gulf Coast region. Katrina was so large that it affected about 90,000 square miles—an area equal to the size of Great Britain. At the height of the service outages due to Katrina, Entergy lost:

- 1.1 million customers in Louisiana and Mississippi (previous Entergy customer outage record was 290,000)
- Virtually all generation in southeast Louisiana was lost or had to be isolated from the grid to protect the ability of the equipment to return to service;
- Approximately 3,000 miles of transmission lines;
- 30,000 miles of distribution lines;
- 263 substations;
- 1,560 feeder lines were damaged; and
- 14,500 poles were damaged or broken.

One distinguishing characteristic of Katrina was the flooding of mammoth proportion. Although hurricanes frequently result in high winds and heavy rain, Katrina left many areas of southeast Louisiana flooded with several feet of water for several weeks when the levee system failed. Although other areas of the United States are susceptible to flooding, in the case of Katrina, the impacted area in southeast Louisiana became an extension of the gulf for nearly a month, a condition that has not occurred elsewhere in the U.S. during modern times.

On the heels of the destruction and flooding of Katrina, a strong category four storm, Hurricane Rita, a strong category three storm, inflicted significant additional damage to the Gulf Coast region, a critically important natural gas producing region. At the height of the service outages due to Rita,

- An additional 766,400 customers experienced power outages in Texas and Louisiana;
- Another 3,400 MW of generation was damaged or had to be taken out of service to protect vital equipment;
- Over 3,800 miles of transmission lines were lost;
- 344 substations were damaged; and
- 11,500 utility poles were damaged or broken.

In responding to both storms, utility restoration efforts were swift, well-planned and of a scope that is unprecedented—just as two severe hurricanes hitting roughly the same area of the Gulf Coast region within weeks of one another is unprecedented—just as the pervasive submersion of large segments of southeast Louisiana for weeks at a time is unprecedented. In response, Entergy mobilized more than 13,000 utility linemen and other workers and hundreds of millions of dollars have and will be spent to get the lights back on as safely and quickly as possible.

While responding to the storms, Entergy remained in daily contact with the Department of Energy, providing daily reports and briefings. As a result of these communications, situation reports were posted by the U.S. Department of Energy, Office of Electricity Delivery & Energy Reliability under Energy Emergencies: Hurricane on its website at: www.electricity.doe.gov/program/electric_oat.cfm?section=divisions&level2=home.

While much work remains to be done, restoration efforts have been quite successful outside of the flood zone. Many of the customers who have lost service as a result of Katrina and who are capable of receiving service have been restored, and more than 75 percent of the customers who lost service as a result of Rita have been re-energized. However, it is slow and difficult going in New Orleans and the other hardest hit areas of the Gulf Coast, such as Beaumont and Port Arthur, Texas, and Lake Charles, Louisiana.

Entergy has spent considerable resources to restore service to ten refineries that it serves in the Beaumont/Port Arthur, Lake Charles and New Orleans area. Many of these refineries suffered significant damage to their facilities and the transmission lines and substations that serve these facilities fared no better. However, as of early this week, transmission paths were established to seven of these facilities and at least one substation was energized at each of these refineries, enabling them to take clean up/restoration power. Entergy is in constant contact with each of these customers and stands ready to provide power to meet site specific start-up schedules. These refineries have an aggregate refining capacity of 2.27 million barrels of crude per day and therefore are very important nationally as well as regionally.

Rita also caused interruption at two DOE Strategic Petroleum Reserve sites that we successfully restored several days ago. Similarly, Entergy quickly restored service following Katrina to critical shipping ports, including the Port of New Orleans. In fact, the City's Command Center in the Hyatt Hotel and the Port of New Orleans were among the first facilities to receive power following that storm's landfall.

As a final example, Katrina halted activity at a fuel depot in Collins, Mississippi, which is outside of the Entergy service territory. Because of its critical importance to the energy industry in the region, Entergy provided immediate assistance to restore electricity to this facility. Attached is a summary of those events which highlight the exceptional service of the men and women on the frontlines of the restoration battle.

Entergy's emergency response and operational restoration efforts in the devastated region have been vital to the recovery effort. It has given confidence and hope to citizens throughout the region that we can rebuild. It is clear to me from seeing firsthand the commitment of the hearts, minds and souls of these men and women directly involved in the restoration, that our employees will do anything to help our customers and our neighbors. The cost of these efforts has been staggering. Entergy estimates that storm related and business continuity costs from Katrina at between \$750 million and \$1.1 billion. Estimates of restoration costs for repair or

replacement of Entergy's electric system damaged by Rita are in the range of \$400 to \$550 million.

THE UNIQUE CHALLENGES FACED BY NEW ORLEANS

Katrina not only presented the problems attendant to a hurricane; its rain and wind, combined with the failure of the levee system in southeast Louisiana, damaged as many as 170,000 homes and businesses in the area so severely that they cannot be re-energized until some combination of demolition, reconstruction, and inspection occurs—a process which may take many months. The utility subsidiary that serves New Orleans, Entergy New Orleans (“ENO”), has been especially hard hit:

- From an infrastructure perspective, ENO's electric and gas system sustained massive damage.
- From a customer perspective, due to the unprecedented flooding, many tens of thousands of homes and businesses in the City have been underwater for weeks. These structures cannot simply be repaired after being submerged for so long. As a result, the City has lost a large segment of its housing stock, and ENO has lost the vast majority of its customer base.
- From a financial perspective, current estimates of the cost to restore ENO's system for gas and electric service range from \$325 million to \$475 million—an amount that exceeds the total amount invested to provide those utility services in New Orleans on the day before Katrina came ashore.

Clearly, the confluence of events following Katrina caused an immediate and severe deterioration in ENO's financial condition in the days following Katrina. ENO's revenues, the continuity of which is vital to pay timely fuel, purchased power, and restoration costs, disappeared overnight. And because of ENO's relatively small size, it quickly hit short-term borrowing limits pursuant to SEC orders, and its debt was downgraded by rating agencies to below investment grade.

Also, ENO was unable to access capital markets to raise new debt, because simple steps, like due diligence could not be completed timely, ENO is unable to provide revenue projections assure a revenue source sufficient to demonstrate its ability to service new debt given the uncertainty surrounding the timing and size of the return of its customer base.

Faced with a severe and immediate need for cash to continue its restoration efforts, ENO filed and obtained Chapter 11 bankruptcy protection on September 23, 2005. This filing allowed Entergy Corporation, ENO's parent, to provide up to \$100 million in short-term, debtor-in-possession financing so that ENO can make currently due payments while continuing to restore service as areas of New Orleans rebuild and recover.

But this is only a temporary stop-gap measure. It will take many times this amount to reconstitute ENO in a manner that is able to provide reliable service to its customers. To understand this, consider the following comparative data:

Table 1.—ENTERGY NEW ORLEANS COMPARATIVE DATA

[All Amounts Approximate]

	Pre Katrina	Post Katrina	% Change
Electric Customers	190,000 ¹	60,000-75,000 ²	(68)%-(60)%
Annual Non-Fuel Electric Revenues	\$316M ¹	\$90-120M ²	(72)%-(62)%
Average Annual Storm Restoration Cost	\$2M ³	\$325-475M	1+16,000% +24,000%
Average Annual Storm Restoration Cost per Customer	\$11 ³	\$4,300-\$7,900 ⁴	+39,000% +72,000%

¹based on 2004 actuals

²estimated based on 115,000-130,000 customers unable to take service for extended period of time per September 30, 2005 press release [A process that could take many months or years]

³cost estimated based on last 5 years; average per customer based on 2004 customer count

⁴cost estimated based on Katrina restoration; average per customer based on post Katrina customer count

As a regulated utility that has devoted its property to public use, Entergy operates under a cost-of-service regime. As such, ENO is not entitled to unregulated profits, but it is entitled under well-established law to the opportunity to recover from its customers all of its costs, including its storm restoration costs. This traditional cost recovery approach has been used in response to past hurricanes and ice storms and has raised customer bills. But the magnitude of those cost increases was manageable. That would not be the case for the level of destruction caused by Katrina and Rita.

These storms, coming as they did one after the other, and accompanied by massive, long-term flooding, require a different approach. Even under the best of circumstances, it is difficult to see how these customers, many of whom live in some of this nation's poorest neighborhoods, could bear the loss of their belongings, homes, and jobs, and also bear the cost of the restoration of the utility system. This problem is particularly acute given the extent of the devastation to hundreds of thousands of homes and businesses throughout the Gulf Coast region. In addition to bearing that cost, the cost of restoration will also be unprecedented.

Entergy estimates that electric rates in New Orleans would have to more than double to keep ENO operating during the period 2006 to 2008. This is due to a combination of the extraordinarily high restoration costs in absolute terms (+16,000%—+24,000% higher than average for that company over the last five years) and the fact that the customer base among which restoration costs would be spread is significantly lower. On a per customer basis, the cost of Katrina would be \$4,300 to \$7,900, a level that is unaffordable given the below-national-average income of citizens in New Orleans' citizens before the storms. Clearly, the federal government must provide alternative means of funding the restoration and the cost of rebuilding one of the exceptional areas in the United States, the City of New Orleans and the Gulf Coast region.

Some may ask, "Why should the federal government take a role different from the one it has taken for years through its well-established programs for natural disaster and emergency management?" The answer, I believe, is four-fold:

1. Unprecedented levels of damage and destruction caused by Hurricanes Katrina and Rita;
2. Unprecedented flooding for an unprecedented period of time resulted from levee failures in and around the New Orleans area;
3. Unprecedented displacement of a large number of people for an indeterminate period of time. This includes a very significant portion of the population of the City of New Orleans and virtually the entire population of St. Bernard Parish.
4. The extraordinary level of poverty among large segments of the population of the region—citizens who would be required to pay the cost of restoration through regulated utility rates if federal assistance is not provided to protect them from this unaffordable burden.

In short, the potential rate effects of the enormous restoration costs and the loss of customer base will stifle any form of economic development—much less full recovery—if the federal government does not intervene. In such a scenario, the rates for power services—electricity and gas—will be so abnormally high that no industry will locate here or bring new jobs that are the engine of economic recovery and growth.

We cannot let that happen. The City of New Orleans and the Mississippi Gulf Coast have too much economic, social, and cultural importance to the nation. We urge you at the federal level to do everything that can be done to reduce the burden on customers who already have lost so much, and to restore safe and reliable utility service.

THE NEED FOR FEDERAL ASSISTANCE

We must put in place immediate, direct federal assistance for utilities serving the Gulf Coast region, particularly ENO, which, unlike municipal utilities or cooperatives, are not eligible under the Stafford Act for emergency financial assistance to pay for restoration and rebuilding costs under existing federal law. There are several ways in which the Congress can help those who were hardest hit by Katrina and Rita.

For example, enactment of the Privately Owned Utility System Restoration Act of 2005 (modeled after the post-9/11 Relief Act provided for the Airline industry) would provide financial compensation to electric and gas utilities to recover the direct costs resulting from Hurricanes Katrina and Rita for plant, equipment and restoration costs, as well as providing financial compensation through 2007 to cover the incremental losses for those companies which have significant and sustained loss of

customers. A provision providing compensation for direct and incremental costs is included in the Landrieu/Vitter "Pelican Bill" (S. 1765 & S. 1766), which was introduced in the Senate on September 22, 2005 and referred to the Senate Committee on Finance.

We would also urge the Congress to consider other federal legislative efforts to provide financial relief to help utilities such as Entergy and Entergy New Orleans rebuild the Gulf Coast region.

Another approach to providing financial assistance is through the Department of Housing and Urban Development under the Community Development Block Grant (CDBG) program. Community Development Block Grants appear to be a viable approach to providing direct federal assistance to utilities. Congress used CDBG funds to provide direct assistance to Consolidated Edison (and other utilities) following the September 11, 2001 terrorist attacks.

These grants, if funded and dispersed on a timely basis, can significantly mitigate costs that would otherwise be passed through to utility customers. Entergy strongly recommends that the CDBG program be modified to fit the extraordinary circumstances resulting from Katrina and Rita. For instance, Entergy is recommending to Congress that the CDBG program and funds be tailored to directly target electric and gas utility companies so that there is no "battle" among other service providers (phone, cable, etc.) for such grants. Funding for these other entities should be done separately so as to not impede financial assistance to electric and gas companies. Restoring electric and gas service is simply too important to the City, region and the national economy.

Additionally, Congress must streamline the CDBG fund distribution process. Entergy recommends that Congress itself must set specific statutory timetables and periods during which the CDBG funds must be distributed.

Finally, Congress must recognize the special and unique circumstances of New Orleans generally, and ENO specifically. As noted earlier, New Orleans is home to some of the poorest citizens in the country. This has always presented special challenges for ENO. That challenge has become exponentially more difficult as a result of the significant and perhaps sustained loss of ENO's customer base as a result of hurricane Katrina and Rita, and the associated flooding. Simply put, increasing electric rates to cover storm and on-going costs would place far too great a burden on those customers remaining or returning to the City, and is therefore not a viable alternative.

Thus, in order to recognize these unprecedented conditions, Entergy recommends that Congress implement a means of direct federal assistance, perhaps through CDBG funds, that can be used for those electric and gas companies that have and will continue to suffer as result of this dramatic and potentially sustained loss of customers.

To ensure that only those utility companies in such dire straights are eligible for such relief, Congress must also establish specific eligibility requirements for such federal compensation. One approach would be to limit this relief to a company that has seen its customer level return to no more than 80% of its pre-Katrina/Rita levels.

A third alternative for providing federal relief is through a waiver of the Stafford Act. The Federal government has intervened with immediate financial assistance to utilities on the north shore of Lake Pontchartrain (electric cooperatives) that were impacted by hurricane Katrina, but has not and cannot do so for the privately-owned utilities on the south shore of the lake without Congressional intervention. Who can seriously claim that customers of utilities on the north shore deserve aid and protection against crippling rate effects, but those on the south shore—many of whom have been commanded not to return to their homes for the last month due to flooding—do not? In this time of need, such disparate treatment cannot be justified.

This disparate treatment stems from the fact that privately-owned utilities are not eligible to receive financial assistance from the Federal Emergency Management Agency due to a statutory prohibition on such funding in the Robert T. Stafford Disaster Relief and Emergency Assistance Act. A waiver of this provision was included in the "Pelican Bill" (S. 1765 & S. 1766), and the need and basis for such a waiver of the Stafford Act is clear in my view. This type of waiver would provide direct assistance for infrastructure restoration of a critical national interest and for immediate and permanent relief of these customers who are beset with massive losses due to these storms. The rates, terms and conditions of service to customers are heavily regulated by state and local regulatory authorities (i.e., the Mississippi Public Service Commission, the Louisiana Public Service Commission and the Council of the City of New Orleans). One of the key features of utility regulation is that the utility and its shareholders are entitled to charge only the rates set by the gov-

ernment, in exchange for which they are given the opportunity to recover all of their costs of doing business—including their cost of capital. Without assurance that investors will obtain a return on their investments, the investors will not provide the funds necessary to finance the restoration.

Without direct federal assistance, the customers remaining on the utilities' systems will face enormous rate increases. This would cripple any hope of economic recovery for the region and discourage people from returning as utility rates in those areas would be unacceptably high. Such rates would initiate a regulatory "death spiral," from which there is no means of recovery. For the City of New Orleans, this is a potential doomsday scenario. Even if there were a foreseeable and significant customer base for ENO, something that no reasonable person could confidently predict will occur even in three to ten years, the rate increases to the remaining and returning customers would be unsustainable. Without federal intervention, these costs will cripple the City's and the region's economy for decades and render the local utility unable to restore this vital infrastructure. We strongly urge that Congress pass such a waiver immediately. President Bush committed the country to rebuild the City of New Orleans in his September 15th speech from historic Jackson Square. The ultimate economic and social recovery of the City will be difficult and made even harder if there is not a commercially viable local electric and gas utility. Yet without direct federal aid, a company such as ENO that has sustained such a significant erosion of its customer base cannot maintain safe and reliable on-going operations and provide the necessary foundation for the City's economic restoration and growth.

You have seen the pictures of the devastation, but this isn't about pictures or devastation; it is about the recovery, about the future and about hope. The City of New Orleans can only have a future if it can obtain the federal financial assistance necessary to rebuild its infrastructure. Obviously, that infrastructure includes that of the electric and gas utility that serves the City and its citizens.

We ask for your assistance so that we can continue to help one of this country's great Cities get back on its feet.

COLLINS, MS FUEL DEPOT EVENT SUMMARY

Hurricane Katrina knocked power out to millions of customers in MS and LA. The outages impacted all classes of customers especially energy sector facilities such as refineries, pipelines and fuel depots. This led to a gasoline crisis in the midst of restoration efforts. One such facility was a fuel depot located in Collins, MS in the Mississippi Power Company (MPCo) service area. A portion of that facility is served from the west by South Mississippi Electric Power Association (SMEPA), but an overwhelming majority of the facility is served by MPCo from the South. SMEPA was able to reenergize its portion a day after the storm, but this only supplied power to a few of the facilities in this large complex.

Mississippi Power Company's distribution facilities were brought up in quick time, but transmission facilities that served this facility from the South were badly damaged. MPCo, recognizing the importance of this facility, considered providing power from a different route from the east and immediately began work to provide this interim fix.

Four days after the storm on Friday, September 2nd, Entergy's Transmission group received a call from Southern Company's transmission group requesting assistance. The damage to MPCo's transmission facilities were much worse than originally thought and it became apparent that it would take too much time to rebuild their transmission facilities to serve the fuel depot in Collins. While surveying the area by helicopter the Southern Transmission group assessed a 230 kV transmission interconnection segment south of the Mississippi border in Louisiana just north of Bogalusa, LA that belonged to Entergy Louisiana. Southern believed it would be quicker to repair this damaged transmission tie and feed power into the Collins Fuel Depot by tying into the Southern/MPCo transmission system that ran from the MS/LA border through Hattiesburg, MS North to Collins.

In addition, EMI had received calls from MEMA, FEMA and DoE asking if there was anyway they could help with restoring power to the fuel depot in Collins. They identified this as a high priority in helping to resolve the fuel crisis that was mounting in the area.

Entergy had previously assessed this transmission tie and given it a low priority to repair since it was only an interconnection tie and was not used to directly serve any Entergy customers. After receiving the call Entergy recognized the importance the Collins fuel depot meant to the growing fuel crisis and immediately began di-

verting resources working on restoration in Mississippi to this very isolated transmission line located in Louisiana marshlands.

While the damage to these transmission facilities were less than those experienced by MPCo, they were still significant. The transmission line in question ran some 20 miles north of Bogalusa, LA to the MS border. The assessment identified a dozen broken arms, three spans of transmission lines downed and three transmission structures along a 4 mile stretch of marshlands. Furthermore, the location of the downed structures were in an accessible area and after discussion with surrounding landowners, Entergy soon realized that a two mile road would have to be cut through dense forest to the damaged structures. Workers also soon learned that the structures were so badly damaged it would take weeks to reconstruct the towers so engineers began looking for alternatives. The plan they came up with, airlift three transmission structures from existing transmission facilities on dry ground into the marshlands.

Work got underway on Saturday, September 3rd, first priority cutting the two mile long road through dense forest. The next challenges involved locating existing transmission structures and a helicopter capable of lifting 7,000 lbs. A sky crane was located in Oregon, but it would be a week before it was available. A call was placed to the Mississippi National Guard who gladly provided a Chinook, capable of lifting 10,000 lbs, to assist with the restoration.

After working through numerous resource and environmental challenges, this team of 120 Entergy personnel and contractors completed restoration by Saturday, September 10. An event that should have taken weeks to complete was completed in days. Through the use of ingenuity and creativity these individuals helped resolve a fuel supply crisis that was hampering restoration efforts in Mississippi.

The CHAIRMAN. Thank you very much.

Senators, normally we would just proceed to Senator Bingaman and move around, but with his permission—you have time, do you not? I am going to waive. Is there any Senator who has an absolutely urgent appointment somewhere else who would like to ask, or they cannot stay? I do not want to do that always, but it has been a very, very important hearing. Is there anybody who must ask a few questions or they will not be here? You are all very generous if you do not.

Senator TALENT. You are tempting us all.

[Laughter.]

The CHAIRMAN. But you are all being very, very understanding that I am being generous and you are not accepting it. So, Senator Bingaman, you are first.

Senator BINGAMAN. Thank you very much, Mr. Chairman. I thank all the witnesses for your excellent testimony.

One issue I wanted to get into relates to an amendment that Senator Alexander offered during the markup on the energy bill, an amendment to require efficient dispatch, as I recall it. I supported the amendment. I thought it made sense, essentially saying that we should use our most efficient power generation plants first to meet our demand and our less efficient ones should be left until they are absolutely needed.

As we are urging Americans to save and to be efficient in their use of energy and to cut down their use of natural gas, it seems to me eminently reasonable that we do the same thing with regard to the electric utility industry. I am under the impression that 23 percent of our natural gas consumption today is essentially natural gas that is consumed by the power industry to produce electricity. And requiring them to go ahead and produce that from the most efficient plants that they have available seems to me to make absolute sense. I believe, Mr. Liveris, you had this in one of your recommendations.

I wanted to ask Mr. Hébert. One of the concerns that I have had is that in the rebuilding that you folks undoubtedly have to accomplish, and we want to see you accomplish, there has been criticism of your company by the Louisiana Public Service Commission saying that there is too much use by Entergy of old and inefficient natural gas units and that there are more efficient units that could be used, but your transmission system has not been configured to take advantage of those. I would be interested in whether you think that is a valid criticism. Is this an opportunity?

I know all of the catastrophe that we have and that you are faced with, and I am sympathetic to that. But if you are going to rebuild that transmission system, is it possible for you to reconfigure that so as to use the most efficient power generation assets available in your region, even if those do not belong to Entergy, even if those belong to independent power producers? Because my understanding is that there are some very new, more efficient plants that are not able to sell into your system because you are just not configured to accept their power. Any reaction you would have to that I would be interested in.

Mr. HÉBERT. I have a huge reaction. Senator Bingaman, you and I have been working toward this end for a long time, and you know I am very vocal about my opinions and certainly I will do that here.

First, let me say that we do have a pending matter before the FERC with regard to what you are talking about, so I will be a bit careful. But also let me suggest to you several things.

We have been working with many different facets of the Federal Government: the Nuclear Regulatory Commission, the Federal Energy Regulatory Commission, and the Department of Energy. As recent as last week, we had Gil Benderhal—I believe is how you say his last name. I will apologize to him if I say that incorrectly. But he is, I think, with the Office of Electricity Delivery and Energy Reliability. We had them down, and we are working in concert with the DOE and they are helping us and providing us with some information. But they came down and actually assessed our approach of restoration and assessed our restoration in infrastructure.

So, having said that, I think that would be evidence to you that we are doing anything and everything that we can to make certain that the system that we rebuild is an operational system that functions reliably and, yes, certainly as efficiently as possible.

But since I have laid that foundation for you, I think there are several other important pieces of information that this committee needs to know about.

When you look at a generating station—and it does not matter what kind of generating station it is, but what does matter about it is something sometimes other than efficiency. Efficiency is a small factor when it comes to us looking at and deciding whether or not we use that facility. It is probably important, if you need load following, to use load following and combine that with efficiency. It is probably important if you need voltage support. In other words, you have a system here but you have got to get power over here, and if this system is not running, you lose the voltage support. So from a physics and engineering standpoint, you lose

your ability to transmit power. It is probably important to look at something other than just efficiency.

Having said that, I do not want you to think that efficiency is not on the tops of our minds. I do not have to tell you how much we worked toward that in Entergy. You know that. But you have to look at all the factors.

Having said that, when I was at FERC—I believe it was in 1997, and I have told this story 100 times, but I want you to know it because I do not think I have told you and I think you need to know it. I had a meeting with a group of merchants when I was a FERC commissioner, and I know Mississippi and Louisiana like the back of my hand because that is my home. I have spent my adult life in the energy industry. I started in natural gas, but then ended up in electricity. And I told the merchants at that time, do not site here. It is not where the constraint is. It is not where the bottleneck is. It is not where the congestion is. Do not site there. It is going to cost you a lot when you do it. The upgrades are going to be horrific. Why would you do that?

But you have got to remember in 1997, as we talked about gas prices, it was a very different day. In 1997, what they were telling me is we are going to make enough money. We are going to pay for that interconnection. Do not worry about that. So much so that they contracted with utilities to do that very thing.

I told them they were putting them in the wrong places. It is going to be expensive to fix that sometimes.

But I will close with this, and I think this is significant. Our energy needs in 2004—34 percent of the energy we purchased from non-affiliate merchants. I think that is very significant.

But we always look at efficiency, and I appreciate your question.

The CHAIRMAN. Senator Bingaman, you had a number of questions, but you do not have any time left.

Senator BINGAMAN. I know that.

[Laughter.]

The CHAIRMAN. I am going to start. When we give you a question, we are going to set a limit on how long you can take to answer it.

[Laughter.]

Mr. HÉBERT. It was a difficult question, Mr. Chairman, but it was an important question.

The CHAIRMAN. Well, it was one that seemed to stir you up for some reason.

[Laughter.]

The CHAIRMAN. In any event, on this side we are going with the next Senator. I think that is Senator Alexander. Senator Thomas, you are next on this side, Senator Akaka on that side.

Senator ALEXANDER. Thank you, Mr. Chairman. Thanks to all of you for very helpful testimony. I am going to ask several questions and if you could give me short answers, I can get more questions in because this is a learning experience for all of us.

I greatly appreciate Senator Bingaman's question about the efficient dispatch of natural gas. We have lots of old inefficient gas plants around and we have lots of new gas plants around. The principal driver for demand of natural gas is the fact that in the 1990's almost all of our new plants for electricity were natural gas.

So, Mr. Liveris, what should we do about the efficient dispatch of natural gas, and how much would that help in terms of stabilizing the price of natural gas?

Mr. LIVERIS. Thank you, Senator Alexander.

There is no question that combined heat and power, co-gen, facilities are the most efficient, technically proven, and they should be given priority to dispatch into the grid. There are also combined cycle power stations that we could actually put in front of single fire-powered stations. So what I am really saying is that there is a priority. There is a tier.

To be very brief, this could free up 644 bcf of gas.

Senator ALEXANDER. How much gas is that? Can you give us some way to imagine it? Is that a little bit or is that a whole lot?

Mr. LIVERIS. Well, it is a lot. I totally agree with the comment that this is a complex solution, and this is one part of it. So it will not solve everything. The studies we did when we brought this into the comperency, LNG, more OCS gas, when we put all that together, we can solve the problem. But some will be 2 years. Some will be 5 years. Some will be 10 years.

Senator ALEXANDER. What is the timeframe for us to deal with the issue of automobile fuel efficiency?

Mr. LIVERIS. A 0-to-2-year timeframe. It will not solve the probably immediately. Natural gas prices will stay up high for a while, but the futures markets will start to see that we have taken action to actually be more efficient and increase—

Senator ALEXANDER. But there are not very many things that are in the 0-to-2-year timeframe that make much difference. Is that not correct?

Mr. LIVERIS. There are not. Correct. But your action—your action—will signal to the futures markets. Why did it go up instantaneously? It was basically demand destruction that is going on. Fundamentally it is saying, go away at \$14, because it will not get any more supply anytime soon. If we work on OCS today and we get gas in the 2-to-5-year timeframe, the futures market will bring that price down.

Senator ALEXANDER. You said the cost of raw material, natural gas, was 50 percent of your cost of production today. What was it 5 years ago?

Mr. LIVERIS. Twenty-five percent. It has doubled.

Senator ALEXANDER. May I move to Mr. Cavaney with a different point? Senator Johnson and I introduced a bill called the Natural Gas Price Reduction Act. Senator Domenici and Senator Bingaman and others took parts of that and added many ideas of their own. In a way you could say that the energy bill that we passed 2 months ago was a natural gas price reduction act because it was conservation and then alternative energy and then new supplies, as well as other things. Now I think we need to have more aggressive conservation, more aggressive new supplies.

Let me ask you very specifically about one idea: Lease 181. Lease 181 is basically a line, I believe, that could be drawn in the Gulf of Mexico between Florida and Alabama. Is that correct?

Mr. CAVANEY. Essentially, with a few variations, yes.

Senator ALEXANDER. Does the President today have the authority to draw that line?

Mr. CAVANEY. In concert and consultation with you all, yes, he could do that.

Senator ALEXANDER. So, does he need any new legislation in order to draw that line?

Mr. CAVANEY. I would have to check and get back with you. I am not exactly sure it is precise in terms of how you interpret it. You would have to talk to the legislative counsel here, as well as at the White House.

Senator ALEXANDER. Well, would you let me know what your opinion is?

Mr. CAVANEY. I will.

Senator ALEXANDER. Because my opinion is that the administration could draw the line.

Mr. CAVANEY. It is our understanding it can be lifted, yes.

Senator ALEXANDER. If the line were drawn and if it were 100 miles away from Florida, which is further away from Florida than Cuba is, for example, how much natural gas might be found on the Alabama side of the line?

Mr. CAVANEY. We cannot be exactly that precise, but it is known and there is enough exploration that has been done that the eastern part of the gulf, the area you are talking about generally, is considered to be the most gas-rich part of the gulf. Therefore, there are some very, very rich, almost exclusively dry gas deposits of significant size, closer in, but that also indicates to the point—as I said, everything over there in that area—you are talking about 181, which is why it was so attractive when we were attempting to get it.

Senator ALEXANDER. Can you give me any rough idea of the dollar value or of the amount of gas? Mr. Liveris was trying to estimate how much natural gas efficient dispatch might save. Could you either later or now—

Mr. CAVANEY. Yes. We can get that to you. We could tell you about various elements. The closer-in gas is more significant, but out beyond 100 miles, we can break that out.

Senator ALEXANDER. Well, my sense is it is a huge amount of gas.

Mr. CAVANEY. A huge amount of gas.

Senator ALEXANDER. Is it probably the first place to go to get the largest amount of new natural gas most quickly?

Mr. CAVANEY. Yes, it is because it is also closest to some of the most attractive and needful markets.

Senator ALEXANDER. How long would it take? This is my last question, Mr. Chairman. How long would it take if the President drew the line for the gas to be drilled and be into the market and would that not have some effect on the futures market and begin to help stabilize gas if the market knew that that gas was coming?

Mr. CAVANEY. There is no question it would send a very powerful signal. I want to associate myself with the comments before. The signal that is being sent by public policymakers in America is natural gas is not something you should count on at \$14. And if we do not turn this around, you are going to have demand destruction, the likes of which we will not even be able to calculate. Once you move those people away, they will not be here.

I did want to tell you that the President does have the authority to move that through MMS. They would have to go through their lease sale. There are already some leases along those areas that could be used, but it is very, very important to reinstitute that part of the lease sale. Then you could do it and they could be up within probably 5 to 7 years.

Senator ALEXANDER. So, Mr. Chairman, as I hear him, in plain English, we do not have to pass a law for the President to draw a line on 181, which would produce a huge amount of natural gas and send a signal to the market.

The CHAIRMAN. I heard it.

Senator Smith had an observation.

But let me just say you asked them to give us the estimates of what we could count on if this occurred. We can also get that from the Federal Government. I think as an aftermath we should do that. We should have that in here.

Yes, Senator Smith.

Senator SMITH. Mr. Chairman, I wonder if I could ask my colleagues—I know I am not next—if I could ask one question to throw in the mix of this because I do have to leave now.

The CHAIRMAN. Senator Akaka, is that all right with you?

Senator AKAKA. Fine.

The CHAIRMAN. All right, Senator Smith. We are going to hold you to one question.

Senator SMITH. Thank you, Senator Akaka.

Gentlemen, we talked a lot about natural gas and the problem and how it is being used to create electricity, frankly, rather inefficiently. But that has all been driven, in part, by Government policy to meet the Clean Air Act. But the Government owns many assets that are non-polluting, non-global warming, if you will, nuclear, and specifically hydro. These are assets that run at half speed at best.

Are any of you aware of the administration taking any efforts to utilize these power assets to get us through this, at least in a brief period of time?

[No response.]

Senator SMITH. Thanks, Mr. Chairman.

The CHAIRMAN. Senator, what public assets are you talking about?

Senator SMITH. Well, Mr. Chairman, obviously we have capacity in hydroelectric that is limping because of environmental restraints on it. We could light up most of the country if these assets were utilized. I just wanted to make that point. We are in an emergency and maybe there is a brief period of time we ought to use what we already have to help the American people get through this crisis.

The CHAIRMAN. As we ask questions, you might ask Mr. Curtis what he thinks about that. That would give us an idea. We will ask you in a while.

Mr. CURTIS. At the risk of feeling like the skunk at the party here, I—

The CHAIRMAN. Wait a second.

Mr. CURTIS. I am sorry. I will wait my turn.

The CHAIRMAN. I was not going to ask you to comment now because that is not his question. Let us go on here. That is a question somebody is going to ask you.

Senator Akaka.

Senator AKAKA. Thank you very much, Mr. Chairman.

Since we are talking about natural gas, let me ask an easy question to Mr. Helms. Some industry analysts have posed the idea of a strategic natural gas reserve that could be used in times of supply emergency, as we have now, and similar to the SPR, Strategic Petroleum Reserve. What are your pros and cons of this idea?

Mr. HELMS. Senator, I think it is very important for this country to have a robust storage backbone, if you will. The challenges for our industry to develop that storage is the same thing as my colleague to the right said, that it takes a certain amount of base gas to provide the pressure to produce the gas that you put into storage, and at \$14, there are no economics in the world that will permit you to do that. It takes storage development from inception, through permitting and construction, between 2 to 3 years to be able to get there.

The industry has gone through a period of deregulation over the last 15 years where the interstate gas transmission companies used to be the supplier of the natural gas to the market. Today that is not the case. So the storage is held by others, local distribution companies, and users like Dow, and also trading and marketing companies.

So I think the issue really gets to where do you want to have the storage, who is going to go ahead and buy the gas to put it in storage, and then in those periods of time that you need to allocate or withdraw from storage, what is the mechanism or the processes and procedures to do that. And we do have a very competitive market today.

Senator AKAKA. Mr. Liveris, would you have a comment on this?

Mr. LIVERIS. I would just reinforce what Mr. Helms said. There is no question it will be a powerful signal. More storage will reduce volatility. But the issue is the \$14 number, which is why the 181 question and why the whole notion of releasing OCS becomes so powerful. Increased supply will lower price in the futures. Then you can start working on storage as a check against future vulnerability, which is really the key. You will never ever get there the way we have with petroleum, though.

Senator AKAKA. Thank you.

Mr. Hébert, as you know, I have just returned with my colleagues from New Orleans and Baton Rouge and was struck by the contributions of Entergy employees during the hurricanes and the needs and challenges facing the company to rebuild and provide reliable electricity to the region. You have eloquently mentioned that.

With respect to Federal assistance, can you expand more about the unique circumstances in your case and why Entergy in New Orleans should receive Federal financial assistance? Are you suggesting this kind of financial assistance be available for any utility that suffered a severe natural disaster, or do you see this need limited particularly to New Orleans' case?

Also, you mentioned in your testimony using community development block grants as a way to provide Federal assistance to utili-

ties, citing assistance to Consolidated Edison and other utilities as a precedent, and provided suggestions on how to improve the block grant process. Even without a streamlined distribution process and targeting language would financial assistance through block grants still be a helpful form of assistance or are other options needed?

Finally, do you have further ideas on additional mechanisms for Federal financial assistance?

I know I have many questions here. If you choose to, you can answer some of it because of time, and you can provide responses for the record.

Mr. HÉBERT. Senator Akaka, thank you. What I will do, at the committee's request, is answer a couple in about a minute and then provide for the record a more detailed answer because that is the crux of why I am here.

I think fundamentally it is an equity argument. As we look at this—and now we understand that transmission and distribution is something that is not insurable within any reasonable means after hurricane Andrew—is it fair to continue to distinguish between customers and say that customers of one group, if you live in one area, your rates get to stay low because you get Federal assistance; if you live in another area, you do not? I think that should be changed. So having said that, I think that answers the simple and easy question.

As far as Entergy-New Orleans itself, the reason it is different is that for the first time in American history, an American city, an entire city, an entire utility operating company, has been taken off the map. We have no revenues. We have nothing. We need immediate assistance there, and that is why something like waiver of Stafford or quick legislation, something to give an immediate cash infusion of, say, \$475 million or somewhere close to that, would be sufficient.

The community development block grants would be more in line with doing similar to what you did for ConEd after 9/11, understanding that we do not want to raise their rates either. So spread that among the other investor-owned utilities. I think that would be the fair approach.

But I will give you a much more detailed answer. But I think the bottom line is, should not all customers be treated the same?

Senator AKAKA. Thank you for your response.

The CHAIRMAN. Senator Akaka, would you yield?

Senator AKAKA. Yes.

The CHAIRMAN. I do not want you to answer, Mr. Hébert, but I just want to make an observation. I understand clearly the unfairness or the lack of equity and have great empathy. But I think when you tell us you have no customers, the issue then comes, are not some of them never going to be customers? Have they not stopped being customers in the future because of what has been destroyed? That would have to be taken into consideration as part of some plan. I saw it and all those houses that are not customers now—and that is well over two-thirds of the customers, not two-thirds of the use—many of those are never coming back as users. I do not know what other people think.

Mr. HÉBERT. Yes, sir, Mr. Chairman. The people of New Orleans would never ask you to give them money for something they did

not do. If we do not restore an area, we certainly would not have costs.

The CHAIRMAN. I understand, but it might lower the price too because you might not have to do all of it.

Mr. HÉBERT. Let us hope so.

Senator AKAKA. Mr. Chairman, my time has expired.

The CHAIRMAN. The next Senator is Senator Thomas.

Senator THOMAS. Thank you, Mr. Chairman.

Mr. CAVANEY, we hear from the industry that there will be an adequate supply of natural gas for the winter. Is that a valid statement?

Mr. CAVANEY. As best we can tell—and obviously, the biggest variable is always the weather. If you get an extremely harsh winter, there will be strains on the fuel supply that will be exceptional. But if we have a normal winter or just moderately colder than normal, we think that there is going to be enough fuel available, natural gas, home heating oil and the like, that we will be able to work our way through that.

Basically it has already been announced by EIA that the cost of those fuels is also going to be very high, about 40 percent higher than normal. So at least the way it is right now, we are hoping that the availability will continue. The cost will be high.

Senator THOMAS. Well, is that the relationship? Because the availability is there, you would not—what was the cost 3 months ago?

Mr. CAVANEY. This projection was pretty much—you could see this getting—

Senator THOMAS. What was the cost 3 months ago?

Mr. CAVANEY. I do not know exactly. I can find out for you.

Senator THOMAS. It was not \$14.

Mr. CAVANEY. No, it was not. But natural gas also interacts with home heating oil and with propane. There is a mixture and they all interplay with one another. So one price does not make one market.

Senator THOMAS. Well, I guess you cannot help but wonder sometimes if there is enough of a product, why is there that much of an increase. It begins to make you wonder a little.

Mr. HELMS, maybe it has something to do with transportation. Now, you are in the transportation business, so obviously you want to use gas as much as possible.

Mr. HELMS. We certainly want to transport it, and I will tell you, Senator, that our people are doing everything they possibly can to get it in.

Senator THOMAS. What is the capacity to do it?

Mr. HELMS. We can do it, but if we do not get the gas processing plants at Venice, at Toka, and Wyclosky, Louisiana, for three examples, back online, we cannot transport the gas. So my colleagues upstream can do everything they want to get the gas flowing, but if it is not processed, it cannot go downstream.

Senator THOMAS. But he said there is going to be enough, I believe. It means it is already processed. Now, there is some confusion here as to whether we are short of a product or whether there is a product there. And then you say, well, how come the price has gone up quite as much as it has.

Mr. HELMS. Sure. Senator, first, let me tell you we have no direct economic interest in the price of the commodity. We do not own it. We do not take title to it.

Senator THOMAS. But your ability to transport it has something to do with it. I am from the West where there is production, and some of the reasons why more production is not there is because we do not have the transportation to get it out.

Mr. HELMS. Right. We have the infrastructure in place. Our infrastructure has been damaged significantly.

Senator THOMAS. Not in the West it has not.

Mr. HELMS. We are working hard to put the pipes back in the ground. The problem we have is we cannot find lay barges. I cannot get a dive boat out to my Vermillion 245 platform because those dive boats are being used in other sectors of the industry.

Senator THOMAS. One of the things we have to be looking at is the future a little bit. I know, first of all, we have an impact immediately, obviously. For instance, you talk about the generation. You know there are some other ways to generate electricity besides gas. Indeed, given the whole market, there is probably a better reason to be using coal than there is gas. We have more availability of coal. So that is one of the things we need to be doing, making some differentials between the use of the available energy.

So I hope that we are thinking a little bit about the future in terms of how Dow has to have gas for some of their manufacturing. You mentioned we have not had generation plants built recently. We have not. And the ones that have been have been smaller ones close to the market because we have not had the transportation to get them there. So I guess what I am saying is we have some obligations to look at in the future, not just talk about gas, but the use of gas, and so on.

Yes, sir.

Mr. LIVERIS. If I may, Senator. 69 percent of the gas processing capacity is down. So there is not enough gas to be provided. So what happens is even if you say that the rigs can pump the gas out, he cannot get the extracted gas to us. What that means then is demand destruction. The price 3 months ago was \$8 in the futures market. Today it is \$14. People were thinking already with the cold winter, followed by a hot summer, there would not be enough gas to supply through these processing plants. Period. So there is true shortage upstream. There is processing capacity down, and at \$14 people are shutting down. The plant you saw at St. Charles yesterday is going to be kept down for 4 months through the winter. We have no choice. I cannot get the gas.

Senator THOMAS. And there is not enough gas available, which is what we hear.

Mr. LIVERIS. At \$14 I cannot run economically, so I have got demand destruction. That is really the answer.

Senator THOMAS. I am not talking about the price. I am talking about the availability of the product.

Mr. HELMS. Senator, 7 billion cubic feet are shut in today as a result of the storm. It is not flowing. We cannot get our liquid separation plant operable for another 5 weeks. It had 8 feet of salt water under it—every pump, every motor, every electrical piece of equipment. And we are not alone. The refineries, Entergy, my col-

leagues on both sides have the same demands for the electricians—

Senator THOMAS. What is the total demand in the country?

Mr. HELMS. About 60 billion cubic feet.

Senator THOMAS. Yours is 7. Yours is 10 percent that is shut down for a while.

Mr. HELMS. We will get some of that back on by November and by December and January, but I would not be honest with you if I said we will have all seven back on by November 1.

Senator THOMAS. I guess I am just trying to really get a determination as to whether this kind of a price increase is relative to the amount of gas that is available. Frankly, I guess that is a hard question, but we need to talk about it some more.

Mr. HELMS. It is that marginal supply. It is the incremental supply that sets the price for the balance. Our local distribution companies have gas in storage and they have continued to buy at \$7, \$8, \$9, \$10, \$14 to make sure that consumers have gas this winter.

Senator THOMAS. I see. Thank you.

Senator ALLEN. Mr. Chairman, I have conferred with Senators Burr and Martinez. I have to be on the floor to argue on an amendment very shortly. I thought this would move more quickly. If I may, if I could pose my questions now.

The CHAIRMAN. Sure, you are next.

Senator ALLEN. All right. Thank you to my colleagues from North Carolina and Florida.

Several things. Gentlemen, thank you all for your testimony. It was very probative and I think very helpful, and I think we need to move forward on a variety of these fronts.

One thing Senator Burr and I are working on has to do with gasoline. I am going to talk about gasoline and then natural gas.

The Government Accountability Office did a study on all the different fuel blends we have in this country, over 100 fuel blends. What Senator Burr—and I am sure he will talk about this—and I are looking to do is reduce it to the, say, three to five cleanest-burning fuels, formularies. Non-attainment areas pick from those fuels as opposed to having 100 different ones.

Indeed, all of this was predictable. In June 2005, the Government Accountability Office said because of the inflated number of fuels that we have in this country, it adds complexity and costs at refineries. Shipping more special gasoline blends reduces pipeline capacity and raises costs. The special gasoline blends contribute to higher and more volatile prices. Gasoline prices are higher now than they would be if gasoline were closer to a single commodity.

This is something I think we need to work on. It will be good for consumers, but it also makes sure that in non-attainment areas they have clean-burning fuels, working with those communities where they have non-attainment areas.

Second, natural gas. Listening to Mr. Liveris, you are saying the same thing I say all the time. We are losing jobs every month in this country for people who manufacture tires, chemicals, fertilizers, masonry products, and other important products. Natural gas permitting, as was said earlier by one of the other questioners, in my view, needs to be used for homes and for manufacturing. We need to be generating electricity maybe out in the West with hydro.

But we are the Saudi Arabia of the world in coal, and we ought to be using clean coal technology. We also need advanced nuclear, and we also ought to learn from what the French are doing in re-processing that spent fuel so it is less dangerous, safer, and more efficient.

In my view, if we were able to do this, there would be less of a demand for natural gas for electricity generation and more available for manufacturing, so that companies are not going overseas where they have lower prices and a more reliable and more affordable approach. And if they leave, these chemical and fertilizer and tire manufacturers, they are not going to come back in here.

I know this is a controversial issue. I was Governor of Virginia at one time and certainly respect the rights and prerogatives of the people in the States. The fact of the matter is on the east coast of the United States, there may be good supplies of natural gas. It is being explored in the Bahamas and in Nova Scotia and possibly also Cuba. Florida does not want exploration off their coast. I support Senator Martinez and the will of the people of Florida. However, the people of Virginia, through their representatives, in a bipartisan coalition would like to have exploration far off their coasts. If Virginia or another State would like to do so, I do not think they should be precluded.

I also believe that it is very important that we, the Federal Government, share it with the States. My proposal is that they use it for reducing college tuition, use it for transportation infrastructure, and either beach replenishment or shoreline erosion in Virginia.

I think that this crisis, as Mr. Hébert said once in 100 years, recognizes that a lot of progress was made in our energy bill. More needs to be done. We have the platform there, but if something is not done quickly on some of these fuels that Senator Burr and I are working on and I think also increasing the supply of natural gas, we are going to be hurting our economy and jobs. We are going to clearly continue to allow our companies to be at a less competitive advantage or have less of a level playing field. Ladies and gentlemen, this is a national security issue as well as jobs in our economy and competitiveness.

So if any of you all have any comments on these ideas, I would like to hear from you all.

Mr. CAVANEY. Senator, speaking on behalf of the refiners and the American Petroleum Institute, we have mentioned this and talked with Senator Burr on a number of occasions. We strongly support a significant reduction in the number of boutique fuels. We think that will add great fungibility to the system. It will make fuels more readily available. We would love to be at the table when there are discussions about this and work in a positive way to continue to make the environmental gains we have made with cleaner air, but also to get the number of fuels down. We do not know what the magic number is, but it is somewhere down in the mid single digits. Probably realistically you can satisfy most of the individual State needs and still get those numbers reduced.

I would like to say another thing. We support the opt out sort of opportunities that have been promoted by some for States that do not want to be a part of the moratoria and would like to participate. I would like to just make one warning. We represent the peo-

ple who explore and actually produce natural gas and the crude oil. In order to permit, obtain everything, get the necessary stuff to do the exploratory after the seismic, and determine whether or not you have got something that you actually could produce on, as a company, you are probably going to spend somewhere between \$60 million to \$80 million. Technology today does not allow you, in the exploratory process through seismic, to be able to determine whether you are going to go in gas only or whether you are going to pick up some crude oil or gas liquids or other things.

So we just want to make sure that the people who are promoting gas only understand that there may be a bit of a false promise there. You could win and opt in, but with that provision, it may be far, far too expensive and too high a risk to have anybody to go out there and dig rigs.

What I would like to just point out is if you look at this 100-year experience that we had in the gulf here, there has not been one single leak of crude oil into the gulf from production, let alone natural gas. So I think we have more than proved that we can operate in a safe kind of environment, and we hope that we will be able to work together on this opportunity for States that do want to opt out and have some production off their coasts.

The CHAIRMAN. Senator Allen, I am going to let you go first this time.

Senator ALLEN. All right. Mr. Curtis and Mr. Hébert.

Mr. CURTIS. I would just like to touch on a couple of points.

The CHAIRMAN. Let us make sure I understand.

Senator ALLEN. They are answering my questions.

The CHAIRMAN. Yes. Is Mr. Curtis to answer your question?

Senator ALLEN. Yes, and then Mr. Hébert.

The CHAIRMAN. Fine. Go ahead, Mr. Curtis.

Mr. CURTIS. I will be very brief.

I made my comments at the beginning and I would like to repeat them now. Everyone supports the notion of a balanced energy plan. We talked about energy conservation, and then for the last 45 minutes of questions, it has all been about more production. I would like to bring you back to the immediate gains available from energy efficiency and conservation and just remind people that we need to do that.

I think one of the challenges I would like to extend to the committee is that I think one of the reasons you are hearing this is there are no economic actors at this table who stand to benefit from promoting energy efficiency. All these gentlemen represent great companies that make lots of good money and do lots of good stuff, but they do it by producing energy. There is nobody here that makes money by producing energy efficiency or renewables.

The CHAIRMAN. Mr. Curtis, we are so pleased that we started off by saying we are together for a change, and we want to stay together. Okay?

Mr. CURTIS. I do too.

The CHAIRMAN. So if we do not have the right people here, it does not mean that we do not want to get the best information. So if we need to have a different array of people with you to tell us about this, we want them.

Mr. CURTIS. That is terrific, and I look forward to working with you and your staff to try to give you some suggestions.

The CHAIRMAN. Because we need them.

Mr. CURTIS. I agree.

The CHAIRMAN. Okay.

Mr. CURTIS. Let me just stop there.

Mr. HÉBERT. I will just jump in quickly. To answer Senator Allen's question, I think Mr. Curtis has got some real good merit there, and so does Red, obviously, but I think it is a combination of all of that.

I apologize for getting a little emotional earlier, but it is my family, it is my friends, and I am down there in the middle of all of this, and it is a tough time. But we have kind of learned to be gatherers again. At night you go out and you make sure you have enough gasoline for the next day, enough water, and enough ice, and it really makes you focus kind of on pure economics again. As we know, the economics of price have everything to do with the functions of supply and demand, and you hit on that. And you are right.

But there are some easy-to-grab fruit out there for us. Senator Burr and I have had this conversation. I had it with Senator Domenici as well. At the Nuclear Regulatory Commission right now, if you want to ease some burden on natural gas—like our Vermont Yankee plant right now. We have already reconfigured our fuel. We have 95 megawatts of up-rate capacity that within 3 or 4 days I could have flipped on. You could relieve that pressure on some of these gas systems. I do not know how much is at the NRC now. I told, I think, Senator Burr the other day around 500. Some think there could be as many as 1,000 megawatts of up-rate capacity at the NRC, and as long as that is done safely and securely—I have every reason to believe it is—that is something that we could get out there quickly and could help us on these gas prices. So I would submit that to you.

[The following was submitted for the record:]

In the question and answer session at the end of the hearing, the discussion shifted to higher natural gas prices and the importance of nuclear energy in providing an alternative to natural gas in the future. I mentioned the reactor upgrades pending at the Nuclear Regulatory Commission and the hope that those upgrades would be approved in a timely manner to help deal with high natural gas prices, particularly in the Northeast. I am happy to report to you that the NRC has approved a 20% upgrade in the operating capacity at our Vermont Yankee Plant, saving approximately 7 million MMBtu's of natural gas a year. This will save the Vermont consumers over \$70 million a year.

Senator ALLEN. Thank you.

The CHAIRMAN. What we need to do is we need something from you. That may not be something for us. It may be something for somebody else who is holding it up, the States or something. We need to know whether we should be involved. So would you let us know?

Mr. HÉBERT. Yes, sir. I am certainly not blaming the NRC. I think it is resource agencies and things of that sort.

The CHAIRMAN. But if it is so, this is not the time to have that.

Mr. HÉBERT. Correct.

Mr. LIVERIS. Mr. Chairman, if I can. Senator Allen, I think you did a great job summarizing all the components of a multi-dimen-

sional energy plan on top of the energy act that was passed 2-3 months ago. If I add support—and I think we are together, Mr. Chairman—to Mr. Curtis's conservation point, which is a here and now, I think you have all the components we need. What you said plus conservation, we will get a solution for America's problems and keep jobs here.

Senator ALLEN. Thank you, sir. Thank you all.

The CHAIRMAN. I have been at this hearing for all the time, but I stepped out and I did not hear the distinguished Senator. So he just discussed the solutions.

[Laughter.]

The CHAIRMAN. I am very sorry. I am not part of the solution. Right?

[Laughter.]

Senator ALLEN. Mr. Chairman, we cannot do it without you.

The CHAIRMAN. I know that. I am quite sure that we cannot have a meeting without me, but that is the only reason I am important.

[Laughter.]

The CHAIRMAN. In any event, let us move along here. Who is next? Senator Salazar is not here, so we have Senator Burr.

Senator BURR. Thank you, Mr. Chairman.

So much has already been said, but I think all of you alluded to the fact that predictability is the No. 1 challenge for us. I take us backward just a little bit to remind you that we did pass an energy bill, and I think the focus of that energy bill was to make the future short-term more predictable for business, for producers, for environmentalists. My belief is that we can move forward. We can move forward with conservation. We can move forward with new supply. And both can be done in a complementary way. We can live by the rules that are out there. The only thing it needs is coordination. I think, in its own weird way, disasters bring people together where we communicate for once versus all staying in our little holes.

Mr. Cavaney, I appreciate the comments on the boutique fuel issue, and we will continue to work with you to try to refine that.

I received an email this week that disturbed me from one of my gasoline retailers in Winston-Salem. He is considered an unbranded retailer. In his email, he described to me a scenario where we have gone through a period of time where unbranded retailers have paid as much as 50 cents a gallon more for gas than branded retailers. I think you referred to that in your testimony as price inversion.

I guess my question is quite simple. Can you explain to us why price inversion occurs? Describe for me, if a supplier supplies their name stations 50 cents cheaper than they supply a station that does not have their name on it, why that is not price gouging?

Mr. CAVANEY. But you have to look at each circumstance. The first question you have to ask is usually—usually, not always—what happens is the branded stations operate under a contract. They have a contract, which means at a certain price, which is flexible to some metric that they have set. They can be pretty assured of having a supply. Many unbranded do not operate under contract. They work off the spot market, and when there is plenty of fuel available, they actually have a good deal and they can go

many, many years actually being able to purchase gasoline at a lower cost than somebody who is under contract often, and that is their competitive advantage.

But it works the other way when prices invert and they go high, and it is economics 101. What you are now talking about is you are getting sparse supply, and therefore the price to bid up that incremental gallon of gasoline can go literally through the roof.

So we try and point out—and I have testified to this effect—just because two gas stations are across the street from one another and one guy's price is 60 cents per gallon higher than another does not automatically mean that that person is gouging. He may well be trying to collect just as much overhead as the other person and being able to try to recover his costs. So it is a function of what choice the independent businessman or woman actually makes.

The owned and operated, which means by the refineries, we own the station and we operate them, are well less than 10 percent. So over 90 percent of the decisions that are made on how I want to purchase my gas and under what terms is made by independent businessmen and women. So you cannot generalize on this, but this covers I think, Senator, most of the cases.

Senator BURR. I hope you understand the purpose of asking the question. I think if this were 10 cents or 12 cents—50 cents is huge. I think this retailer has a reason to question it. I think the American public has a reason, when there is a 50 cent difference from one station to another, to pick up the phone, call their attorney general, and say there is a guy here up on the corner that is price gouging. Our job is to try to make sure that, in fact, that is not happening.

Again, I think everybody alluded. This is a once-in-a-century type of deal. We have certainly had some shortages before. We did not see that drastic a move, and clearly we did not see it as fast. If there is a better way for the system to set up—I am not sure that it is necessarily responding to the market. It is responding to whatever contracts existed before. We had the reverse of that in California as it related to an electricity shortage, and it was not existing contracts. It was the one that California went out and negotiated in the midst, and it caused a back-end problem.

But I thank you and I appreciate your willingness to look into that.

Let me make a comment, if I could, in the time that I have left about the rigs in the gulf. It was, I think, a pleasant thing for all of us to see, that the technology that we have been told about worked, that the rigs themselves did not leak at the platform or at the wellhead. I think this is something that has not gotten enough press on. As a matter of fact, I have seen some press accounts of a certain number of gallons having polluted with no explanation that that came from onshore storage and not from platform destruction. I hope the industry will get that word out there.

Mr. CAVANEY. Yes, sir, Senator. There are over 33,000 miles of pipeline on the seabed of the Gulf of Mexico, and every bit of it held together. So that is even more important.

I think one of the things we will be finding, though, is already several companies have talked about absorbing huge amounts of write-offs that they are going to have to do to replace all this and

the costs. So we are just beginning the exploratory process of finding out the cost side of what all this has done. We are not asking for the Government to help fund or do anything. This is our stuff. We are going to pay for it. We took the risk with our insurance companies.

So it is a great story and hopefully it will give comfort to these opportunities to look to other areas on OCS and elsewhere we think we can operate in an environmentally responsible way.

Senator BURR. I thank all of you.

The CHAIRMAN. Now, with the Senators' permission and consent, I passed over myself, so I am going to use a couple of minutes, and then I will get back to the next Senator, which I think is Senator Martinez.

But I will first say, Senator Martinez, there has been a lot of discussion about things very dear to you here today. We welcome you on the committee so you can be a voice, but we think we have heard that we have got to do something about offshore drilling. We will share what we plan to do with you, obviously. But there is no question that things are at a crisis and something must be done.

Now, let me make first an observation. Mr. Liveris, I am so both impressed and frightened about your testimony that I can only wish, which is only going to be a wish, that somehow opinion makers could hear what you had to say. We are a small group of opinion makers. We speak so much in this country about losing jobs in the past and in the future because of competition overseas, and here we have right in front of us one of the huge remaining industries that hire and pay people big wages that is dependent upon natural gas that cannot save any more. We speak of conservation. Mr. Curtis has told us, and he is right. But in your statement, you said you have already increased efficiency to the tune of 40 percent, and the problems remain as you discussed them. Right?

Now, frankly, I am very, very worried because I do not know, first, whether our country understands. I do not know what we can do about it, and I am not sure that when we try that we are going to get it done.

So could I ask you to recap one more time? And then I will move right along. You gave us four suggestions. Would you make them again please?

Mr. LIVERIS. Thank you, Mr. Chairman. You said in your statement there something that I did want to actually make sure that it was understood. We profit from efficiency.

The CHAIRMAN. Oh, I understand.

Mr. LIVERIS. The 42 percent of savings that we have generated is through efficiency. We have done what we can.

So the four things we are suggesting that should be done, which are really very, very key here, is that we absolutely, totally find a way to increase natural gas supply.

The CHAIRMAN. Right.

Mr. LIVERIS. And the Outer Continental Shelf—Senator Alexander and others have spoken very eloquently. State rights is the way to do it, and it allows Florida and elsewhere to get what they need to get for their constituencies. It is very critical. The redrawing of Sale Lease 181 we believe can be done without legislation.

We think it can be done through Presidential intervention, and I think it is something that is within your hands.

We have got some numbers. We can share them with you later. It is in our testimony. But if we released the area that is available and that is known, it will power 25 million homes for 15 years. Available today.

The third is conservation and we need to declare a national crisis. We need to do it. I think the start has happened in the Energy Act. The President, Secretary Bodman, all of us. It is serious. Two degrees down on the thermostat, three LNG terminals. We talk about permitting LNG terminals and how long it will take. two degrees down on the thermostat for every American this winter, three LNG terminals saved or not needed to be constructed in the time-frame they need to be constructed. That is the 0 to 2 years impact of conservation. Very, very key.

And then the efficient dispatch of electricity, which was referenced by Senator Bingaman. I think that needs a lot of investigation. I think our friends from the utility sector have a lot to say about it. I think we need deep drills—forgive the pun—to understand tier one of efficiency on the combined heat and power cycle, followed by tier two, followed by tier three. Those four things.

The CHAIRMAN. Now, Mr. Curtis, the suggestion by Senator Smith about hydro. A brief answer, if you can. What would you think about it and what is right or wrong about it?

Mr. CURTIS. The brief answer is I do not know enough about what he proposed to give an informed answer, so I will get back to you. So let me just stop there.

The CHAIRMAN. I am not being facetious. Can we expect the same real open-mindedness that you have given us here today? We need to know that this is an emergency.

Mr. CURTIS. It is an emergency. You will not get a knee-jerk environmental response. You will get a thoughtful one.

The CHAIRMAN. That is terrific.

Mr. CURTIS. Sometimes they are the same.

[Laughter.]

The CHAIRMAN. Look, you are so good at it that we are not going to know the difference.

[Laughter.]

The CHAIRMAN. Mr. Helms, in your remarks you suggested, I think, better “coordination,” which was the word you used, is needed in the restoration of gas production to help ensure adequate supplies this winter. Could you tell us how this coordination can be improved? We would like to help with that. How is it to be done?

Mr. HELMS. I think really at this point, Mr. Chairman, there is a question about the interaction and sharing of information and prioritization of equipment between the upstream producers, the gatherers, processors, and the interstate transmission companies. Under the legislation which was passed, which was landmark and I think is good for this country, there was the imposition of civil penalties of up to \$1 million a day for violation of the Natural Gas Act. I can assure you there are people in my organization that are very sensitive to that issue, and quite frankly, that has acted as an impediment in the short term for people sharing information. They are worried that they are violating the FERC regulations,

and we had the opportunity to visit with the chairman of the FERC last week and raised that issue. We are beginning to get that dialog going.

What we are finding is the producers cannot, for antitrust reasons, sit in the same room with each other to start talking about, well, where is my production, how long will it take to get my production in. And I think quite frankly, 4 weeks now after both of the hurricanes, we are beginning to hear some of the major producers disclose what production is shut in. It is very difficult at this point without having, if you will, a Federal agency as a clearinghouse to allow us to get in the room and say, I need a lay barge at Vermillion 245. That will get 400 million cubic feet of gas back into the system in 4 weeks. One of the things we need to do.

Senator, I would be remiss if I did not raise this one point. One of my members, who is a western company, mentioned to me yesterday that if there was a relaxation on the drilling moratorium in the Rockies from November through March, that the industry could probably provide a billion cubic feet of deliverability by March of next year. That is an issue that I think needs to be raised and I think we need to take a look at it. That is something that can be done I believe administratively.

The CHAIRMAN. Okay, if the staff can get that comment. Why is there a moratorium? Environmentally?

Mr. HELMS. It is environmental issues, Senator.

The CHAIRMAN. So we ought to take that up with the environmental community also in terms of no knee-jerk response. Do you want to answer right quick?

Mr. CURTIS. No, I do not.

[Laughter.]

The CHAIRMAN. You are being tremendous today. Thank you.

[Laughter.]

The CHAIRMAN. Let me just ask any of you. We discussed this issue of economic dispatch. Is there not a problem with that, that the State PUC's, public utility commissions, have been the ones principally involved in that and we would have to in some way overtake them or take authority from them? Does somebody know the answer? Quickly. I do not want a long discussion.

Mr. Hébert.

Mr. HÉBERT. Mr. Chairman, that is part of the answer. Obviously, there are things such as regional transmission organizations are filing to basically do the same through our independent coordinator of transmission, which is before the FERC right now, that we would hope we would get final approval of pretty soon, and we have every reason to believe we are going to do that. It is going to make for more opportunities through the bidding process to try to get them to bid more into the system. So that is part of the answer, yes, sir.

The CHAIRMAN. One last question. You know that chart you had up there with all the drilling activities out there in that area with two circles.

Mr. CAVANEY. Yes, sir.

The CHAIRMAN. Can you put that up there? I want to ask you just a dumb favor. Maybe your people have the technical skills. If not, maybe you could go to one of the laboratories, Sandia or Los

Alamos. But I wonder if you could have somebody produce a new one and assume today's drilling technology and tell us what that would look like with today's technology.

Mr. CAVANEY. Okay.

The CHAIRMAN. I think it is possible and I think it would be terrific to be able to show that when we go to these other States, this is not going to be the case because it cannot be. One of those holes is going to take 20 wells and 30 wells. Can you do that?

Mr. CAVANEY. We can. We will.

The CHAIRMAN. If you have to spend a little money, spend it. I think we should see that. You have got a lot of money to spend. That is what it is for. Do not come up here and ask us.

[Laughter.]

Mr. CAVANEY. We will do it.

The CHAIRMAN. Now we are going to go to the next Senator here, Senator Martinez.

Senator MARTINEZ. Mr. Chairman, thank you very much. You are so perceptive because that is exactly the picture I have been focusing on. I must tell you that to see that off the coast of Florida and the eastern gulf scares me to death. I think it scares Floridians to death. If a picture in today's technology would look dramatically different from that, I think that would be instructive and interesting and good to know.

Let me just make a couple of comments and then I will have a question or two. But, Mr. Hébert, I want to just tell you how much I appreciate that dramatic picture you have of those linemen getting people back in service. I very much appreciate the work that those people do, that they have done over the years oftentimes in the middle of the night with a spotlight trying to get service back, not in dramatic circumstances like Katrina, but just in everyday Florida thunderstorms in the afternoon or evening. A tree limb falls and there they are, and folks never even know, except for the blinking light on their alarm clocks, that the lights were out for a period of time while they were out there working. It is a dramatic thing to see how many people were out of power.

Something I will point out is that I believe last year during the horrible series of hurricanes that we had in Florida, there were more customers out in Florida last year than there were this year as a result of Katrina and Rita. I think that is very telling that, again, with the cooperation and the help of linemen from South Carolina, from Georgia, from North Carolina, from Texas, from everywhere, and probably Louisiana as well, they responded to Florida and helped us get through our crises. I know the favor has been returned. It is a fraternity that works together and it is a very impressive thing to see. I can not only understand but appreciate your emotion as you talk about that.

I had a question for you, Mr. Curtis. You mentioned in your testimony there were 7 million gallons of oil spilled as a result of the storms. Then I heard the chairman's questions on the rigs, and I understand that they were not impacted by any spills. Please state clearly today where those spills occurred, how did they occur, and whether you can tell us too how it might be avoided in the future. It is a pretty dramatic amount of spillage.

Mr. CURTIS. It is a lot of oil that was spilled, and I think by point of reference, I think the Valdez was 11 million and this was 7 million. It is my understanding—and I will double check it and provide it back for the record—it came from about 11 different major identified sites. It was storage on the land, and I think it happened at a bunch of different places.

Senator MARTINEZ. I think the other point to talk about, though, is I heard you describe that there was not one leakage from the OCS. I have never heard that before. They are honest, but it is skeptical. I would like to go take a look. But there are lots of leakages that occur as a result of energy production, and it is not just at the well. It is through the whole infrastructure. I think as people talk about exploring in other parts of the Outer Continental Shelf or elsewhere, you have to look at the whole thing, not just the drilling. It is the transport. It is the storage and all that. That is where I believe a lot of the leakage came from.

Mr. CAVANEY. I can comment on both parts of that. To speak to the latter, using government figures, the amount of leaks in the aggregate over about a 12-year period is less from the industry than the natural seeps in the gulf area. So it is fairly insignificant.

The leaks that occurred were all onshore. Essentially what they were, they were tanks that were hit or punctured, whatever the case may be, and the leakage occurred in what are called secondary storage, all in the facility. So there are large berms that captured all of this. What happened was with the amount of water, storm surge rising and all that, it was so much, it came over these berms and actually displaced the oil and pushed it out into other facilities. Obviously, we can see this and we have been cleaning it up since then. But it does require us to take a look at and work with the Government on new approaches to this because the old system, even though it was once in a hundred years—we have never seen this happen before—it did happen here, and we do not like that kind of experience any more than the next person.

So as we did with Ivan, which was the fierce storm of last year that you had mentioned happened down in Florida, we worked together with the MMS part of the DOI and the Government to have a lessons learned conference, and we will make available to the committee, if you would like, all the things we were trying to implement. Our problem was that Katrina and Rita came within about 60 days of that conference, and so there was little you could do.

But one of the take-aways here is very clearly we need to look at the secondary berms and how we are going to be able to protect against this problem if we have another experience like this.

Senator MARTINEZ. Mr. Curtis, then Mr. Helms.

Mr. HELMS. Senator Martinez, thank you. I would like to make two observations. The first is the chart that you have referred to. That is a record of 50 years of offshore development and production off the coast of Louisiana, and the technologies have changed dramatically.

My second observation is the network of gas pipelines, particularly the natural gas transmission lines, have had an exemplary environmental record. Quite frankly, I would like to see the facts and the figures and the empirical evidence that there has been an

environmental failure of those pipelines and those plants in south Louisiana by either hurricane Ivan last year or Katrina or Rita. I think the facts will speak for themselves.

Senator MARTINEZ. Mr. Curtis, do you have something else?

Mr. CURTIS. One point I want to make is kind of the assumptions everybody is making in listening to this testimony, that it is a once-upon-a-century occurrence. It will not happen again for another 100 years is the implication. I sure hope so, but we cannot count on that. We cannot count on that at all. Industry should not plan on that. Government should not allow industry to plan on that.

Whatever you believe about global warming—and this is not a global warming hearing—there is a lot of evidence from scientists and people that the ocean waters are warmer, storms will be more severe. There is a natural 20- to 40-year cycle going on. That may be very well compounded—I believe, but others can disagree—and exaggerated by global warming. All that is happening.

Senator MARTINEZ. The science does not agree with you on that one. I am with you, but the science does not agree. I do not think we should link the two.

Mr. CURTIS. But as we plan for the future, that should be, I think, one of the assumptions people look at.

Senator MARTINEZ. I agree with the underlying premise. I just do not think that we can—

Mr. CURTIS. I agree. I am not trying to take you there.

Senator MARTINEZ. Mr. Chairman, may I have just one brief final question?

I would like to ask you, Mr. Cavaney, and maybe the others. Feel free to chime in. I have heard you allude to the crisis of the moment. Katrina was the trigger point of this. The part I do not understand is how drilling in the Outer Continental Shelf for either gas or oil relates to the current problem, which seems to deal with refinery capacity and transmission issues. I do not know how the people that are under salt water and are being replaced have a whole lot to do with what we do in the Outer Continental Shelf to avoid the crisis of the moment. When someone goes to a gas station tomorrow and they are paying \$3 a gallon, the fact is—and I would like for you to agree or disagree—that that will not be impacted for any period of time in the foreseeable future by any exploration in the OCS.

Mr. CAVANEY. Senator, we have fully agreed. Energy is very long-lived and has a long planning cycle in order for anything to happen. So there is almost without exception very, very little that can be done in the near term to change the dynamic. It will not, in and of itself, change the price at the pump or whatever.

Now, what it will do is there is a lot of activity in what we call the futures market, in other words people hedging, speculation, looking at various kinds of things, and they try to factor in all the future risks and back that into a price in today's market.

What we have done as a country is we have basically taken off the table all the attractive places where natural gas can be gained within our country. So the signal we are sending is that we do not want natural gas. So as a result, people who are factoring in risk

run up the price, particularly when you run into short-term problems like this.

So my point that I wanted to make is we need to begin planning today so that if a circumstance similar to this occurs in the future, we will at least have in place more tools to deal with it and more flexibility than we have today.

Senator MARTINEZ. But we could all agree that OCS drilling will not impact the current crisis we are in and, further, that conservation measures, as frankly we have already seen over the last several days, could in fact impact immediately what is taking place in the marketplace.

Mr. CAVANEY. Absolutely. The most powerful thing we could do today is to have everyone ramp up their efforts at conservation and energy efficiency. No question.

Senator MARTINEZ. So our focus for the immediate crisis ought to be at conservation, not OCS drilling.

Mr. CAVANEY. We should have the discussion on OCS drilling because if we never talk about it—

Senator MARTINEZ. I understand that. But my question is simple. The current crisis is more easily resolved by conservation than drilling on the OCS.

Mr. CAVANEY. To affect today, conservation is the quickest thing we can do.

Senator MARTINEZ. We are here on Katrina, and if we are dealing with Katrina, the issues relating to Katrina really can much better be solved by conservation.

Mr. CAVANEY. Absolutely.

Senator MARTINEZ. Thank you.

The CHAIRMAN. Mr. Liveris.

Mr. LIVERIS. Demand destruction is part of conservation, Senator, and I think the answer to that question on the short term. Katrina just showed the issue that has been around for 5 to 7 years.

Senator MARTINEZ. I understand there are some underlying problems in our energy supply, in the refinery capacity, frankly in long-term conservation, diversification of fuels. There are lots of problems in the energy front. When we talk about Katrina, we can limit the discussion to the issues that will impact and resolve Katrina issues.

Mr. LIVERIS. It is very unfortunate that a hurricane showed the shortfall of the Energy Policy Act of 2005, which I am a big fan of. But frankly, the OCS supply issue should have been tagged onto that bill, as I think the chairman was trying to do and others were trying to do. Available gas in this country is there. There are 406 tcf gas available. Why are we importing it from the Middle East?

The CHAIRMAN. I do not think this is the place for me to engage in a debate predicated by the questions asked by my good friend from the State of Florida. But you cannot isolate Katrina and say we are here to solve Katrina. We are hearing testimony here today about the short-term impact of natural gas shortages on Dow Chemical. That is not 5 years from now. You may be in trouble during the recovery and you are certainly in trouble after the recovery if we do not have some solutions to this problem. Am I correct in that statement?

Mr. LIVERIS. Yes, Mr. Chairman, you are very correct.

The CHAIRMAN. Now, having said that, I want to get to Senator Talent and then Senator Murkowski.

Senator TALENT. Thank you, Mr. Chairman. You took the words out of my mouth, Mr. Chairman. If this were just the hurricane and a crisis induced by that, of course, that would be bad enough, but what the hurricane did was exacerbate conditions already in place. If this crisis has done nothing else, it has concentrated energy and attention on this issue, and that at least is a good thing.

Most of my questions have been asked. Mr. Liveris, let me just ask you specifically. In your judgment, to keep Dow and other industries in the United States, what do we need to do legislatively to increase the natural gas supply? Can you give us an idea of what price of natural gas you would like to see long term? Obviously, as low as possible, but give us some sense.

I think you discussed this some before, but what would be the effect of just an announcement that we were going to open up Lease 181? Would that be sufficient by itself? You are probably going to say no. It is terrible when you answer the questions at the same time you are asking them, is it not?

[Laughter.]

Senator TALENT. But it would be a big deal, would it not? Just comment on these questions.

Mr. LIVERIS. I think that is a great way to phrase the question. Your answers are actually not correct. I would say they would be a stabilization factor. I think we have heard the uncertainty point. The volatility point is our greatest enemy as much as the absolute supply. The two are working together.

Senator TALENT. Because the price today reflects not only supply today and demand today, but the market's estimation of unpredictability in the future.

Mr. LIVERIS. Correct, Senator.

Senator TALENT. So when you take that unpredictability out or you lower that risk, it affects price.

Mr. LIVERIS. Absolutely. If you couple that with a conservation message, the two things together will stabilize a lot of the volatility.

Now, the other question you asked. The well price of LNG, which has not yet appeared—LNG or gas is still a very regional business. LNG trade around the world is long-term contracts. They are to support the huge capital infrastructure that has to be put in place, including the ships. It sits between \$4 and \$5, depending on where it comes from, landed somewhere. Although China did a deal with my home country of Australia that lands natural gas from remote Australia to China at \$3.20.

So we used to have \$2 here in this country. Obviously, "as low as possible" is the right answer, but I am a realist. All we need is the certainty of supply, i.e., lack of volatility, and a world price or less that enables me to serve the domestic sector. It would be great if the American chemical industry can once again be an exporter. We used to export over \$20 billion a year, second only to aviation. \$154 billion of trade surplus over the last 10 years gone. All that has disappeared on us because we no longer have the \$2 price. If

we can get the world price, we can at least compete against foreigners importing into this country.

Senator TALENT. Sure, because before the hurricane, you were paying prices elevated compared to your competitors.

Mr. LIVERIS. Since 2000-2001, we have been living with prices bouncing around. It is unbelievable that a technology-rich industry like ours, with college graduates as our primary work force, suffers because of the weather. We go by hot summers and cold winters, or the other way around, and that is our input cost. So we live and die by the weather. It is unbelievable that chemical engineers and scientists and Ph.D.'s and people do not have jobs because of the weather forecast. It is incomprehensible.

Senator TALENT. Mr. Chairman, there is a win-win that you and I have talked about with all this. An adequate and diverse energy supply with lower prices means much stronger economic growth and risk taken out of the economy. And economic growth, because of the marvelous productivity of the American people, produces wealth on the basis of which we can enhance technology, enhance conservation efforts, improve the environment, take care of our coasts. So we end up with the growth, the jobs, the industry, the exports, and a better environment and a better community all at the same time, and we do it by having faith and confidence in the productivity and the decent instincts of the American people. That is what you are saying.

We have seen those instincts on display in response, just an immediate, gut-level response to this crisis, and we will see it again. Really all they need us to do is to unshackle them a little bit, and they will go out and get us out of this. I really believe it.

I thank you all. This has been a very good hearing. The chairman walked over to me before and said that, and I think he is right.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you.

Senator Murkowski, there is a vote up but you have time for your questions.

Senator MURKOWSKI. Thank you, Mr. Chairman, and thank you to the members of the panel. I am sorry that I missed most of your testimony. I was presiding and I was listening to the comments of Senator Landrieu from Louisiana who was speaking to the devastation in her region and spent a great deal of time talking about how the gulf region is the area of commerce not just for the region, but truly for the whole world. We recognize and appreciate the contributions offshore and onshore that the region has made and continues to make and will continue to make to the energy needs of this country.

I sit so frustrated and we all know why. It is the whole access issue. We have got the resources and we have it so many times over and whether it is off of our shores or whether it is up in Alaska, we have it. We just do not allow ourselves to go there. In the meantime, what happens is our companies, our businesses are suffering. I was just commenting to the chairman here. We are no different than the times back in the age of Mesopotamia when the rivers flooded and everybody had to move. You would like to think that our technology gets us beyond being controlled by the weather,

but it should serve to be a very humbling reminder to all of us that we are not in charge.

So what is it that we can do? I am real concerned about my constituents up home who are panicked about home heating costs this winter. They are already looking to how they are going to make it financially through the winter and pay their bills and keep their homes warm. I do not know how they are going to do it, quite honestly.

A couple different questions for probably you, Mr. Cavanaugh, on the prices that we are seeing now with natural gas and the doubling that we have seen just from last year. We recognize this one-in-a-100-year crisis that we have been hit with. Where do you see the price of natural gas going?

Mr. CAVANEY. Senator, we had the problem with natural gas really before the hurricanes. All the hurricanes did was just draw undue attention and take it up to the next level. For a number of years, really about the last 15 to 20 years, our growth here in the United States was supported by Canadian gas that we imported, and they kept growing sufficiently. As they have developed their oil sands up in Alberta, what has happened is they had to re-route their gas growth in order to make the oil up there. So we have lost that growth capacity.

What that did several years ago was underscore the fact that we were not producing enough here to make up for the very steep declines in the U.S. fields because we were not getting the access to the attractive new fields where you could go.

So again to complement Mr. Liveris, back in the year 2000, this started to become very much in evidence and it is just regrettable that it took this long for people to understand. I applaud the committee and particularly Senator Alexander for drawing attention to natural gas. Because it is a regional fuel and not a global fuel like crude oil, we do not have the options of trying to bring in substitutes when we run into periods like we are right now.

Senator MURKOWSKI. So where do you see it going? We are at \$14.

Mr. CAVANEY. Well, I think the most important thing is we need to get a signal from the policymakers that you recognize the problem is here and we are going to do something about it. I agree, I think the markets will show some relief and that may well be the point where you start to see the corner being turned.

Senator MURKOWSKI. Let us talk about the Alaska project for just a second here. We are trying our darnedest to make that project come to fruition. And it is so frustrating that for years the price has not been there, and then boom, the price takes off like that. The fact of the matter is it takes 7-8 years to bring that gas down and to supplant what we have been getting from Canada. So if we move forward with that project, even though it is 8 years down the road, recognizing the incredible potential that we have up there in supplying this country, is that enough of a signal to the market, even though it is years off, to provide some assistance?

Mr. CAVANEY. It is definitely going to help. These people look at future risks and then they factor it in in prices today. So anything that sends signals about the opportunity for more natural gas or

a more positive environment for people to take risks I think is going to have to help in today's market.

Senator MURKOWSKI. So we need to have a flow chart or a time line saying Alaska gas comes on here. In the interim, we can loosen some restrictions in the Rockies.

Mr. CAVANEY. LNG is a very important intermediate help. Access and LNG, Senator, are the two things that will help us significantly fill the gap, along with conservation again I want to underscore. Those three things will help us get there until the northern gas can get in here and take its place.

Senator MURKOWSKI. But we have got to have the northern gas.

Mr. CAVANEY. Yes.

Senator MURKOWSKI. And this is the point that I want to bring home to everybody. Right now we do not have that northern gas. We do not have those producers signed onto a deal. If they think that they need more subsidies than they are getting now, it is wrong, wrong, wrong.

Mr. CAVANEY. I understand that this is a commercial venture, but that is not what their problem is. They are just trying to go through the process of ensuring that they can get the supplies and they work with the State. We are very pleased to see that the State of Alaska has shown an interest in becoming an equity partner, and I think that makes for a good partnership.

Senator MURKOWSKI. We want to be able to supply it.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator, you wanted to comment.

Senator ALEXANDER. I just wanted to express my thanks to Mr. Hébert for the people of Tennessee for the extra efforts your company made to get the electricity back on so the Colonial pipeline would work. That helped us avoid a very severe shortage.

And I wanted to invite you and anyone else who wants to suggest to the chairman and Senator Bingaman and me ways to make efficient dispatch work. We would like to have them in the next few days.

The CHAIRMAN. All right. We know we have to go, but they are going to hold up for us for a minute. I want to just say once again thanks to all of you. It was terrific. I am just sorry that more people do not get a chance to hear what was said. That is not possible. We have to do a better job.

Mr. Curtis, I want to say we clearly did not intend to outnumber you.

[Laughter.]

The CHAIRMAN. But we are very pleased. I think the issue I want to place before you is we have always been versus the environmental and conservation community—we have been faced with the proposition that they want conservation and savings and others want production. Therefore, a stalemate occurs because those who want efficiency saying we are not on with the business of efficiency, so we do not want more production. Production is saying we want more production.

Now, we are saying we want both. But the problem is how do we get them to work in tandem with credibility. Most of the time you can put two eggs and two eggs and you have got credibility. It is two and two, and when you add one, you have three and three. But

one is very intangible and the other one is very tangible. We have to find some modus operandi where when we start efficiencies, they are credible so they are not saying you are not doing efficiency, so we do not support supply. We have to find some way to measure that, and I hope we can.

Mr. CURTIS. I completely agree, and I look forward to working with you and whomever to try to help make that happen.

The CHAIRMAN. Last, we did not ask any of you, but let me see if I can summarize. Those from the coast, from the area affected, told us that the Federal Government, in terms of their agencies and Secretaries, had been terrific in their response to requests for assistance, modification of rules, expeditious handling from DOE to EPA to Commerce. Is that a correct statement? Was the Federal Government responsive? Quickly, could we just say, Mr. Hébert?

Mr. HÉBERT. Very favored. NRC, FERC, and DOE were great for us to work with and helped us restore quickly. Absolutely.

The CHAIRMAN. Mr. Helms?

Mr. HELMS. We found it all the way through, Senator. We have had tremendous cooperation.

The CHAIRMAN. Mr. Liveris?

Mr. LIVERIS. Absolutely, yes.

Mr. CAVANEY. Absolutely. It could not have been better.

The CHAIRMAN. Now, Mr. Curtis.

Mr. CURTIS. From the community groups we work with and interact down in the gulf, EPA and the other agencies were fabulous.

The CHAIRMAN. Okay. It looks, for once, we had something on our side go right.

[Laughter.]

The CHAIRMAN. Everybody says everything was right except something happened that was not. Maybe it was just the storm.

I wanted to say, Mr. Curtis, with reference to the pollution in the ecosystem and water, we were amazed yesterday to hear from the Corps of Engineers at the top level that they are in the business of measuring pollution all the time everywhere very scientifically. They said that there was not any. Do you believe it? There had been no big, serious bacteria in the environment that was dangerous. Now, that does not mean anything yet. I mean, I could not believe it. I said, are you kidding? And they said, no, no, not so.

So I do not know what it means. But somebody is going to do it right. But it may be that there is some kind of a cleansing mechanism that we do not know about in terms of water-related products. But I just wanted that in the record. I know you are looking at me with furrows in your brow.

[Laughter.]

The CHAIRMAN. I am only repeating what they told me. I do not believe it either.

[Laughter.]

The CHAIRMAN. But I thought we should say it here.

We need you to go with me somewhere, Mr. Chairman, Mr. President. Which do they call you in your company?

Mr. LIVERIS. Andrew.

[Laughter.]

The CHAIRMAN. Okay. If you will join me outside, I need to use you for something.

Thank you, everybody.

[Whereupon, at 12:25 p.m., the hearing was recessed, to be reconvened on October 27, 2005.]

HURRICANES KATRINA AND RITA

THURSDAY, OCTOBER 27, 2005

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

The committee met, pursuant to notice, at 10:35 a.m. in room SH-216, Hart Senate Office Building, Hon. Pete V. Domenici, chairman, presiding.

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

The CHAIRMAN. Good morning. First of all, to our distinguished witnesses, I want to apologize for the lateness of the event. But the Senate doesn't ask the committees when the Senate will vote; they tell us.

First, for the Senators and the witnesses, there is a Senate resolution which authorizes the Senate chambers and the Senate office buildings be filmed for use in the Capitol Visitor Center. Members should know that that production company might—will spend a few minutes during this hearing obtaining footage for the educational video to be shown in the Capitol Visitor Center. So, if you want to make sure you're at your prettiest, be aware.

First, I want to thank both Secretaries for being with us today. This hearing is the fourth hearing that we've had to discuss the impacts of the devastating hurricanes in the gulf and the general energy state of the country. The people of Florida have suffered again, just this week, with Hurricane Wilma. It's been a very difficult season. I hope it's over, but—who knows? There's a level of frustration with the energy industry, due to high prices, record profits, and perceived lack of investment, that has taken center stage in the public arena. There is also a level of fear about the energy supply, possible transportation bottlenecks and shortages that will make the winter particularly hard, especially if it's a cold winter.

Over and over, the experts that this committee has invited have told us that there are no quick fixes to our energy challenges. All have stressed the need for conservation as our most effective short-term tool to deal with this crisis, especially the crisis in natural gas, which is, sort of, the unseen crisis at this point.

We're all advocating that Americans encourage—and encouraging Americans—in trying to persuade them to take conscious steps to reduce energy consumption. So are you, particularly Secretary Bodman, and I want to thank you and indicate that I think you're on the right track with some of the things you're doing in

that regard. I wish that program, nationally, could get bigger and more persuasive, but that's not all in your hands.

The list of saving tips with multiple resources, like local utilities companies are talking about, big oil companies are beginning to advertise about, they're showing some significant interest, and the public is, I believe, getting the message. I think everybody knows that the lighting of our homes, as Senator Bingaman has been talking about for some time, can represent 20 percent of the home electricity bills, and there are some real areas of savings that can occur there. If the public were to change a light to an ENERGY STAR one, together we'd save enough energy to light seven million homes. That's up to the people of the country, not up to us, but, still, we'd better talk about it. Same thing applies to light fixtures. There are models of ENERGY STAR for energy efficiency that could save substantial amounts.

On the transportation front, consumers can take a number of steps. We know about them. Perhaps we can ask you about them, Mr. Secretary, or you, Madam Secretary. So, as part of this hearing we're encouraging consumers to take action—drive less, when possible, replace an old furnace, keep your tires inflated properly, change light bulbs, all those things we've been talking about.

So, I think conservation is like a diet on our demand, but without sufficient supply our economy will end up very skinny, in any event. So, I know that supply is one of the topics that several members want to talk about here today, and I would say to both of you, while it might not be the subject matter of Katrina and Rita, Lease Sale 181 will be brought up and discussed, I'm sure. I'm going to save for the questions a discussion of Lease 181, other than to say it is a very, very energy-laden lease, and to discuss the fact that it is not really subject to a moratorium. And we will proceed from that point on with asking the Secretary of the Interior, in particular, about that issue.

Senator Bingaman.

[The prepared statements of Senators Bunning, Corzine, Salazar, and Talent follow:]

PREPARED STATEMENT OF HON. JIM BUNNING, U.S. SENATOR FROM KENTUCKY

Even though my home state of Kentucky is situated far enough away from the gulf coast to avoid the brunt of these recent storms, Hurricanes Katrina and Rita really hurt us, and the rest of America, at the gas pump. These natural disasters have shown that in many ways, the federal government has been sleeping at the switch. But perhaps Katrina and Rita's biggest wake up call goes to the energy industry which has failed to diversify.

Katrina and Rita were able to cause such a large disruption because so much of our production and refining capabilities are concentrated in the Gulf of Mexico. We must diversify this capability. Right now we are working to open up ANWR, which will finally allow us to tap a vast oil resource in Alaska. But there is more we can do—with Kentucky coal, Western natural gas and offshore drilling. We will remain vulnerable to continued price spikes unless we explore new areas domestically to produce and process fuel.

We have also seen ineffective regional energy markets that, when faced with disaster, are unable to quickly shift resources and capabilities to areas in need. Much of this inability is caused by overly-complicated federal regulations. For example, government policies have been a roadblock to oil refinery construction. It has been nearly 30 years since the last one was built. We must take a hard look at federal regulations and ensure that they are not needlessly constraining the energy marketplace.

Even after addressing these issues, at the end of the day we need to diversify our sources of energy beyond oil. I have long talked about the benefits of coal, particularly new clean coal technologies, and how coal can replace more expensive oil and natural gas electric plants. From synthetic fuel production to FutureGen, coal can and will play a more important role in America's energy future. I also believe we can displace gasoline demand with biofuels made from corn, soybeans and even recycled cooking grease. We have many new technologies under development and we should encourage this continued fuel source diversification.

I am hopeful that today's hearing will explore the potential impact of the recently passed Energy Bill, what additional government policies are needed to stimulate diversification and what lessons we have learned from this tragedy. Secretary Norton, I would like to hear from you how we can best access the untapped sources of oil, coal and natural gas here in America. And Secretary Bodman, I look forward to hearing from you how we can better stimulate the energy industry to diversify and use new technologies so we can achieve lower prices and energy independence. Thank you for your testimony before the Committee today.

PREPARED STATEMENT OF HON. JON S. CORZINE, U.S. SENATOR FROM NEW JERSEY

I would like to thank Senator Domenici and Senator Bingaman for calling this hearing to address the Hurricane Recovery Efforts. Hurricane Wilma once again highlighted our nation's vulnerability to the devastation that can be caused by hurricanes and my thoughts and prayers are with those who now have to rebuild their lives.

I would also like to thank Secretary Norton and Secretary Bodman for being here today to testify. In order to establish a comprehensive recovery plan that will restore our full energy system, as well as make improvements that will reduce the damage that hurricanes and other natural disasters have on our energy infrastructure, efforts must be coordinated among all of our government agencies. These ongoing discussions on hurricane recovery efforts are vital not only to the short term revitalization of our energy system and the mitigation of the burden on consumers, but also to our nation's future energy security.

Mr. Chairman, one of the most immediate ways to help Americans dealing with the high energy costs is the Low Income Home Energy Assistance Program (LIHEAP). I am deeply disappointed that the Senate continues to underfund this vital program. Energy costs place a severe and continuing burden on household budgets. In many cases, families are forced to choose which bills to pay and which necessities to survive without.

Of course, Mr. Chairman, it is not just low-income families that will be affected. In fact, the Department of Energy estimates that Americans will spend over \$200 billion more on energy this year than they did last year.

Meanwhile, big oil companies are making record profits. In fact, the combined total quarterly profits for the top five oil companies are \$32.88 billion. I implore the oil companies to do their part to ease the energy cost burden on consumers. How can oil companies sit back while their profits, even in the wake of the hurricanes, are increasing at such astronomical rates—all while American families are being squeezed by skyrocketing home heating costs and gasoline prices?

Yet, instead of dipping into their own profits, these oil companies are calling for the expansion of drilling in the Arctic National Wildlife Refuge (ANWR) and off our shores, claiming that this will ease prices. I'm disappointed that some of my colleagues are giving in to them. I have been clear about my opposition to such proposals and am deeply disappointed that this Committee included opening ANWR in its portion of the reconciliation bill. In addition, I am greatly concerned that the House Resources Committee just approved legislation that not only opens ANWR to drilling, but also allows states to opt out of the decades-old Congressional moratoria on oil and gas leasing in the Outer Continental Shelf—which will damage my State's economy, as well the economies of other states that depend so heavily on the cleanliness of their beaches and oceans.

I urge my colleagues to avoid this knee-jerk reaction. We should instead be discussing more effective policies to reducing our dependence on oil and strengthening our energy security such as reducing CAFE standards and investing in renewable energy.

Again, I thank the witnesses for being here today and I look forward to hearing about the status of hurricane recovery efforts at the Department of the Interior and the Department of Energy. I hope that both Secretaries offer recommendations for the short and long term and make progress toward fortifying our energy system and

reducing the damage that hurricanes and other natural disasters have on our energy infrastructure.

PREPARED STATEMENT OF HON. KEN SALAZAR, U.S. SENATOR FROM COLORADO

Good morning. Thank you, Mr. Chairman, for holding this hearing. During the August recess I began a tour of Colorado that took me to all 64 counties. I just finished this tour last week and I can report that in every county the biggest concern was high energy prices. It is important to note that I began the tour before the hurricanes came through the Gulf of Mexico and hit the gulf coast where much of our energy production is based. High energy prices were the greatest concern even before the hurricanes. The hurricanes ramped up already high prices as well as increased the frustration Coloradans are feeling.

Mr. Chairman, I share that frustration. I know I am new to this body. While I am proud that I had some small hand as helping to craft our nation's long-term Energy policy this past summer, I nevertheless feel we are missing an opportunity—actually, failing in our obligation, to take immediate steps to address our near-term energy crisis. Since we returned to Washington immediately following Katrina, the Senate has failed. The Senate has failed to take action to address high energy prices, period.

I have offered 5 bills to address the problems the country faces regarding high energy prices. I would like to talk briefly about each one.

ACCELERATING EFFICIENCY CREDITS

The first bill I have offered is S. 1850, the Rapid Efficiency Credit Act of 2005. Under the energy bill signed into law in August, tax credits are available to consumers and businesses for purchases of energy efficient products (such as energy efficient windows, air conditioners and furnaces, solar power collectors, fuel cells and hybrid vehicles), as well as expanded ethanol fuel refueling facilities.

But these tax credits do not go into effect until January 1, 2006. People in Colorado and across America want to know what they can do now in order to prepare for high heating and electricity costs this winter. These tax credits would have a positive impact if they went into effect now. Why are we waiting?

In an effort to promote energy efficiency in vehicles and buildings sooner, my legislation would accelerate some of those credits to become effective upon enactment of this legislation.

This legislation also adds a new provision for energy efficiency. Consumers will be eligible for a 30% tax credit for the purchase of compact fluorescent bulbs, which take the place of traditional incandescent bulbs, save significant amounts of energy, and save consumers real money.

TIRE EFFICIENCY

My second bill has to deal with vehicle tire efficiency. S. 1851 would require replacement tires to meet the same standards as new vehicle tires, including fuel economy requirements. If you go to buy new tires today, you can't find out how those tires will affect your gas mileage.

But the truth is that replacement tires are in general between two and four percent less efficient than the original tires that come with the vehicle. Two percent may not seem like much, but it ends up costing the buyer as much as \$150 over the life of the tires. And it also means we use more foreign oil as a nation.

GAS GUZZLERS TAX LOOPHOLE

My next bill, S. 1852, addresses a specific tax loophole that encourages gas guzzling. Currently the tax code effectively punishes, through smaller deductions, those small businesses that purchase vehicles that get good gas mileage. At the same time, the current tax code actually rewards small businesses that purchase bigger, heavier vehicles—those over 6,000 pounds.

Businesses purchasing vehicles that consume more fuel are rewarded with markedly larger and accelerated deductions.

I am not saying that we should tell small businesses to purchase one class of vehicle or another. What I am saying is that the playing field must be level for all vehicles, so small businesses can purchase the vehicles of their choice without being unnecessarily pushed into bigger, heavier vehicles. That is what my bill does: it levels the playing field.

FEDERAL GOVERNMENT FUEL SAVINGS

To address saving energy used by the federal government, I have introduced bill S. 1853, the "Reduce Government Fuel Consumption Act." This bill directs federal agencies to try to achieve a target of 10% reduction in fuel consumption over the next year. For obvious reasons, it specifically excludes any fuel consumed for military use. However, it is important that the federal government practice what it preaches.

PRICE GOUGING

Finally, Mr. President, I have offered a bill that addresses price gouging. It may come as a surprise or even a shock to most Americans, but there is no federal law against price gouging. My proposal, S. 1854, changes that by establishing a law stating that price gouging may exist when prices rise by ten percent as a result of an emergency compared to the same point one month before.

My bill allows for both the U.S. Attorney General as well as the state Attorneys General to file a price gouging lawsuit in state or federal court. My bill requires the U.S. Department of Justice to cooperate with states on anti-gouging efforts.

I am sure there are other measures that would provide small doses of relief, but we have not advanced them.

So, there it is, I am frustrated at the Senate's inaction. Today, I am sure that we will discuss policies that may provide relief in 2-20 years, but I am more concerned about this winter. Many of America's families, farmers, ranchers, and small businesses are on a financial cliff, and they need action to pull them back from that edge.

 PREPARED STATEMENT OF HON. JAMES M. TALENT, U.S. SENATOR FROM MISSOURI

Mr. Chairman, we've spent over four years working to get an energy bill, and even after passing that bill into law, we find ourselves facing a fundamental problem—energy prices are too high because supply is not keeping pace with demand.

We've tried for years to work around these fundamentals, but now we are to the point where, if we do nothing, the problem will solve itself in a way we cannot afford: energy prices will chase industry and jobs away to countries where prices are more reasonable. That's no solution; it is a disaster, it is real, and it is coming unless we do something soon.

Dow Chemical CEO Andrew Liveris provided just one example of a business that no longer finds it economic to produce in the United States.

He noted the huge disparity in natural gas costs that existed even pre-Katrina and will be a problem even after the gulf recovers from the hurricanes, unless we do something.

Natural gas prices set a record of \$14.50 per MMBtu last month (9/30/95), double the already high \$7 per MMBtu price from last year at this time. (API) In Europe, it's about \$7.00 today, China less than \$5.00 and in Saudi Arabia it's less than \$1.00. This is largely the reason that, between 2000 and 2005, more than 2.9 million American manufacturing jobs disappeared. (Dow Chemical) I think that we can all agree that this cannot continue.

Likewise, gasoline prices, while largely down from their post-Katrina peak over \$3.00 per gallon, are still almost a dollar higher than a year ago, and even then it wasn't cheap. Our airlines are teetering on the brink of bankruptcy, in part due to the high cost of jet fuel.

What will bring these prices down to sustainable levels? Not conservation alone. Certainly not new taxes on oil companies or regulations on industry.

Mr. Chairman, a first year economics student could tell you the answer—when demand is increasing, supply must increase as much or more to keep prices down. And we've got the supply. The untapped portion of Lease 181 in the Gulf of Mexico, 100 miles offshore, has enough natural gas to heat 6 million homes for 15 years. Alaska and the Western Mountains have an estimated 1,450 trillion cubic feet of natural gas, enough to meet current U.S. demand for more than 60 years, according to the Natural Gas Supply Association.

ANWR has enough oil to produce 900,000 barrels per day, or 4.5 percent of current U.S. consumption, for thirty years.

This is an important hearing on rebuilding our nation's infrastructure and planning for our energy future. I am hopeful that our witnesses will discuss how we are working together to find ways to overcome obstacles and tap into these vital resources that drive economic growth in this nation.

To that end, I sponsored a letter, signed by 11 of my colleagues, to President Bush asking that he direct Secretary Norton to include the remaining portion of the Lease Sale 181 area in the 2007-2012 five year leasing plan on the Outer Continental Shelf.

Thank you.

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

Senator BINGAMAN. Thank you very much. Thank you, Mr. Chairman, for having this hearing. And, as you point out, it's one of a series of hearings that we've had.

The two issues that I hope we can explore are what the two Departments see as their roles in post-Katrina reconstruction, and any recommendations that they have on avoiding future damage to the energy infrastructure and critical infrastructure in these hurricane-prone regions of our country. The second, of course, is probably the nearest to the hearts of most Americans, and that is what the Secretaries can tell us about how we can propose to address these very high energy costs and prices that we are faced with, what actions have been taken, and what actions may be taken.

I have an industry alert here, put out by Deutsche Bank, dated yesterday, which says that the White House is close to sending a series of oil recommendations to the Hill for legislative action; two key proposals. First, a 5-day regional reserve for gasoline, diesel, and jet fuel, and, second, a tax on the oil industry to fund the Low Income Home Energy Assistance Program. It goes on to say that, while at first glance, this looks—this 5 percent profit haircut that these proposals represent are arguably bullish in the view of Deutsche Bank, they're arguably bullish for the industry, because they would reduce the pressure from more severe and troublesome wind-fall profits taxes, and, second, they can be passed along to the consumer. That doesn't sound like a very good arrangement, the way I'm generally thinking of it.

So, at any rate, those are issues I would like very much to explore when we get into the questions.

Thank you very much, Mr. Chairman.

The CHAIRMAN. Thank you very much, Senator.

Now we're going to proceed. We're going to start with our witnesses, and we're going to take Secretary Norton first, and then Secretary Bodman.

Would you please proceed, Madam Secretary?

**STATEMENT OF HON. GALE A. NORTON, SECRETARY,
DEPARTMENT OF THE INTERIOR**

Secretary NORTON. Thank you.

Good morning, Mr. Chairman and members of the committee. I appreciate the opportunity to be here today to share with you our experiences from the hurricanes and what we can learn from those.

Hurricanes Katrina and Rita clearly demonstrated the need for diversification of our energy supply. President Bush recognized, in his national energy policy, that we need to increase our energy supply and invest in our energy infrastructure. Diversification is a key goal for this administration and must remain a top priority for our Nation's economic and national security.

Achieving a goal of secure, affordable, and environmentally sound energy will require diligent, concerted efforts on both the supply and demand sides of the energy equation.

I'm pleased to be here today with Secretary Bodman. One of the things that we have learned very dramatically during this experience is how interconnected our energy supply is, how much offshore production depends on onshore facilities. We have had the opportunity to work together very closely, and even to visit the gulf region together to see the impacts.

Now, let me begin by explaining what happened to our offshore energy infrastructure as the hurricanes came through. This map—and you have been provided with copies of that—the map in your packets—the map shows the path of the two hurricanes. The key point is that three-fourths of our offshore platforms were in the path of one or another of the hurricanes. Of 4,000 platforms, 2,900 were in the path. One platform reportedly clocked sustained winds of 170 miles an hour for 5 to 6 hours, with gusts over 200 miles an hour during Katrina. As Hurricane Rita came through, although, fortunately, it had subsided by the time it reached ground, it was still category 4 as it hit some of our offshore platforms. Coming so close together, these storms created an unprecedented challenge for offshore production.

We have a few charts that show both gas production and oil production from the hurricanes, and the top green line on each of these goes back to last year. That is the pattern that we saw for Hurricane Ivan in 2004. What you can see from Hurricane Ivan, which, similarly, had a significant effect offshore, is a fairly quick recovery. We see stages of recovery. Essentially, the first stage is checking to see if there is damage to facilities. If there's no damage, restoring those quickly, getting people back on the platforms. The next phase is dealing with minor damage, and restoring those things. And then you have a longer time of restoring the more significant damage, and that results in a—more gradual parts of the recovery process. When you look at the bottom blue line on each of these charts—one shows oil, one shows gas, but the pattern is basically the same—the blue line shows what happened with Katrina, and then with Rita. After Katrina, we had a slower path of recovery than we had with Ivan, because the damage was more severe. And then, with Hurricane Rita, we have seen an even slower path of recovery.

All together, between Hurricanes Rita and Katrina, we had over a hundred offshore platforms destroyed. Many of those were small, old platforms, but those were destroyed. In the recovery, we have now seen getting back to about two-thirds of our oil production continuing to be shut in. And that's our current situation. Wilma caused a brief blip on that, but essentially caused no additional damage. But we remain with two-thirds of our gulf oil production not producing, and 53 percent of natural gas production shut-in.

The Department of the Interior has been taking active measures to help get production back online. We tried to cut through red tape and be practical in our application whenever possible. We've been streamlining the processes for various permit approvals to resume production. We've expedited the reviews of requests for temporary

barging of oil until pipelines could be repaired. We've accelerated the process to approve pipeline repairs.

One of the key things that we have seen in this whole experience is the effect of our environmental protection measures. As we saw these two huge hurricanes roll through with so much of an impact, one might have expected the entire Gulf of Mexico to be blackened by oil spills. The reality is that even with over a hundred platforms destroyed, there were no significant spills from any of our wells.

What we see in these two charts are the valves that protect the wellheads. And the—Tom, if you could point to where the wellhead shutoff valves would be, they are 100 feet below the sea-floor level, which means that each well is protected by a valve that will prevent that well from leaking into the water, even if the entire platform is destroyed. What we found was that, in each and every case, those valves operated correctly. We had no spill from any of our wells. The National Oceanic and Atmospheric Administration recently announced the results of a study they did with samples from fish and other marine life, and found that there were no elevated levels of hydrocarbon contaminants in those fish populations, which indicates that—again, that our oil-spill prevention measures worked.

There is no official estimate, but the damages in repair costs will be in the billions of dollars. We recognize that this is a complex system, companies need to be checking platforms, they need to be dealing with pipeline damage, with onshore facility damage. We've had to respond in a variety of ways. We're working closely with the Department of Energy and with the Coast Guard in the Department of Homeland Security on our recovery efforts.

Some of the reasons for slow recovery include limited amounts of repair equipment and skilled personnel that have to be divided in many more directions than has been the case in the past as a result of past hurricanes. So, know that our employees are working hard. The industry is working hard, and there is a lot of repair work that needs to be done. That's going to take many more months before we see a full recovery.

Let me run through a few of the lessons that we have learned from this.

First of all, we learned that our upgraded design standards for platforms worked well. Of all of the platforms that were destroyed, only one was built after 1988. And so—certainly, at least, of any significant platform—our current standards worked very well. The one exception is shown in this set of charts, the chart that is headed "Mini-Tension Leg Platform" shows the typhoon facility owned by Chevron. It was one of the newest facilities in the Gulf of Mexico and was producing 28,000 barrels of oil a day. We are investigating the cause of this, but there may have been a collision between this facility and another—possibly drilling units—in the midst of the hurricane. But, unfortunately, the after-photo is what you see over there. That is the upside-down version of the platform—view of the platform. We found it floating about 30 miles away from where it was supposed to be located. Other than that, perhaps collision causing damage, all of our other major platforms performed fairly well. There were some areas of damage on the platforms, but the overall structures survived.

One area that we did find where our standards need to be reviewed is on mobile offshore drilling units. And this is an example of one of those units. Those are moored in place, and we found, unfortunately, those moorings did not hold. We found some of that with Hurricane Ivan, and the Minerals Management Service had already initiated a study to see how those should be strengthened. We found that 19 of these drilling rigs were knocked loose from their moorings during the hurricanes, and some of them dragged anchors. That caused pipeline damage. And so, we have learned that is an area we need to focus on.

I have called for a conference with the energy industry on November 17, to discuss what we need to do to strengthen those moorings and where we need to go in a future regulatory stance.

The hurricanes have shown us the importance of diversifying our energy supply. We have been working on that issue in a number of ways. The Minerals Management Service is looking at its 5-year plan for the leasing of offshore areas from 2007 to 2012. We have had the first round of public comment on that, and we will then be doing environmental impact reviews.

Of all the comments received to date on the 5-year plan, there were 8,998 comments in support of opening additional areas, and 2,276 against.

The House—

The CHAIRMAN. Would you repeat that one?

Secretary NORTON. Yes. We had close to 9,000 comments—

The CHAIRMAN. What was the issue?

Secretary NORTON. This is on the areas that should be opened for leasing, between 2007 and 2012, in the Outer Continental Shelf.

The CHAIRMAN. Thank you.

Secretary NORTON. It was 8,998 for, 2,276 against.

The House, last night, as you're probably aware, included an OCS provision in its budget reconciliation. We're still reviewing that. We do not have an official position yet. We're pleased that Chairman Pombo has worked with Governor Bush to try to resolve some of the issues of concern to Florida especially.

Very briefly, we are looking at other areas. ANWR is one that I have talked with this committee about before. We continue to consider that an important part of our energy plan and our diversification. We've been working onshore, through the Bureau of Land Management, to process applications for permits to drill. And, as a result of the provisions in the energy bill that you all recently passed, we have additional funding to process APDs, and we're moving quickly to get additional personnel in place. You have also passed some categorical exclusions from NEPA that do very straightforward things, like saying if you drill two wells from the same drilling pad, you don't need to go through the whole process for the second well being placed on the same pad. Those kinds of things are very helpful to us, and we anticipate being able to move more quickly as a result of those things.

I will stop at this point, but thank you very much for your attention.

[The prepared statement of Secretary Norton follows:]

PREPARED STATEMENT OF HON. GALE A. NORTON, SECRETARY,
DEPARTMENT OF THE INTERIOR

Mr. Chairman and Members of the Committee, thank you for the opportunity to appear today to discuss energy policy and hurricane recovery, especially the Department of the Interior's activities and responsibilities in bringing the offshore oil and gas production in the Gulf of Mexico back on line.

Hurricanes Katrina and Rita clearly demonstrated we have no margin to mitigate the impacts of natural disasters on our energy supply. The wake-up call being sounded for the past decade has reached the point where it must be heard. The President recognized, in his National Energy Policy, that we need to increase our energy supply and invest in our energy infrastructure. The President's National Energy Policy report envisioned a long-term energy strategy. As the report stated "America's energy challenge begins with our expanding economy, growing population, and rising standard of living. Our prosperity and way of life are sustained by energy use. America has the technological know-how and environmentally sound 21st century technologies needed to meet the principal energy challenges we face: promoting energy conservation, repairing and modernizing our energy infrastructure, and increasing our energy supplies in ways that protect and improve the environment. Meeting each of these challenges is critical to expanding our economy, meeting the needs of a growing population, and raising the American standard of living." In fact, in recent testimony presented to the Senate Interior Appropriations Subcommittee by the Industrial Energy Consumers of America stated that "[s]ince 2001, natural gas prices have significantly contributed to the loss of 3.0 million manufacturing jobs and the shifting of future investment overseas."

Therefore, we must not lose sight of this fact: Diversification of our Nation's energy supply is a key goal for this Administration and must remain a top priority for our Nation's economic and national security. Achieving the goal of secure, affordable and environmentally sound energy will require diligent, concerted efforts on many fronts on both the supply and demand sides of the energy equation.

HURRICANE KATRINA AND RITA RECOVERY

The oil and gas produced from the Gulf of Mexico are vital to the American economy and way of life. Production from the Gulf of Mexico provides 27% of oil and 20% of natural gas produced domestically. However, it took two major hurricanes back-to-back to drive home the importance of this region to our Nation's energy security. As a country we face tightening oil and gas supplies and higher prices. It is time to take a closer look at the full impact of Hurricanes Katrina and Rita.

The attached map* shows that Hurricanes Katrina and Rita moved through a core area of offshore operations. Of the approximately 4,000 platforms, 2,900 were in the path of Katrina and Rita. One platform in the path of Katrina clocked sustained winds of 170 mph for 5-6 hours with gusts of over 200 mph. At Rita's peak on September 25, 100% of daily oil production and 80% of daily gas production in the Gulf was shut-in. Prior to Hurricane Katrina, the Gulf of Mexico produced approximately 1.5 million barrels of oil per day, and 10 billion cubic feet of natural gas per day. In the wake of these two devastating hurricanes, a significant portion of our Gulf production has been curtailed: as of October 21, 2005, some 65 million barrels of oil and 327 billion cubic feet of natural gas have not been produced due to shut-in wells. We do, however, want to note that additional facilities were shut-in due to Hurricane Wilma, resulting in an approximately four percent increase in shut-in production. These facilities did not sustain any damage and therefore, are expected to come back on line in the next few days.

There is good news regarding offshore operations. Katrina and Rita—both reaching Category 5 strength as they spun through the Gulf and the heart of the offshore energy production—caused no loss of life among offshore industry personnel or significant spills from any offshore wells on the Outer Continental Shelf (OCS). This bears repeating: We faced down two of the most devastating hurricanes ever to hit the Gulf of Mexico without one significant spill from any offshore well on the Outer Continental Shelf. Although there were some minor pollution events from lines or equipment, all subsurface safety valves installed beneath the seafloor successfully prevented uncontrolled releases of hydrocarbons into the Gulf of Mexico.

The Department of Commerce's National Oceanic and Atmospheric Administration (NOAA) has been collecting fish samples in the aftermath of the hurricanes to determine exposure to contaminants resulting from the storms. On September 29, 2005, NOAA announced the results of the first sample tests of Gulf of Mexico fish

*All attachments have been retained in committee files.

two weeks after Hurricane Katrina. The latest tests found no elevated exposure to hydrocarbon contaminants, which can be present at elevated levels in marine life after exposure to oil spills. The first round of samples were from Pensacola, Florida, along the coastlines of Alabama and Mississippi and then around the southern tip of Louisiana at the mouth of the Mississippi River and back. NOAA has advised that samples from two subsequent cruises are currently being analyzed and NOAA will continue to assess impacts throughout the year. The Department's Minerals Management Service (MMS) regulates all exploration, development and production activities on over 8,000 leases in the Gulf of Mexico alone. Since human and environmental safety are two of MMS's major goals, we are very pleased with this result.

At the same time, significant damage has been reported regarding facilities in the OCS. Katrina destroyed 47 platforms and 4 drilling rigs; extensively damaged 20 platforms and 9 drilling rigs; and shut in 95% of Gulf oil production and 88% of Gulf natural gas production. Production had not fully recovered post Katrina when Rita hit the Gulf. Rita destroyed an additional 66 platforms and 4 drilling rigs; extensively damaged 32 platforms and 10 drilling rigs; and shut in 100% of Gulf oil production and 80% of Gulf natural gas production.

Today, we are seeing incremental progress in the Gulf oil and gas production. As of October 21, 2005 shut-in numbers are 66% of the oil and 53% of the natural gas production. Again, these percentages are slightly higher post Hurricane Wilma but we expect that portion of production to resume quickly. It is fair to say, however, that oil production in the Gulf of Mexico will not be back to 100% for many months. Recovery is dependent on repairs to onshore facilities, offshore and onshore pipelines transportation systems, and offshore platforms. Generally Industry must conduct the necessary inspections of these networks, determine the repairs required, and then perform any necessary repairs. It is evident from reports received from Industry to date that this work will take approximately several months to a year. For example, we estimate, based on Industry reports, that approximately 30 percent of pipelines have not been leak tested and approximately 60 percent of underwater/riser inspections have not been completed.

Industry has reported billions of dollars in damage and we expect the figure to grow as inspections are complete. The oil and gas industry continues to use all available resources to board, assess damage, re-man and begin repair of OCS facilities, concentrating on the high-producing operations first. Even as production repairs are made, however, problems with dislocated employees, onshore support facilities, terminals, refineries and pipelines could delay the resumption of supply to market.

The industry is exploring various alternatives to restore transmission of oil and gas from the OCS while repairs are being carried out on pipelines and onshore facilities. Concerning pipelines in the area impacted by Katrina and Rita, we estimate that 45 percent of the pipelines are operational, 30 percent need repair, and 25 percent are undamaged but cannot flow due to downstream problems. In some cases, oil is being barged to shore until pipelines and other facilities can be repaired, inspected and judged safe for operation. The MMS, along with the U.S. Coast Guard, has approved these requests resulting in 33,000 barrels of oil per day being brought back online that had been shut in due to downstream refinery problems. The MMS is evaluating such applications on a case by case basis.

Both onshore natural gas processing facilities and oil refineries suffered extensive damage from the storms. In fact, some onshore production in the states of New Mexico and Texas was also shut-in due to the lack of refining capacity. Following Katrina, the Mont Belvieu plant could not accommodate any refinery product from the Dukes plant in New Mexico, where some of the natural gas produced from federal oil and gas leases in New Mexico is sent for processing. Consequently, the Dukes plant could not accommodate any raw product for approximately 24 hours resulting in some production having to be shut in. This example serves as an illustration of the ripple effect that occurred oil and gas production and refining. It will take multiple months to repair processing plants.

A number of variables are impacting this restoration process. Industry personnel, for both offshore and onshore operations, have been and continue to be affected by the storms and must ensure their families' well-being and safety first. Onshore infrastructures suffered significant damage. For example, 16 natural gas processing plants in Louisiana and Texas are inoperable due damaged from the hurricanes.

MMS Actions

As directed by the MMS's Continuity of Operations Plan (COOP), the Gulf of Mexico Regional Office, which is located in the New Orleans area moved its COOP team to Houston, Texas, in advance of the evacuation triggered by Katrina. As Hurricane

Rita bore down on Houston, the COOP team evacuated once more to the MMS's offices in Herndon, Virginia, and continued collecting and evaluating data on the status of operations in the Gulf. In addition, the MMS also moved its Lake Charles District Office operations to other district office sites in the region.

In September Johnnie Burton, the Director of the Minerals Management Service, and I visited our New Orleans staff recently relocated to Houston where we witnessed the dedicated employees hard at work to bring facilities back on line and resume normal operations. The dedication of these public servants—many of whom had their homes destroyed or severely damaged—is beyond words.

The MMS has notified all 530 MMS Region employees that they will be back to work on October 31, 2005, at one of four office sites, three in the New Orleans area and one in Houston. The top five floors of the Region's headquarters building were severely damaged and are being renovated. The bottom five floors are habitable and employees will be using this space as of October 31, 2005. All administrative and health procedures have been put in place to ensure our employees will be working in a safe and healthy environment.

The Department is also taking other actions to help bring production back online. After Katrina, it was apparent that there was massive disruption to not only the producing, transporting and processing infrastructure, but also the supporting infrastructure including the companies' land-based operations essential to repairing damage. Hurricane Rita amplified this impact by disrupting operations which had been recently reconstituted after Katrina and significantly expanded the coastal area that was disrupted. The culmination of the two storms created Herculean challenges for the industry and based on prior experience, the MMS immediately began the following:

- 1) streamlining processes for various permit approvals to resume production,
- 2) expediting reviews of requests for the temporary barging of oil until pipelines are repaired, and
- 3) accelerating the process to approve pipeline repairs.

MMS is also providing regulatory relief to those companies hardest hit by Hurricanes Katrina and Rita. This relief eliminates undue burdens on companies at a time when the focus must be maintained on repairing and restoring infrastructure. For example, MMS extended the time to report and pay royalties for companies that certify that they cannot report or pay due to the hurricanes' impact on their offices and staff. Finally, the effective dates for two regulations have been extended in order that we do not place additional burdens on industry at this time.

Gulf oil and gas operations account for a significant portion of our domestic production and the Department is determined to bring production back on line as quickly as possible. This is truly a vital issue, which we are pursuing every day. MMS is always striving to ensure that appropriate technology is used in the design and operation of offshore facilities and MMS assesses all potential improvements for withstanding hurricane-force wind and waves. I have been working closely with Energy Secretary Bodman and Transportation Secretary Mineta on these important issues.

Lessons Learned

Damage reports post-Rita have highlighted a problem with Mobile Offshore Drilling Units (MODU). Nineteen MODU's broke loose from their moorings and were set adrift; some causing damage to pipelines as anchors dragged along the ocean floor. To address this issue, I have called for a Conference on Mobile Offshore Drilling Units to be held at the Department, here in Washington, D.C. on November 17, 2005. During this conference we will assess lessons learned and we will define a path forward.

What lessons have we learned from the past month? Major new facilities, constructed to meet MMS's 1988 updated design standards, fared much better than their older counterparts. Typhoon was the only platform built under the 1988 standards that was destroyed. I have asked MMS to work together with the U.S. Coast Guard to investigate the destruction of the Typhoon tension leg platform. The MMS has commissioned studies that are assessing the actual wind, wave and current forces that were present in Hurricane Ivan, analyzing the consequential damage to structures and pipelines, determining the effectiveness of current design standards and pollution-prevention systems and developing recommendations for changes to industry standards and MMS regulations. If funding permits and it is practical to do so, these studies will be expanded to include information from Hurricanes Katrina and Rita.

Hurricanes Katrina and Rita confirmed that our offshore oil and gas industry produces environmentally safe energy for America. Even in the face of two back-to-back

major hurricanes, all subsurface safety valves held on the OCS and there was no significant spill from production. The small amounts of oil observed in the water surrounding platforms may have come from damaged pipelines or petroleum supplies for running platform machinery, but, as stated, it did not come from OCS production wells.

In addition, the Katrina/Rita scenario has confirmed that our domestic offshore oil and gas resources are key components in the energy mix which provide some of the basic necessities Americans have come to expect—gasoline for our cars, heating fuel for our homes, natural gas to cook our meals, to power our factories, and to generate the electricity that is critical to our way of life and critical to powering our advanced economy. At present, more than 25% of America's total domestic oil and natural gas production comes from only 10% of the total OCS acreage.

ENERGY DEVELOPMENT AND DIVERSIFICATION

ANWR

President Bush's National Energy Policy report laid out a comprehensive, long-term energy strategy for securing America's energy future. That strategy recognized that to reduce our rising dependence on imported oil and gas, we must also increase domestic production while pursuing conservation and development of alternative and renewable energy sources. The President proposes to open a small portion of the Arctic National Wildlife Refuge (ANWR) to environmentally responsible oil and gas exploration using newly available, environmentally friendly technology. ANWR is by far the largest potential untapped source of onshore resources in the country. Had ANWR been opened in 1995, it is possible that today we could have oil from the area, which may have helped mitigate the effects of the hurricanes. I would like to thank you and the rest of the Congress for taking up this important issue as we continue to try to provide additional energy resources in an environmentally responsible way.

OCS 5-year plan

Under the OCS Lands Act, the MMS is required to prepare a new 5-year leasing plan that specifies the size, timing and location of areas to be considered for Federal offshore natural gas and oil leasing. The 5-year planning process provides several opportunities for MMS to work with stakeholders, including Federal and State agencies, local communities, private industry, and the general public to develop a program that offers access in an environmentally responsible manner to those areas with potential for discovery of natural gas and oil. Not every area analyzed in a 5-year plan is recommended for leasing consideration. In addition, public participation through input and comments is an integral part of preparing the environmental impact statement (EIS) in conjunction with the 5-year program, and there are multiple opportunities for public comment during the EIS process as well.

The MMS announced in late August that it is seeking initial public comment on the development of its 2007-2012 five-year leasing plan for energy development on the Outer Continental Shelf (OCS) and accompanying environmental impact statement.

In seeking public comment, MMS asked the public to comment specifically on whether the existing withdrawals or moratoria should be modified or expanded to include other areas in the OCS; and whether the Interior Department should work with Congress to develop gas-only leases. Throughout the process of developing a new 5-year program, MMS requests comments from states, local and tribal governments, American Indian and Native Alaskan organizations, the oil and gas industry, Federal agencies, environmental and other interest organizations, as well as the general public. Consultation with affected parties also occurs at the local level through MMS regional offices. Of all of the comments received to date on the 5-year plan, MMS has received 8,998 comments for opening additional areas of the OCS and 2,276 against.

We have received several letters from senior citizens expressing their "strong support" for opening additional areas of the OCS. One senior citizen wrote "I'm writing to express my strong support for developing more domestic oil and natural gas resources off our coasts—in the country's Outer Continental Shelf (OCS)—by providing for more acreage for lease in the government's next five-year leasing program for 2007-2012 . . . Higher energy prices of the past two years have forced me to make hard choices. And I worry that high energy prices will harm our economy affecting the value of pensions and making it more difficult for Social Security to help make ends meet."

We have also received several letters from Chambers of Commerce throughout the country. The Indiana Chamber of Commerce wrote "The Indiana Chamber of Com-

merce and our members are experiencing high energy costs, resulting in a negative impact on production and transportation in Indiana.” The Arkansas Chamber of Commerce stated “Over the last five years the price of natural gas has risen 140%. There is no doubt this increase has played a role in the reduction of manufacturing jobs available to Arkansans.”

Onshore Mineral Development

The Bureau of Land Management (BLM), an agency within the U.S. Department of the Interior, administers 261 million surface acres of public lands, located primarily in 12 Western States. The BLM sustains the health, diversity, and productivity of the public lands for the use and enjoyment of present and future generations. The BLM continues to balance the energy needs of the country while working within its multiple use framework and is mindful of alternative uses of the land it manages.

Within areas designated for appropriate mineral development, the BLM has been making a concerted effort to help bring additional oil and gas supplies to the market. Domestic production of natural gas has been increasing over the last three years. In Fiscal Year 2002, 2.1 trillion cubic feet (Tcf) of natural gas and 107.5 million barrels of oil (bbl) were produced from Federal (non-Indian) lands. In Fiscal Years 2003 and 2004, 2.2 Tcf and 3.1 Tcf and 101 million bbl and 98.2 million bbl, respectively, were produced. In addition to the Federal onshore leases, the BLM supervises the operational activities of 3,700 producing Indian oil and gas leases.

Permitting and Leasing

Processing Applications for Permits to Drill (APDs) and operating an efficient federal oil and gas leasing program continues to be a major priority for the BLM. Increased funding provided by Congress and management improvements have enabled the BLM to make significant progress in responding to the greatly increased number of APDs being submitted by industry. In FY 2004, the BLM processed 7,351 APDs, approving 6,452 (on both Federal and Indian lands). In FY 2005, the BLM had processed approximately 7,736 APDs (about 400 ahead of FY-2004's pace), approved 7,018 APDs (about 600 ahead of FY-2004's pace).

Also, as directed by the Energy Policy Act of 2005, BLM is implementing a pilot project to better coordinate APD processing. The BLM has entered into a Memorandum of Understanding with the Fish and Wildlife Service, Bureau of Indian Affairs, Army Corps of Engineers, Environmental Protection Agency, and United States Forest Service to provide staff and expertise to better coordinate activities in order to improve efficiency while maintaining environmental protection. The pilot offices will be aggressive and innovative in finding better and more efficient ways to manage the oil and gas program and within 18 months, we will have identified best management practices that can be implemented bureau wide. New money from rental revenue will help BLM accomplish this task. With more efficient processes and additional funds, we anticipate BLM could process more than 9,600 permits in FY 06 and 11,400 permits in FY 07.

The Energy Policy Act of 2005 also gives us a valuable tool for improving our NEPA compliance related to the exploration or development of oil and gas by providing a legislative determination that a set of defined and very minor development activities do not need further site specific NEPA review and if proposals meet certain conditions, they should be deemed to be categorically excluded from further NEPA review.

It is important to note the dramatic increase in the number of protests that the BLM has experienced in recent years, which create processing delays. For example, in 1999, approximately 4.5 percent of leases offered were protested; BLM received approximately 166 protests on 3,628 leases offered. In 2005, 50 percent were protested; 1,291 protests on 2,342 leases offered. The State of Utah provides a clear illustration of the impact of protests on the oil and gas program. In 2004, every lease sold in Utah was protested resulting in delays in issuing them of up to 18 months. The real challenge for BLM is that the same personnel who process protests also process APDs, conduct leasing, inspection and enforcement, land use planning, and a range of other activities.

National Petroleum Reserve Alaska (NPR-A)

BLM is also working to make oil and gas resources in Alaska available through its leasing, exploration and development activities in the NPR-A, an area covering more than 23 million acres in the northwest corner of the state. Development of these oil and gas resources is an important component of the President's National Energy Policy. It is estimated that NPR-A contains 10.6 bbl and 61.4 Tcf undiscovered resources for the entire assessment area. The first significant commercial production from the NPR-A is expected as early as 2008.

Oil Shale

The United States holds significant oil shale resources underlying a total area of 16,000 square miles. This represents the largest known concentration of oil shale in the world and could contain the equivalent of 2.6 trillion barrels of oil. More than 70 percent of American oil shale is on Federal land, primarily in Colorado, Utah, and Wyoming. The Energy Policy Act directs that public lands in these three States be made available for research, development, and demonstration (RD&D) leasing within six months of the measure becoming law. In response to its announcement of an oil shale RD&D program, the BLM has received 20 nominations for parcels of public land to be leased in Colorado, Utah, and Wyoming. BLM intends to offer RD&D leases for the viable nominations early in 2006. BLM will also be conducting a programmatic Environmental Impact Statement and will develop a commercial leasing program by mid 2007.

Coal

The BLM is doing its part to ensure that the Nation has an efficient, affordable, and reliable domestic energy supply of coal. Bonus bids are up 177%; existing lease production is up nearly 24%; and the royalty and estimated rent income is up nearly 33%. During this time period, 2001-2004, nearly 1.8 billion tons of coal were produced from Federal leases. In addition, the Energy Policy Act of 2005 gives the Department the authority to increase the number of acres per lease, which we are working on implementing.

The Office of Surface Mining Regulation and Enforcement (OSM) works with coal operators to ensure that land that has been mined is restored to its previous condition. OSM has a successful working relationship with the States and mining industry to ensure sites are properly reclaimed. OSM brings a level of regulatory stability to the benefit of all stakeholders.

Conservation and Renewable Energy

Fossil fuel development is only part of the solution to our Nation's energy issues. We also must increase energy conservation and the use of alternative and renewable resources. The Department echoes Secretary Bodman's call for an increase in conservation measures. Most media coverage of the President's National Energy Policy and the recently enacted Energy Policy Act of 2005 focused on the parts dealing with production of traditional energy. However, both call for increased energy conservation and alternative and renewable sources as critical components to a balanced energy program. Good stewardship of resources dictates that we use energy efficiently and conserve resources. Americans have already made great strides in using energy more efficiently. Since 1973, the United States economy has grown nearly three times faster than energy use, in part due to more efficient use of energy. Efforts over the past 20 years have proven that simple conservation actions by individuals and businesses can yield impressive results in demand reduction.

Alternative and renewable sources of energy can also play an important role in helping meet our increased energy needs. To this end, the President and the Energy Policy Act of 2005 encourage development of a cleaner, more diverse portfolio of domestic energy supplies, and include measures to aid in the development and expansion of renewable energy technologies in use today, including geothermal, wind, solar, and biomass, as well as continued research into using hydrogen as an alternative energy carrier. Such diversity helps to ensure that Americans will continue to have access to the energy they need.

With that in mind, the Department has been working hard to establish conditions that will permit the development of renewable sources both on and offshore. We are proud of our record of results. We are increasing permitting, improving land use planning, and establishing policies that emphasize the use of renewables. In fact, since 2000, we have approved 200 geothermal leases and 92 wind energy permits. To further encourage wind energy development, the BLM has prepared a national EIS, which will assist the BLM in expediting wind energy permitting across our public lands. In addition, offshore we are developing a process to implement new authority provided for in the Energy Policy Act of 2005 that allows MMS to permit alternative energy-related uses such as wind, current, and wave technology on the OCS.

Hydropower is also a key renewable energy source. The Bureau of Reclamation's 58 power plants make it the 10th largest producer of electricity in the Nation. Those plants have an exemplary record of reliability, with a forced outage rate of about one-half of the industry standard. We are continually expanding generation at our facilities by upgrading turbines. In addition, the Fish and Wildlife Service is involved with Federal Energy Regulatory Commission licensing of private hydro-

electric facilities. We are working to make that process more streamlined, predictable and effective.

For solar energy, last fall the BLM issued a solar energy development policy, which, among other things, establishes the authority and procedures for BLM field offices to use when processing applications for solar projects. It helps establish solar markets by encouraging BLM field offices to consider the use of solar power for BLM facilities and field stations. More than 650 facilities owned and operated by the Department are equipped with solar systems. These include office buildings and remote systems such as weather stations and water pumps. Many other Federal agencies often use solar for power at isolated facilities as well.

Finally, the Department of the Interior continues to explore ways to encourage the use of wood biomass created as a result of wildfire prevention and healthy forest treatments. Most people think of ethanol from corn when they think of bioenergy, but wood is the source for 72 percent of all U.S. bioenergy production. Two Presidential initiatives, one to prevent catastrophic wildfires and the other to restore rangeland and forest health, encourage the removal of excess or diseased wood debris from forests and rangelands. This wood debris can be used as a renewable source of biomass energy.

The Department is working to reduce regulatory barriers and encourage the development of markets for the material produced from biomass and are actively working with other stakeholders on ways to use this resource. For instance, we will be hosting, along with the Departments of Agriculture and Energy, a conference on bioenergy. The Department will also provide training to local communities in biomass utilization.

CONCLUSION

Hurricanes Katrina and Rita brought devastation and destruction to a wide area of our Nation. The road to recovery after these storms will be long and, at times, very difficult. However, it is in these instances more than ever that humanity comes together as one to begin the journey toward recovery, rebuilding, and restoration. I am proud of the commitment and dedication shown by the employees of the Department of the Interior during this difficult period. Our resolve to assist in recovery and restoration activities remains strong. We will do all that we can to assist those affected by these storms as they begin the process of rebuilding. Our agency is not alone in this endeavor. We are working shoulder to shoulder with other Federal, State, local agencies, and industry in these efforts.

The disruption to our energy production in the Gulf is significant but we have learned lessons that will serve us well into the future. Most importantly, we have learned that the systems in place have worked. Modern oil and gas production techniques are effective and environmentally sound even in the most challenging and unpredictable of environments.

Thank you for the opportunity to be here today to discuss the Department's role in hurricane recovery and energy development. I will be happy to answer any questions members of the Committee may have for me.

The CHAIRMAN. Thank you, Secretary Norton.

I would note, just in passing, for you and for the record, that I'm working very hard to get Lynn Scarlett released here in the Senate. And I commented last night, and I did talk to the leader and the Democratic leader about it. I know you need every additional expert in your staff that you can get, and I'm trying my very best.

Secretary NORTON. I'd greatly appreciate that.

The CHAIRMAN. I will soon solicit the help of Senator Bingaman on that. I haven't asked him yet, but I think he won't object to helping me.

Senator BINGAMAN. I'd be glad to help.

The CHAIRMAN. We don't even know who's holding her up. It's not my side now, but it took me 6 months for my side, so it's not—I'm not complaining.

Secretary.

**STATEMENT OF HON. SAMUEL W. BODMAN, SECRETARY,
DEPARTMENT OF ENERGY**

Secretary BODMAN. Mr. Chairman, Senator Bingaman, members of the committee, I'm very pleased to have the opportunity of being here. I'm particularly pleased to be here with Secretary Norton, with whom I have been working even more closely than before, following these hurricanes.

The Department of Energy's Office of Electricity Delivery and Energy Reliability has been the center point of much of what we have done as a consequence of these hurricanes. They have put together a very succinct chronology of every action that was taken by the Department with respect to the hurricanes. This timeline covers a 2-month period from when Katrina first struck south Florida, as a matter of fact, on August 25, and that chronology is up through this current week. It notes actions that were taken not just by the Energy Department, but by the White House, the Department of Homeland Security, Department of the Interior, Transportation, EPA, Coast Guard, and the International Energy Agency, among others. So, it's fairly comprehensive.

I would like to ask, Mr. Chairman, that that be included in the record.

The CHAIRMAN. Yes.

Secretary BODMAN. And I would refer all of you to this document, as well as to the daily situation reports, which have been sent to congressional offices from the Department since Hurricane Katrina made landfall.

Let me just highlight a couple of the points that are spelled out in that chronology.

Hurricane Katrina struck the gulf coast on August 29, several days after first landing in south Florida. It left an unprecedented amount of destruction and an area that totaled 90,000 square miles. A total of 2.7 million people lost their electricity, 11 petroleum refineries were shut down, which represented 2½ million barrels a day of capacity, or nearly one-sixth of our refining capacity.

With Katrina, more than a quarter of U.S. crude oil production, 1.4 million barrels a day, was shut in. Nearly nine million cubic feet a day of natural gas production, as is shown on the charts the Secretary just showed you, was shut in, representing 17 percent of U.S. gas production. There were additional production losses occurring in areas on land in Louisiana.

Louisiana Offshore Oil Port was shut down, as were a number of major oil and gas pipelines. As a consequence, pipeline deliveries of gasoline, diesel, jet fuel, and propane supplies to the east coast and Southeastern United States were halted in their entirety.

The administration responded quite well, in my judgment, and took several critical actions. Prior to the storms' landfall, our Department dispatched employees to the Emergency Response Centers in the Southeastern United States, where they assisted utilities and coordinated with the power restoration efforts. Our job is really a matter of collecting the information and trying to provide coordination and getting barriers out of the way. We worked closely with State and local officials, first-responders, and power companies to assist in coordinating their efforts to begin restoring power and fuel supplies as quickly as possible.

We engaged with Entergy, the local utility, electric utility and other utilities, to help coordinate the work of over 13,000 utility crew personnel from all over the United States and Canada to restore electric power. We arranged for a shipment of fuel to two companies that manufactured electricity poles, a move which was absolutely critical in order to get their production going.

These efforts were very successful in reestablishing and helping to reestablish electricity throughout the affected areas. Within 2 weeks, the number of customers without electricity fell from 2.7 million to under a half a million.

We also took a number of crucial measures to minimize the impact of the storm on the Nation's energy supply. We worked to get power to the interstate pipelines. That was essential to ensuring adequate supply of refined products to the Southeast and east coast. We authorized loans from the Strategic Petroleum Reserve to refiners in the gulf region and the Midwest whose scheduled deliveries had been disrupted by the storm.

The President authorized the sale of oil from the Strategic Petroleum Reserve to help keep markets well supplied at a time when there were widespread fears of looming shortages. We reached an agreement with the International Energy Agency, which is located in Paris, for its membership to release an additional 30 million barrels of crude oil and refined products to world markets. The EPA provided temporary waivers, allowing the early use of winter-blend gasoline. The Department of Homeland Security rescinded legal restrictions on tanker transportation of fuel supplies. The Department of the Interior's Minerals Management Service immediately began to streamline processes for various permit approvals to resume production and expedited reviews of requests for temporary barging of oil until pipelines could be repaired.

The Treasury Department increased the supply of diesel fuel available for use on the highway by waiving penalties for the highway use of so-called "dyed" diesel fuel. The Navy and Coast Guard worked to clear shipping channels. We worked with our European allies to provide extra cargo tankers, as well as refined product, to help supply the American gasoline market. These steps had a very positive effect and helped calm the markets.

And then came Rita. That storm made landfall on September 24 and did even greater harm to our Nation's energy markets than Katrina. After Rita, 19 refineries were shut down, representing a third of the U.S. refining capacity. In the Federal Gulf of Mexico, virtually all crude production and 80 percent of natural gas production was shut in. Twenty-seven natural gas processing facilities were shuttered, representing half the gulf coast natural gas processing capability. Offshore rigs and platforms suffered great damage, as you just heard about. The LOOP facility, the offshore oil port, was shut down once again, along with a number of major pipelines.

An extraordinary situation was brought on by the one-two punch of Katrina and Rita. Energy markets have taken a big hit, and consumers will continue to face high prices for gasoline, natural gas, and home heating materials this winter. However, many of the steps which we took after Katrina have helped us deal with the

supply crunch caused by Rita, such as making crude oil from the Strategic Petroleum Reserve available to the market.

The administration has launched an energy efficiency and conservation campaign that the chairman took note of. That is aimed at educating consumers on steps that they can take to reduce their utility bills. This is the major effort that I think will be effective in dealing with this forthcoming winter. There is a copy of the Energy Saver's Guide, that we've provided for each of you, that we have been distributing throughout the country.

I have been traveling, along with senior Department officials, encouraging these conservation efforts. We're also working with energy intensive businesses and industries on ways to conserve. The President has called on the Federal Government to lead by example and conserve its own energy use, and we're working on that, as well.

Both the President and I have encouraged Federal agencies and employees to use these reference guides in their daily activities. Many members have requested copies for their constituents, and an online version has been mailed to each of your offices.

Mr. Chairman, Senator Bingaman, this concludes my statement. I'd be happy to take questions.

[The prepared statement of Secretary Bodman follows:]

PREPARED STATEMENT OF HON. SAMUEL W. BODMAN, SECRETARY,
DEPARTMENT OF ENERGY

Chairman Domenici . . . Senator Bingaman . . . members of the Committee . . . I want to thank you for the invitation to appear today. I am pleased to be joined by Secretary Norton and appreciate the opportunity to talk with you about the Administration's response to Hurricanes Katrina and Rita.

The Department of Energy's Office of Electricity Delivery and Energy Reliability has put together a very succinct chronology of every action taken in this regard.* This timeline covers the two month period from when Hurricane Katrina first struck south Florida, on August 25, up to the present week. It notes actions taken not just by my Department, but by the White House, the Department of Homeland Security, the Department of the Interior, the Department of Transportation, the Environmental Protection Agency, the U.S. Coast Guard, the International Energy Agency and others.

I ask that this be included in the record, and refer Senators to this document as well as the daily situation reports which have been sent to Congressional offices from the Department since Hurricane Katrina made landfall.

Mr. Chairman, I would like to highlight just a few of the points spelled out in that chronology.

Hurricane Katrina struck the Gulf Coast on August 29, several days after first landing in south Florida. It left an unprecedented amount of destruction in an area totaling 90,000 square miles.

A total of 2.7 million electricity customers lost power.

Eleven petroleum refineries were shut down, representing 2.5 million barrels per day—or nearly one-sixth—of U.S. refining capacity.

With Katrina, more than a quarter of U.S. crude oil production—1.4 million barrels per day—was shut in.

Nearly 9 billion cubic feet per day of natural gas production in the federal Gulf of Mexico was shut in, representing 17 percent of U.S. gas production with additional production losses occurring in areas under Louisiana's jurisdiction.

The Louisiana Offshore Oil Port (LOOP) was shut down, as were a number of major oil and gas pipelines. As a consequence, pipeline deliveries of gasoline, diesel, jet fuel, and propane supplies to the east coast and southeastern states were halted.

The Administration responded immediately by taking several critical actions.

*The chronology has been retained in committee files.

Prior to the storm's landfall, the Department of Energy dispatched employees to emergency response centers throughout the southeastern United States to assist utilities as they coordinated power restoration efforts.

We worked closely with state and local officials, first responders, and power companies to assist in coordinating their efforts to begin restoring power and fuel supplies as quickly as possible, wherever possible.

We engaged with Entergy and other utilities to help coordinate the work of over 13,000 utility crew personnel from all over the U.S. and Canada to restore power.

We arranged for a shipment of fuel to two companies that manufactured electricity poles, a move which was absolutely critical to efforts to restore power throughout the region.

Those efforts were very successful in re-establishing electricity throughout affected areas. Within 2 weeks, the number of customers without electricity fell from 2.7 million to under half a million.

We also took a number of crucial measures to minimize the impact of the storm on the nation's energy supply.

We worked to get power to the interstate pipelines that were essential to ensuring adequate supplies of refined products to the southeast and east coast.

We authorized loans from the Strategic Petroleum Reserve to refiners in the Gulf region and the Midwest whose scheduled deliveries had been disrupted.

The President authorized the sale of oil from the Strategic Petroleum Reserve to help keep markets well supplied at a time when there were widespread fears of looming shortages.

We reached an agreement with the International Energy Agency for its members to release an additional 30 million barrels of crude oil and refined products to world markets.

The Environmental Protection Agency provided temporary waivers allowing the early use of winter blend gasoline.

The Department of Homeland Security rescinded legal restrictions on tanker transportation of fuel supplies.

The Department of the Interior's Minerals Management Service immediately began to streamline processes for various permit approvals to resume production and expedited reviews of requests for temporary barging of oil until pipelines could be repaired.

The Treasury Department increased the supply of diesel fuel available for use on the highway by waiving penalties for highway use of "dyed" diesel fuel.

The Navy and Coast Guard worked to clear shipping channels in the Gulf and the Lower Mississippi River.

And we worked with European allies to provide extra cargo tankers, as well as refined product to help supply the American gasoline market.

These steps had a positive effect and helped calm the markets. Though gasoline prices spiked in the immediate aftermath of Katrina, they quickly eased in the weeks following.

And then came Rita.

That storm made landfall on September 24, and did even greater harm to our nation's energy markets than Katrina. After Hurricane Rita, 19 refineries were shut down, representing nearly a third of U.S. refining capacity. In the federal Gulf of Mexico, virtually all crude production and eighty percent of natural gas production was shut in. 27 natural gas processing facilities were shuttered—representing half of Gulf Coast natural gas processing capability. Offshore rigs and platforms suffered damage. The LOOP was shut down once again, along with a number of major pipelines.

An extraordinary situation was brought on by the one-two punch of Katrina and Rita. Energy markets have taken a big hit and consumers will continue to face high prices for gasoline, natural gas, and home heating oil this winter. However, many of the steps we took after Hurricane Katrina have helped us deal with the supply crunch caused by Hurricane Rita, such as making crude oil from the Strategic Petroleum Reserve available to the market.

The Administration has launched an energy efficiency and conservation campaign aimed at educating consumers on steps they can take to reduce their utility bills. I have been traveling the country, along with other senior Department officials, encouraging consumer conservation efforts. We are also working with energy-intensive businesses and industries on ways to conserve. And the President has called on the Federal government to lead by example and conserve its own energy use.

Additionally, in front of you, please find a copy of the Department's Energy Saver\$ booklet; an informative guide for your constituents with helpful tips on saving energy and money at home. Both the President and I have encouraged Federal agencies and employees to use these reference guides in their daily activities. Many

Members have requested copies for their constituents and an on-line version has been emailed to your offices.

Mr. Chairman . . . Senator Bingaman . . . this concludes my statement. I'll be happy to answer your questions.

The CHAIRMAN. Thank you very much.

I'm aware that a lot of Senators come to these hearings, and I know they all want to ask questions. I know witnesses think we're all here to hear them. We are. But many of you want to get your questions in. I have many, but I'm going to start another way and see if I can come along a little later.

So, Senator Bingaman, with your permission, I'm going to go to Senator Craig, then to you and—Senator Craig, you take my position, at this point.

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

Senator CRAIG. Well, thank you, Mr. Chairman. And to both Secretaries, thank you for your overview and your summary. And I think no one understands the magnitude yet of the damage, except those of us who look at it and those of you who deal with it and what you've had to do, in an extraordinary way. And, as you said, Secretary Bodman, the one-two punch almost took us down. And so, that's a reality that is being faced at the moment. And thank goodness gas at the pump is dropping again now. But natural gas, of course, remains extremely high. Diesel is high, hasn't moved. There's irregularities in the market there. And it's terribly frustrating.

Having said that, let me move on. That was then, this is now. And the national media is reporting, this morning, "gushing profits" from the major oil companies. And I believe the consumer is increasingly feeling that they've been taken for a ride, or very frustrated about their inability to do something about it. And what is now important is for us to focus on what we can do in the short term while we're doing things in the long term to resolve and get us through this period of time. Obviously, what you've said here is important. Can it get into the hands of every consumer? Probably not. Should it? Yes. Can it be presented in a different, less comprehensive, more detailed way, or action way? Probably can. You've asked for \$10 million more. We ought to provide it. You need to be on television, you need to be talking about it. I suggested maybe we could put the President in a sweater and put him on television. And then somebody said, "But remember, Jimmy Carter did that?" And yet, in a hearing last week, we know that if the American consumer turns their thermostat down two degrees with the demand destruction that's going on in the petrochemical industry and the less of use of high gas there, we can get through the winter and gas prices could fall if that were to happen. But that needs to be communicated, and how you do that, in ways that it's capable of doing.

So, we ought to help you there. You ought to be very vocal to us where you need any additional resource. We're also going to track very closely with you, especially Secretary Bodman, but also with Department of the Interior. Now that you've got an energy bill in your hands, don't take 3 years to write the regs. I hope this com-

mittee comes back to you on a quarterly basis. We're going to mark you and move you along the chart. You were here, now you're here. How long is it going to take you to get here? How much can we move into the market very quickly to get things happening out there?

Having said that—and I'm cognizant of the time—this week, we had Kathleen Clarke before the Subcommittee on Energy, in Approps, and I made a misstatement, but it was a misstatement that I want to bring into context, because it's an important context for us to understand and maybe for you to do things. I referred to less APDs or drilling permits versus leases, and I compared it with Clinton, and I was wrong. Clinton released—Clinton leased more acres, but you have, on a large factor, 70 percent more—gotten more drilling permits out to the field, in the overthrust especially, and in the West. And those are very interesting and important figures, because we've incentivized you through the bill. I know you're doing those pilot programs out there now to see how we can expedite the process of leasing to get out to where the gas is. There's a trillion cubic feet out there inside the infrastructure today, if we can get to it. But we are restricted. The thing that is most interesting to me is that while you have accelerated dramatically the effort and need—and more needs to be done, comparatively speaking, with leases, there are now 664 percent more protests and lawsuits filed against the effort to lease gas in the Bush years than in the Clinton years. And so, those who still don't want us to produce are out there fighting us. And somehow we need to work with them to get through this process. And that's going to be important.

Also, the automatic shutdown in the middle of the winter. We did these land-use plans 10 or 15 years ago, and it was an easy way to get around the wildlife problem, just say we won't drill during the winter. But we do know we can drill during the winter, and we don't hurt wildlife, and we ought to revisit that. The idea of this fits-and-starts, stops-and-starts kind of things where you drill for a little while and you pull your rig out because the snow is falling, and you don't go back until midsummer—we can bring capacity online very, very quickly. We need to help you there. When you ask us how to help. Thank you for doing what you've done. We're going to track you very closely. There is no reason for the bureaucracy to grind on at the moment of a crisis. We ought to expedite everywhere we can, as quickly as we can. As fast as you've all worked with Katrina and Rita, we ought to be doing the same thing for the next 3 to 5 years to get us out from under this problem.

We'll work with you. We'll monitor you closely. You've got to be held accountable. We need to be held accountable. And we can get through this.

Thank you.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Larry. Thank you, Senator Craig. Senator Bingaman.

Senator BINGAMAN. Thank you very much.

Let me ask Secretary Norton about Lease Sale 181. That area was put off limits to energy development earlier in this administration. Is there a reconsideration of that going on in the administra-

tion right now? Is there a possibility that that will be open to lease? What is your position on that?

Secretary NORTON. We are actively, in our preparation of our 5-year plan, looking at the Lease Sale 181 area, and that is an area, as we know, is not subject to moratoria or to withdrawal. And so, that is an area we are seeking comment on as we move forward with that. It does not include the area within a hundred miles of the Florida coastline.

Senator BINGAMAN. Well, I certainly encourage you in that regard. And I know that most—probably many members, at least of this committee, and of the Senate—agree with that. I know that there have been letters sent to you. And I believe I'm sending a letter along those same lines in the very near future. So, I encourage you—I think when you look at where the potential is for substantial increases in natural gas production, that seems to be No. 1 on the list, as far as I am informed. I mean, a lot of other ideas are out there, but they are more speculative than 181 is, as I understand it.

The CHAIRMAN. Senator, would you yield?

Senator BINGAMAN. Certainly.

The CHAIRMAN. I think that, Madam Secretary, Senator Bingaman is being very mild on this issue. I believe 181 has to be done. And I don't believe 5-year plans and all of that business are very important. We've been told that it is the single most significant act that can be taken to stabilize and/or possibly reduce the cost of the price of natural gas. You're aware of that, right?

Secretary NORTON. I'm aware it is an area with very significant—especially natural gas reserves—

The CHAIRMAN. Yes. I said natural gas. I didn't say crude oil.

Secretary NORTON. Right.

The CHAIRMAN. Well, we have actually had an expert witness, more than one, tell us what I just said, that it—because it is so big and so timely, that it might be seen as an actual addition to available reserves, and that would have an impact. So, I'd not only join—I've been telling you all, and I don't know how to get through any more—that this shouldn't be delayed. And you don't need anything from us. You keep talking about us. You don't need anything from us.

Secretary NORTON. Well, actually, Mr. Chairman, under the process set up under the Outer Continental Shelf Lands Act, that is operated on a 5-year program. And clearly, we know a lot today that we did not know when we made the decisions for the program 2002 to 2007. For one thing, we have now seen the toughest test of our offshore safety, and we know that we can do a lot to alleviate any concerns about oil spills, and that has been proven today. That was not proven at the time we made the first round of decisions. But in order to move ahead, we'd need to go through all of the environmental planning and so forth, which really, under our administrative capabilities, puts us on the schedule of completing our 5-year plan and looking at 2007, the latter half of 2007, before a lease sale would take place.

The CHAIRMAN. All right.

Senator Bingaman, I apologize.

Senator BINGAMAN. No, that's fine.

Let me just follow up. Tell me if this is wrong, but my understanding is that Lease Sale 181 was part of the 5-year plan adopted by the Clinton administration for the years 1997 through 2002. And then a judgment was made early in this administration that it would not be permitted to be drilled, or that parts of it would not be. And so, now we're talking about a 5-year plan for 2007 through 2012. So, we've essentially lost a decade, as I understand the numbers. Am I right about that?

Secretary NORTON. It is correct that that area was approved by the Clinton administration as an area to be leased, and that this administration made a determination to reduce the area of the sale. We anticipate that if the area were subject to sale, it would take about 5 years for production to actually commence in that area.

Senator BINGAMAN. Let me ask Secretary Bodman just a question about this item I referred to in my opening statement, the suggestion that the administration may urge Congress to adopt a tax on the oil industry to fund the Low Income Home Energy Assistance Program, or LIHEAP. I'd be interested in any insight you could give us about that, but also the suggestion that this is—would be somewhat welcome by the industry, because these are costs that could then be passed on to the consumer. I mean, are we in a circumstance here where we're going to pay for low income home energy assistance—largely natural gas, I would think, and home heating oil—by adding a price to what people have to pay at the pump? Is that the suggestion?

Secretary BODMAN. I don't know what the suggestion is. I'm unfamiliar with the suggestion. If your question, Senator, is directed at what my feelings are about having the oil companies pay for LIHEAP, that is not something that I would be in favor of. It is the equivalent of a windfall profits tax, it strikes me, and we have proven, I thought, to our general satisfaction, back in the 1970's and 1980's, that that didn't work when we last had a windfall profits tax. I should also mention that the LIHEAP program does not reside in the Energy Department or in the Interior Department, but is in HHS, and so that questions about how that is funded and what the initiatives are should be directed to Secretary Leavitt. But my own views, however, are as they are.

I can tell you that the LIHEAP program is one of a number of initiatives that is being discussed at the current time by the White House, and Secretary Norton and I have joined in and made our views known on it. And I would expect their views and proposals, if any, to be coming forward in the relatively near future.

Senator BINGAMAN. Let me just ask one other question. On this public campaign for conservation, I commend you on it. I think it's a good thing. I think it's something we should have been doing each year for a long time, but it's good that we're doing it now. How much additional funding should we be providing to you? I keep thinking that if we were spending about a third as much on this as is spent every year on promoting use of Viagra or something, we would really solve this energy problem. Do you have a figure you could tell us?

Secretary BODMAN. No, sir.

Senator BINGAMAN. I fear that this is terribly underfunded. It's a nice gesture. It's nice to get these brochures. I mean, I think all of us who hang around inside the Beltway are well aware of it. But I don't know that the people in my State are that focused on this campaign to encourage conservation.

Secretary BODMAN. We have made every effort of the senior leadership of the Department to get out to, largely, the States that are most affected by the winter fuel issues. All States will be, to one degree or another, but we're particularly concerned about the Northeast and the Midwest. And so, we have covered—we've been in 11 States, and—

Senator BINGAMAN. But you need to be on television, right? That costs money.

Secretary BODMAN. I can't speak to that, other than we're doing, I think, an effective job, given the resources that we have. We have not put together a budget for any expansion, and we would be happy to work with you and your staff to develop what ideas we think—and to make a determination of how much additional funding we could effectively put to use. We simply haven't done the work on that.

Senator BINGAMAN. That would be a very useful thing, from my perspective. Thank you.

Senator CRAIG [presiding]. Thank you very much.

Senator Alexander.

Senator ALEXANDER. Thank you, Mr. Chairman.

Following Senator Bingaman's line of questioning, I notice that the beer companies over the years, who are very good at advertising, now spend a lot of money encouraging people not to drink when they drive, and to drink moderately. I wonder if a good use of all of these big oil profits might not be to let the American people know that if we actually turn down our thermostats two degrees, that we could get through the winter with a lot less hardship. That might be a good use of those profits, without the Government having to require a single thing. It might be a good corporate gesture by companies that are making a whole lot of money at a time when a lot of people are hurting.

Secretary BODMAN. Is that a question, sir?

[Laughter.]

Senator ALEXANDER. Well, I was hoping to elicit a comment.

Secretary BODMAN. My comment would be that the oil companies seem to be individually advertising—I see newspaper advertising—talking about conservation. And so, I would agree with the general thrust of your idea, and would take note that they seem to have pursued it with some vigor.

Senator ALEXANDER. Secretary Norton, back on Lease 181, just so we understand, this is the largest area in the Gulf of Mexico where drilling is not banned that could be leased for gas. Am I correct about that?

Secretary NORTON. It's certainly the area that is closest to infrastructure. And, of course, you know, there are areas in Alaska, but we have no natural gas pipeline yet, so—

Senator ALEXANDER. But within the Gulf of Mexico, it's—

Secretary NORTON. It is an area that has very significant reserves and is very close to existing production; and so, could come online very quickly.

Senator ALEXANDER. My information is that there is enough gas there, even if we stay a hundred miles away from Florida, or 125 miles away from Florida, to heat six million homes for 15 years, which would be a couple of cities the size of Los Angeles and Houston. So, we're talking about lots of gas, and enough gas—we've heard in our testimony here, that it's so much that just the act of doing it might tend to stabilize the price of gas and send a signal that the price should come down. So, I want to pin down a comment you made. If you follow your present course, and if you were to conclude, after all the appropriate studies, that Lease 181 ought to be a part of the lease plan in the next 5-year plan, when would you lease 181?

Secretary NORTON. We would anticipate that would be one that would come up very early in our leasing cycle. We have not made any decisions yet. It would be predecisional for us to say that area would be in, and it would be leased at a particular time.

Senator ALEXANDER. When does the leasing cycle begin?

Secretary NORTON. It begins in July 2007.

Senator ALEXANDER. July 2000. So the earliest would be in the second half of 2007 that you could actually put it out for lease.

Secretary NORTON. That is correct, under our administrative process.

Senator ALEXANDER. And the public decision wouldn't be made and announced much earlier than that, would it? Or would it?

Secretary NORTON. That's correct, yes. But we would take into account, as we make those decisions, the input on what areas had the most benefits the most quickly. And, obviously, what we're hearing is that there is a lot of benefit quickly.

Senator ALEXANDER. So, we're talking about a huge amount of gas, and we're in late 2005, and it would be early 2007, if you should decide to do this, before the markets would know that this big amount of gas might be coming—might be coming forward.

Secretary NORTON. That's generally correct. We make those decisions earlier in the calendar year of 2007.

Senator ALEXANDER. Now, given the fact that natural gas prices, when we were debating the energy bill last year, or earlier this year, were at \$4 or \$5 or \$6, and now they're at \$13 or \$14, and that hundreds of thousands of jobs might move overseas as a result of that, wouldn't it make sense to accelerate that? And let me be specific in that. Senator Johnson and I offered legislation a year ago, when natural gas prices were a third of what they are today, that would basically order the Department to lease 181 within a year. If the Congress were to do that today, is there any administrative reason you couldn't get that done? If we were to order you to do that within a year, could you actually accomplish it?

Secretary NORTON. Assuming the language gave us the ability to do that, obviously we would move forward, according to that statutory language, to do a sale in 2006.

Senator ALEXANDER. And, Secretary Bodman, might it not be possible, if I may shift to you for this, although, Secretary Norton, you may—and this will be my last question, Mr. Chairman—if the

Congress were to decide to do that, and the President should sign the law, and the signal would go out that we would suddenly be leasing 181 within the next year, might not that be a signal to the markets that would help to stabilize the gas prices during this winter, rather than waiting until 2007?

Secretary BODMAN. It certainly would be a signal. Quantitatively, how it would be interpreted is hard to judge, sir, but it would certainly be a signal.

Senator ALEXANDER. Thank you.

Senator CRAIG. Senator Landrieu.

Senator LANDRIEU. Thank you.

Let me begin by saying, on the record, that I was both relieved and felt somewhat vindicated, Secretaries, when we had minimal, if any, oil spills offshore, as a strong advocate of the new technologies that are available to provide more energy independence for the Nation. So, while there was destruction to the rigs, as you mentioned, and you were accurate in your testimony, we were relieved, and those of us supporting it, vindicated, in our arguments over the years that this could be done safely.

However, I am aware that there were quite a few pretty disastrous spills at refineries onshore that have left some of our communities completely uninhabitable. People—thousands of people—unable to return within miles of their neighborhoods. So, what are you, Madam Secretary and Secretary Bodman, doing to work with our local governments, particularly Murphy Refinery that had the worst spill, and other onshore refineries, to help provide technical assistance and specific financial resources to help our areas recover?

Secretary NORTON. I am aware of the Murphy Refinery spill, and it truly was a terrible situation for that neighborhood. But the Department of the Interior doesn't really have the onshore jurisdiction to be addressing that, so I would defer to Secretary Bodman.

Secretary BODMAN. I would think that the role of the Energy Department, as I described in my testimony, Senator, really is one of working with the private sector to facilitate getting things back up and functioning. I, too, am aware of the damage done by the Murphy Refinery, in particular. I assume that's what you're referring to, particularly. And the Department doesn't really have the technical skill, it's not in our skill set. I would think the EPA, that's what their program would be, so I can't speak to the financial resources that might be available.

Senator LANDRIEU. Well, I might suggest, if we're going to continue to promote responsible energy development, that both the Secretary and the Department of the Interior and the Secretary and the Department of Energy might come up with a coordinated plan with the Department of the Environment, so that when we promise people that we can produce energy safely and securely, that we can actually deliver on that promise. So, I'm going to be submitting some suggestions that I hope would be included in any legislation that promotes new development anywhere, so we can really be accurate in our projections and promises made to the people of this country.

No. 2, Secretary Bodman, the—our State, which is still—of course, our economy has been devastated in Louisiana. We're the

heart of the energy coast. And we still are devastated, with a lot of talk and little action. And while the independent and private sector is trying their best to stand up with not very much help, despite the testimony that's been given today on the part of the Federal Government—what role and what are you proposing to stop the real culprit, which was the shutdown of the electric system, which basically shut down the refineries, despite the workers being there, despite the bravery of the people on the ground? We just suffered so much, not just locally, but nationally, because of the failure and collapse of the electricity system. So, what are you proposing, so that we can weather a storm better, either in terms of backup generators or more fuel available or—what are your recommendations? Quickly, because I've got one more question.

Secretary BODMAN. Senator, there again, I don't have specific recommendations. The reconstruction of the transmission lines, which was the major problem that caused the electricity to be lost, particularly in western Louisiana, when they are reconstructed, they will be done at higher standards, at a higher level, at higher codes, thereby improving things. But that, again, is not what we do.

Senator LANDRIEU. Well, let me just suggest that we all start doing that a little bit better, because this is a very integrated system, Mr. Chairman. And what I'm suggesting here is that you can't produce energy independently. It is all integrated with the environment, with coastal protection, with navigation, with electricity. And we found ourselves, in this Nation, quite vulnerable. So, you could have the most sophisticated platforms in the world, you could have the greatest technology in the world, and because we haven't spent 2 minutes thinking about how we get energy to these platforms in the middle of either a terrorist attack, God forbid, or another hurricane, which we most certainly will have, we will not have made any progress.

My third question is this: In 1998, the Republican chairman of the House Energy Committee, my colleague Mr. Tauzin, and I introduced the first revenue sharing bill in 1998. It's now 2005. This bill suggested that, as this country pursued more aggressive drilling policies, that we might share a portion of those revenues with those States that would step up and do so. That was during the former administration and unfortunately, nothing was done. I have a letter from May 2003 here. President Bush came to our State in 2000 to campaign—and I will provide this for the record—and promised that he would be willing to share revenue with coastal producing States during the campaign. However, I'm going to submit to the record that, in May 2003. "The administration would object to any coastal impact payments such as those authorized by the bill. Under current law, more than one billion already goes . . ."—the one billion goes, really, to States that don't produce, not to the States that do. The record will reflect that.

In July 2004, "We recognized the importance of investing in coastal conservation. However, rather than establish new and complicated processes." We can't do it.

June 2005, right before this hurricane, "We oppose significant new funding authorizations and diversion of OCS revenues." We can't do it.

July 15, a month before the hurricane, "The administration strongly opposes provisions in the House and Senate."

My question is: Do you two Secretaries think the administration will ever change their views that would allow coastal producing States to receive a portion of offshore oil and gas revenues? Very quickly, yes or no?

Secretary NORTON. Senator, we have taken an additional look at that approach in one of our most—our most recent statement of administration position—

Senator LANDRIEU. What is it?

Secretary NORTON [continuing]. Did indicate that we would be willing to discuss the issue of revenue-sharing. While that is, obviously, a sensitive issue, because many of those funds have already been spent by the Federal budget, we are interested in looking at the sharing of revenues with States, in an appropriate way.

Senator LANDRIEU. And, Mr. Secretary, real quickly.

Secretary BODMAN. Yes.

Senator LANDRIEU. I have one final comment.

Let me go on record to my colleagues, Republicans and Democrats, here. I have been a strong and long proponent of access of production. I will vigorously and aggressively oppose any opening of Lease Sale 181, or any new openings, unless there is a substantial and aggressive revenue-sharing provision for States based on the production or based on some fair share that we would establish.

It is inconceivable to this Senator from Louisiana, having gone through the devastation that we are still living through—I wish we had thermometers to turn down. I wish we had a house to send energy to. The energy coast is flat on its back. And for this Congress to consider opening up new areas of production without providing the current States of Texas, Mississippi, Louisiana, and Alabama, who have borne the brunt, for 60 years, of the production for this Nation, to even begin to talk about that is really an insult to the people of my State.

So, let me just go on record. I will vigorously oppose any opening unless there's more than talk, but delivery, on a fair share of revenues to be spent appropriately, transparently, and accountably for the environment and for the people who happen to live there, digging the ditches, producing the oil, digging the channels, and helping this country become energy independent.

Thank you, Mr. Chairman.

The CHAIRMAN [presiding]. Thank you very much.

Senator CRAIG.

Senator CRAIG. No, Senator Thomas.

The CHAIRMAN. Senator Thomas.

Are you going to be here for a while?

Senator LANDRIEU. I will be back.

The CHAIRMAN. Well, Senator, would you yield for a minute?

Let me say, Senator, I know your State's going through a very difficult time, and I know how much you are fighting for it, and we all appreciate the circumstances you're in. But I don't believe that those of us on this committee, who have been working to help your State, deserve the comments you've just made.

Senator LANDRIEU. I didn't direct them at you, Mr. Chairman.

The CHAIRMAN. Well, we ought to direct them—you ought to be fair. You ought to also say a giant step has been taken.

Senator LANDRIEU. A giant step has been taken.

The CHAIRMAN. We gave you \$350 million a year for 5 years.

Senator LANDRIEU. You gave us a billion dollars. A billion dollars. And, Mr. Chairman—

The CHAIRMAN. How much to your State?

Senator LANDRIEU [continuing.] And, Mr. Chairman, without you, it would not have happened.

The CHAIRMAN. Well, I'm—

Senator LANDRIEU. And without Senator Bingaman, it would not have happened. But—

The CHAIRMAN. Yes, but I'm suggesting that to say nobody's been doing anything about it.

Senator LANDRIEU. I did not say that, Mr. Chairman.

The CHAIRMAN. We have been.

Senator LANDRIEU. I have been extremely grateful. I have said that the administration, both the previous and current—

The CHAIRMAN. Okay, now let me finish.

Senator LANDRIEU. Thank goodness for these Senators—

The CHAIRMAN. Excuse me.

Senator LANDRIEU [continuing]. Because we wouldn't be anywhere without them.

The CHAIRMAN. May I—you talked, and I want to finish. The Senator from Wyoming is being patient.

We are having difficulty talking about the existing—the States that are producing, getting additional revenue, when we speak about revenues for new leases, because there's a big budgetary difference. And I'm trying to solve that budgetary difference. And you're aware of it. The new ones don't count against the budget. The old ones do. So, every time we think about giving you increases, there's a huge budgetary cost, and we can't fit it in a bill. So, if we introduce a bill helping you, it does the other—it's immediately subject to all kinds of points of order, so we just leave it aside. But we're not intending to leave it aside. This Senator intends to do something about it.

Senator LANDRIEU. And you already have, Mr. Chairman.

The CHAIRMAN. I intend to insist that we equalize the royalties. If we are going to add royalties to new, then we must add royalties to old. Now, that's the end of my conversation. And I don't think we need any threats. We need your help. And you need our help.

Having said that, we'll yield to the Senator from Wyoming.

Senator THOMAS. Thank you, sir. I wish you'd make yourself a little more clear about the way you feel, but—

[Laughter.]

Senator THOMAS. If we were to, kind of, define where we are, which do you think was the problem that had more impact, the refining aspect or the production aspect?

Secretary NORTON. Mr. Chairman and Senator Thomas, there were a number of offshore platforms that could have produced, were it not for the problems at the onshore facilities. And, although there were some others that went the other direction, from the offshore perspective we found that there were a great many onshore problems that prevented it.

Senator THOMAS. But what we hear all the time is that generally the increased demand for gasoline, for example, is not a product of not having enough oil, it's a refining restriction, which, in this instance, that—in the short term—and this is the second point I want to make, is, we've been working for a long time with all of you, and you've been working well, but more on a long-term energy policy. Now we're looking more at a very short-term policy, and—to try and deal with an issue. So, is it refining you think is more—has more impact on our prices and on our capacity than—or oil?

Secretary BODMAN. I think at least my understanding of the situation is, it depends on what the timeframe is, Senator. The refineries are expected to be back up and functioning by the end of this calendar year. At the current time, there are five refineries that are up. We expect one back this week, two at the end of November, two at the end of December. And, therefore, the refineries, as such, will be back and, under normal circumstances, will be functioning. My guess is that the offshore production of oil is going to take longer, because it's going to—it will require construction of new platforms, in some instances, and that will be a longer-term thing.

Senator THOMAS. That's really not my question. I understand what you're saying, but I'm talking about the impact on consumers. Which one has the more impact, the limit on—

Secretary BODMAN. I think it's fair to say that the refineries have a greater impact on consumers. We've had crude oil available. It's been made available out of the Strategic Reserve.

Senator THOMAS. So, really, if we had to focus priorities, it really ought to be on getting the refining capacity back in shape.

Secretary BODMAN. Well, the priorities—I think that's yes, but it's being done. It's—and the refineries will be back in shape. The issue is expansion. I think that Speaker—

Senator THOMAS. And even putting these back in shape doesn't resolve the problem that we had before this ever happened.

Secretary BODMAN. I agree with that.

Senator THOMAS. I'm talking about refining capacity before this hurricane ever came.

Secretary BODMAN. I agree with that.

Senator THOMAS. And part of that has been the difficulty in the restrictions on expanding and developing new refineries.

Secretary BODMAN. That is also true.

Senator THOMAS. And so, it seems to me that's one of the things that's—and I'm really interested in this short-term/long-term thing. For example, Secretary Norton, offshore leases are going to take a while to produce.

Secretary NORTON. Yes.

Senator THOMAS. On the other hand, we have some availability of gas and oil in the West that is held up largely because of approval of permits and all those kinds of things. If you were really going to focus on the short-term impact, where would you get the most change the quickest?

Secretary NORTON. We, obviously, have a significant impact in two places. One is getting the offshore capacity back up and running again. And that is being done—

Senator THOMAS. 181 leases—

Secretary NORTON [continuing]. And we're working on that.

Senator THOMAS [continuing]. Don't have anything to do with getting that up.

Secretary NORTON. No, I'm sorry, the existing facilities.

Senator THOMAS. All right.

Secretary NORTON. But, you're correct that onshore is very significant in the short term for getting things going again. And we appreciate the additional funding that was provided through the energy bill. And we are working very quickly to implement the provisions from that bill in our pilot offices, and we anticipate that, with that additional funding, we would be able to get increases of production up to a trillion cubic feet over the space of a year, and that is very significant. That is more than our current loss from the offshore, and that would be as the result of processing more quickly, under the current standards, the applications for permits to drill.

Senator THOMAS. Just to interrupt you a little bit. I see some reports—this is, kind of, a bureaucratic thing—where you have big increases in some offices, and less in another. So, I would hope you'd take a little look at what can be done to get a little more oomph out of a few of those offices.

Secretary NORTON. We've created an Energy Coordinating Council within the Department that allows us to look not just at what BLM is doing, but to make sure that moves quickly, but also to make sure we've got Fish and Wildlife Service people onboard. We've moved 2 weeks ahead of the statutory schedule to get an MOU signed with all of the other relevant Federal departments on working together on processing applications for permits to drill in those pilot offices.

Senator THOMAS. Okay. Just as an observation on your last comment, as we look to the future, you talk about offshore drilling and all these things, and then you keep talking about—many people do—of the gulf. We ought to pick—does it make any difference—if you're going to develop offshore, should it be in hurricane—where the hurricanes generally come, or should we be looking somewhere else?

Secretary NORTON. I think that diversity is important. We are hearing interest from some States—for example, Virginia—that is not an area where production has occurred in the past. They're interested, if there is revenue-sharing, in looking at natural gas production.

Senator THOMAS. I've heard quite a little bit, you know, about the concentration of energy development in this area that is subject to these kinds of disasters. And I should think, as we look long term, we ought to be giving that some attention. I'm sure you have.

Thank you.

Senator CRAIG [presiding]. Thank you.

Senator Akaka.

Senator AKAKA. Thank you very much, Mr. Chairman.

I would like to ask that the full statement that I have be included in the record.

Senator CRAIG. Without objection.

[The prepared statement of Senator Akaka follows:]

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

Thank you, Mr. Chairman, for holding this hearing today. As you know, I also serve on the Homeland Security and Governmental Affairs Committee, which is conducting an investigation into the federal, state, and local government's response to Hurricane Katrina. I welcome this opportunity to build upon the HSGAC investigation and review the impact of Katrina and Rita on energy infrastructure.

On October 6th, the Energy Committee held a hearing on energy infrastructure and recovery. I remarked then, and continue to note, that we have a *national crisis* on our hands. The repeated hammering by hurricanes has exposed significant weaknesses in the nation's energy infrastructure and is sending us warning signs about our vulnerability during *next year's* hurricane season.

The price shock waves that rippled across the nation have pushed up prices on the mainland and in Hawaii. Gasoline prices went sky-high, but also the costs of materials, transportation, petrochemical products, and food prices—almost everything has been touched by the impact on our energy infrastructure.

Climate experts predict that hurricanes will hit our coasts with *greater* intensity when they do hit, so it is *critical* to ensure adequate and durable infrastructure on our coasts. Hurricanes Katrina and Rita shut down 20 Gulf Coast refineries at one point and a total of 4.8 million barrels a day, or 28 percent of the U.S. refining capacity. The most recent hurricane, Wilma, will leave the east coast of Florida without electricity for days, in a much smaller repeat of the losses in New Orleans and the Gulf. Collectively, the hurricanes have exposed significant weaknesses in the nation's energy infrastructure and significant effects on consumer prices across a broad range of goods and services.

I look forward the testimony of the witnesses and I have some questions I would like to ask Secretaries Bodman and Norton about their agencies' role in hurricane recovery.

Senator AKAKA. I want to add my welcome to the Secretaries here as we talk about this great disaster.

Hurricanes Katrina and Rita highlighted the vulnerability of our energy infrastructure, particularly—and I'm so glad my fellow Senator has raised the question about refineries—and particularly in refining capacity and capability. After Hurricane Rita, we lost almost one-third of the U.S. refining capacity, as you noted in your testimony. However, even when Katrina hit our gulf coast region, the Nation's refineries were already running at 98 percent capacity to meet demand. Yet, no new crude oil refinery has been constructed in the United States since 1976, for 30 years. And that was indicated. It is estimated that it could take up to 10 years to build a refinery in the United States. So, my question is: Why is it that oil companies have not taken the initiative to bring more refining capacity online in the United States, given the expected announcement of third-quarter profits of as much as \$28 billion? Why have they not done that? And, to continue, what does the Department of Energy see as the shortfall in current policy that perpetuates the lack of domestic refineries? What policies would you suggest that could be initiated by the Department of Energy to correct this, beyond tax incentives?

Secretary BODMAN. First of all, Senator, the reason that is usually given by the oil companies is that they have not found it profitable to invest in refining capacity. I think the Speaker got it about right yesterday, when he—I think it was yesterday—when he had his press conference, that these companies are turning in record profits, that they have a responsibility to increase refining capacity, that the American public expects that and should see that. And I believe that, that I do think that there is a—every possibility that we would—that we will see an expansion of capacity. But I think, as I said, the Speaker got it about right, until we get a sense that there is a concerted and broad-based effort to do that, we should

continue to speak publicly about it. And I will continue to do that, both publicly and privately.

You asked a second question, Senator?

Senator AKAKA. Yes, I asked about the tax—beyond tax incentives, what policies would you suggest?

Secretary BODMAN. Yes, what the policies are. You know, the issue there has really been one, I think, that you will find in talking to both the large oil companies, as well as the companies that specialize in refining, that we have a significant problem with respect to siting new refineries. People want the energy, but don't want to have the facility that creates the energy in their backyard or in their neighborhood. And so, there is a difference, in terms of siting coordination between the Federal and State and local authorities. We did favor and support Mr. Barton's bill, which sought to deal with that matter. And so I think those sorts of approaches of trying to improve the siting, the permit issuance, is something that would help materially. I think it's also true that, with the increase in gasoline prices that we've seen, that the margins in the refining side of the business are quite strong, and very much would support at least increasing the capacity of the refineries that already exist, as well as creating new refining capacities, new refineries.

Senator AKAKA. A final fast question. My time is expired. What is your view of the idea of a Strategic Refinery Reserve, similar to the Strategic Petroleum Reserve, as discussed in the Environment and Public Works Committee only yesterday?

Secretary BODMAN. Right. That is one of the subjects that is being talked about by our colleagues at the White House, including the Secretary and myself, who participate in it. I will tell you that it's a complicated matter. Gasoline has a limited shelf life. It starts to lose its performance characteristics after 2 or 3 months, typically. And so, it has to be constantly turned over. So, if you were to set up a reserve, you have to take that into account. We also have to remember that we have—I think it's 15 different types of gasoline, then all the different States that have various requirements under the Clean Air Act. And, therefore, which grade are you going to put in the reserve, and where? So, there are issues there that need consideration, but there are many who are intelligent, and who observe this industry as it operates, that think a reserve of refined products is something that we should have. And it's being looked at, as best I can tell, quite closely.

Senator AKAKA. Thank you, Mr. Chairman.

Senator CRAIG. Thank you, Danny.

Senator Salazar came first, but Senator Cantwell stayed longer.

[Laughter.]

Senator CRAIG. Senator Cantwell. I flipped a coin. She won.

[Laughter.]

Senator CRAIG. All right? Thank you. Appreciate it, your courtesy. Please proceed.

Senator CANTWELL. Thank you, Mr. Chairman.

Senator Salazar did come back, and he has a pressing—I'm happy to defer to him so that he can get his question in.

The CHAIRMAN [presiding]. Go ahead, Senator Salazar.

Senator SALAZAR. Let me just ask this question, Secretary Bodman. One of the conversations I've had with Chairman Domenici and Ranking Member Bingaman and others of the committee has to do with your statement that the only real short-term action we can take for this winter is conservation.

Secretary BODMAN. Yes.

Senator SALAZAR. And there are two concepts that I included in legislation that I've been talking to my colleagues about, and I want your reaction to them. One would be to have a Federal law that essentially would mandate the Federal Government to reduce its consumption of energy by some percentage. I don't know whether that would be 2 percent or 5 percent, but that way the Federal Government could lead, if you will, by example, in terms of conservation. The second concept has been to accelerate the parts of the energy bill, which we passed, to provide the tax credit for—tax credits for energy efficiency to kick in earlier than they are now scheduled to kick in under the bill. And my thought has been that, given the high prices of natural gas and heating oil and the like, is that you would have consumers that would be incentivized to put in the new furnaces or the new water heaters or the more energy efficient windows if we had that tax credit, that tax incentive for them to do it. And so, one of the ideas that I've thought about is moving that time for the implementation of those tax credits up to, say, December 1, as opposed to when they kick in later in the bill.

What's your reaction to those concepts? And, also, do you think that there might be something that we should be doing here in the Congress, and out of this committee, with respect to some kind of emergency conservation legislation for this year?

Secretary BODMAN. First of all, we are working very hard—we, in the Energy Department, and with our colleagues throughout the executive branch—on energy-saving programs. We're just pulling it all together and getting feedback as to what everybody's efforts are. I don't have any quantitative numbers to give you. When you start mandating certain energy savings, you get into the very situation that you mentioned: What percent, and how do you do it? Because some departments are much more energy intensive than others, and some activities are more energy intensive than others. And so, when one starts to mandate, one gets, I think—it may well interfere with the functioning of the very departments that you want functioning well. And so, we will pull together and make available the information that we are currently—under the current program, working on.

In terms of advancing the tax incentives, I think most of those incentives start January 1. It's a matter of, would there be an advantage in having it take effect December 1? I think there would be some. And therefore, depending on what's involved in getting it done and getting it passed, I would think that that would help, in terms of the conservation efforts.

I think it would be a mistake to assume that it would be a big effect, because you're talking only, I think, about 30 days, because I think that the tax incentives for ENERGY STAR appliances and that sort of thing start January 1, sir, I believe.

Senator SALAZAR. Right. Secretary Bodman, my only comment on that is that I do think, following up on many of the questions and

comments of my colleagues, that part of it is educating the Nation, as a whole, about energy conservation. And if we look at this as the kind of crisis that we're in, and we're taking action, even though it may only—it may only help us, in terms of providing a 30-day window in December, that it may be part of just elevating the consciousness of the country on conservation.

Secretary BODMAN. It could well be. Yes, it could well be. That's not my long suit, is, you know, trying to make a—you know, a public-relations sort of judgment on that. I do want to emphasize that this initiative goes beyond just the little booklet in working with consumers. We are working with consumers, and we've done public-service announcements, to get this information out to some, I think, 4,000 radio stations throughout the country. We're also working with industry, as well as with the Government. We have teams of people that come from the energy-efficiency part of the Department of Energy who are working with the 200 largest energy users in industry and also are working with our colleagues in the Federal Government at devising methods of reducing energy use.

Senator SALAZAR. Just one other quick question. In terms of the status of DOE's regulations that would implement the conservation measures that were passed in the energy bill, including the tax credits, how are those coming along?

Secretary BODMAN. We have literally hundreds of different reports and initiatives that we have been charged with doing. I think we're doing well—we're managing it in terms of the equipment—the appliance regulations that were in the energy bill. I think there were some 15 or 16 different appliances. Those have already been done. They've been published and they're in the *Federal Register*. We did that about a week ago.

Senator SALAZAR. Let me just say I—I've often said this to Chairman Domenici—and that is that I think that the work that you have in your hands on energy for our country is probably the most important domestic agenda, and I look, very much, forward to working with you on these issues in the future.

Thank you very much.

Secretary BODMAN. Thank you, sir.

The CHAIRMAN. Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman, Secretary Norton, Secretary Bodman.

Secretary Norton, it's good to see you. Last time I saw you was at the U.S. Geological Office in Vancouver, Washington, when you were concerned about Mount St. Helens erupting. And at least we can say that's one natural disaster that didn't happen, we didn't have to worry about.

Secretary Bodman, I wanted to follow up on a couple of things that my colleagues brought up. I actually have two subjects I wanted to see if I could get your input on. In the energy bill, we've put in a new section dealing with the sale of electricity and transmission, that basically says, "Let's not have any manipulative or deceptive conveyances or devices." That was our way of getting at what had transpired in the electricity markets. Do you think we need that kind of authority, at the Federal level, to make sure that there isn't price gouging going on?

Secretary BODMAN. That's a complicated question. It's really a legal question, I think, Senator. My own view of it is that we have what I would characterize as a reasonably effective outreach for identifying citizens who indicate that there are gouging problems in their neighborhood. We've got both a Website and have had a toll-free number to identify those. We pull the information together, we make it available to the Federal Trade Commission, and they work with individual States. As I'm sure you know, each State has its own definition of just exactly what gouging is, and—

Senator CANTWELL. We don't have any Federal authority there.

Secretary BODMAN. No, we don't. And when one gets to superceding what has traditionally been, you know, local legal authority, I would be very careful about doing that, that's all.

Senator CANTWELL. So, the Department doesn't have an official position on way or another, at this point?

Secretary BODMAN. It's not something that we have sought, no.

Senator CANTWELL. Perhaps we could send you legislation, and you can give us comments on that?

Secretary BODMAN. Be happy to do that.

Senator CANTWELL. Okay, great, thank you.

On this strategic reserve issue, I think the Europeans have done something on jet fuel. Is that something we should consider?

Secretary BODMAN. Yes, it's—the strategic—the Strategic Reserve looks at any distilled product. I think the Europeans do that. And they—each country there has its own procedure. Many of them put the maintenance of the strategic reserve of refined products in the hands of industry, because industry is the one that's constantly dealing with this, and that way, you overcome the question of maintaining the freshness of the product, where if you—a government were to get into that business, let's say, you're then constantly in the business of having to turn over the inventory and getting it moved out.

Senator CANTWELL. But is that something you think we should consider?

Secretary BODMAN. I think that it's something that ought to be considered. It's not going to help, near term, for sure, but it is something that needs to be considered. I just would repeat, we have a variety of grades of these different materials. And so, when you talk about refined products, you're not talking about three or four things, you're talking about 20, or some large number—I don't know what the different grades are—of jet fuel, for example. But I'll bet they're—that they've—it varies—

Senator CANTWELL. Somehow, the Europeans have figured that out, right?

Secretary BODMAN. Somehow, the Europeans have figured that out. And, apparently, it works there.

Senator CANTWELL. Okay. I'm curious about your thoughts about whether we should do that on some of these new areas of alternative fuels that we're looking at, but I'll save that, because, while I know this hearing is about energy costs, I wanted to ask if you had seen the IG report on the audit of tank waste retrieval at Hanford, if you had had a chance to see that report? I think it came out a week or so ago.

Secretary BODMAN. I have not read it, Senator, but I'm generally aware of the contents.

Senator CANTWELL. Are you concerned about meeting the milestones for cleanup at the Hanford site?

Secretary BODMAN. Absolutely. As you're well aware, we have looked very hard at the entire Hanford effort, and I have made a determination that we are going to miss some of those milestones. Your office, as you know, was informed. Your colleague's office, Mr. Hastings, who—

Senator CANTWELL. Were we informed that they were going to be missed?

Secretary BODMAN [continuing]. The Congressman from the area, as well as the Governor. So, everybody's been informed.

Senator CANTWELL. I think we were informed that they might be missed. And so, you're saying that they will be missed.

Secretary BODMAN. Best we can tell at this point in time, they're going to be missed, yes, ma'am.

Senator CANTWELL. Okay. So, what do you think we do about that, given that there are, you know, 67 single-shelled tanks that are either confirmed leaking or suspected leaking?

Secretary BODMAN. We are very committed to the cleanup of the Hanford site. The issues that will—we're going to miss milestones relate to the vit plant, to the so-called vit plant, and getting that started on time.

Senator CANTWELL. This is about tank waste, though. This report is about tank waste.

Secretary BODMAN. Okay. Well—

Senator CANTWELL. In fact, the budget is going to double. The original estimates by the Department were way off, and now, the cost is going to double.

Secretary BODMAN. I haven't seen it, but I'm not surprised by it.

Senator CANTWELL. Okay. Well, we're obviously very concerned about it.

Secretary BODMAN. No, I understand. I understand. We're very committed to cleaning up that site, and we're doing our level best to try to accomplish that. But what I don't want to do, and will refuse to do, is to—as best I am able to—is to make commitments we can't keep. And that has been the case in this project in the past, where we have made commitments in terms of what the various cost levels were going to be. And the Government is very good at buying highways, buying bridges, buying things that are of that type, because we do it all the time. I'm a chemical engineer and it is very difficult, I will tell you, to accurately estimate in advance what things are going to cost. Everybody has to understand that there are very wide bands, in terms of precision, on this. And so, it's a real issue.

Senator CANTWELL. I don't know if you remember, Secretary Bodman or Mr. Chairman, but before this committee, I did recommend that you become Secretary of Energy for life, or until Hanford cleaned up, because I do think it is a very, very complex project and it needs the oversight of somebody who understands that complexity. But we certainly feel that the budget shortfall there needs to be addressed. And so, we'll be working with you and the chairman and others to try to address what has been a larger

projection for cost than was originally estimated. And, again, the fact that the tank waste is reaching toward the Columbia River has got all of us very concerned.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator.

Frankly, after all the Secretary has to put up with, I'm not sure he wants to be Secretary for life.

[Laughter.]

The CHAIRMAN. But I haven't asked him yet.

Senator, I'm going—I haven't asked any questions.

Senator TALENT. Sure. Can I just say, Mr. Chairman, I might almost think of that as a life sentence, rather than life service.

[Laughter.]

The CHAIRMAN. Same for the Secretary of the Interior. It's the same thing.

Well, first, Secretary Bodman, I'm very sorry that the hearings have not quite been as extensively on the subject of the hurricanes as it might have been, but you can tell there's a high, high degree of frustration about our inability to get our arms around this energy problem, which is bigger than Katrina and Rita, obviously. So, I want to ask, with reference to Katrina and Rita and the fact that we have so much energy—of our energy assets there, are you looking at lessons to be learned? I'm not asking that you disclose them all, but—

Secretary BODMAN. Yes. Yes. Yes, we are.

The CHAIRMAN. I would think that there's got to be some things that come out of that. For instance, the pipelines just told us, when we were down there—that one little visit of Senator Bingaman and Senator Akaka and I—that they're looking very, very diligently at the possibility of having a dual pipeline system in an area so that they have an extra capacity when problems occur. That'll come up later, but I would think that there ought to be some possibilities that we could prevent the shutdown of industries and utilities because most of it's not coming from being destroyed, most of it's coming from not having any electricity.

Secretary BODMAN. Yes, sir. But it's not obvious to me how putting in two lines would help.

The CHAIRMAN. I understand.

Secretary BODMAN. I mean, trying to put in electric power and have the electric power delivered with greater degree—with greater reliability would help.

The CHAIRMAN. But maybe it's some real effort at backup that's targeted. I'm just saying it's—I think it's incumbent on the industry and your Department to really work at that. And somebody has to spend some resources on it. It would be resources well spent.

Secretary BODMAN. Thank you, sir.

The CHAIRMAN. Second, Secretary Bodman, it seems to me that this is a new day, in terms of the public versus energy, and that they will accept and go along with things that they might have not gone along with in the past on the side of supply. And I just urge, as a general proposition, that you not be bound by, you know, ideas about what you could and couldn't do 5 years ago. And I don't know whether that applies to you or not in any specifics, but I really think the public—for instance, on ANWR, the public polls show an

incredible change in the last 2 or 3 years, most of which has occurred in 6 months, in terms of favor/disfavor.

And that leads me from the Secretary to you, Madam Secretary. First, I apologize for any pushing on you about 181. But I want to tell you, and state for the record, and then I'll ask you some specifics, you know, if the United States of America, believe it or not, were going to put all its eggs in one basket on its natural gas future—sorry, Alaska—the eggs would be put in offshore drilling of natural gas. It is, all by itself, more than enough natural gas for all of America's needs for as far as we can see.

Now, part of it's impossible, as I guess it's impossible to do it off the shore of California, no matter how far out you go. But I want these numbers in the record. We are using 22.9 trillion cubic feet per year. It is now estimated, under old estimates, that the entire offshore has 420 trillion cubic feet of natural gas.

Now, I understand how we have been—tied ourselves in knots about doing anything about it in the past, but I submit to you that the knots are coming apart, and we can sit by and worry about them, or we can decide we're going to hurry up and take them apart. And it's in that context that I urge that you look at the Outer Continental Shelf with a new, new vision.

I applaud the House. They're doing some very, very terrific things. In fact, the Peterson approach was thought to be, kind of, wild—it might get a lot of votes in the House—for us to just open them, instead of the opt-in/opt-out, and give them a very extensive and new royalty. I did not ask you what you think about it, and I won't ask you, but I'm letting you—leaving you with that thought.

Well, maybe I will. What do you think about what I've just said? [Laughter.]

Secretary NORTON. Mr. Chairman, you are correct, there are vast resources offshore. I also should point out that in your own State, as well as the rest of the Rocky Mountain region, we do have 139 trillion cubic feet there, as well.

The CHAIRMAN. Right.

Secretary NORTON. And so, we need to look both onshore and offshore.

The one point I'll make on the natural-gas-only leasing, which is the Peterson amendment, there are some technical issues as to that. We have asked for comments in our 5-year plan on the technical aspects of that, so we should have some additional information for you.

The CHAIRMAN. I understand. Now, we're going to talk about onshore for a minute, very precise and specific with you. I've been informed that, in just one area of Wyoming, Pinedale, we are on a winter no-drilling rest-of-the-year drilling. Now, for everybody listening, that sounds neat, right? But, you understand, that's a terrific problem. Secretary Bodman, you understand, you know, you put a drilling rig in, and you drill, and then you've got to move it, or shut it down, and 6 months later, bring it back—I mean, that's a very, very onerous—you know, but for something unusual, it's rather impractical, to say the least.

I am told that if just that area, Pinedale, were put on year-round, it would yield as much natural gas as is needed for one-third of all of Los Angeles' needs. They're always comparing and

saying, "It doesn't matter much." I'm beginning to try to compare locally, so, when they say, "It doesn't matter much, it's only one-tenth of 1 percent of America's"—I say, "Well, how many counties in New Mexico?" or, "How many of my major cities?" It turns out a little different.

So, I want to ask you to do this for us. I want you to respond to us very precisely in writing, What is the problem—legally, administratively—with lifting, changing, or substantially altering the winter prohibitions? Would you do that?

Secretary NORTON. Mr. Chairman, we'd be happy to do that.

I will note, we have approved some winter drilling proposals in that area, and the ones I'm aware of total 54 billion cubic feet that will be brought online by allowing the winter drilling, which is a very significant amount. That was done with mitigation—it's largely dealing with big game animal populations—but with mitigation and with some steps taken to be sure that the environment is protected at the same time.

The CHAIRMAN. Okay. Now, on 181, I would like you to tell us, in writing, with your lawyers—you're a lawyer, also—but go through with us exactly what is the most expeditious way, and what are the impediments, to proceeding with 181, in whole or in part, and give us—don't do this on the basis of assuming that every problem is one that's not doable. Assume, quite to the contrary, that, unless they're absolutely legal, that the time has come to do some of them. Can you do that for us?

Secretary NORTON. We'd be happy to look at what would need to be done administratively as well as what legislation might be able to do it.

The CHAIRMAN. And I would really urge that you have the best people you can do that, and not people who are looking for every—you know, every fly in the ointment, but, rather, that this is something very important to the American people. This could be taken to them very easily, in terms of, Are you worried enough about this or not? Especially if you do a hundred miles out.

I would add to that the request that you do it also if we move a hundred miles away from the coast. Give us your analysis.

I don't think it's going to be any different, because I think you can draw the line wherever you'd like. But I'm not sure of that.

Secretary NORTON. Thank you, Mr. Chairman.

The CHAIRMAN. Will you also give us the estimate of natural gas that we currently think would be on 181? And then what would be there if we start a hundred miles out. Do you know those numbers?

Secretary NORTON. I actually can give you that, assuming we start a hundred miles out, so everything that's more than a hundred miles from shore, the area that has not been leased in Lease Sale 181 contains 6.03 trillion cubic feet of gas, which translates to providing enough gas for 4.3 million households for 20 years.

The CHAIRMAN. Now, see, this is not just a little field. This is pretty big stuff for America and our future.

Now, Secretary Bodman, with reference to the energy bill—

This is my wrap-up, and I'll go to you and—the Senator wants a second round. If you can stay a minute and let him do that—okay, well, anybody that comes back, we don't want to keep these Secretaries too long, they'd better get back pretty quick.

Secretary Bodman, you're overwhelmed with many things, including the crisis of the hurricanes, but I think it's really important that we not let a whole year go by in analyzing the energy bill in terms of resource needs to accomplish some of the goals, and also administrative needs on your part.

Madam Secretary, there are a number of them for you, also.

I would ask that you inform us on what kind of a timetable you have for getting these—you pick the most important ones. What's the timeframe for you to get them done?

And then I'm going to ask you informally—and this, you shouldn't do on the record, but I'm just going to lay it before you—I think it's important that the administration know, as they produce their budget, in these times of constraints and everybody wanting to cut, that we really—you know, we just did a bill which was lauded, but if you look at it, you've got to do some things to make the praise bear fruit, right? Some of it's not automatic.

Secretary BODMAN. Most of it, sir, I think, is not automatic.

The CHAIRMAN. Not.

Secretary BODMAN. No.

The CHAIRMAN. You know, for instance, even nuclear, we're all proud of it, but you've got to draw some rules for the loans, right?

Secretary BODMAN. Right.

The CHAIRMAN. I mean, for the insurance.

Secretary BODMAN. Right.

The CHAIRMAN. And you're doing that, right?

Secretary BODMAN. Yes, we are.

The CHAIRMAN. So, I think I would like to be helpful, in terms of advising the administration of five or six important funding areas, maybe some on your end, without which we're not going to get any of the fruits, then they'll say the bill didn't work. So, I would ask both of you if you might informally share that kind of thing with me, if you feel comfortable.

If it's something you don't think you can do, because of your relationship to OMB, then we'll do it over a cup of coffee and nobody will know we did it.

[Laughter.]

Secretary BODMAN. We'll find a way, sir.

The CHAIRMAN. Now, what I'm going to do is yield to you, Senator.

Senator TALENT. I'll just take a minute.

The CHAIRMAN. And then Senator Murkowski—is this your first round?

Senator MURKOWSKI. Yes, sir.

The CHAIRMAN. You go, and then Senator Akaka. And will you stay here for a while?

Senator MURKOWSKI. I will. Thank you.

The CHAIRMAN. Thank you very much, Secretaries. How about your time? You're okay?

Secretary BODMAN. Yes, sir.

The CHAIRMAN. Other than getting hungry, I guess you're okay. Thank you for your time.

Senator TALENT. They need some fuel, too, I guess, Mr. Chairman, don't they?

Thank you, Mr. Chairman. And I can be brief, in part, because you went into a lot of the areas I was going to go into.

You know, I want to say that I think we have a tremendous opportunity now to move ahead, in terms of supply. And I hope you will both, for your portfolios, just take the attitude that any energy package that does not contain a substantial supply component is just a nonstarter. And I'm talking about supply of natural gas, oil, traditional fuels, which, in the short term, we're going to need. Yes, then conservation, on top of that. That's great. We should do that. And, of course, we should find the supply in environmentally sensitive ways. But this is the time to do supply. I think that's what the people are looking for. The chairman was mentioning that, and I think he's right. If we just look at natural gas, demand is going to increase, over the next 20 years, about three times that the projected supply is going to increase. And that's when prices are already intolerably high. So, we have got to increase supply.

Let me add a question to the chairman's, and you can respond later on this. But I'd like to know—and I'm not sure he asked it exactly this way. What areas, onshore or offshore, hold the most promise? And which of those areas are the easiest to access, both in terms of readily available pipeline and processing infrastructure and in terms of overcoming legal impediments to get natural gas? In other words, Madam Secretary, I think it would be useful if you looked at the areas which contain reserves that you guys control, looked at which ones were the easiest to get at, in terms of practical impediments, which would be pipeline processing, and then looked at the ones that are most difficult, in terms of legal impediments, and then maybe did a cross to see which of the ones that are the easiest to get at practically and the easiest to get at legally and maybe supply us with a sense—a set of priorities on that.

I don't like you to have to go away with a bunch of information requests, but I sure would like to know what are the easiest to get at from both standpoints. Maybe we can remove some of those legal impediments.

And then just—the chairman asked about Lease 181. I'm very interested in that, but I won't go into that.

Let me just ask you both to opine on one subject, and then I'll yield to my colleagues. How will the natural gas supply and price forecast change if we were able to move ahead, let's say, with Clear Skies if we were able to make coal more readily available, either through Clear Skies or perhaps some kind of coal gasification program, so that we could take some of the burden off of natural gas as an electricity-generating fuel?

Secretary BODMAN. Why don't I talk about that. First, neither of these are going to deal with this winter, sir, as you're well aware. And so, that's why our focus has really been on conservation, and that's what we're out trying to make known to the American people. Certainly, clean coal technology will make a huge difference. Nuclear power will make a huge difference by removing the pressure on natural gas. The natural gas situation is even more difficult than the gasoline situation today, because we don't have any ready means of importing product. We have LNG, but it's only 2 percent or 3 percent of what our needs are. And it's a major problem.

I am very much committed to working on the clean coal technology, working on nuclear power in order to try to accomplish that. In order to give you a price forecast, I can't do that off the top of my head, but we'd be happy to have our folks at EIA looking at what we might be able to accomplish. Looking long term and what the impact would be on natural gas, we'd be happy to make that available to you.

Senator TALENT. I agree with what you're saying about this winter. I just think the conservation medicine will go down a lot easier if people know that supply is on the way.

Secretary BODMAN. Well, sure.

Senator TALENT. And I would encourage you to link those as you talk about them, while making clear that the supply is not going to produce more in the next, you know, 3 or 4 months.

Secretary BODMAN. Right.

Senator TALENT. But we've already done a lot in the bill, and I'm glad you mention that, with regard to LNG. With renewables for oil and gas—and we're working on ANWR, and hopeful that we can get that. So, I think some help is on the way. But the more that we can do, the better. And I would encourage you both to talk about it, in terms of increasing supply. The chairman is right, people are not only ready for that, they're expecting it.

Secretary BODMAN. Thank you.

Secretary NORTON. And, Senator Talent, we are looking at what we can do in the short term, as well as in the long term, in terms of our access to supply.

Senator TALENT. Thank you, Madam Secretary.

Thank you, Madam Chairman.

Senator MURKOWSKI [presiding]. Thank you. And it's—you know, it's great to be talking about "Help is on the way." And we always say, "Alaska stands ready." We are just itching to help you out. Whether it's oil or natural gas or coal gasification or wind or geothermal or ocean energy, we've got it all. We just can't get it to you. And this is the concern that I have. Recognizing how much potential we do have up north, and in other parts of the country that we just haven't been able to get at, we, as a country, certainly when it comes to our oil supplies, have chosen to look overseas, have chosen to look abroad. And that's why we are approaching about 60 percent—between 58-60 percent dependency on foreign sources of oil.

I am so concerned—and I raise this at every opportunity—that we're going, potentially, in the same direction when it comes to natural gas. We've all heard the statistics, we all know that the supply is just so far outstripping—and what we're talking about are these projects that are longer term, whether it is the coal gasification—we've got a project in Alaska that we're looking at that's just kind of right on the edge of coming together, in terms of possibilities. We're very excited about it, but we recognize that the window on that is years off.

Our natural gas pipeline, I want to talk to you a little bit about that this morning, because there's a great deal of frustration that we haven't been able to get at least two of the three major producers to come online with a project that we, in this country, have said, "We want Alaska's natural gas," we, in the Congress, have

said, "We want it, and we're willing to put taxpayer dollars to help with incentives"—we did that last year, and we still can't get two of the three to commit. And so, we're at that situation where, because we can't establish to the markets that it's here for the short term, it's going to be available in the short term, we look offshore, we look to Indonesia, we look to Qatar, we look overseas. We sign these 25-year contracts. We set up the LNG siting facilities to receive it. But what are we doing here in this country? And I get very nervous about—in a quest to meet the short term, we're making long-term commitments, without making the commitment to develop it here.

And I want to get back to—to my—now I'll make it a question, on the gas line. Press reports that the Governor and his administration have pretty much come to agreement with ConocoPhillips, one of the three major producers in the State, for agreement on a gas line. Exxon and BP have not yet come to the table, are not yet participating. And I am not privy to the details. The public is not. But we know that we can't even discuss the issue of a natural gas pipeline before our legislature to approve it unless and until we've got a—producers out there that are willing to make it happen.

Now, some of my colleagues here earlier were beating up a little bit on the oil companies and saying, "Look, they're facing major profits this year, and it's a growing trend, and that we expect the trend to continue." What it is that we have to do to move this project further? We have, last year, as you very well know, moved forward with some fiscal incentives at the Federal level that we were told, "Boy, if we can get those, gas is coming from Alaska." Given where we are and what you know, what can you advise?

Secretary NORTON. Senator, I know that each of us has had conversations urging the companies to move forward with the pipeline and getting that constructed and emphasized the importance to the country of having that pipeline constructed. As you know, at this point it is largely in the hands of that negotiation for a proposal to emerge in which the Federal Government would then be taking action to handle that proposal.

Senator MURKOWSKI. Secretary.

Secretary BODMAN. I wish I had a good answer for you. I would certainly associate myself with what Secretary Norton just said. I think while you were out, Senator, I made the statement that I think Speaker Hastert had it about right in his press conference, that these companies are showing record profits, they're doing very well, and it's time for them to demonstrate to the American public that they're going to be responsible in running, you know, our collective energy business, our country's energy business. And that involves increasing refining capacity, and it involves dealing with this pipeline, because my information is, we're, you know, up to four billion cubic feet a day of gas that can come out of this pipeline. We only use 60 or 61 billion cubic feet. It's a massive injection of gas into our economy that we desperately need. And I think the Speaker had it about right.

Senator MURKOWSKI. When I think whatever we can do, at a public level and at higher levels, to remind the companies that the country needs this and that it is as much an issue of energy security as economic and national security. And I think the more that

we can do to impress that, it's very important for us. So, I would appreciate your assistance in that.

One very quick question. There was a comment made by Red Cavaney of the American Petroleum Institute. And Mr. Cavaney indicated that when it comes to refineries, it may not be so much construction of new refineries that is needed as much as expansion of the existing refineries that we have. I haven't had a chance to speak directly with him about that to see what it is that we can do, at the congressional level, at the Federal level, to help facilitate the further expansion. Any comments or thoughts, Secretary Bodman?

Secretary BODMAN. Well, I think the reason that there seems to be greater interest in expansion rather than building a new greenfield facility is, one, it's easier to get it permitted, because you already have a site there; and so, therefore, getting the expansion done, it's proven to be a couple of years, rather than 3 or 4 years. You're looking at big differences in at least the historical timeframe. Second, by expanding, you already have available, presumably, at a refiner that already exists, crude oil supply. You have a way of getting crude to the facility, so you can expand that. And you also have customers and places you can put it, whether it's the chemical industry, whether it's retail consumers, by access to a pipeline that gets the product eventually. So, there are a number of reasons, both financial and from the standpoint of getting the approvals done, that encourage that.

I think it's useful to look at either one. I think that it's useful to think about additional refining capacity. If you look at a map of refineries, there are a lot of refineries all over America. They're scattered pretty well. They're much less concentrated, in terms of individual units, than I once thought. It's true, the larger refineries are down in the gulf coast and in New Jersey, New York area, as well as in Los Angeles. That tends to be where the concentrations are. So, the additional refining capacity will help. But I just think we also should be encouraging the greenfield or grassroots type development.

Senator MURKOWSKI. Thank you both, Secretary Norton, Secretary Bodman.

Senator Akaka.

Senator AKAKA. Madam Chairman, may I ask two fast questions? And I didn't want to leave without asking Secretary Norton a question. But this has to do with what we're just discussing now, and that is pipelines and delivery of energy.

Secretary Norton, under section 368 of the Energy Policy Act of 2005, several agencies are required to identify energy corridors for oil, gas, and hydrogen pipelines, and electricity in 11 Western States. I understand that the Bureau of Land Management and Forest Service recently began holding public meetings to gather comments that will be considered in designating new energy right-of-way corridors on Federal lands across the West. One question, of two, is, Can you elaborate on the anticipated increase in energy transmission that the corridors will provide to growing areas? And I understand that the corridors will not cross national parks lands or wilderness areas. Is that correct?

Secretary NORTON. Senator, yes. I'm not aware of any proposals that would do that. And that was not included in the legislation. So, we're focusing on our multiple-use lands.

Senator AKAKA. And what about the national monuments on Bureau of Land Management lands? And what about National Landscape Conservation Lands, which have been designated as uniquely important landscapes? And so, my second question is, Will the transmission corridors cross those lands?

Secretary NORTON. There are some specific things that are included under the statutes. The monuments that are BLM monuments are not. One would have to look at the purposes outlined in the monuments' designation. A number of those do include existing rights-of-way in existing corridors. We are going through a process, working with the Western Governors Association, to try to identify desirable rights-of-way. And those kinds of factors would certainly be considered as we would be looking at which areas make the most sense for having the designations.

Senator AKAKA. Yes. And my first question was if you would elaborate on the anticipated increase in energy transmission that the corridors will provide for.

Secretary NORTON. I'll have to provide that for the record.

Senator AKAKA. Fine.

[The information follows:]

The BLM has begun its efforts to identify energy corridors pursuant to section 368 of the Energy Policy Act of 2005. The public scoping period for the West-wide Energy Corridor Programmatic EIS began on September 28, 2005 and concluded on November 28, 2005. At this point in the process we are unable to quantify an anticipated increase in energy transmission capacity. We anticipate an estimate will be possible as we continue through the EIS process. We will be happy to update you as information becomes available.

Senator AKAKA. Thank you very much, Madam Chairman.

And thank you for your responses.

Senator MURKOWSKI. Thank you, Senator Akaka. And thank you, again, to both of you, for giving us as much time as you have this morning and for your work on behalf of the country. Appreciate it.

And, with that, we're adjourned.

[Whereupon, at 12:40 p.m., the hearing was adjourned.]

APPENDIX
RESPONSES TO ADDITIONAL QUESTIONS

THE DOW CHEMICAL COMPANY,
October 25, 2005.

Hon. PETE DOMENICI,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: Thank you once again for inviting me to testify before your committee on October 6 on the subject of the effects of the recent hurricanes on our nation's energy infrastructure. Thank you as well for your words of praise for the people of my company that you met during your visit to Saint Charles, Louisiana.

Enclosed per your request of October 11 are my written responses to the questions posed by Senators Akaka and Feinstein. Should you or your staff have any additional questions, please do not hesitate to contact me, or Dow's Vice President of Government Affairs, Peter Molinaro, at 202-429-3429.

Very truly yours,

ANDREW N. LIVERIS,
President and CEO.

[Enclosure.]

QUESTION FROM SENATOR AKAKA

Question 1. Mr. Liveris, thank you for your testimony. I appreciate all that your company, and other petrochemical companies, do to keep us supplied with a wide array of products for everyday use. I am concerned about the ripple effects that are being reported throughout the economy. We are seeing price spikes of key raw materials for manufacturing. How long do you expect these prices to continue, and what do you as an industry expect the ultimate effect will be?

Answer. Prior to hurricanes Katrina and Rita, the chemical industry was experiencing increasing sales volumes as the inventory de-stocking activity of the 1st half of 2005 (the result of the soft-patch in global manufacturing) was ending and as orders improved. This was pushing operating rates (or capacity utilization) for many polymers up to the 91% to 94% range. Hurricanes Katrina and Rita resulted in the unavailability of as much as 60% of North American capacity for a number of key petrochemicals, petrochemical derivatives and polymers. With already tight markets, this pushed operating rates for available capacity up to 100%. Although much of the capacity has now returned to service, according to CMAI, a leading industry consultant, for example, 9% of high density polyethylene (HDPE) capacity and 6% of polypropylene capacity remains shut-down. The reduced polypropylene capacity is now running at a 100% rate. Given current demand, this is placing upward pressure on prices.

Most energy, industrial, and chemical products have a low price elasticity so even minor supply disruptions have large effects on prices paid for products in short supply. These price effects are now working their way through the supply chain. Prices for polymers (e.g. polyethylene) are highly correlated with monomer prices (e.g. ethylene), which in turn are highly related to feedstock prices (e.g. ethane), which in turn are highly correlated to natural gas prices.

Chemistry accounts for a high degree of materials value of many household items we take for granted. The chemistry share of the materials value of a bottle of shampoo, for example, is 100%. For tires it is 62%. For semiconductors it's 30%. Even for paper cups it's 22%. Higher prices for key industrial supplies and materials will now begin filtering through the value chain to other manufactured goods and ultimately to the consumer. These price effects and shortages are now being witnessed in the most recent import price report released by the Bureau of Labor Statistics,

which indicated the largest increase in non-petroleum import prices since monthly publication of the report began in December 1988. The rise in non-petroleum industrial supplies and materials prices was led by a jump in natural gas prices, although higher prices for chemicals, building materials, and some metals were also contributing factors. This will next show up in producer prices and then the CPI. As inflationary pressures intensify, central banks will tighten, resulting in higher interest rates, which at some point reach a tipping point for the economy, resulting in the next downturn. Future economic historians may very well talk about the recession of 2006-7 as being engendered by higher natural gas costs as a contributing factor.

What follows is a sampling of products that have or will rise in price or be in short supply because of high natural gas costs that are driving up the cost of chemicals used to make finished goods. We have already seen news accounts that tire companies (dependent on butadiene chemistry), carpet makers (dependent on nylon chemistry) and furniture companies (dependent on polyurethane chemistry) are paying far higher costs or are unable to obtain raw materials because of gas costs and availability.

CONSUMER PRODUCTS

Diapers

Natural Gas → Propane* → Propylene → Acrylic acid → acrylate esters → super absorbent polymers

Petroleum → Propylene → Polypropylene (liners)

Natural Gas → Propane → Propylene → Polypropylene (liners)

Shampoo

Natural Gas → Ethylene → polyethylene glycol → Sorbitan Laurate (primarily baby shampoos)

Natural Gas → Ethylene-polyethylene glycol → Ammonium Lauryl Sulfate

Natural Gas → Ethylene → High-density polyethylene (HDPE)

Lotions

Natural Gas → Propane → Propylene → Allyl Chloride → Epichlorohydrin → Glycerin

Natural Gas → Ethane → Ethylene → High-density polyethylene (HDPE) packaging

Toothpaste

Natural Gas → Propane → Propylene → Allyl Chloride → Epichlorohydrin → Glycerin

Natural Gas → Ethane → Ethylene → High-density polyethylene (HDPE) packaging

Laundry detergent

Natural Gas → Ethane → Ethylene → High-density polyethylene (HDPE) packaging

Natural Gas → Ethane → Ethylene → linear alpha olefins → alcohol ethoxylates [liquid detergent raw material]

Natural Gas → Ethane → Ethylene → linear alpha olefins → alcohol ether sulfates [liquid detergent raw material]

Natural Gas → Ethane → Ethylene → linear alpha olefins → alcohol sulfates [liquid detergent raw material]

Petroleum → benzene → linear alkylbenzene → linear alkylbenzene sulfonate (LAS) [liquid and powder detergent raw material]

Dishwashing liquids

Natural Gas → Ethane → Ethylene → High-density polyethylene (HDPE)

Natural Gas → Ethane → Ethylene → linear alpha olefins → alcohol ether sulfates [detergent raw material]

Petroleum → benzene → linear alkylbenzene → linear alkylbenzene sulfonate (LAS) [detergent raw material]

Milk Jugs

Natural Gas → Ethane → Ethylene → High-density polyethylene (HDPE)

Yogurt / Sour Cream / Cream Cheese / Margarine Containers

Natural Gas → Propane → Propylene → polypropylene

* Where Propane appears, propane can also be derived from petroleum refining as well as from natural gas processing. About 45% of US propane supply is derived from natural gas. Another 47% comes from oil refining (crude distillation, cat cracking, hydrocracking, catalytic reforming, and thermal processes) with the remaining 3% of propane imported.

Bottles for Mustard/Honey/Salad Dressing/Peanut Butter/Jelly

Natural Gas → Ethylene → Low-density polyethylene (LDPE)
 Natural Gas → Ethylene → Polyethylene Terephthalate (PET or PETE)

Water Bottles (5 gallon)

Petroleum → Benzene → Cumene → Phenol → Bisphenol A → Polycarbonate

Water/soft drink/juice bottles

Natural Gas → Ethylene → Polyethylene Terephthalate (PET or PETE)

Plastic Wrap for Food Packaging

Vinyl chloride film—commercial use
 Vinylidene chloride—home use
 Natural Gas → Ethane → Ethylene → Ethylene Dichloride → VCM → PVC

Meat trays

Expandable polystyrene packaging
 Natural Gas → Ethane → Ethylene → Ethylbenzene → Styrene → Polystyrene

Prepared food packaging (i.e., rotisserie chickens, sushi)

Natural Gas → Ethane → Ethylene → Ethylbenzene → Styrene → Oriented Polystyrene

Bread bags

Natural Gas → Ethane → Ethylene → Low-density polyethylene (LDPE)

Trash can liners

Natural Gas → Ethane → Ethylene → Low-density polyethylene (LDPE)

Fast Food packaging

Crystal polystyrene—fast food service cold drink cups, cutlery
 Expandable polystyrene packaging—hot beverage cups
 Natural Gas → Ethane → Ethylene → Ethylbenzene → Styrene → Polystyrene

Food/Beer cans

Epoxy coatings on the interior of food cans to protect food from contamination with dissolved metal

Petroleum → Benzene → Cumene → Phenol → Bisphenol A → Epoxy resins

BUILDING SUPPLIES

PVC plumbing pipe

Natural Gas → Ethane → Ethylene → Ethylene Dichloride → VCM → PVC

Vinyl siding, doors, and windows

Natural Gas → Ethane → Ethylene → Ethylene Dichloride → VCM → PVC

Kitchen cabinets/countertop laminates

Natural Gas → Methanol → Formaldehyde → Phenol-Formaldehyde Resins

Architectural paint

Natural Gas → Ethane → Ethylene → Vinyl acetate → paints
 Petroleum → Propylene → Acrylic acid → paints
 Natural Gas → Ethane → Ethylene → Ethyl glycol → Ethyl acrylate → paints
 Petroleum → Propylene → n-Butyl acrylate → paints
 Natural Gas → Methanol → Methyl methacrylate → exterior paints

Carpet

Petroleum → Benzene → Phenol or Cyclohexane → Caprolactam → Nylon 6
 Petroleum → Benzene → Cyclohexane → Adipic acid → Nylon 6,6 fibers
 Petroleum → Propylene → Polypropylene → Polyether Polyols → flexible polyurethane foam → carpet cushion
 Petroleum → Toluene → Toluene diisocyanate → flexible polyurethane foam → carpet cushion

Housewrap

Natural Gas → Ethane → Ethylene → High density polyethylene fibers

Plywood

Natural Gas → Methanol → Formaldehyde → Phenolic Formaldehyde Resins

Insulation

Natural Gas → Ethane → Ethylene → Ethylbenzene → Styrene
 Natural Gas → Propane → Propylene → Polypropylene → Polyether Polyols → spray polyurethane foam insulation

OTHER IMPORTANT GOODS

Car parts

Gaskets, hoses, belts
 Natural Gas → Ethylene → Ethylbenzene → Styrene → Styrene-Butadiene Rubber (SBR)
 Petroleum → Propylene → Polypropylene → Polyether Polyols → Polyurethane elastomers

Tires

Natural Gas → Ethylene → Ethylbenzene → Styrene → Styrene-Butadiene Rubber (SBR)
 Petroleum → Benzene → Phenol or Cyclohexane → Caprolactam → Nylon 6 for tire cord
 Petroleum → Carbon Black

Brake fluid

Natural Gas → Ethylene → Triethylene glycol monomethyl ether
 Natural Gas → Ethylene → Diethylene glycol monomethyl ether

Fertilizer

Natural Gas → Ammonia

Contact Lenses

Natural Gas → Ethylene → Methyl Methacrylate (MMA)

Eyeglasses

Petroleum → Benzene → Cumene → Phenol → Bisphenol A → Polycarbonate

Printed circuit boards

Petroleum → Benzene → Cumene → Phenol → Bisphenol A → Epoxy resins
 Petroleum → Propylene → Epichlorohydrin → Epoxy resins

QUESTIONS FROM SENATOR FEINSTEIN

Question 1. I want to start off by thanking Dow Chemical for endorsing the energy efficiency bill that Senator Snowe and I introduced (S. 680). In light of this, I was disappointed when I read your testimony and found energy efficiency buried in Section V. Following along these same lines, the United States is currently paying twice as much for natural gas as Europe and almost 3 times as much as China. It seems to me that the very first step we should take as a nation to help bring down the cost of natural gas would be to implement energy efficiency standards and incentives. Do you agree?

Answer. Dow continues to believe that energy efficiency is indeed the most important thing the nation can do in the near term to blunt the high cost of natural gas. In addition to endorsing S. 680, Dow supported the other aggressive energy efficiency measures in the Energy Policy Act of 2005, and have subsequently signed on to letters to Congress asking that the tax credits be accelerated, along with the funding for the authorized public education campaign.

Dow has taken significant proactive steps to reduce our energy demand, improving our energy efficiency by 42% since 1990. We recently exceeded our publicly stated goal of improving energy efficiency by 20 percent by the year 2005 from 1994. By year-end 2004, Dow had already achieved a 21% energy intensity improvement vs. 1994. In 2004, alone, we reduced our energy intensity by 5.4% vs. 2003. We are now setting a new aggressive goal to continue our energy efficiency drive through 2015. Within the chemical industry, Dow is a leader in efficient energy use. We use highly efficient cogeneration to generate 95% of the power and heat needed to run our processes in the U.S. and 75% of that needed globally. Cogeneration is 20-40% more efficient than producing power and steam separately.

Dow has saved more than \$3 Billion since 1994 through our focus on energy efficiency & conservation.

While we agree that the nation needs to make an immediate and aggressive commitment to improved energy efficiency, we also believe that we must begin immediately as well to develop additional sources of domestic natural gas supply. Efficiency alone will not cut the price of natural gas enough to make domestic manufac-

turing globally competitive again. More fuel diversity will help reduce gas demand as well, but the need for additional domestic natural gas supply is inescapable.

Question 2. As you mention in your testimony, the U.S. currently does not have a Strategic Natural Gas Reserve, like we do for crude oil. Do you think the federal government should require a certain amount of natural gas to be stored at all times in order to mitigate supply shortages?

Answer. The reference to there not being a strategic natural gas reserve was more an observation than a recommendation. It was meant to illustrate that there is no real safety valve like there is for petroleum supply emergencies. Rather than a strategic natural gas reserve, we need to generally increase the existing natural gas storage infrastructure. The nation's current 3 TCF storage capacity has changed little since the 1970's despite the dramatic increase in natural gas demand for power generation. The Energy Policy Act of 2005 provided for increased storage. More storage will reduce volatility, but we must be prudent about how and when to do it lest we further drive up the short term price of natural gas. Natural gas supply and demand are so out of balance that there is no gas to spare to increase storage. Additional domestic supply, and growth in storage infrastructure, go hand in hand.

AMERICAN PETROLEUM INSTITUTE,
Washington, DC, October 28, 2005.

Hon. PETE V. DOMENICI,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: Enclosed please find the responses to Committee member questions from the October 6th hearing on Hurricanes Katrina and Rita's effects on energy infrastructure and the status of recovery efforts.

Should you require additional information on the industry's ongoing Hurricane recovery efforts, please do not hesitate to contact me.

Sincerely,

RED CAVANEY,
President & CEO.

[Enclosure.]

QUESTIONS FROM SENATOR BUNNING

Question 1. Legislation pending in the House of Representatives would grant the President authority during periods of extreme fuel supply emergencies to grant waivers of fuel standards. Are you aware of the types of changes to fuel standards that producers of crude oil and refiners might seek?

Answer. It is impossible to predict what type of waivers may be needed in the future; however, producers and refiners could seek waivers similar to those granted in the wake of Katrina and Rita. The U.S. Environmental Protection Agency ("EPA") was given authority, after consultation with the Department of Energy, to waive fuel standards during periods of extreme fuel supply emergencies by the Energy Policy Act of 2005 ("EPACT 2005"). EPA used this new authority after Katrina and Rita. EPA waived certain requirements for federal gasoline volatility, federal reformulated gasoline, federal low sulfur diesel fuel, and specific state fuel requirements. These waivers were targeted to create a significant increase in supply with a minimal environmental impact.

Gasoline volatility refers to the vapor pressure, or how quickly the gasoline will evaporate, as evaporated gasoline can contribute to smog in high heat summer months. In most areas, low vapor pressure gasoline is required for sale until September 15th, although Phoenix, Arizona and east Texas extend the requirement to September 30th, and California extends the requirement to October 31st. In response to Katrina and Rita, EPA allowed summertime requirements to expire early, allowing more volatile components, such as butane, to be blended with gasoline allowing for greater supply.

Reformulated gasoline is required for sale in some areas to reduce levels of smog producing elements. Conventional gasoline was allowed for sale in a limited number of reformulated gasoline covered areas that the EPA recognized as facing supply disruptions.

Individual states have created specific rules concerning the composition of gasoline blends. These vary from state to state and are commonly referred to as "boutique fuels." Several of these requirements (Atlanta low sulfur gasoline and Texas low emission diesel) were waived to allow for more gasoline to be pooled together in pipelines, barges, and tanks, thus increasing the supply available to these areas.

EPA also waived the low sulfur requirement in diesel fuel. On-road diesel accounts for two thirds of diesel supply and has a sulfur cap of 500 ppm. The remaining one third of supply is used in such off road purposes as farm and construction equipment. The waiver allows for the use of these fuels interchangeably, helping to increase the supply available to trucks.

These waivers were granted by the EPA to address supply problems in specific areas and greatly contributed in keeping supplies available and preventing shortages.

Question 2. I have been told that certain changes in the content of automotive fuels (e.g., sulfur content) could degrade the emissions system and catalytic converters in automobiles. This degradation could limit the useful life and effectiveness of these pollution control devices. Further, it could require automobile owners to incur significant expenses to replace their cars emissions systems so they can pass their state's emissions tests. Are you aware of whether producers of crude oil or refiners would seek or support waivers in fuel content that would allow the fuel to include components (e.g., sulfur) that could damage the vehicles emission system?

Answer. Refiners and producers would not support waiving fuel requirements that would cause increased degradation of emissions control systems.

The sulfur requirements that were recently waived by EPA for diesel fuel did not affect the current fleet of vehicles. The sulfur requirements that were waived would have posed a problem for emissions systems only in automobiles and trucks designed to be introduced for the 2007 model year. These vehicles will require Ultra Low Sulfur Diesel fuel, a new product that is being introduced in June 2006. Some of these vehicles have already been introduced in test fleets, but are supplied via a segregated distribution system, and thus were unaffected by the recent waivers.

Once the ULSD program begins in June 2006, the trucks and vehicles designed to run only on ULSD will be labeled "ULSD only" at the gas cap. This will inform the owner/operator of the fueling requirement. As the years advance, these ULSD-only vehicles will gradually increase their penetration into the in-use vehicle fleet ("fleet turnover"). Retail and fleet pumps will also be required to label as to whether they are offering for sale "ULSD" or "low sulfur (up to 500 ppm)". The low sulfur pumps will have a notice warning not to fuel ULSD-only vehicles. All of these safeguards are intended to protect the emission control devices on the model year 2007 and later vehicles from sulfur poisoning. In the future, waivers will not change these requirements. Thus "ULSD-only" vehicles will not be able to use any fuel other than ULSD, regardless of whether waivers are issued to increase the on-highway diesel fuel supply for those vehicles that do not require ULSD.

QUESTIONS FROM SENATOR FEINSTEIN

Question 1. A Deutsche Bank study from September 16, 2005 finds that refinery margins have doubled on the West Coast from 2003 to 2005. Can you explain the reasons for these dramatic increases?

Answer. The California Energy Commission (www.energy.ca.gov/gasoline) provides estimates of the breakdown of gasoline price prices and margin details for both branded and unbranded product. According to their data branded refinery cost and profits increased from an average of 49.6 cents per gallon in 2003 to an average of 55.5 cents per gallon in 2004 and 54.7 cents per gallon so far this year.

The chart below* provides a breakdown of the component price of a gallon of regular gasoline. It shows that the price of crude oil has been the main driver in the increase in prices at the pump. Taken together, the cost to refine and distribute branded gasoline increased from 66.3 cents per gallon in 2003 to 72.7 cents per gallon in 2004, but then fell back to 66.9 cents per gallon so far this year (January-October 24, 2005). The tax data reported by (CEC) in the chart differ from the tax data compiled by the American Petroleum Institute (API). According to APIs estimates the average tax on a gallon of gasoline in California increased from 50.8 cents per gallon in 2003 to 54.3 cents per gallon in 2004 to 60 cents per gallon in 2005.

Question 2. In July, API met with the Minerals Management Service and the Coast Guard to assess the damage Hurricane Ivan caused and determine whether new policies or industry practices should be put in place to avert similar damage. What were the results of this collaboration?

Answer. This past summer API, along with Minerals Management Service and the United States Coast Guard, sponsored an industry conference on hurricane preparedness and reviewed the industry's performance during Hurricane Ivan in 2004. From this workshop the industry generated a number of items to explore for potential changes to standards, including revised 100-year design criteria, and revised

* Retained in committee files.

mooring design criteria for drilling units (currently covered by API RP 2SK, *Design and Analysis of Stationkeeping Systems for Floating Structures, 2nd Edition, December 1996*.) These items are currently being reviewed and studied by industry and the regulatory agencies and final recommendations on proposed standard revisions will be forthcoming. Data generated during the two most recent hurricanes also will need to be evaluated before final proposals are developed.

Question 3. The American Petroleum Institute and its member companies have recommended that, due to the current limited supply of oil and natural gas, American consumers modify their driving and living behaviors so that energy may be used as responsibly as possible.

While supply has been limited by the hurricanes, gas prices have been rising due to increased global demand. Don't you think that increasing fuel economy standards would help moderate gas prices even after the Gulf refineries are brought back on-line?

Answer. It is not clear that increasing fuel economy standards would moderate gasoline prices—and it definitely would not do so in the short-run. Increasing fuel economy standards lowers fuel cost per unit distance traveled which may result in additional miles traveled and fuel consumed. In addition, even assuming that increased fuel economy standards did reduce aggregate demand for motor fuel, it would take years for a significant impact to be felt. The auto manufacturers need years of lead time to comply with more stringent standards. Even after the standards go into effect, it typically takes 10 years or more to completely turnover the existing fleet of passenger motor vehicles.

At API's web site (www.api.org) we provide plenty of tips to consumers on how to use fuel more wisely. In addition, consumers that are considering buying a new car or truck can certainly factor fuel economy into that decision, given the large number of fuel-efficient vehicles currently offered for sale.

ENTERGY,

New Orleans, LA, November 1, 2005.

Hon. PETE DOMENICI,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

DEAR CHAIRMAN DOMENICI: Enclosed are my responses on behalf of Entergy Corporation to the questions forwarded to me after the submission of my written and oral testimony to the Senate Energy Committee on October 6, 2005. I appreciate the opportunity to respond to your questions and look forward to being of further assistance.

Sincerely,

CURTIS HÉBERT,
Executive Vice President, External Affairs.

[Enclosure.]

QUESTIONS FROM SENATOR DOMENICI

Question 1a. Your testimony states that “current estimates” for restoration of ENO's system range from \$325 million to \$475 million.

How much, if any, of these amounts would cover amounts that have already been spent by ENO or any other entity within Entergy Corporation?

Answer. Since the date of the testimony, the Entergy System has refined the estimated restoration costs based on in-the-field inspections of the damages caused by Hurricanes Katrina and Rita, as well as detailed plans for restoration of service. The current estimates of restoration costs only (not including any incremental losses), are as follows:

ESTIMATED RESTORATION COSTS

[U.S. \$ in millions]

	Katrina	Rita	Total
ELI	325-375	30-40	355-415
ENO	260-325		260-325
EGSI	29-42	365-500	394-542
EMI	75-90		75-90
Other	11-18	5-10	16-28
Total	700-850	400-550	1,100-1,400

Through September 2005, ENO had already incurred \$113 million of the estimated \$260—\$325 million in restoration costs. Entergy's other operating companies have incurred costs consistent with those estimates listed above given that restoration efforts for those operating companies are nearing completion.

Question 1b. How much, if any, of ENO's losses resulting from Katrina or Rita are covered by insurance?

Answer. Entergy maintains insurance coverage for the Entergy System of \$400 million. However, Entergy's insurance coverage is limited in that it only covers certain assets. Most of the transmission and distribution lines, towers, and poles are not covered. This is because cost-effective insurance for these types of assets have not been available since Hurricane Andrew devastated utility infrastructure in Florida in 1992. As a result of that event, annual premiums, for limited coverage for those types of assets, equal as much as 50% of the policy limit. The costs and limited nature of such insurance coverage render such policies effectively unavailable.

The vast majority of damage incurred from Hurricanes Katrina and Rita were to the transmission and distribution lines, towers, and poles and thus will make up a majority of the estimated restoration costs. As a result, much of Entergy's damaged facilities were uninsurable, and Entergy's insurance claim is expected to be below the \$400 million limit.

Entergy cannot provide an estimate of the amounts that will be recovered by insurance; however, please see the table supplied in response to 1.c. which estimates the restoration costs by function and provides a description of the insurance coverage for such assets.

Question 1c. Please provide a breakdown of exactly what these amounts would cover (i.e., generation, transmission, distribution, etc.).

Answer.

ESTIMATED COST BY FUNCTION

[U.S. \$ in millions]

Function	Entergy System	ENO	Insurance Coverage Description
Distribution ...	\$648-\$829	\$78-\$95	Generally covers damage to substations and underground wires only, subject to a \$1 billion Katrina cap for all Oil Insurance Limited insureds. Assets <i>not covered</i> by insurance include above-ground power lines, towers, poles, line transformers, etc. outside a 1000 meter radius of generating stations, switchyards and substations and any insurance proceeds discount caused by the aforementioned cap.
Transmission	\$228-\$283	\$34-\$43	Generally, covers damage to substations and underground wires only, subject to a \$1 billion Katrina cap for all Oil Insurance Limited insureds. Assets <i>not covered</i> by insurance include above-ground power lines, towers, poles, line transformers, etc. outside a 1000 meter radius of generating stations, switchyards and substations and subject to the cap provisions noted above.
Generation	\$55-\$71	\$26-\$33	Generation property damage losses are covered (including lost inventory), subject to the cap provisions noted above.

ESTIMATED COST BY FUNCTION—Continued

[U.S. \$ in millions]

Function	Entergy System	ENO	Insurance Coverage Description
Gas	\$99-\$124	\$99-\$124	Gas system property damage losses are covered (including lost inventory), subject to the cap provisions noted above.
Other	\$70-\$93	\$23-\$30	Facilities (owned buildings and leased buildings where Entergy has risk of loss under the lease agreements) damages are covered (including lost inventory), subject to the cap provisions noted above. Other costs <i>not covered</i> by insurance include business continuity.
Total	\$1,100-\$1,400	\$260-\$325	

Question 1d. Your testimony refers to the “uncertainty surrounding the timing and the size of the return of its [ENO’s] customer base.” In making estimates of the costs of restoring ENO’s system, what assumptions have you made regarding the timing of construction and the size of the customer base over time?

Answer. Entergy estimates that as of mid-October approximately 25% of ENO’s customers have returned and are actually taking electric service. By the end of 2007, Entergy estimates that approximately 51% or 96,000 customers will return. This level of customers is estimated to produce load of approximately 60% of the Pre-Katrina levels. The estimated percentage of load is higher than the estimated percentage of customers returning due to the assumption that a higher percentage of commercial and industrial customers will return resulting in relatively higher load.

This estimate is consistent with previous estimates in the City of New Orleans’ repopulation plan but is highly uncertain and dependent on ongoing clean-up, demolition and reconstruction efforts that must occur in the severely flooded areas of the city. Please also see Entergy’s response to 1.f. for further details on the assumptions upon which this estimate is based.

Question 1e. If you received capital today, how long do you anticipate it will take to rebuild the system?

Answer. Rebuilding the ENO system is dependent on having a financially viable ENO during the rebuilding process. Today, ENO is *not* financially viable as evidenced by the necessity of having ENO file for bankruptcy protection. Absent the recovery of reasonable incremental losses for the period August 29, 2005 through December 31, 2007, it is not expected that ENO can be a financially viable entity. Assuming the recovery of incremental losses by ENO, it is believed that, if sufficient funds for restoration are made available timely, it will be able to restore the infrastructure in a timely fashion such that customers who are ready, willing and able to take service will have electric and gas service available. When that can occur is a function not only of the capital ENO has available, but also, the timing of the clean-up efforts and reconstruction activities in the portions of New Orleans severely damaged by flooding.

Question 1f. What assumptions have you made regarding the type and location of ENO’s future load? Do your assumptions include any allowances for increased efficiency of new housing stock?

Answer. For the period through 2007, ENO’s projections are based on a determination of what areas are capable of taking service immediately as well as those areas that will be capable of taking service during the period through 2007. Entergy’s estimates do not reflect significant portions of the anticipated future customer base resulting from completely new construction through 2007. Rather, the vast majority of customers anticipated to return during this period will return, primarily, to structures that were repaired or renovated as opposed to completely new construction.

Regarding efficiency gains from new housing stock, ENO does anticipate that new construction will produce homes that are more energy efficient than the structures that are to be replaced. However, ENO residential customers already consume about 20% less electric energy annually than Entergy Louisiana, Inc.’s or Entergy Gulf States, Inc.’s residential customers. Each of these companies is geographically similar and has similar weather; however, the housing stock in ENO’s service area is older and smaller. Newer homes tend to be larger than homes built decades earlier. The U.S. Census Bureau reported this trend toward larger homes in a report titled

“These Old Houses,” released in February 2004. This trend toward larger houses will likely mitigate potential efficiency gains from new housing stock.

Question 1g. ENO and/or other Entergy operating companies own generation that was used to serve ENO’s now-diminished load. Is this generation now being used to serve other customers or being sold in the wholesale market? Are you assuming that revenues being generated by these facilities will be used to offset the costs of rebuilding ENO’s system? Please compare actual revenues expected to be generated by these facilities post-Katrina to revenues from the equivalent amount of power distributed by ENO before the storm.

Answer. Certain generating resources that were used to provide service to ENO customers pre-Katrina are now being used to serve ELI and EGS customers. Specifically, certain purchased power contracts of ENO have been assigned to ELI and EGS on a temporary basis subject to recall by ENO as it reacquires load. ENO’s Grand Gulf purchased power obligation either will be used to meet ENO’s load requirements or will be sold in the wholesale market pursuant to applicable regulatory requirements.

The resale of purchased power to ELI and EGS are at actual cost, as is required under the applicable FERC approved tariff. The sale of Grand Gulf in the wholesale market pursuant to applicable regulatory requirements will mitigate the costs incurred by ENO for this resource. ENO’s estimate of incremental losses includes these mitigating effects.

Question 2. Many utilities, particularly those in hurricane-prone areas, have set aside hurricane reserve funds to be used for system restoration. Does ENO or any of Entergy’s operating companies have such a fund, and how large is (are) they?

Answer. Each Entergy Operating Company can establish a storm damage reserve only with the approval of its regulator. In each instance, the regulator determines the annual accrual to the storm damage reserve account.

The actual annual accruals for storm damage approved by each retail regulatory authority are generally based on some historical average of storm damage expense. The average can vary from five to 15 years. The annual accruals currently approved by each retail regulator for each Entergy Operating Company are as follows:

[U.S. \$ in millions]

Company	Storm Damage Accrual
ENO—Electric	0.0
ENO—Gas	0.0
ELI	20.4
EGS-Louisiana	16.2
EGS-Texas	1.7
EMI	7.6
EAI	4.8

Several years ago, ENO ceased collecting for storm damages in rates as a result of significant over funding. Since that time, the reserve has been largely depleted. Over time, the reserve balance can be positive (meaning that the actual cost of storms has been less than the accruals) or negative (meaning that the actual cost of storms has been more than the accruals). The current pre-Katrina and Rita storm damage reserves for each Operating Company are as follows:

[U.S. \$ in millions]

Company	Storm Damage Reserve
ENO—Electric	1.3
ENO—Gas	0.3
ELI	(41.7)
EGS-Louisiana	(44.6)
EGS-Texas	(12.5)
EMI	2.4
EAI	(29.0)

Question 3a. Your testimony states that “on a per-customer basis, the cost of Katrina would be \$4,300 to \$7,900.”

Exactly what costs are included in this calculation? Is this the cost of system restoration, or are other costs included as well? Please explain in detail.

Answer. The average Katrina cost for ENO of \$4,300 to \$7,900 per customer was based on an initial range of estimated restoration costs of between \$325 million and \$475 million and estimated post-Katrina number of customers of between 60,000 and 75,000. Prior to Katrina, ENO had 190,000 customers. ENO estimated that, during 2006, approximately 30% to 40% of those customers would return. Consequently, by the end of 2006, it would have between 60,000 and 75,000 customers. The average per customer restoration cost would be between \$325 million divided by 75,000 customers or \$4,333 per customer and \$475 million divided by 60,000 customers, or \$7,917 per customer.

The restoration costs include the total costs estimated to restore the electric and gas facilities to their pre-Katrina condition and do not reflect any insurance proceeds. They also do not include any incremental losses.

As noted above, the values presented in earlier testimony were based on the initial estimates of storm damage costs. Based on in-the-field inspections of the damages caused by Hurricane Katrina as well as detailed plans for the restoration of service, those estimates have been refined and, as announced on October 19, 2005, the revised estimate for ENO is in the range of \$260 million to \$325 million. Furthermore, projections indicate that ENO will regain approximately 51%, approximately 96,000 of its pre-Katrina customer base by year-end 2007. This equates to a cost per customer of between \$2,710 and \$3,390 (see also Entergy's response to 3.d., which computes the cost per customer for ENO and the other affected operating companies.)

The actual storm costs incurred by ENO over the past five years has averaged about \$14 per customer or less than one-half of 1% of the Katrina per customer cost. In the following table are shown the five-year average actual storm costs for the other Entergy Operating Companies, as well as for other electric utilities prone to hurricanes.

ELI	\$36
EGS	\$30
EMI	\$25
EAI	\$86

During 2004, Florida endured four hurricanes. The total storm damages costs for all four hurricanes are computed on per customer basis in the table below. Note that ENO's Katrina cost per customer of between \$2,710 and \$3,390 is 10 to 12 times the highest cost per customer rate incurred for the four hurricanes that affected Florida in 2004.

Florida Power & Light	\$211
Gulf Power	\$274
Tampa Electric	\$97
Progress Energy—Florida	\$236

Source: EEF's "After The Disaster: Utility Restoration Cost Recovery," released in February 2005 and internal analysis.

Question 3b. You refer to a diminished "customer base among which restoration costs would be spread." What assumptions did you make about that future customer base when you calculated your per customer cost?

Answer. The original estimate of the 60,000 to 75,000 customers that would return in 2006 was preliminary, and based on an overall assessment of the extent of the damage due to flooding. These projections have been refined based on neighborhood-by-neighborhood and block-by-block inspections. It is now projected that, by the end of 2007, approximately 96,000 electric customers (51% of the pre-Katrina level) will be taking service from ENO. See also the response to item 3.a., above.

Question 3c. In light of your assumptions regarding a diminished customer base, what assumptions have you made about changes in overhead for on-going operations (apart from system restoration costs)?

Answer. Most of ENO's non-fuel and purchased energy costs are fixed, at least in the short-run of one to three years. (These are generally referred to as "base rate costs"). For example, the Company's pre-Katrina indebtedness will not decline because of a loss of customers. Consequently, the interest costs are fixed. The same is true for depreciation, benefit costs and the like. Assuming that ENO will be able to emerge from bankruptcy as a viable entity, ENO will attempt to reduce certain

of its base rate costs such that the Company and its customer base will be better aligned to its reduced size.

Question 3d. What would be the pre-customer cost if these costs were shared by the customers of Entergy Louisiana, all customers in Louisiana, and all customers of all Entergy operating companies?

Answer. This is not a viable alternative, as it conflicts with the laws and decisions applicable to cost recovery in each of Entergy's retail jurisdictions. Generally, each Entergy Operating Company is allowed to recover only the costs prudently-incurred to provide service to that Operating Company's customers. This is a requirement established by each of the Entergy Operating Company's regulators. Thus, the Louisiana Public Service Commission generally allows Entergy Louisiana, Inc. ("ELI") to recover only costs incurred to provide service to ELI's customers, but not the cost to provide service to Entergy Gulf States, Inc. ("EGS") customers' or to ENO's customers.

Based on the current estimated Katrina/Rita costs, the per customer average is as follows:

Company	Estimated Restoration Costs (U.S. \$ in millions)	Customers	Cost Per Customer
ELI	\$355-\$415	662,000	\$540-\$630
ENOI	\$260-\$325	96,000	\$2,710-\$3,390
EGSI	\$394-\$542	720,000	\$550-\$750
EMI	\$75-\$90	419,000	\$180-\$210

Question 4a. The only numbers cited in your testimony are for system restoration in New Orleans. However, legislation introduced in the aftermath of Katrina has provisions for grants of money to Entergy that are several magnitudes larger than the costs cited in your testimony.

What is the total amount of assistance sought by Entergy for damages from Katrina and Rita?

Answer. The proposed legislation did not apply to just Entergy. As we understand it, the proposed legislation applied to all electric and gas privately-owned utilities that suffered damage as a result of Hurricanes Katrina and Rita in the states of Louisiana (including the City of New Orleans), Texas, Mississippi, and Alabama. The legislation contained a cap of "up to \$2.5 billion for all affected privately-owned utilities.

With regard to the current estimate of restoration costs, see the response to 3.d, above. Note, however, that these values are prior to any insurance proceeds and the assistance requested is net of all insurance proceeds. These estimates cover generation, transmission, distribution, and related infrastructure facilities as detailed in response to 1.b., above.

In addition to the net restoration costs that Entergy would seek under the proposed legislation, Entergy is seeking incremental losses for ENO.

Question 4b. Exactly what do these amounts cover (i.e., generation, transmission, distribution, overhead, lost profits, etc.)?

Answer. These amounts cover the cost of restoring the generation, transmission, distribution, and related infrastructure damaged by Hurricanes Katrina and Rita, net of insurance. In addition, they cover the incremental losses of ENO through December 31, 2007. Entergy would agree to exclude any return on the equity capital invested in ENO from this request.

Question 4c. Please describe in detail the allocation of these costs, by operating company and by state. Also please provide a breakdown of these costs on a per-customer basis.

Answer. The vast majority of these costs are not allocated to the Operating Companies. Rather, they are the costs of restoring the damaged facilities in the specific service territories of each Operating Company, such that service can be restored to the customers of each Operating company. The only costs that will be allocated are business continuity costs, which represent less than 5% of total costs. The estimated restoration costs per customer are detailed in response to 3.d., above.

Question 5a. What is the total market capitalization of Entergy Corporation?

Answer. On October 25, 2005, Entergy had approximately 207 million outstanding shares of common stock, and the closing market price per share was \$68.64. Accordingly, Entergy's market was approximately \$14.2 billion.

Question 5b. Why has Entergy Corporation chosen not to make a direct investment in the reconstruction of the New Orleans system?

Answer. Entergy has made significant contributions to the reconstruction of the New Orleans system by providing Debtor-in-Possession financing to Entergy New Orleans, Inc. ENO, as Debtor-in-Possession has been authorized to borrow up to \$100 million under this financing, an amount that is expected to be depleted by December 2005. Entergy could provide additional amounts pending internal analysis and receipt of legal and regulatory approvals. Like any public company, Entergy has a responsibility to act in the best interests of its various stakeholders, including its shareholders. Entergy must evaluate the likelihood of earning a fair return on any funds it invests. Accordingly, Entergy's investments in the New Orleans system must take into consideration factors such as long-term customer retention rates, the cost structure implicit in a given level of investment, the rate implications of that cost structure, and other such factors. Finally, ENO's equity capital (common and preferred equity) as of the year ending December 31, 2004 was approximately 174.2 million dollars.

Question 6. What was the book value of assets destroyed by Katrina? Please provide this information for each operating company. What was the book value of assets destroyed by hurricane Rita?

Answer. Entergy has not yet completed its identification of all assets that were destroyed by Hurricanes Katrina and Rita. However, for that portion of the restoration work performed and/or assessed thus far, Entergy estimates that assets with a total original cost of over \$270 million were destroyed. This level of asset destruction is more than ten times greater than Entergy has experienced with any previous storm. It should be noted that this estimate only includes a small portion of the cost of assets destroyed in our New Orleans service territory, where damage was most extensive on both an absolute and a relative basis. Restoration efforts will need to proceed much further before all destroyed assets can be identified. Entergy has based these estimates on the original, historical costs of these assets that, in many cases, representing price levels that are several decades old. Accordingly, replacement costs for these assets will substantially higher at today's prices, and it is this current cost that would be borne by customers through the ratemaking process if federal assistance is not obtained.

Question 7a. Please list the total capital construction expenditures for all of the Entergy operating companies for each of the last ten years.

Answer. The requested data is shown in the following table:

[\$ Millions]						
Year	EAI	EGS	ELI	EMI	ENO	Total
1995	165	186	120	79	28	578
1996	146	155	103	85	28	517
1997	141	133	85	50	16	425
1998	190	137	105	59	22	513
1999	238	199	131	95	46	709
2000	369	278	203	121	49	1,020
2001	281	318	203	160	61	1,023
2002	277	355	210	158	58	1,058
2003	335	349	258	189	66	1,196
2004	270	358	240	163	51	1,083

Question 7b. What is total capital construction budget for all Entergy operating companies for 2005?

Answer. The requested data is shown in the following table:

[\$ Millions]						
Year	EAI	EGS	ELI	EMI	ENO	Total
2005 Budget	321	275	455	147	47	1,244

Amounts budgeted for 2005 do not encompass hurricane restoration costs.

Question 8. Your testimony cites a per-customer cost of \$4,300 to \$7,900 per customer for the reconstruction of ENO's system. If these costs were securitized and collected over a ten year period, what would be the average charge per each residential customer per month? What would be the average cost per customer per month if these costs were allocated to the customers of Entergy Louisiana as well?

Answer. As noted in response to 3, above, the revised per-customer cost is between \$2,710 and \$3,390 based on the restoration cost estimates of \$260 to \$325

million. These cost estimates do not include incremental losses as noted in various responses, above. The annual cost of a securitization for 10 years of the lower estimate of \$260 million would be about \$35 million. The required rate increase for residential customer would be composed of the increase necessary to recover ENO's ongoing fixed costs over a smaller customer base plus the amount necessary to recover the storm restoration costs, securitized or otherwise.

ENO's current base rates are approximately 4.5 cents per kilowatt-hour or \$45 per month for an average residential customer consuming 1,000 kilowatt-hours each month. Recovering the ongoing fixed cost over a smaller customer base consisting of 60% of the load would require an increase of approximately \$30 per month or roughly 67% increase in base rates for the lost customer component alone. The rate increase necessary to recover the \$35 million associated in addition to the recovery of ongoing fixed cost over a smaller customer base will be approximately \$39 per month, or a total of 87% in base rates.

As noted in response to question 3.d., above, having the cost associated with ENO's damage flow to Entergy Louisiana is not a viable alternative, as it conflicts with the laws and decisions applicable to cost recovery in each of Entergy's retail jurisdictions. Generally, each Entergy Operating Company is allowed to recover only the costs prudently-incurred to provide service to that Operating Company's customers. This is a requirement established by each of the Entergy Operating Company's regulators.

Question 9. Entergy has long been an outspoken opponent of the socialization of the costs of transmission and distribution systems, and has been a supporter of "participant funding," a system whereby those that benefit from the costs of facilities are required to pay for them. Entergy has long argued that transmission and distribution facilities that cannot be entirely supported by the market which they are intended to serve should not be built. How do you distinguish the present case, in which you are arguing for the socialization of the costs of rebuilding an entire system?

Answer. As citizens throughout our service territory are still struggling to rebuild their lives and as Entergy is still working hard to restore service in the hardest hit areas, especially New Orleans, we do not think it is appropriate to reopen the policy debate on participant funding. Suffice it to say that Entergy was pleased that Congress in the EAct of 2005 authorized participant funding and generally codified prior FERC orders authorizing the use of participant funding.

Entergy's position on participant funding was based on one simple principle: protecting our customers from bearing costs associated with facilities that they did not cause to be built. Our position on seeking federal relief for the costs associated with Katrina/ Rita is based on this exact same principle: protecting customers from bearing the costs associated with the destruction of our system—something obviously that neither our customers nor ENO caused to occur. The case for federal assistance for ENO is especially critical and warranted. But for the flooding of 80% of the City of New Orleans when the federal levee system failed, ENO and the citizens of New Orleans would not find themselves in these dire straits. Moreover, merchant plant developers had complete control of the business decisions they made on where to invest and locate their facilities on the electric grid. (This is explained in more detail below in the answer to Senator Feinstein's question.) That most, if not all, did so without considering transmission implications and potential costs is beyond dispute. Obviously ENO and the citizens of the Gulf Region are innocent victims of the worst natural disaster in our country's history.

In sum, just as we sought to protect our consumers from bearing unwarranted costs in advocating for participant funding, we are seeking federal assistance here in order to avoid massive and significant rate increases that our customers would otherwise bear if we were to seek cost of service rate recovery for storm related costs. Our positions are consistently based on seeking to protect our customers—in this instance to protect our customers from bearing the burden of this nation's worst natural disaster. That is why participant funding is a just policy. That is why providing immediate federal relief for the costs incurred to rebuild from Katrina and Rita is a just policy warranting immediate Congressional action.

QUESTION FROM SENATOR FEINSTEIN

Question 1. As we look at proposals to rebuild the Gulf Coast, I understand that Entergy has asked for federal money to rebuild or restore power plants damaged during the recent hurricanes. While all of our thoughts and prayers go out to you and your employees, I am wondering why Entergy is looking for federal money to rebuild power plants in an area where there is an oversupply of electric generation?

Answer. Prior to Hurricane Katrina, Entergy New Orleans, Inc. (“ENO”) had two generation stations, Paterson and Michoud, both of which are located in the City of New Orleans and both of which were flooded.

The Senator is right in the sense that there are a number of merchant generators who have built facilities in and around our service territory. However, few, if any, of these generators took transmission considerations into when they located their plants. Their location was certainly not the result of their participation in any Entergy or regional planning processes. In fact, for reliability purposes, it is necessary to have a certain amount of generation located in proximity to the load being served. This is critically important, especially for a utility like Entergy New Orleans.

For the New Orleans area, it is necessary to have operating a minimum number of generating units in order to maintain voltage and provide reliable service. The Michoud generating unit is one of the units that serves that function. While there are many merchant generating facilities in the Entergy service area resulting in the referenced “oversupply,” none are physically located in the New Orleans area, and thus, none are available to serve the reliability needs of New Orleans’ customers. These other units simply do not have the same electrical characteristics for serving Entergy New Orleans’ customers. For that reason, it is critical that Entergy have available the generating facilities necessary to meet reliability needs and to have them available in the right place.

RESPONSES OF CHRISTOPHER HELMS TO QUESTIONS FROM SENATOR FEINSTEIN

Question 1. How much natural gas is stored through the U.S. in the winter storage facilities?

Answer. The five-year average (2000-2004) for natural gas in storage by November 1 is 2.95 trillion cubic feet (tcf). The current inventory for this winter, as of October 7th, is 2.99 tcf, and it is expected that storage will be filled to 3.1 tcf by the beginning of next month. This is in line with the five-year average at this time of the year.

Question 2. Would you agree that the largest factor on the price of natural gas is demand?

Answer. No, we would argue that supply and demand are equal factors in determining commodity prices, consistent with the fundamental principles of economics. The proximate cause of the recent run-up in natural gas commodity prices has been the impact from Hurricanes Katrina and Rita, which reduced natural gas supplies going into the winter heating season—a period of high demand. Still, even before the twin hurricanes, natural gas prices in the forward market were high compared to previous years, which signaled a tight supply and demand balance. Changes in either demand or supply will impact the price of natural gas.

Question 3. If so, then would you agree that the most important step we can take as a nation to reduce the price of natural gas is to reduce the demand?

Answer. High commodity prices are already reducing demand, particularly in the industrial sector, which has historically been the largest consumer of natural gas in the U.S. In the short-term, energy conservation and efficiency improvements can also help consumers reduce their energy costs and reduce some further demand. In the long-term, however, the U.S. must focus on developing additional natural gas supplies in North America and building the infrastructure required to take advantage of the growing global natural gas supply market. Natural gas remains a popular product given its environmental attributes. Therefore, demand will remain strong. Developing new supply resources will be critical to meeting future demand.

Question 4. As you mention in your testimony, the natural gas market is not regulated and you believe that the market should continue in this manner. Do you think that natural gas prices are being driven up by speculators on the market?

Answer. The natural gas commodity market was decontrolled by Congress more than 15 years ago. Interstate transportation of natural gas remains regulated by the Federal Energy Regulatory Commission (FERC), as does local distribution services by state public utility commissions. Further, FERC has taken an active role in ensuring that adequacy of reported price data and investigating price spikes in wholesale gas and electric markets. To that end, FERC has recently completed a Memorandum of Understanding with the Commodity Futures Trading Commission to enhance vigilance and assure the price integrity of the markets for natural gas and other energy products.

The current commodity prices for natural gas reflect the fact that demand is outstripping supply. The significant supply reductions caused by the twin Gulf hurricanes temporarily have exacerbated this supply situation in a major way. We be-

lieve current prices are being driven by these market fundamentals, and not by speculation.

DEPARTMENT OF THE INTERIOR,
OFFICE OF CONGRESSIONAL AND LEGISLATIVE AFFAIRS,
Washington, DC, January 19, 2005.

Hon. PETE V. DOMENICI,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington,
DC.

DEAR MR. CHAIRMAN: Enclosed are responses prepared by the U. S. Department of the Interior to questions submitted following the October 27, 2005, hearing regarding "Hurricane Recovery Efforts."

Thank you for the opportunity to provide this material to the Committee.

Sincerely,

JANE M. LYDER,
Legislative Counsel.

[Enclosure.]

QUESTIONS FROM SENATOR DOMENICI

Question 1a. Texas, Louisiana, Mississippi and Alabama are major producing states of timber and manufactured forest products. Hurricanes Katrina and Rita have ripped through timber country and left substantial devastation to the natural resource. Forest Service damage estimates from Katrina suggest approximately 19 billion board feet of downed timber on more than 5 million acres in Mississippi, Louisiana and Alabama. The vast majority of which is from private land. Estimates from Rita are still coming in, but they will no doubt add to the loss of standing timber in Louisiana and now Texas.

Some of the debris and damaged timber that is unusable for manufacturing forest products could be used to produce electricity and steam at forest products manufacturing facilities in the region. Using this otherwise wasted material for energy could have multiple benefits including creating value for landowners and reduced natural gas consumption for manufacturing facilities. Since natural gas prices are now four times higher than they were just a few years ago, what has the Interior Department done since these hurricanes occurred to facilitate increased biomass utilization?

Answer. In the immediate aftermath of Hurricane Katrina, the Department of the Interior organized a meeting of technical specialists, the Woody Biomass Utilization Group, from across the federal agencies in Washington, D.C. to help coordinate the response to assist the States in their recovery efforts. On September 27-28, the Department and the Department of Agriculture (Forest Service) met in Jackson, MS, with State foresters affected by the Hurricanes to propose the strategy to improve utilization of storm damaged wood. At that meeting, the agencies and States identified the following short-term focuses as most important to improving the utilization of storm damaged wood for forest products and biomass: coordination, inventory, transportation and storage, and market development. The Department and the Forest Service will continue to work closely with its federal partners in providing assistance to the States regarding biomass utilization.

Question 1b. In some cases, current environmental laws and regulatory limitations prevent additional biomass utilization. In your view, what obstacles are limiting the use of Hurricane debris as biomass for energy production?

Answer. Some constraints that could limit the use of hurricane debris for biomass, as noted above, include issues with transporting and storage of the forest debris. However, in many cases, the more significant limiting factors are economic, including a lack of transportation and processing infrastructure.

Question 1c. What steps can Congress undertake to further assist in the utilization of damaged timber as an energy source?

Answer. The Environmental Protection Agency has jurisdiction over many of the issues surrounding the use of damaged timber as an energy source. We would prefer you address this question to EPA.

Question 2. In 1999 and 2000, the FERC undertook a rulemaking to institute reporting requirements for gas pipelines on the OCS in an effort to implement the open and non-discriminatory access requirement of Section 5(f) of the OCSLA. The MMS supported FERC's efforts. Subsequently, however, the reporting rules were nullified by the D.C. Circuit, which held that FERC did not have any general rule-making authority under Section 5(f) of the OCSLA. As a result, the regulation of OCS pipelines [sic] with MMS. What is the Department of Interior's position on a

clarifying amendment of the OCSLA that would clearly delegate to FERC authority to administer, implement and enforce Sections 5(e) and 5(f) of the OCSLA, dealing with open and non-discriminatory access to OCS pipelines?

Answer. The Department of the Interior would support efforts to amend the Outer Continental Shelf Lands Act (OCSLA) to clarify regulatory jurisdiction over gathering pipelines and would support changes to section 1334(f) to provide FERC the authority for ensuring open and nondiscriminatory access to pipelines. However, we would want to ensure that any amendment expressly states that the Department of the Interior maintains authority over granting pipeline rights-of-way and operations of those pipelines. We have been working closely with FERC on these issues and will continue to maintain close coordination.

Question 3. What is your interpretation of the Outer Continental Shelf Lands Act with respect to the question of whether the Secretary has the authority to lease the remaining Lease Sale 181 lands prior to the issuance of the new 5-year plan?

Answer. Under our existing authority, the remaining Lease Sale 181 Lands would need to be included in a 5-year plan in order for these areas to be leased. The current 5-year plan, which ends in June 2007, would need to be amended to include these areas since there is no such sale scheduled in the current 5-year program. Some NEPA analysis of the amendment would also be required.

In August, the Department took the first step in the two year process of developing the next 5-year program for 2007-2012. The Department asked for comments on all OCS areas, including the Lease Sale 181 area, for the 2007-2012 5-year leasing program. The public period has closed.

MMS received 8,998 comments in favor of opening additional areas of the OCS and 2,276 against. The Department will consider all comments received when formulating the draft proposed 5-year leasing plan.

Question 4. In 2001, Department of Interior offered a reduced portion of Lease Sale 181 for leasing (only 1.47 million acres of the entire 5.9 million acres). Presumably in making this decision the Department looked at a number of factors such as environmental concerns, proximity to state coastlines, our nation's domestic energy supply, and several other considerations.

- Can you comment on whether the state of any or all of these considerations has changed in any significant way since the decision in 2001?
- Have the changes in the state of these considerations led the Department to change its policy position in the upcoming 2007-2012 Five-Year Plan?

Answer. In 2001, the Secretary spent a considerable amount of time talking to and listening to officials and citizens of the affected states around the original Lease Sale 181 area. Based on these discussions and information available, a decision was made to modify the area that would be available for leasing during the 2002-2007 Oil and Gas Leasing Program, which is the current program in effect.

As stated above, the Department has taken the first step in a two year process to develop the next 5-year Oil and Gas Leasing Program for 2007-2012. In August, we requested comments on all OCS areas, including the Lease Sale 181 area. The public comment period has closed. The Department will consider all comments received when formulating the draft proposed 5-year leasing plan.

Question 5. Would the Secretary have to go through the steps required by a five year plan such as a public comment period etc. . . . or, could the Secretary simply amend the current 5-year leasing plan to include the remaining non-leased 181 areas?

Answer. The Department is looking at what would be required if the current 5-year plan were to be so amended.

Question 6. If the Department were to have a lease sale in the Sale 181 area early next year, how long would it take before any natural gas production might be realized from that sale? Assume there are no CZMA "consistency challenges" or lawsuits against the sale itself or plans of exploration and production.

Answer. The Department anticipates that production would occur within five years of the first sale.

Question 7. Please comment on the most recent DOI resource estimates for Lease Sale 181. Start with the entire 181 area; then the entire non-leased portions of 181 and then the entire non-leased portions of 181 which are more than 100 miles from the Florida and Alabama coastlines.

Question 8. Could you please comment on what these numbers mean in real terms? In other words, how many homes could be heated for what period of time, and how many cars could be fueled for how long if these resources were produced?

Answer for both 7 and 8. According to the MMS National Resource Assessment Update in 2003, undiscovered technically recoverable resources for the entire 181 area is 1.87 billion barrels (bbl) of oil, which equates to enough oil to fuel 136 mil-

lion vehicles for one year or 6.8 million vehicles for 20 years, and 11.69 trillion cubic feet (Tcf) of gas, which equates to enough gas to cover current U.S. household consumption for 2.5 years or 8.3 million homes for 20 years.

The estimate of undiscovered technically recoverable resources for the non-leased portions of 181 are 1.11 bbl of oil and 7.45 Tcf of gas. This is equivalent to enough oil to fuel 80.7 million vehicles for one year or 4 million vehicles for 20 years and enough gas to cover current U.S. household consumption for 1.6 years or 5.3 million households for 20 years.

Most of the undiscovered technically recoverable resources in the non-lease portion of 181 are more than 100 miles from both Florida and Alabama coastlines, .93 bbl of oil and 6.03 Tcf of gas. This would provide enough oil to fuel 67.5 million vehicles for one year or 3.4 million vehicles for 20 years and enough gas to cover U.S. households for 1.29 years or 4.3 million households for 20 years.

Question 9. Please comment on the procedure that the federal government goes through in determining whether an area on the OCS should not be offered for leasing because it is an area that is critical for military use by the DOD.

Answer. The Department of the Interior coordinates closely with the Department of Defense to determine whether an area contemplated for leasing is critical for military use. We have a Memorandum of Agreement with the Department of Defense on a process for resolution of such issues if a conflict does arise. This process has worked well and has achieved balanced decisions regarding the best uses of the OCS that avoid interference with military operations.

Question 10. Can you comment on whether any determination has been made with respect to any portions of the Lease Sale 181 area on the question of whether there is a strategic military interest sufficient in that area to prohibit leasing there?

Answer. The Department understands that the Department of Defense uses portions of the Eastern Gulf of Mexico planning area. However, since we have not developed any leasing proposal for consideration in the non-leased portions of Lease Area 181, it is premature to speculate as to whether there may be a conflict with the Department of the Defense. As stated above, we coordinate with the Department of Defense to determine whether an area contemplated for leasing is critical for military use.

Question 11a. New Production: As you know we are facing a very serious energy situation for this winter. We received an update from BLM on the backlog of oil and gas permits. It's apparent there is progress being made, but it's not even close to what will be needed. After listening to testimony for years on this issue, I am of the opinion that we have created so many barriers and so much process that more funding will not be enough.

Do you have any estimate of how much gas we are sitting on?

Answer. The EPCA Phase I study estimated that 138 Tcf of undiscovered technically recoverable natural gas resources and proved reserves are under federal lands within the five basins that were assessed in the study. This is enough natural gas to heat 55 million homes for approximately 30 years.

Question 11b. What will it take to actually process the 10,000 drilling applications anticipated next year?

Answer. The Bureau of Land Management (BLM) has taken numerous administrative steps to ensure that applications for permits to drill (APDs) are processed promptly, while at the same time ensuring that environmental protections are fully addressed in the review. In FY 2005, the BLM processed approximately 7,736 APDs and approved 7,018 of those processed. This is approximately 4,000 more than BLM was able to process in 2000.

The Energy Policy Act of 2005 gave the Department valuable tools for improving APD processing. Pursuant to section 365 of the Act, BLM is implementing a pilot project to improve Federal permit coordination. Section 365 also establishes a permit processing improvement fund that will provide the funds necessary to hire additional staff in the pilot offices established. We anticipate that the BLM will process more than 10,326 permits in FY 06 and 12,150 permits in FY 07. The new pilot offices handle approximately 72 percent of the current permit application activity.

Another tool that will assist the BLM in more timely application processing is the improvement of our NEPA compliance related to the exploration or development of oil and gas. Section 390 of the Energy Policy Act of 2005 establishes a rebuttable presumption that a set of defined development activities do not need further site specific NEPA review. This will assist the BLM in processing applications in a more timely manner.

Question 11c. This is an opportunity; we have companies with the money to spend. You have a challenge. We've got to find a way to make this work.

What can be done to encourage new production right now?

Answer. The Department is actively implementing provisions of the Energy Policy Act of 2005, which provides additional authorities and resources to streamline current procedures.

Question 11d. What can Congress do to help?

Answer. As stated above, the Department is actively implementing provisions of the Energy Policy act of 2005, which provides additional authorities and resources to streamline current procedures. The Department will continue to evaluate its existing authorities, and if we find that additional changes are appropriate, we will recommend those changes to the Congress.

Question 11e. If we were to do something with winter drilling restrictions, is it still possible to protect wildlife and habitat?

Answer. Regulations at 43 CFR 3101.1-4 allow the BLM to grant exceptions, waivers, or modifications to lease stipulations when the authorized officer determines that the factors leading to the inclusion of the stipulation in the lease have changed sufficiently to make the protection provided by the stipulation "no longer justified" or if the proposed operations would not cause "unacceptable" impacts. Exceptions are granted more frequently than waivers or modifications and can involve temporary changes to seasonal or locational drilling restrictions. To ensure impacts are not unacceptable, BLM conducts a biological review prior to granting an exception, waiver, or modification. The identification and use of environmental Best Management Practices can play a significant role in reducing impacts to an acceptable level. Therefore, when circumstances and mitigation are appropriate, BLM believes it can grant seasonal and locational exceptions for energy development while protecting wildlife and its habitat.

Question 12a. Pilot Project Offices: In your testimony you spoke of the BLM's plans for implementing the Permit Processing Pilot Offices.

How will this program serve to expedite permitting?

Answer. The pilot offices will provide the BLM the ability to test new management strategies designed to further expedite the processing of APDs. These strategies include placing employees of other Federal agencies in the pilot offices to provide for improved coordination and expedited consideration of applications. The additional funds provided through the pilot fund established under section 365 of the Energy Policy Act of 2005, will also help BLM process APDs more expeditiously.

Question 12b. This program comes with funding. How do you make sure the new funding is used to make a difference on the ground?

Answer. Funding will be allocated to the seven BLM pilot offices identified in the Energy Policy Act of 2005 and it will augment base funding BLM already receives in order to expand its capacity for processing APDs and related activities. The BLM has also established an accounting structure and project codes for the pilot offices to monitor and track associated expenditures.

Question 12c. What feedback have you received from State governments on participating in this effort?

Answer. The pilot program established by the Energy Policy Act of 2005 authorizes coordinated permit processing arrangements with states. The BLM has initiated discussions with appropriate state contacts. We will also begin working with the states on a Memorandum of Understanding to better coordinate activities with those states.

Question 12d. As a pilot program we will need regular feedback on what is working and what is not. Can you make sure, say once a quarter, to provide a regular report?

Answer. The Energy Policy Act of 2005 requires the Secretary to provide a report to Congress on the pilot project by August 2008. The BLM will provide interim reports and briefings for Congressional staff on implementation and progress in the pilot offices.

Question 13. Oil Shale and Tar Sands Program:

- Can you give us any additional information on the 20 nominations for research and development leases?
- Are these real and substantive proposals?

Answer. The BLM has received 20 nominations for research, development, and demonstration (RD&D) proposals in Colorado, Utah, and Wyoming. These nominations include proposals to use a variety of oil shale extraction technologies. The nominations are currently being reviewed by an inter-disciplinary team to consider their merits, economic viability, and potential environmental effects. At the conclusion of the review process, recommendations for RD&D leases will be made. The BLM expects to issue RD&D leases for viable nominations early in 2006.

Question 14. In the FY2006 Appropriations Congress provided a \$2 million increase with specific direction from both the House and the Senate about oil shale.

Is BLM using this funding for this new program?

Answer. Congress provided an increase of \$3.0 million for conventional oil and gas activities and oil shale development. Of that amount, \$1.0 million has been dedicated to oil shale. BLM is using the funds on the oil shale RD&D program and for the programmatic Environmental Impact Statement for commercial oil shale leasing.

QUESTIONS FROM SENATOR TALENT

Question 1. Skyrocketing natural gas prices are damaging the manufacturing and farm economies, hurting residential bill payers and driving up inflation. They are not going to come down on their own, in fact EIA projects residential cost increases of up to 70% this winter. The Administration has taken significant portions of Lease 181 out of the leasing program by executive action, areas that are known to be rich in natural gas and where existing infrastructure could bring that gas to market relatively quickly. In the face of \$14 natural gas what is preventing the Administration acting to expand leasing in the eastern Gulf and ease the supply shortages?

Answer. In 2001, the Secretary spent a considerable amount of time talking to and listening to officials and citizens of the affected states around the original Lease Sale 181 area. Based on these discussions and information available, a decision was made to modify the area that would be available for leasing during the 2002-2007 Oil and Gas Leasing Program, which is the current program in effect.

To expand leasing in the non moratoria areas that have been deferred from leasing in the Eastern Gulf, the Department would need to amend the current 5-year leasing plan, which ends in June 2007, to schedule an additional sale in the Eastern Gulf that would include any of these deferred areas. It would take time to go through the necessary procedures, including NEPA, to amend the current program.

The Department has taken the first step in a two year process to develop the next 5-year Oil and Gas Leasing Program for 2007-2012. In August, we requested comments on all OCS areas, including the Lease Sale 181 area. The public comment period has closed. MMS received 8,998 comments in favor of opening additional areas of the OCS and 2,276 against. We will be considering all comments received when formulating the proposed draft leasing 5-year plan.

Question 2. Are there any procedural impediments from the way the Lease Sale 181 area has been handled that could be raised that might delay the actual sale process for an extended time if you were to re-offer them in the near term?

Answer. In order to lease additional lands, the current five year plan would need to be amended. Amending the plan requires new work under NEPA, since the EIS for the current 5-year program did not analyze these tracts. Other statutes, such as the Coastal Zone Management Act, would need to be complied with prior to the Secretary conducting a lease sale.

Question 3. How does the law prioritize need or use of the Lease 181 area between energy production and military use? How is DOI working with DOD to resolve these issues so that we might access the oil and gas while not weakening our defense?

Answer. The Department of the Interior coordinates closely with the Department of Defense to determine whether an area contemplated for leasing is critical for military use. We have a Memorandum of Agreement with the Department of Defense on a process for resolution of such issues if a conflict does arise. This process has worked well and has achieved balanced decisions regarding the best uses of the OCS that avoid interference with military operations.

Question 4. Do I understand correctly that there were no oil or natural gas leaks from offshore facilities in the Gulf of Mexico as a result of the recent hurricanes?

Answer. There were no significant spills from any offshore wells on the OCS. Although there were some minor pollution events from lines or equipment, all sub-surface safety valves installed beneath the seafloor successfully prevented uncontrolled releases of hydrocarbons into the Gulf of Mexico.

Question 5. What issues, if any, do you see if the Senate were to vote to allow individual coastal states to choose whether or not to allow oil and gas exploration in federal waters off of their coasts?

Answer. The Department does not see any major issues with giving a state the right to request moratoria be lifted off its coast in order for the state to "opt-in" to an oil or gas leasing program. The Administration also supports increasing offshore energy production in areas where States agree to lift current offshore moratoria.

Question 6. There have been some proposals to break the traditional oil and gas lease to be oil-only or gas-only in case a particular State prefers to allow only natural gas drilling, for instance. It seems to me that being forced to choose to produce only one or the other may present a high degree of risk to exploration companies who may be granted a gas-only lease, discover oil only, and be forced to abandon

their facilities and write off the investment. What is the likelihood of accurately knowing in advance whether a lease area contains just oil or just natural gas?

Answer. The Department, either through legislation or regulations, would need the ability to create procedures to address situations where oil or gas is discovered on a lease restricted to development of one of those resources. Resource assessments, through geologic and geophysical evidence, provide an indication of what may be located in an area, however, the likelihood of accurately knowing in advance whether a lease area contains just oil or just natural gas is minimal in frontier areas (areas with little or no previous exploration).

QUESTIONS FROM SENATOR BINGAMAN

ROLE OF DEPARTMENT

Question 1. What has been the role of the Interior Department in coastal wetlands restoration? Do you see that role changing in the aftermath of these hurricanes?

Answer. The Fish and Wildlife Service (Service) is actively engaged in coastal wetlands restoration. The Coastal Wetlands Planning, Protection and Restoration Act of 1990 (CWPPRA) established a Task Force that includes the Department of the Interior, Corps of Engineers, Environmental Protection Agency, Department of Commerce, Department of Agriculture, and the State. The CWPPRA Task Force has approved 154 restoration projects to protect and restore more than 101,000 net acres, and completed the comprehensive Coast 2050 Restoration Plan. Over the past 14 years, the Service sponsored 20 CWPPRA projects amounting to 14,600 net acres. The Service continues to work with partners to implement other restoration projects on National Wildlife Refuges and non-Federal lands.

Question 2. What has been the impact of the hurricanes on Departmental facilities and on units of the National Park and National Wildlife Refuge Systems?

Answer. Several units of the National Park and Wildlife Refuge Systems were damaged. The most severe damage to Park units occurred to the Mississippi District of the Gulf Islands National Seashore, to the units of Jean Lafitte National Historic Park and Preserve, and New Orleans Jazz National Historical Park. Several other units including Everglades National Park, Dry Tortugas National Park, Natchez Trace Parkway and Natchez Historical Park sustained damage from Hurricane Katrina.

Gulf Islands National Seashore sustained virtually complete destruction of five government housing units in the Davis Bayou area, all housing and facilities on the islands, the interior of the visitor center and district offices, and associated docks and piers. Additionally, thousands of downed trees blocked roadways. All Mississippi offshore islands, Davis Bayou Campground and Visitor Center in the Mississippi District of the park remain closed. In the Florida District, the Fort Pickens and Santa Rosa Areas are also closed due to damage from Hurricane Ivan last September and further damage sustained from Hurricane Katrina.

Jean Lafitte National Historical Park and Preserve's French Quarter Visitor Center in New Orleans, Chalmette Battlefield and National Cemetery in Chalmette, and Barataria Preserve in Marrero will be closed until, at a minimum, early 2006. The park's Acadian Cultural Center in Lafayette, Prairie Acadian Cultural Center in Eunice, and Wetlands Acadian Cultural Center in Thibodaux are open and programs continue as scheduled. New Orleans Jazz National Historical Park headquarters and visitor center remain closed.

Hurricane Katrina impacted 22 national wildlife refuges (NWR) in Alabama, Mississippi, and Louisiana. The office/visitor center at Mississippi Sandhill Crane NWR remains closed and was damaged beyond repair. Delta NWR is closed for the foreseeable future. Access to the refuge is limited and the headquarters building was damaged. The Breton NWR experienced a 50 percent loss in its landmass. The facilities and levee system at the Bayou Sauvage NWR were almost completely destroyed. The Big Branch Marsh NWR lost many facilities, but remains open. Existing facilities at the Grand Bay NWR were destroyed. Bon Secour NWR also suffered damage and additional debris removal will have to take place. Public access at this station remains limited.

Hurricane Rita impacted 22 national wildlife refuges in Louisiana and Texas. All facilities and infrastructure at Sabine NWR were completely destroyed. There were extensive damages to Anahuac NWR, Cameron Prairie NWR, Lacassine NWR, and McFaddin NWR.

Hurricane Wilma impacted multiple national wildlife refuges in Florida. The Florida Keys Refuges headquarters was destroyed. The A.R.M. Loxahatchee NWR lost its office and experienced a great deal of damage to facilities.

Question 3a. What coordination is taking place between the Interior Department and other Federal agencies in addressing the aftermath of the hurricanes?

What input are you having with respect to FEMA's activities?

Answer. The Department is actively engaged in several interagency efforts to assess the government's response to Hurricanes Katrina and Rita. We participate in the "Comprehensive Review of Federal Government Response to Hurricane Katrina" that is being led by the Assistant to the President for Homeland Security. We are also participating in several of the Working Groups established by the White House Task Force on Hurricane Katrina, including Economic Recovery, Environmental Impacts and Cleanup, Transportation Network Restoration, Energy Supply, and Law Enforcement and Public Safety. The Department's participation in these efforts includes input related to the activities of FEMA.

Question 3b. What input are you having with respect to the activities of the Corps of Engineers?

Answer. As noted, the Department is actively engaged in several interagency post-hurricane review efforts, and our input relates in part to all of our federal partners, including the Corps of Engineers. The Department is a major supporting agency of Emergency Support Function (ESF) 3, Public Works and Engineering, for which the Corps of Engineers is the lead agency. At the present time, 187 Department of the Interior personnel are deployed under ESF-3, including personnel from the Bureau of Reclamation, Bureau of Land Management, Bureau of Indian Affairs, Fish and Wildlife Service, National Park Service, United States Geological Survey, Minerals Management Service, and Office of Surface Mining.

Question 3c. Do you view the hurricane response as largely a FEMA and Corps effort or does the Department also have a role to play?

Answer. FEMA is the primary federal agency responsible for responding to the hurricanes. The Department of the Interior has had a significant role in assisting that response, with every Interior bureau participating. Although The Department of the Interior is not a lead agency for any of the Emergency Support Functions under the National Response Plan (NRP), several thousand Interior employees have directly participated in the hurricane response efforts, primarily under the NRP framework. The Department of the Interior has provided substantial support to ESF-3 (Public Works and Engineering), ESF-4 (Firefighting), ESF-10 (Oil and Hazardous Materials Response), ESF-11 (Agriculture and Natural Resources), ESF-13 (Public Health and Safety). While the Department of the Interior's deployment fluctuated day-to-day, our peak deployment included over 2,300 personnel. At the present time, approximately 284 personnel are deployed.

Question 4. What role is the Department playing in shaping the Administration's proposed legislation relating to hurricane relief?

Answer. The Department fully participated in the development of the reallocation request transmitted by the President on October 28, 2005.

Question 5. Do you think there is any need for Federal dollars for land acquisition in the aftermath of Hurricane Katrina and Rita?

Answer. At this time, the Department is not aware of a need for any land acquisition arising from the aftermath of the hurricanes.

Question 6. The Energy Policy Act (Section 342(j)) provides the federal government with a new opportunity to help low-income energy consumers. The section authorizes you to provide royalty natural gas to low-income consumers at a reduced price and is intended to supplement the LIHEAP program. You have significant discretion in implementing this royalty gas program. Have you developed a plan that can help low-income consumers this winter? Are you consulting with consumer representatives and the state agencies that implement the LIHEAP program?

Answer. Immediately following enactment of the 2005 Energy Policy Act, the Minerals Management Service began exploring ways to implement section 342(j) of the Act. The Department's Office of the Solicitor determined, after discussions with the Office of Management and Budget, your staff, and the Majority staff, that the provision provides authority only for an access preference. It does not provide Interior with the authority or discretion to receive less than fair market value for the royalty gas or oil. We are still reviewing the possibility of implementing an access preference. No final determination has been made.

IMPLEMENTATION OF EPACT 2005

Question 1. Please describe your actions in implementing EPACT 2005. Can you share with us a timetable for implementation of the provisions for which the Department has responsibility?

Answer. The Department has taken several actions in implementing the Energy Policy Act of 2005.

Section 210—Biomass: BLM updated the Biomass Utilization Strategy in July 2005 and completed a Biomass joint work plan with the Forest Service on September 23, 2005. A Biomass Use Grant Application Form has also been jointly developed with the Forest Service.

Section 221-237—Geothermal: BLM issued interim guidance on October 7, 2005 (1M 2006-009) for processing geothermal lease nominations received prior to enactment of the Act and prior to the completion of new geothermal rulemaking. MMS is developing regulations to comply with statutory requirements changing the methodology for geothermal valuation and simplifying the valuation calculations, both for direct use and electricity generation. A Geothermal Workshop was held on October 17-19, 2005 in Reno, Nevada to address geothermal issues and establish assignments for the rulemaking effort.

Section 331—Naval Petroleum Reserve No.2 Transfer to DOI: The transfer of jurisdiction of NPR-2 (California) from DOE to BLM was effective the date of enactment of the Act and a BLM News Release was issued on August 10, 2005 regarding the transfer. A Notice to all lessees and permittees was mailed on September 15, 2005. Federal Register Notice of Intent to amend the BLM land use plan for the National Petroleum Reserve Number 2 transfer was published on September 26, 2005. MMS has obtained copies of all of the leases to be transferred from the Department of Energy to DOI, contacted all of the current oil and gas companies to inform them of the reporting and payment requirements, and begun the process of collecting, accounting for, and disbursing the revenues from these leases.

Section 343—Marginal property production incentives: MMS is working on a proposed rule prescribing specific categorical standards and requirements for, and the extent of royalty relief for, marginal properties on the Outer Continental Shelf.

Section 344—Deep gas production incentives: MMS is drafting a proposed rule that would create a royalty suspension volume of 35 BCF for gas production from ultra deep (more than 20,000 feet subsea) wells on shallow water leases in the Gulf. By statute, regulations issued will be retroactive to the date of the proposed rulemaking.

Section 345—Deep water royalty relief: The relief specified in the Act has been and will be included in lease documents for lease sales in the Gulf of Mexico occurring during the 5-year period beginning the date of enactment of the Act.

Section 346—Alaska Offshore Royalty Suspension: MMS is drafting a proposed rule that would adopt for eligible leases offshore Alaska the existing evaluation structure used for making pre-production royalty relief determinations on deep water leases in the Gulf of Mexico to promote development and increase production.

Section 348—North Slope Science Initiative: The Charter for the North Slope Science Technical Advisory Panel was approved by the Secretary on September 2, 2005 and a Federal Register Notice calling for nominations to the Advisory Panel was published on September 12, 2005. The call for nominations closed on October 27, 2005.

Section 350—Tar Sand Rule: The Tar Sand Rule was published in the Federal Register on October 7, 2005. The Interim Final Rule will provide for separate tar sand leases and oil and gas leases in special combined hydrocarbon leasing areas.

Sections 353—Gas hydrate production incentives: MMS is developing a proposed rule that would allow the Secretary to grant royalty relief on a case specific basis if the Secretary determines that such royalty relief would encourage production of natural gas from gas hydrates on an eligible lease.

Section 357—Outer Continental Shelf Inventory: MMS is conducting an inventory and analysis of the oil and gas resources beneath the waters of the OCS.

Section 365—Oil and Gas Pilot Offices: BLM is implementing a pilot project to better coordinate APD processing. The BLM has entered into a Memorandum of Understanding with the Fish and Wildlife Service, Bureau of Indian Affairs, Army Corps of Engineers, Environmental Protection Agency, and United States Forest Service to provide staff and expertise to better coordinate activities in order to improve efficiency while maintaining environmental protection. The pilot offices will be aggressive and innovative in finding better and more efficient ways to manage the oil and gas program and within 18 months, we will have identified best management practices that can be implemented bureau wide. New money from rental revenue in FY 2006 and FY 2007 will help BLM accomplish this task. With more efficient processes and additional funds, we anticipate BLM could process more than 10,326 permits in FY 06 and 12,150 permits in FY 07.

Section 366—APD Processing Timeframes: BLM issued interim guidance (IM 2005-235) on September 15, 2005 regarding the APD processing timeframes required by the Act. These processing timeframes will be incorporated into a reissuance of Oil and Gas Onshore Order # 1. Onshore Order # 1 will be published as a Further Proposed Rule in the Federal Register in the near future.

Section 368—Joint Designation of Corridors: The Department of Energy, the Department of the Interior's Bureau of Land Management, and the Department of Agriculture's Forest Service (the Agencies) will prepare a Programmatic Environmental Impact Statement (PEIS) to evaluate issues associated with designation of energy corridors on federal lands in eleven Western states. The public scoping period started with the publication of a Notice of Intent in the Federal Register on September 28, 2005 and will continue for 60 days after publication in the Federal Register. Public scoping meetings were held in each of the eleven Western States beginning on October 25, 2005 and completed on November 4, 2005. A website has been established for this Programmatic EIS at www.corridoreis.anl.gov.

Section 369—Oil Shale R&D: BLM received 20 nominations for oil shale Research and Development leases and issued a News Release on September 20, 2005 regarding the nominations received in Colorado, Utah and Wyoming. A Review Team has been designated to review the nominations and provide recommendations for oil shale R&D leases.

Section 384—Coastal Impact Assistance Program: MMS is working on guidelines, and developing the organizational capabilities required to effectively and efficiently administer the Coastal Impact Assistance Program, including the methodology to determine the share of funds allocated to each state and coastal political subdivision.

Section 388—Alternate energy-related uses on the Outer Continental Shelf: The program required to implement the statutory provisions is under development. As the lead Federal licensing agency for the Cape Wind Energy project, MMS is reviewing the Project's application and environmental documentation for completeness in light of our broader responsibility to regulate the Project's full spectrum of activities (e.g., construction, operations, and decommissioning). Additionally, MMS is working with the State of Massachusetts and other cooperating agencies (such as the U.S. Army Corps of Engineers, Environmental Protection Agency, Coast Guard) to ensure that their permitting needs are being adequately addressed. Also included in this Section is the requirement to coordinate a digital mapping initiative for the OCS. MMS has drafted a preliminary implementation plan and is working with appropriate member agencies of the Federal Geographic Data Committee. MMS is building a full business plan in order to effectively implement the statutory requirements.

Section 390—Oil and Gas NEPA Review (Categorical Exclusions): The BLM issued interim guidance (IM 2005-247) on September 30, 2005 to BLM Field Offices for implementation of the NEPA rebuttable presumption categorical exclusion provisions of Section 390 of the Energy Policy Act of 2005. The IM also provides guidance for improved NEPA compliance for oil and gas activities.

Section 432—Repeal of the 160-Acre Limitation for Coal Leases: Interim guidance was issued to BLM Field Offices on coal lease modifications on September 30, 2005 (IM 2006-004) which increases the limitation for coal lease modifications from 160 acres to 960 acres.

ONSHORE OIL AND GAS PRODUCTION

Question 1. How many APD's have been granted during fiscal year 2005? Please provide this information by month and by state, if possible. On how many of these APD's has drilling occurred? If drilling has not occurred, why not, and can you recommend actions that can be taken to facilitate this production?

Answer. In FY 2005, the BLM processed approximately 7,736 APDs and approved 7,018.

FY 2005

State	APDs Received	APDs Approved	APDs Rejected	APDs Processed	New Wells Spudded	New Wells Completed
AK	8	8	0	8	3	3
CA	235	232	3	235	220	69
CO	605	608	30	638	334	260
ES	136	110	8	118	58	45
MT	451	425	29	454	226	229
NV	9	10	2	12	10	3
NM	1,619	1,475	95	1,570	975	1,003
UT	1,245	770	16	786	553	455
WY	4,043	3,380	535	3,915	2,303	1,075
Total	8,351	7,018	718	7,736	4,682	3,142

The BLM is not always aware of why an applicant requests a permit and then does not drill.

Question 2. I understand some onshore oil and gas leases have stipulations that restrict certain activities on a seasonal basis. Can you please characterize these stipulations and explain the need for seasonal closures? Is there a process for obtaining an exception from these stipulations? If so, please describe. How often are such exceptions granted? Can you please provide the Committee data for each of the past five years from selected BLM field offices (such as Pinedale, Wyoming, and Farmington, New Mexico) regarding the number of exceptions requested and the number of exceptions that were granted or denied?

Answer. Many of the BLM's Resource Management Plans have identified environmental protection requirements that are attached to leases before the leases are issued. These lease stipulations are major or moderate limitations placed on the lease in order to protect important resource values such as winter habitat for wild-life species, steep slopes that cannot be reclaimed, and fragile wetlands. A typical lease stipulation may require that an operator not drill a new well from November 15 to March 15 in order to protect critical sage-grouse winter habitat.

The BLM regulations in 43 CFR 3101.1-4 outline the general process for obtaining an exception, waiver, or modification of lease stipulations. Individual land use plans identify the criteria for granting exceptions, waivers, or modifications to lease stipulations. The Bureau typically grants exceptions to these lease stipulations when the protected resource is not present in the area(s) affected, or if the impact would be minor and not seriously affect the protected resource, or if additional on or off site mitigation would reduce the negative impacts to acceptable levels. The number of exceptions, waivers, and modifications approved each year by the Bureau is not tracked and is not known. The BLM will research this information and provide an approximate number to the Committee once available.

Question 3. What actions are you taking to ensure that while you are increasing activity relating to oil and gas production from public lands, other important aspects of BLM's mission to administer public lands for multiple-uses (grazing, recreation, fish and wildlife, etc.) are not being adversely impacted?

Answer. The BLM endeavors to balance the energy needs of the nation while sustaining the health, diversity, and productivity of the public lands. BLM has recently taken specific actions to help ensure increased oil and gas activity does not adversely impact the other resources BLM manages as part of its multiple use mission. BLM has identified many environmental Best Management Practices (BMP) for conducting oil and gas operations in an environmentally responsible manner. BLM policy requires that field offices consider appropriate BMPs in every drilling permit approval. BLM has also produced a new handbook for the oil and gas operator, referred to as the Gold Book. The Gold Book provides instructions for implementing many of these environmentally improved practices. Both the BMPs and the Gold Book can be found on BLM's BMP website at www.blm.gov.bmp.

QUESTIONS FROM SENATOR AKAKA

Question 1. In your testimony you reported that there were no lives lost and no major oil spills from oil rigs on the Outer Continental Shelf. This is very good, given the Category 5 status of the hurricanes, but it is also important—for us to learn how to protect our workers and infrastructure in the future.

What are your "lessons learned" for secure oil and gas drilling platforms in the Gulf? What percentage were damaged enough to stop production? Assuming we are

looking toward ultra-deep drilling, are there additional safety or structural standards you would suggest for the future? To what do you attribute the success on personal safety and oil platform stability?

Answer. It was confirmed that the offshore oil and gas industry produces environmentally safe energy for America. All subsurface safety valves held on the OCS resulting in no significant spill from production. We learned that facilities constructed to meet MMS's 1988 updated design standards fared much better than their older counterparts. Only one deep water platform (Typhoon) and four platforms in shallow water built under the 1988 standards for manned platforms were destroyed. The Typhoon incident is under investigation to determine the circumstances of its destruction.

Post Hurricane Ivan, the Department recognized that Mobile Offshore Drilling Units (MODUs) were vulnerable to breaking loose of their moorings in extreme hurricane conditions and therefore, began to study how best to remedy this issue. Post Hurricane Rita it was reported that nineteen MODUs broke loose from their moorings and were set adrift damaging pipelines as anchors dragged along the ocean floor. To address this issue, the Secretary has called for a conference on MODUs to be held at the Department on November 17, 2005.

In preparation of the approaching hurricanes, production was shut in and personnel were evacuated. At the peak of Hurricane Katrina, 95 percent of Gulf of Mexico oil and 88 percent of natural gas was shut in. Hurricane Katrina destroyed 47 platforms and 4 drilling rigs; extensively damaged 20 platforms and 9 drilling rigs. At the peak of Hurricane Rita, 100 percent of daily oil and 80 percent of daily gas production was shut in. Hurricane Rita destroyed an additional 66 platforms and 4 drilling rigs; extensively damaged 32 platforms and 10 drilling rigs. As of November 3, 2005, 52.7 percent of daily oil production and 47.27 percent of the daily gas production in the Gulf remain shut in; 25.27 percent (207) of manned platforms remain evacuated. Industry continues to assess damage and make repairs to offshore facilities.

Question 2. Does the Minerals Management Service set standards for oil rigs on the Outer Continental Shelf, or does industry set the standards?

Answer. Ninety-five industry standards are incorporated by reference into the OCS operating regulations. These standards are supplemented with additional regulations which are drafted and promulgated by MMS. The 1996 National Technology Transfer and Advancement Act (NTTAA) directed Federal agencies to achieve greater reliance on voluntary standards and standards-developing organizations by participating in developing voluntary standards. Operators must comply with all industry standards that are incorporated into MMS regulations and any additional requirements promulgated by MMS. Operators also have the option to use alternative standards or procedures if they can demonstrate to MMS that such practices provide a level of safety and environmental protection that is equivalent to or greater than that provided by complying with MMS regulations.

QUESTIONS FROM SENATOR CORZINE

Question 1. As you know, this committee just passed its portion of the reconciliation bill, which opens the Arctic National Wildlife Refuge to drilling. I am strongly opposed to drilling in ANWR, but what concerns me most about the language is that it does not even afford ANWR the same environmental protections afforded to every other wildlife refuge or public land that is currently open to oil and gas development.

If we are to open ANWR, a controversial policy decision to begin with, doesn't it make sense to at least ensure that it is protected with the same laws that protect other wildlife refuges?

Answer. This Administration is committed to stringent regulation of oil and gas development in ANWR. We will require the best available commercial technology for oil and gas exploration, development, and production in the 1002 Area. We are also committed to the standard that oil and gas exploration, development, and production activities in the 1002 Area will result in no significant adverse effect on fish, wildlife or their habitat, subsistence resources, and the environment. We will ensure that this standard is met, or no development will take place. Finally, we will also require that lessees restore the area, both as activities proceed and when production is finally shut down.

Question 2. Some have proposed opening the OCS to natural-gas-only leasing. Such proposals ignore the regional nature of routine marine discharges and other impacts resulting from normal exploratory drilling for oil or gas, and from day-to-day discharges from production platforms. Do you think that opening the OCS to natural-gas-only leasing is a good policy?

Answer. The Department has begun its two year process of developing the 2007-2012 leasing program. Natural gas only leasing is an issue the Department sought comments on in its initial request for information. The public comment period for the leasing program has closed. We will consider all comments received during the development of the draft proposed 5-year leasing program.

Question 3. Can you guarantee that if drilling were allowed on the Outer Continental Shelf areas currently under moratoria, these areas would be 100 percent safe from oil spills? Is the current technology foolproof?

Answer. Hurricanes Katrina and Rita confirmed that our offshore oil and gas industry produces environmentally safe energy for America. Even in the face of two back-to-back major hurricanes, all subsurface safety valves held on the OCS and there was no significant spill from production.

Question 4. I am disappointed that the House Resources Committee's portion of the House reconciliation bill includes not only drilling in ANWR, but also includes a provision allowing states to opt out of the decades-old federal moratorium on new offshore drilling. If a state such as Virginia decides to opt out of the moratoria, how do you propose that we protect the coastlines of nearby states, such as New Jersey, should an accident occur?

Answer. The Oil Pollution Act of 1990 provides resources for response teams and equipment should an incident occur. From an environmental standpoint, OCS natural gas production ranks favorably in comparison, say, to imported oil, which increases tanker traffic into U.S. waters and often comes from countries with less stringent environmental requirements. As to OCS oil production, the record reveals that the risk of an oil spill has decreased over each of the past three decades and is about 6 or 7 times less than the risk posed by tankered imports. Although the trend is improving for both sources, based upon the data for the period 1985—2001, for every billion barrels transported, worldwide tankers spill about 53,000 barrels, whereas OCS production loses about 8,000 barrels for every billion barrels produced. For the most recent decade the OCS rate was down to 6,500 per billion barrels. Of note, according to a recent National Academy report, natural seeps of oil from underground accumulations emit 150 times more oil into the North American ocean environment than U.S. OCS production.

QUESTIONS FROM SENATOR SALAZAR

Question 1. If Congress and DOI opened up the Arctic National Wildlife Refuge and lease area 181 to production tomorrow, we would still be years away from that oil and gas hitting the market. While I am not opposed to working on the supply side of the equation, I believe that now is the time to address the demand side of the equation. Energy efficiency and conservation are the options that have the ability to offer some measure of relief to Americans in the near term.

What has been the time line in the past for getting production up and running once an offshore area has been leased? Assuming lease area 181 is fully leased by the end of FY07, when would the additional supply of natural gas reach the market? And how would it affect price?

Answer. It takes an average of five years for production to come on line in areas where infrastructure exists.

Question 2. The Energy Policy Act (Section 342(J)) provides the federal government with a new opportunity to help low-income energy consumers. The section authorizes you to provide royalty natural gas to low-income consumers at a reduced price and is intended to supplement the LIHEAP program. You were given significant discretion in implementing this royalty gas program. On September 12th I sent you a letter requesting you to establish a pilot program in Colorado based on this provision. Have you developed a plan that can help low-income consumers this winter? Are you consulting with consumer representatives and the state agencies that implement the LIHEAP program?

Answer. Immediately following enactment of the 2005 Energy Policy Act, the Minerals Management Service began exploring ways to implement section 342(j) of the Act. The Department's Office of the Solicitor determined, after discussions with the Office of Management and Budget, the Majority staff, and the Minority staff, that the provision provides authority only for an access preference. It does not provide Interior with the authority or discretion to receive less than fair market value for the royalty gas or oil. We are still reviewing the possibility of implementing an access preference. No final determination has been made.

DEPARTMENT OF ENERGY,
CONGRESSIONAL AND INTERGOVERNMENTAL AFFAIRS,
Washington, DC, January 25, 2005.

Hon. PETE V. DOMENICI,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: On October 27, 2005, Samuel Bodman, Secretary, testified regarding hurricane recovery efforts related to energy and to discuss energy policy.

Enclosed are the answers to 93 questions that were submitted by you, Senators Talent, Bunning, Bingaman, Akaka, Cantwell, Corzine, and Salazar to complete the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

JILL L. SIGAL,
Assistant Secretary.

[Enclosures.]

QUESTIONS FROM SENATOR DOMENICI

Question 1. Some have argued that Strategic Natural Gas Reserve should be considered a potential policy solution. Given the current high prices for natural gas and tight market for supplies, what do you think of such a policy? Likewise, what are the Administration's thoughts about a Strategic Refined Products reserve?

Answer. There are significant complex issues associated with the establishment of a Strategic Natural Gas Reserve. All of these issues are being carefully considered by the Administration.

Question 2. What is the Administration's position on a windfall profit tax?

Answer. The Administration would oppose imposition of a windfall profit tax. The nation's last experience with a windfall profit tax proved to be counterproductive. The tax discouraged investment in domestic oil production and distorted oil markets. If we were to re-establish a windfall profit tax, the U.S. would not be competitive in the world's energy markets and needed energy infrastructure investment would be discouraged. As a result the U.S. would experience reduced energy supplies, higher energy prices and lower economic growth. It would represent an about-face from the Energy Policy Act of 2005 that established policies to encourage development of domestic energy resources and ensure adequate and reliable supplies of energy.

Question 3. Yesterday [October 26], the Environment and Public Works Committee had a tied 9 to 9 vote on the Inhofe Refinery Bill [S. 1772]. The Inhofe bill was a more modest approach to refiner expansion than the Barton bill [H.R. 3893]. What do you think of the two approaches and what do you think if will take to get refinery expansion in the U.S.?

Answer. The Administration understands the need to expand refinery capacity in this country. We supported House passage of H.R. 3893 and commended the House for proposing steps to address the Nation's critical need for additional refining capacity and fuel supply. While the Administration has not developed a Statement of Administration Policy for Senator Inhofe's legislation, EPA did state in testimony before the Committee on Environmental and Public Works that "We believe S. 1772 takes several important steps in the right direction by including provisions to streamline refinery permitting requirements and expand refinery capacity in the U.S." EPA further said that the Administration looked forward to working with Congress as it considers the bill.

We should be encouraged by several refinery expansions that have been announced by industry including those by Marathon, Exxon, Valero, Sunoco and other U.S. refiners.

Question 4(a). In 2000, the Northeast Home Heating Oil Reserve was established and today it holds 2 million barrels of heating oil. Last week, there was what is defined in the Energy Policy and Conservation Act as a "dislocation in the heating oil market" and there were calls for release from the Heating Oil Reserve.

Do you think the present situation calls for this kind of action? Are storage numbers so inadequate that we need to turn to our emergency supplies right now?

Answer. The Northeast Home Heating Oil Reserve (NEHHOR) was created to provide a short-term supplement to the Northeast systems of private supply of heating oil in the event of an actual or imminent severe regional supply interruption.

Although prices are high and the price differential that is an indicator of an anomaly in the markets for crude and heating oil and crude oil was reached, the

President must use his discretion to determine whether conditions—i.e. a supply disruption—warrant drawdown of the Reserve. The heating season has just begun and there is adequate supply available.

Administration policy is to preserve the inventory of the NEHHOR until an event is likely to or does interrupt supply, thereby causing a supply disruption.

Question 4(b). What can we expect of prices later in the winter if the heating oil reserve is tapped now?

Answer. The NEHOR was designed to address an imminent or actual supply disruption, not to manage prices. It is impossible to tell what may happen to prices later in the winter, since this is largely dependent on the weather. No supply shortage exists now.

Question 5(a). Section 1221 of the Energy Bill, Siting of Interstate Electric Transmission Facilities, requires the Secretary of Energy to complete a study within one year of enactment of EAct 2005, that designates geographic areas experiencing electric energy transmission capacity constraints or congestion that adversely affects consumers as a “national interest electric transmission corridor.” My understanding is that once a “national interest electric transmission corridor” is designated, Federal backstop siting authority becomes available to facilitate construction of transmission in those corridors. I’m interested in hearing your approach toward implementing this important section of the Energy Bill.

Do you anticipate that DOE will designate these corridors as wide as possible in order to relieve as much congestion and save consumers as much money as soon as practicable?

Answer. In most cases, there are several alternative ways to mitigate transmission congestion. Choosing which option to pursue primarily is a business decision. We believe that the Energy Policy Act of 2005 provides a vehicle to designate corridors in a balanced manner without predetermining such business decisions.

Question 5(b). Do you anticipate that DOE will phase its findings to designated easily identified corridors as quickly as possible and fine tune the analysis as the year progresses?

Answer. The basis for designating an area as a corridor will have to be technically strong, and the process for evaluating and selecting such areas should provide many opportunities for dialogue with affected parties. It will be important to do this with some care, so that states, local governments, industry, and stakeholders have ample opportunities to participate in the process.

Question 5(c). Do you anticipated needing additional support or help from others to implement and complete this directive as quickly as possible?

Answer. We intend to work cooperatively with industry, appropriate State agencies, and others to implement this work.

Question 6. As of October 14, the EIA reported that natural gas storage was a little over 3 trillion cubic feet. This represents a net increase of 75 billion cubic feet from the previous week and an increase of 53 billion cubic feet above the 5-year average. Despite the weekly increases and above average storage numbers, we are seeing record high natural gas prices. What do you think it will take to cool these prices and what is the level of protection that this level of storage provides compared to other years?

Answer. The most productive steps to increase natural gas supplies for the coming heating season are to facilitate the prompt return to operation of storm-damaged production facilities, including production platforms, gathering pipe networks, gas processing facilities, and gas transmission lines. All of this work has been started and some of it has been completed. For example, we anticipate that a new gas pipeline by Duke Energy Gas Transmission will by-pass a gas processing plant severely damaged in the Gulf storms and route production to an operational gas processing plant. This new segment, scheduled for operation before December 1, and gains by other producers, will add 700 million cubic feet of gas per day. The relatively high-levels of natural gas in storage also provides assurance that the winter-heating market will be served. However, we expect that prices will be significantly higher than normal. EIA projects that the average U.S. household will spend about \$350, or 48%, more this winter if they use natural gas.

In order to bring down prices in future winter seasons we need to increase domestic gas production and increase the efficiency of gas use (increased use of condensing gas furnaces, improved building insulation and improved industrial efficiency are prominent ways to do this). Increased gas production could be accomplished by providing new access to areas of the Outer Continental Shelf currently off limits due to prior Presidential withdrawal and Congressional moratoria on those parts of the OCS. We can also increase imports of natural gas by helping to foster the emerging global trade in LNG, and by facilitating construction of the Alaska natural gas pipeline to bring that stranded gas to market.

Question 7. Can you please give us a report of the progress to date by Energy, Interior, Agriculture and CEQ on the report required at the end Section 1221 transmission corridors on federal Lands? The report is due to Congress by November 6.

Answer. The Bureau of Land Management and the Forest Service requested their field offices to provide the data needed to prepare this report. That data has been delivered and the report is in preparation. We expect to deliver the report no later than November 21, 2005.

Question 8. What can we expect to see in DOE'S Economic Dispatch report required under Section 1234 of the Energy Bill? Will DOE provide recommendations to Congress and the States for legislative or regulatory changes?

Answer. The report will provide useful information about procedures currently used by electric utilities to perform economic dispatch in different sectors of the U.S. electricity industry and identify possible revisions to these procedures.

Question 9. If Congress appropriates funds to the rebuilding of transmission in the Hurricane impacted regions, should non-discriminatory access to the grid be required to assure that ratepayers are best served by available resources?

Answer. Administration policy generally supports efforts to provide open access to the interstate transmission grid for all entities seeking transmission service. In this regard, portions of those systems in hurricane impacted regions subject to FERC regulation are required by the Federal Power Act to provide open access to the grid.

Question 10. Considering the recent spikes in natural gas prices which were magnified by the hurricanes, what can the DOE do to encourage the most economic and efficient use of natural gas plants are used in dispatch systems?

Answer. The economic dispatch study will give useful information to FERC and the States for use by the four joint boards on economic dispatch created under Section 1298 of the Energy Policy Act. In general terms, improving current practices with respect to economic dispatch will result in savings from the substitution of lower-cost fuel and the substitution of more efficient generation.

Question 11. On the subject of hurricane recovery, I would like to know if the Department is providing any building efficiency assistance or advice to state and local authorities so that residential and commercial building stocks can be replaced with buildings of much higher efficiency both in terms of construction and heating and air conditioning.

Answer. As the communities devastated by Hurricanes begin to rebuild, the U.S. Department of Energy is working to encourage cost-effective, durable, and energy-efficient building reconstruction. The Office of Energy Efficiency and Renewable Energy is partnering with the State Energy Offices in the affected States to encourage a broad regional exchange of information and best practices on building technologies. The Department and the States are also partnering with the National Association of State Universities and Land Grant Colleges which includes local universities and local extension services.

The Department is also working with its ENERGY STAR retail, manufacturer, utility, and State partners to reach out to homeowners and building contractors through training workshops. In addition to promotion of ENERGY STAR for New Homes, we are working with ENERGY STAR partners to expand and market their training programs to include DOE's state-of-the-art information.

Question 12. Title XVII, the Incentives Title, is intended to encourage the development and Deployment of highly innovative energy technologies. Congress has given the Department significant responsibility in the selection of technologies for support under Title XVII. Can you please tell the Committee how you intend to develop a program to implement the Title and how long that might take?

Answer. Title XVII of the Energy Policy Act of 2005 authorizes DOE to provide loan guarantees for renewable energy systems, advanced nuclear facilities, coal gasification, carbon sequestration, refineries, energy efficiency, and many other types of projects that use improved technologies in commercial projects that enhance energy economy and reduce emissions of pollution and greenhouse gases. The Department is assessing procedures needed to comply fully with the provisions of the Federal Credit Reform Act and OMB Circular A-129. The Department's Chief Financial Officer is heading up our efforts in consultation with the energy and science program offices, the Office of the General Counsel, the Office of Policy and International Affairs, and others. The Department has not developed a specific timetable for completing these activities.

Question 13. The Energy Bill codified a number of new efficiency standards for commercial and consumer products. However, there are also a large number of efficiency standards under development at the department, some of which have fallen well short of the intended implementation dates. Can you tell the Committee what you intend to do to move this process forward?

Answer. The Department is reviewing and implementing process improvements to its appliance standards program that are already contributing to increased productivity. Even as the Department moves quickly to implement the new requirements of EPACT 2005, we are committed to bringing all appliance standards activities into compliance. Recent results include the publication of a final rule in the Federal Register on October 18, 2005, and codifying the standards in the Energy Policy Act of 2005 in the Code of Federal Regulations. On November 15, 2005, DOE will hold a public meeting to receive public comment on appliance standards scheduling issues. After receipt of those comments, the Department will draft its appliance standards scheduling plan and provide this plan, including process improvements, to the Congress. The initial report, required by section 141 of the Energy Policy Act of 2005, is expected to be submitted to Congress in February 2006.

Question 14. DOE has been trying to facilitate discussions among industry stakeholders and other interested parties regarding electricity infrastructure rebuilding for hurricane damaged areas. Can you tell us about those meetings? Also, how do you think any funds allocated by Congress to these areas for energy infrastructure should be monitored to ensure ratepayers as well as taxpayers are best served? I have seen letters from transmission dependent utilities, like the Lafayette Utilities System, that have suggested they and other transmission dependent utilities would be interested in investing on the Entergy system rebuilding efforts. How do you think such private funding for rebuilding efforts should be treated?

Answer. At the request of Entergy Corporation, DOE has facilitated discussions among experts from the national laboratories, universities, and utilities to share insights and experiences regarding the restoration of electricity delivery systems. These discussions are intended to: (1) assemble technical information about the impact of recent hurricanes on the Gulf Coast; (2) identify ways that advanced technologies could be deployed in a cost effective manner to improve the reliability of the system, mitigate future disruption, and improve restoration time; and (3) build channels for effective coordination and communication between the affected utilities and various experts.

Administration policy generally supports efforts to provide open access to the interstate transmission grid for all entities requiring transmission service.

QUESTIONS FROM SENATOR TALENT

Question 1. Secretary Bodman, EIA data show U.S. natural gas production increasing from 19.2 trillion cubic feet in 2000 to 21.8 Tcf in 2025, but demand growing much faster, from 21.5 Tcf to 30.7 Tcf over the same time period. So we need to make up nearly 9 Tcf of natural gas over the next 20 years. It seems to me that it will be difficult to make up that difference even with a dramatic increase in LNG imports. a) Can you update me on the status of adding LNG facilities and the number that would be needed to meet the projected demand growth? b) Is this likely to be achievable through LNG alone? c) If not, that means we would need to tap into North American supplies, correct? d) What areas, onshore or offshore, hold the most promise, and which of those areas are the easiest to access, both in terms of readily available pipeline and processing infrastructure and in terms of the ease of overcoming any legal impediments to exploration and development?

Answer. Currently there are five LNG regasification terminals in the U.S. with a combined capacity of 1.5 Tcf/yr. An additional 5.8 Tcf/yr of capacity has been approved by FERC or the Coast Guard at 12 terminals, although it is not clear that all of the projects will ultimately be constructed. Together, Canada and Mexico have approved five terminals, with combined capacity of 1.9 Tcf/yr, some of which could supply U.S. needs. Proposals for 20 additional terminals/expansions with an aggregate 9.6 Tcf of regasification capacity are before FERC and the Coast Guard.

Depending on the utilization rates, the LNG imports projected in the reference case of the Annual Energy Outlook 2005 (AEO2005) by 2025 could be accommodated with the addition of the 12 approved projects. In addition, net imports from Canada and Mexico are projected to satisfy 2 Tcf of consumption in 2025. While there are abundant natural gas resources in the world, LNG imports into the United States would be limited by the ability to site regasification terminals, the level of world liquefaction capacity, and competition with other potential consumers, particularly if world oil prices remain relatively high.

Lower import levels would be expected to result in higher natural gas prices, lower consumption (largely as electric generators choose more coal over gas), and increased domestic drilling activity and production, particularly onshore and from unconventional sources (coalbed methane, tight sands, and gas shales). Under current laws and regulations, unconventional sources represent about 50 percent of the lower-48 technically recoverable resource levels and are mainly located in the Rocky

Mountain region. A significant portion of the total unconventional technically recoverable resources in the region are either off limits to exploration and development or subject to Federal lease stipulations (e.g., to protect identified resources) or environmental restrictions when production is allowed. While processing of this relatively dry gas is less of an issue, additional pipeline infrastructure has been added, and will continue to be needed, to bring the growing Rocky Mountain production volumes to market. A significant amount of unconventional gas resources also exist in other areas that are more accessible and closer to existing infrastructure.

The National Petroleum Council (NPC) in its 2003 report on Natural Gas identified the Rocky Mountain and offshore Gulf of Mexico as containing the largest volumes of technically recoverable natural gas resources. The Rocky Mountain region contains an estimated 284 trillion cubic feet (tcf) and the Gulf of Mexico an estimated 329 tcf. Together these areas represent more than half of US resources outside Alaska. Both these producing regions contain extensive production, processing and transportation infrastructure that would facilitate production growth. A negative factor for development in both these areas is that production from both areas is limited by access restrictions: NPC estimates that 69 tcf in the Rocky Mountains and 25 tcf in the eastern Gulf of Mexico are off limits to production.

Question 2. Secretary Bodman, can you tell me how the natural gas supply and price forecast might change over the next 3 to 5, or even 10, years if we were to provide the coal industry with certainty regarding emissions, say along the lines of the Clear Skies proposal? Under this scenario, we'd be producing electricity through clean coal gasification technology as well as diesel and other transportation fuels using the most abundant energy resource this nation has.

Answer. Flexibility of compliance choices, maintenance of fuel diversity, and the cost savings passed on to consumers through low electricity prices are the benefits of the approach taken in Clear Skies, particularly when compared with the other proposals that support more stringent targets, shorter compliance periods, or command and control regulatory approaches. Legislative enactment of Clear Skies will provide the certainty utilities need to build large new clean coal plants and incentivize efficiency at existing units, significantly reducing the potential for increased utility use of natural gas to meet demand and new air quality requirements.

The minimal impact the Clear Skies cap-and-trade program will have on natural gas, coal and electricity prices will drive investment in clean coal generation ensuring much less competition for natural gas supplies between the power sector and manufacturers compared to other alternatives. EIA's May 2004 analysis of the Clear Skies proposal found that power companies would reduce their emissions by adding emissions control equipment to existing generators. Fuel switching from coal to natural gas was projected to play a relatively small role in their compliance strategies; coal generation is maintained under Clear Skies and low electricity prices are maintained.

In addition, Clear Skies will eliminate or reduce the need to require further costly reductions from other industrial sectors because Clear Skies, coupled with EPA's proposed rule to decrease emissions from heavy-duty non-road diesel engines, and other existing state and federal control programs, will bring most of the country into attainment with the new air quality standards for ozone and fine particulate matter.

Question 3. The energy legislation that we passed this summer established procedures for the Department of Energy to review our electricity infrastructure and to establish national interest corridors based on where we have the greatest need for transmission. Can you provide an update on the approach, progress, expectations, and obstacles, to establishing those corridors, as well as reactions to your efforts from the States and various industry sectors?

Answer. We are in the early stages of implementing the transmission congestion study required by section 1221 of the Energy Policy Act of 2005. Identifying areas of the Nation where transmission expansion would be of great value to the various grid systems throughout the Nation is a primary focus of the study. DOE expects that bringing attention to these areas and discussing options with the States on how to ease the particular problems will be of great value, even if many of these areas are not designated as national interest electric transmission corridors.

Question 4. Curt Hébert of Entergy testified before this committee just a few weeks ago. He described the widespread damage to his company's transmission system as a result of the hurricanes. He also requested quite a bit of financial assistance to help rebuild the Entergy system. I understand there to be quite a few highly efficient natural gas generating units in Louisiana that, for one reason or another, have insufficient transmission access to allow them to be fully utilized. Should Entergy seek federal assistance, to what extent will resolving existing transmission

constraints in Louisiana and Mississippi, rather than simply building back into the system existing problems, be a requirement to receive federal funding?

Answer. Administration policy generally supports efforts to provide open access to the interstate transmission grid for all entities requiring transmission service.

QUESTIONS FROM SENATOR BUNNING

Question 1. I just learned of a potential hazardous condition regarding possible gas in the DUF6 cylinders at the Paducah plant. DOE claims the cylinders have been cleaned and pose no threat to the plant and the surrounding community. What is the DOE doing to ensure the safety of the Paducah plant workers and the community?

Answer. To date, the Department has found no evidence that phosgene exists in these cylinders. In response to the September 30, 2005, Office of Inspector General's (IG) Management Alert, safety evaluations that consist of safety experts analysis, review of cylinder modification data, review of routine inspection reports, review of ultrasonic inspections, process knowledge, and historic process documentation have been completed at Portsmouth, Paducah and Oak Ridge. The Department's evaluation has gone so far as to explore what actions would need to be taken if phosgene was present. The Department has also performed archived document reviews to confirm whether past operational practices eliminated the phosgene in Model 30A Uranium Hexafluoride cylinders at Portsmouth, Paducah and Oak Ridge. Through the evaluation process, the Department has identified 43 of the 2,500 total suspect cylinders that do not meet all the criteria necessary to rule out the presence of phosgene. The Department is finalizing the disposition path for these 43 cylinders. The cylinders have been and will continue to undergo a prescriptive and rigorous monitoring and surveillance program.

Question 2. I also want to thank you for continuing the former workers medical screening program. This is an important program for Paducah workers because it has saved many lives. I have had to fight the DOE in the past to keep this program in existence. Can I expect the DOE to continue this medical screening program for former workers who faced serious hazards from their service to their country during the Cold War?

Answer. Yes. The Department of Energy (DOE) is committed to funding all existing regional medical screening programs, including Paducah.

Question 3. As you know, EIA forecasts an almost 50% average increase in residential natural gas heating costs this winter. This will affect almost two million Kentucky residents who heat their homes with natural gas this winter. This will have a tremendous effect on Kentuckians' pocketbooks, particularly low-income residents who may have to choose between heating their homes and buying other necessities. What are some of the actions that could be taken immediately that will increase our supply of natural gas?

Answer. Perhaps the single biggest cause of the high natural gas prices we are seeing today is the damage Hurricanes Katrina and Rita did to the crude oil and natural gas supplies coming out of the Gulf of Mexico. This damage is so extensive that today, more than 5 weeks after Hurricane Rita, natural gas supplies from the Gulf are still only about 50 percent of what they were before the hurricanes.

Getting these supplies of natural gas from the Gulf of Mexico back on-line as quickly as possible and delivered to consumers is the best way to increase our supply of natural gas, and moderate the high prices we are seeing today. This is exactly what the Administration is working to do. The Department of Energy is working with the Department of the Interior and the Federal Energy Regulatory Commission to continue our assessments on the extent of the damages, highlight the critical choke points to producing and delivering natural gas supplies, and facilitate repairs wherever possible. These agencies are in daily contact with producers, pipeline companies, and gas processing plants to track the progress of repairs, and to look for ways to get around those choke points to get natural gas moving to consumers as quickly as possible. For example, we anticipate that a new gas pipeline by Duke Energy Gas Transmission will by-pass a gas processing plant severely damaged in the Gulf storms and route production to an operational gas processing plant. This new segment, scheduled for operation before December 1, and gains by other producers, will add 700 million cubic feet of gas per day.

Question 4. Every sector of business is feeling some crunch in their bottom-line from high energy prices. Many businesses are looking to invest more heavily in energy efficient technologies in order to keep their doors open in the future. Is DOE examining ways to further partnerships with industry to accelerate research on energy efficient technologies?

Answer. The Industrial Technologies Program (ITP) is always adapting its research agenda to respond to evolving economic and business conditions. ITP performs regular peer reviews of the subprogram portfolios with our industrial partners, and, as a result of high energy prices, ITP is currently reviewing its internal research portfolio to better serve its stakeholders. This review includes:

- (a) Refocusing the existing portfolio toward projects which will deliver more sizable energy benefits;
- (b) Reducing our investments in projects that do not contribute to energy efficiency in the shorter run; and
- (c) Exploring with our partners the opportunity to expand our scope to include critical industrial needs such as fuel flexibility.

Question 5. Due to the high gas prices, many other energy sources, such as coal, have risen in price as well due in part to high transportation costs. Is the Department of Energy looking into ways to deal with high cost transportation issues?

Answer. Gas prices do not have a major impact on coal transport costs. However, transportation costs do account for a significant portion of the delivered price of coal. For example, 60% of the cost of coal that southern utilities purchase from the Powder River Basin in Wyoming is due to transport. For the coal they purchase from eastern locations such as West Virginia, the transport cost might be about 20%, still a significant figure. None the less, it is important to conserve petroleum in all uses.

Question 6. Most of our oil and natural gas sources are situated in the Gulf Coast. Since Hurricanes Katrina, Rita and now Wilma, has the Administration looked at our need to diversify the location of our domestic supply? Have you seen any reluctance by businesses to continue their drilling operations in the Gulf Coast?

Answer. While the Gulf of Mexico holds very significant undeveloped oil and gas resources, significant resources also exist in Alaska, the Rocky Mountain region and other off-shore areas. The Administration supports development of U.S. oil and gas resources in these and other parts of the country.

We believe there has been no evidence of lessening industry interest to develop Gulf Coast oil and gas resources. While we defer to the Department of the Interior, we understand that industry has expressed great interest in recent federal lease sales as well as exploration, especially in deep-water areas where significant undeveloped resources most likely exist.

QUESTIONS FROM SENATOR BINGAMAN

Question 1. Public Education: The Energy Information Administration has told us that consumers will see substantial increases their heating bills this winter—with natural gas consumers experiencing the worst increases. Over the past several weeks you have heard from me and many others about the importance of helping consumers to prepare for the winter heating costs and the need to assist those families who cannot afford to pay their bills. I appreciate the efforts the Department has made in partnership with the Alliance to Save Energy, the states and many corporations. Many energy companies and associations are also providing energy savings tips. However, as we discussed at the hearing, I believe we need a more aggressive and comprehensive Public Education campaign that includes public service ads on prime time television shows. The Energy Policy Act of 2005 authorizes \$90 million for an aggressive Energy Efficiency Public Information Campaign based on the successful campaign used in California to reduce peak demand in electricity in 2001.

While I understand that there has not yet been new funding provided for this program, given the increased importance of providing information on energy efficiency to the public, what are you doing to get this program up and running? What resources would you need from Congress in order to initiate such a campaign?

Answer. DOE is taking a comprehensive approach to providing the public with information on energy efficiency and conservation to consumers, businesses, and government. Outreach activities utilize a number of distribution channels including radio, television, print materials, and new media avenues such as web marketing.

Our public education campaign includes a number of efforts to promote efficiency through educating the public on energy efficiency measures. On October 3, 2005, Secretary Bodman highlighted these efforts by announcing *Easy Ways to Save Energy* which included an education and awareness PSA campaign partnership with the Alliance to Save Energy providing consumers with tools to make smart energy choices. The campaign also includes Phase II of the *Energy Hog*, an aggressive public education effort launched in 2004 including online, print, radio and television ads featuring the “Energy Hog”, a character similar to McGruff the Crime Dog and Smokey the Bear. In addition to these consumers’ efforts, DOE is helping the Fed-

eral and industrial sectors save energy through the assessments and recommendations of its energy saving expert teams.

As the FY07 budget is developed, we are evaluating ways to continue to provide information on energy efficiency and conservation to the public, and the funds that the Department will request to do so. The President's FY 2007 Budget will be presented to Congress in early 2006.

Question 2. Weatherization: DOE'S low income weatherization program has been an Administration priority. Like the Low Income Home Energy Assistance Program (LIHEAP) it targets low income consumers. But unlike LIHEAP, weatherization helps them save energy over the long term. The average reduction in energy use for a weatherized home is 25%. EPACT authorizes \$500 million for weatherization this year but it is funded at less than half that level—\$227 million. Shouldn't we ramp up our weatherization efforts now during this period of extremely high home energy cost? Can we expect an increase in funding for this program in the next supplemental—or in the FY07 budget?

Answer. DOE cannot comment on the FY07 budget because it is still in development and will be presented by the President in February 2006.

Question 3. Tax Credits: EPACT provides tax incentives for hybrid vehicles to reduce gasoline consumption and tax credits for energy efficiency improvements in existing homes, efficient new home construction and efficient commercial buildings will help home owners and businesses save natural gas and electricity. DOE and Treasury should be completing the guidelines for these tax incentives before their January 1 effective date so that consumers can take advantage of them this winter. I understand that DOE must prepare much of the analysis for Treasury to establish the rules that would give taxpayers the guidance to take the EE tax credits. What is the status of your work in this area?

Answer. The U.S. Department of the Treasury has not yet requested our assistance in regard to tax incentives provided for hybrid vehicles in the Energy Policy Act of 2005. The Department is ready to assist Treasury as needed.

In regard to tax credits for energy efficiency improvements in existing homes, efficient new home construction and efficient commercial buildings, the Department has been requested to assist, and is working closely with, Treasury. It is our understanding that the issuance of these regulations is on schedule.

Question 4. Federal Efforts: On September 26, the President directed the federal government to conserve natural gas, electricity, gasoline, and diesel fuel to the maximum extent possible. He requested a report from agencies within 30 days on the fuel conservation actions taken—i.e. yesterday. The reports are to go through you to the President. What can you tell us about the federal government's efforts to date (or at least the Department's)? How has the effort been coordinated with the requirements for federal energy management that were updated in EPACT 2005?

Answer. As directed by the President's September 26, 2005 memorandum, Federal agencies were asked to review their existing operating processes and energy efficiency programs and identify and implement additional ways to reduce overall energy use. Thirty-eight agencies reported on a wide range of additional energy management activities which are estimated to provide a 6-month savings of 5.4 trillion Btu—equivalent to 1.2 percent of these agencies energy annual consumption last year. The energy efficiency savings achieved in these initiatives will contribute to the broader goals established in EPACT 2005.

The Department of Energy (DOE) has provided support through a variety of means, including Energy Savings Expert Teams (ESETs) to target Federal facilities experiencing natural gas price volatility and potential supply shortages. ESETs are working with Federal sites across the country to reduce natural gas consumption in buildings and to improve operating efficiencies of central plant and steam distribution systems.

Question 5. Federal Energy Management Program: The National Energy Conservation Policy Act requires federal agencies to reduce the amount of energy federal buildings consume. The 2005 Act updates these requirements and calls for a 4 percent reduction by FY 2007 with annual reductions up to a 20 percent reduction by 2015. What is the Department of Energy doing to provide leadership within the federal government on saving energy and to ensure that agencies comply with these new energy management requirements?

Answer. The Department is developing guidelines for Federal agencies to assist them in meeting the new energy management goals set forth in EPACT 2005 and will report on agency progress in meeting these goals to the President and Congress. The Federal Energy Management Program (FEMP) provides leadership within the Federal government by providing technical guidance, assistance, and training for all agencies, as well as providing the DOE Super Energy Savings Contract, which is the leading alternative finance vehicle used in the Federal government for energy

efficiency. DOE recently signed a Memorandum of Understanding with the non-profit, Energy Solutions Center to provide training for Federal energy managers on new technologies. These services are used by all of the top Federal energy using agencies in their efforts to meet Federal energy management requirements.

FEMP will also reinforce the EPACT 2005 goals through its interagency working groups and through its compilation of data and assessment of agency performance on energy management goals.

Question 6. Energy Savings Performance Contracts: Many agencies depend on Energy Savings Performance Contracts (ESPCs) to help them meet their federal energy management goals. The ESPC program suffered a set back when the authority lapsed in 2003. What is the status of the ESPC program now that it has been extended?

Answer. After the lapse in legal authority for ESPCs during FY 2004, the ESPC program is regaining its momentum. During the second half of FY 2005, the Department facilitated awards of \$72 million in contracts that will save 10 trillion btus and a net \$447,000 over the contract lives, which range from 13 to 24 years. The Department expects that it will facilitate awards of \$80 and \$120 million in ESPC contracts in FY 2006 that will save 14 and 20 trillion btus. The Department continues to focus on ensuring each contract provides the best deal for the taxpayer, maximizing energy savings and energy cost savings for each private sector dollar invested, which the government must repay with interest. Because the authority was established for 10 years, the long-term prospects for the ESPC program are excellent.

Question 7. Role of DOE in energy infrastructure improvement: The mission of the Office of Electricity Delivery and Energy Reliability is "to lead national efforts to modernize the electric grid; enhance security and reliability of the energy infrastructure, and facilitate recovery from disruptions to energy supply." The damage to the electricity transmission infrastructure in the Gulf Coast presents an opportunity that appears to be tailor-made for this Office with the assistance of other departmental programs. What can DOE do to lead efforts to modernize the electric grid; enhance security and reliability of the energy infrastructure, and facilitate recovery from disruptions to energy supply in the states affected by the hurricanes? What is DOE planning to do?

Answer. DOE has facilitated discussions among experts from the national laboratories, universities, and utilities to share insights and experiences regarding the restoration of electricity delivery systems. These discussions are intended to: (1) assemble technical information about the impact of recent hurricanes on the Gulf Coast; (2) identify ways that advanced technologies could be deployed in a cost effective manner to improve the reliability of the system, mitigate future disruption, and improve restoration time; and (3) build channels for effective coordination and communication between the affected utilities and various experts.

Question 8. Utility Energy Efficiency Study and Pilot programs: The Energy Policy Act of 2005 recognized that electric and natural gas utility programs for demand reduction and energy efficiency can be a very effective way to save energy and potentially reduce consumer's energy bills. The legislation calls for a study of state programs that are being carried out by utilities and identification of best practices. It also authorizes funding for DOE to support pilot programs in selected states. What has DOE done to date on the study or the pilot program?

Answer. The Department is working diligently to address the many requirements of the Energy Policy Act of 2005. We have given priority to directly addressing those sections due within 60 and 90 days and we are preparing the steps necessary to address the Sections whose deliverables are of a somewhat longer term. In that regard, we have initiated planning for the studies directed in Sections 139 and 140 of the Act. The respective programs have begun assembling the resources and consulting experts.

Question 9. "Energy Smart" Rebuilding: The DOE Building program provides leadership in innovative new technologies, better building practices and better building codes. The destruction caused by Hurricanes Katrina, Rita and Wilma presents the affected states with a golden opportunity to make smart energy choices in the rebuilding effort. A recent ICF Consulting analysis indicates that investments in energy efficiency for reconstructing the hundreds of thousands of homes destroyed by the Hurricanes would result in significant energy savings compared to a mass reconstruction built to minimum building codes. For example rebuilding 310,000 homes to the 2006 ENERGY STAR guidelines would have a 7.5 year pay-back and save nearly \$20 billion in the following 20 years if energy prices remain constant. What is DOE doing to proactively share its energy efficient buildings expertise with the entities that are funding or supervising these reconstruction efforts?

Answer. As the communities devastated by Hurricanes begin to rebuild, the U.S. Department of Energy is working to encourage cost-effective, durable, and energy-efficient building reconstruction. The Department is partnering with the State Energy Offices (SEOs) in the affected States to encourage a broad regional exchange of information and best practices on building technologies. The Department and the States are also partnering with the National Association of State Universities and Land Grant Colleges (NASULGC) which includes local universities and local extension services. Grants were recently awarded to Louisiana, Alabama, and Mississippi to encourage the application of energy efficiency in their rebuilding efforts. A similar grant is currently being finalized with the Texas State Energy Office. These seed grants will support capacity building, training seminars for residential and commercial consumers, public service announcements, and design forums.

The Department is also working with its ENERGY STAR retail, manufacturer, utility, and State partners to reach out to homeowners and building contractors through training workshops. In addition to promotion of ENERGY STAR for New Homes, we are working with ENERGY STAR partners, such as Home Depot and Lowes, to expand and market their training programs to include DOE's state-of-the-art information. The retailers and manufacturers will also be hosting web sites that are accessible to their customers.

Question 10. State Building Codes: There are a number of programs authorized by the Energy Policy Act of 2005 that would build and bolster state energy programs. Many would not only help the nation deal with rising energy costs, but could also be extremely helpful if targeted to the Gulf States. Among these programs is an important measure on state building codes that would help states implement a plan to achieve and document a 90 percent rate of compliance with commercial building energy efficiency codes.

- What is the Department of Energy doing right now to help states comply with their state energy code and to promote more efficient building codes?
- What is the Department of Energy doing to ensure that the rebuilding efforts in the wake of the hurricanes take into account high energy efficiency building codes?

Answer. The Department of Energy awarded \$2 million in financial assistance to states in FY 2005 to update, implement, and enforce their building energy codes, and hosts a national state building workshop annually on state building energy codes. The Department has also provided a wide range of technical assistance to States, including software compliance tools, training materials, code notes, how to videos, and code impact analyses on its web site at <http://www.energycodes.gov/>.

At the request of States affected by recent hurricanes, the Department has initiated several activities to provide technical assistance on energy efficient building codes. The Department has recently granted a technical assistance request from Louisiana to assist them in holding five web based energy code training sessions starting December 13, 2005. This will be done in cooperation with Louisiana State University. Hurricane related code issues for commercial buildings will be addressed and information will be drawn from recent experience with the Florida code.

Question 11. Appliance Rebates: The Energy Policy Act of 2005 authorizes \$50 million per year for qualified energy efficient appliance rebate programs at the state level. The programs would provide rebates to residential consumers for the purchase of Energy Star rated products that replace used appliances of the same type. New York State implemented a similar program and saved participating consumers \$3.5 million in the first year. What is the Department of Energy doing now to assist states in implementing energy savings programs like the appliance rebate program? Will funds for this program be included in the Administration's budget next year?

Answer. The Department of Energy currently manages two programs which support States in implementing energy savings programs like the appliance rebate program: the State Energy Program and the Energy Star Program, a jointly managed effort with the Environmental Protection Agency. The State Energy Program provides formula grants to each State to support a variety of energy efficiency and renewable energy programs and projects as determined by each State to best fit their needs and priorities. The Department's Energy Star Program establishes energy efficiency levels for home appliances, compact fluorescent light bulbs, and windows and provides education and outreach to consumers, retailers, and manufacturers. The program works closely with States as partners to educate consumers and promote Energy Star products.

DOE cannot comment on the FY07 budget, as it is still in development and will be presented by the President in early 2006.

Question 12. Appliance Standards program: In EPACK 2005, Congress wrote into law minimum efficiency standards for several energy-using products. The standards

were the result of negotiations between manufacturers, efficiency advocates, consumer groups and states. We were pleased to enact these consensus standards; however, Congress intended for the DOE to develop appliance efficiency standards in a rulemaking process. That process has bogged down and many required standards are delayed several years past their statutory deadlines. DOE is required to report to Congress with a plan to address these program delays by February 2006. What have you accomplished to date?

Answer. The Department is reviewing and implementing process improvements to its appliance standards program that are already contributing to increased productivity. Even as the Department moves quickly to implement the new requirements of EPACT 2005, we are committed to bringing all appliance standards activities into compliance with statutory requirements. Recent results include the publication of a final rule in the Federal Register on October 18, 2005, codifying the standards in the Energy Policy Act of 2005 in the Code of Federal Regulations. On November 15, 2005, DOE will hold a public meeting to receive public comment on appliance standards scheduling issues. After receipt of those comments, the Department will draft its appliance standards scheduling plan and provide this plan, including process improvements, in a report to Congress. The initial report, required by section 141 of the Energy Policy Act of 2005, is expected to be submitted to Congress in February 2006.

Question 13. Regional energy offices: During your announcement of the new public information campaign two weeks ago you were asked why the Department was closing its 6 regional offices. You answered that you had no such plans, although the Department has requested exactly that from the Congress. As we are dealing with an energy emergency, where regional and local knowledge will be especially important, do these closings make any sense?

Answer. The primary driver behind the FY 2006 move to consolidate the functions of the six Office of Energy Efficiency and Renewable Energy (EERE) Regional Offices is included in the report language from the Senate Appropriations Energy and Water Development Subcommittee issued on June 13, 2005.

The Administration has not put forth a formal plan to consolidate the regional offices. However, during staff level discussions between the Senate Appropriations Committee and the Department of Energy, the possibility of consolidating the functions of the six EERE ROs into EERE's Project Management Center (PMC) sites was brought up as a means to save money.

The result of the consolidation will be an efficient and effective State-friendly organization that continues the high level of service delivery currently provided to the States and other partners.

All employees currently located in the six Regional Offices will be offered comparable positions at the two PMC locations located at NETL and GFO. Thus regional and local knowledge bases, including established contacts with the individual State Energy Offices, will be maintained.

Question 14. Implementation of EPAct 2005: Please describe your actions in implementing EPACT 2005. Can you share with us a timetable for implementation of the provisions for which the Department has responsibility?

Answer. The Department has a mechanism in place to manage the implementation of the EPAct "action items" in a responsible manner. We are currently tracking 371 action items, including 56 rulemakings and 124 reports. We intend to comply with as many of the due dates in the Act as possible, but the effective implementation of many action items require appropriations that have not been made, or may not be made prior to the due date. When we miss or expect to miss a deadline imposed by the Act, the Chairman and Ranking Member of the Committee will receive written notice from the appropriate Under Secretary, Assistant Secretary, or Office Director, describing the action item that is late and, when possible, estimating when the action item will be completed. You have already received such letters from the Department.

Question 15. I understand that your department is in the process of concluding the study on efficient dispatch of natural gas plants, which is due on 8 November. I would anticipate that the following questions will be addressed in that study. To the extent that it is possible before the report is issued we would like to have information to answer the following questions. To the extent that these questions are not addressed in the report could we have your help in answering them?

Some witnesses at last week's hearing suggested that requiring consideration of the efficiency of natural gas plants in the systems for determining which power plants are dispatched to serve customers' loads would provide enormous savings the use of natural gas for the generation of electricity. Do you have information as to how many older, less efficient plants-steam generations plants with high heat rates—are currently in use?

Answer. During the recent winter period December 2004 through March 2005, the Department's Energy Information Administration estimates that about 244 steam-electric plants using natural gas as a fuel were in operation. Combined cycle plants provide greater efficiencies than steam-electric natural gas plants. Typically, the efficiency of power plants is measured by the "heat rate," which is the quantity of fuel (expressed in British thermal units, or Btu) needed to produce one kilowatt-hour of electricity. Steam-electric gas plants will typically have heat rates in the range of 10,000 to 15,000 Btu per kilowatt-hour while a modern combined-cycle plant will have a heat rate in the range of about 7,000 to 8,000 Btu per kilowatt-hour.

Question 16. How many of those plants could be displaced by newer, more efficient combustion turbines or combined cycle plants?

Answer. Significant amounts of steam-electric generating capacity were used during the past winter even though, in the aggregate, there are enough underutilized combined cycle plants available to replace this generation using significantly less gas. In theory, there are enough underutilized combined-cycle plants to replace all of this generation. In practice, not all of the steam-electric generation could be replaced by electricity from underutilized combined-cycle plants. This is because of operational factors that limit the potential for displacement of steam-electric plants. The two most important factors are transmission systems capacity constraints and the related issue of units which have "reliability must run" (RMR) status. The operation of RMR units is mandatory at times to maintain the reliability of the transmission grid and to protect against the possibility of blackouts. However, the Department's Energy Information Administration does not collect information that identifies RMR plants. Thus, we are unable to provide specific information about which gas-fired steam plants can be displaced to save natural gas without impacting the reliability of the transmission system.

Question 17. If these newer, more efficient plants were dispatched, how much natural gas could be saved?

Answer. As implied by the response to Question 16, transmission constraints and power plant operating characteristics restrict the degree to which steam electric plants can be economically replaced by existing combined cycle units. That said, the 244 gas-fired steam-electric plants noted in the answer to Question 15 generated about 20 billion kilowatt-hours of electricity during the period December 2004 through March 2005, and consumed about 225 billion cubic feet (bcf) of natural gas. During this four month period, if combined-cycle generation replaced less efficient steam-electric generation, the nation would have saved approximately 70 bcf of natural gas depending on weather conditions. However, the 70 bcf savings is a technical maximum, and in practice would be less than that due to a number of factors, including transmission constraints, which limit the ability of operators to move electricity across systems; and the need for "reliability must-run" units to maintain security and stability of the transmission grid.

Question 18. Over the long term, how much effect could these savings have on the price of natural gas?

Answer. Even assuming that the entire 70 bcf of natural gas that was identified in Question 17 could be saved in future quarters, the impact on the price of natural gas would likely be modest. This is because 70 bcf of natural gas is a small portion of total gas demand during the winter. For example, during the period December 2004 through March 2005, residential gas demand was 3,047 bcf and total gas demand from all consuming sectors was 9,408 bcf.

Question 19. We have heard some witnesses that for the most part gas plants are dispatched in the most cost effective manner, given transmission constraints and the need to provide power to support the transmission system. Do you have information that could help us understand how many plants that are older and less efficient are in areas where they must be run in order to provide reliability for the transmission system?

Answer. The Department's Energy Information Administration does not collect information that identifies plants, known as "Reliability Must-Run (RMR)," that must be run for reliability of the transmission system. This is because the conditions upon which these plants are called is system specific. The regional reliability councils, transmission operators, and their members would have this information.

Question 20. How many more efficient plants could be dispatched today without reconfiguring the transmission system?

Answer. The Department does not collect information on the transmission grid's constraints on generating plants that would allow it to conduct the extensive modeling and analysis needed to answer this question.

Question 21. How many could be dispatched with only minor modifications to the transmission system?

Answer. The Department does not collect information on the transmission grid's constraints on generating plants that would allow it to conduct the extensive modeling and analysis needed to answer this question. This information is possessed by the regional reliability councils, transmission operators, and their members.

Question 22. To what extent do the answers to questions 19, 20 and 21 (5, 6 and 7 [sic]) affect the answers to questions 15, 16, 17 and 18 (1, 2, 3 and 4 [sic])?

Answer. If DOE had the data to determine the answers to these questions, then the answers to questions 19, 20, and 21 would be elaborations/clarifications on questions 15, 16, 17 and 18. The data we do have indicates that:

- a) There is significant room for improvement in gas efficiency factors.
- b) Improving efficiency factors is not a simple matter of turning off a steam/electric generator and turning on a combined cycle plant. One needs to resolve transmission constraints and/or construct more efficient plants closer to load in order to raise the efficiency of gas generators dispatched.
- c) A complete replacement of steam electric generators with combined cycle generators could theoretically save about 70 bcf of gas per quarter, or about 0.7% of current winter gas consumption. However, due to a number of limiting factors, the actual savings would be less.
- d) Such a switch would likely have only a modest impact on price.

Question 23. Some observers have called Entergy's transmission system "archaic" and indicated that it is not configured to dispatch the most efficient generation resources in the region. How can we be sure any federal dollars that we might give to the region will be used not merely to repair this old system but to rebuild the system with newer, state of the art smart-grid technologies and with a configuration that will allow customers to take advantage of the most efficient resources in the region?

Answer. Administration policy generally supports efforts to provide open access to the interstate transmission grid for all entities requiring transmission service.

[Note: Questions 24-28 were duplicates of Questions 19-23.]

Question 29. Energy prices were high before the onset of Hurricanes Katrina and Rita. This was due in part to a large number of refineries that were in shutdown in July. Presently the department, though it is charged with overseeing our energy supplies, does not regulate the shutdowns of domestic refineries. At the October 6 hearing on hurricane recovery, I raised the issue of the possible need for government oversight of refinery shutdowns. Administrator Caruso indicated the issue should be looked into. I wonder how you feel about this. Might we first ask EIA to study the issue and provide a look at what the impact of refinery shutdowns has been on petroleum product prices, as we look at the right policy decision here? Would you support such a study and ensure that it was given necessary priority?

Answer. DOE has little reason to believe that planned shutdowns of domestic refineries have an adverse impact on prices. Generally, refiners will try to delay shutdowns when prices and product margins are high. However, eventually refiners must perform required maintenance. More analysis would be necessary before any conclusions can be made, especially before policies to regulate the shutdown of domestic refineries are considered.

Question 30. The hurricanes have only served to highlight the need for refiners and pipelines to hold more petroleum product inventories. The just-in-time inventory framework may work for Dell computers, but it is not the ideal method for promoting stability in oil markets when there is a supply disruption. European and Asian countries mandate that companies hold set amounts of transportation fuels in inventory. (There is no question that the U.S. benefited from the decision by the TEA to release some of these inventories.) Have you given any thought to mandatory product inventories for companies and pipelines? As the Department looks to expand the SPR to its new 1 billion barrels capacity, has there been any thought given to establishing part of the new capacity in the form of a product reserve? And, should these reserves be geographically diverse? (i.e. located near population centers? Key pipelines?)

Answer. The Administration recognizes that the supply of petroleum products was seriously curtailed by the two hurricanes that caused significant U.S. refinery closures and damage.

We understand the need for an increase in our overall refining capacity. Were we to have a marked increase in refining capacity in the U.S., it would address some of the same concerns that have lead some to consider the creation of product stocks.

The Administration is taking a comprehensive look at the petroleum supply situation and various options to address the supply issues highlighted by the effects of the hurricanes.

Question 31. Some experts are saying that the high prices that we have sustained in the aftermath of the hurricanes have helped to reduce demand for transportation fuels (such as gasoline). Others say that the dip in demand is only temporary. They point to the difference in consumption growth trends between OECD and non-OECD countries. Demand dips seasonally in OECD countries, allowing producers (refiners) to build product in certain seasons in anticipation of high demand. However, non-OECD demand tends not to have such dips. Given the amount of refinery capacity that was taken down by the hurricanes (still more than a million barrels per day), there was a gap between supply and demand and no time to build inventories. Ultimately hurricanes Ivan, Katrina, and Rita have done more to disrupt supply than any political uncertainty (Venezuela, strikes in Norway, African unrest . . .). What does this all mean for the future? What can we do to ensure that future price spikes are minimized?

Answer. We agree that high prices helped to reduce demand for transportation fuels so the remaining supplies would sustain personal mobility and commercial needs. We also believe that the President's call for conservation and the American public's awareness of the seriousness of the situation helped to reduce demand. The dip in demand will be temporary as refineries come back on line, supplies increase and prices ease. We are already seeing significantly higher supplies and lower prices.

However, as long as world-oil prices remain high, fuel prices will be higher than the prices Americans have been used to in prior years. These higher prices will have two important long-term effects. First, the efficiency of the vehicle fleet will increase over time. We are already witnessing decreased sales for large SUVs and increased demand for efficient vehicles, especially hybrids. Second, while improved efficiency will reduce demand from previous trends, U.S. economic and population growth will still require increased fuel supplies. We expect that industry will respond. For example, Sunoco recently announced plans to increase their refinery capacity by 100,000 barrels per day. Most refiners are reviewing opportunities to expand capacity to meet growing demand and many more projects will no doubt emerge in the coming months and years. Again, the role of price is critical since industry will only undertake these investments if they expect them to be profitable over the longer term. Consumers and industry both benefit from relatively stable fuel prices that meet consumers' needs for mobility at a reasonable cost and industry's need to recover investment costs over the long term.

Question 32. China has formed several new alliances with countries such as Iran and Russia. What does this mean for the US? Should China's growing import dependence be a concern? Do we need a new definition of energy security?

Answer. As recently as 1996 China imported about 70% of its oil from only three countries—Oman, Indonesia, and Yemen. By 2003, China had developed significantly more diverse import sources, including Saudi Arabia (16.8% of total imports), Iran (13.8%), Angola (11.2%), Oman (10.3%), and Yemen (7.7%), but with a strong reliance on the Middle East. During this period, China's net oil imports (crude and products) increased from approximately 0.3 million barrels per day (mmb/d) to 2.1 mmb/d. As part of its efforts to increase energy security, Chinese state-owned oil companies have significantly increased the number and geographic distribution of energy assets and investments in recent years. They have invested in oil ventures in more than 20 countries with bids for oilfield development contracts, pipeline contracts (e.g., Russia), and refinery projects (e.g., Iran).

The total equity oil secured mainly by Chinese state-owned oil companies is around 400 thousand b/d at present, equivalent to roughly 15% of China's total crude imports, 11% of China's domestic oil production, and 6% of China's current oil consumption. By comparison, the overseas equity oil of the three largest US companies is 3.9 mmb/d, 35% of total US imports, and 71% of their total liquid production.

Following a supply diversification strategy is a sound part of a balanced energy policy. However, Chinese "alliances" can be of concern if they do not comport with international norms of commercial behavior or if they support behavior in host countries that violate international human rights or other agreed standards. Recognizing China as an increasingly important player in the global economy and the international energy market, the U.S. Government has been discouraging China from viewing energy security as a zero-sum game and encouraging China to see benefits of playing by international norms and principles. In the area of energy security, the USG has been encouraging China's greater involvement in discussions at international energy fora like the Asia-Pacific Economic Cooperation and the International Energy Agency. In bilateral exchanges, such as the US-China Energy Policy Dialogue, the Economic and Development Forum, and US-China Oil and Gas Industry Forum, the USG continues to encourage greater transparency in China's eco-

conomic decision-making, energy policy planning, and contractual activities by their state-owned enterprises. Specific, recurring themes have included how the equity stake abroad does not guarantee one with the increased crude supply. Our messages to China through energy consultations are consistent with a broader message to China by the Administration that urges them to become a “responsible stakeholder” and to recognize the international impact of their domestic policy decisions. We encourage like-minded countries to join in our call for a more responsible China. This will increase both China’s and our economic growth and energy security.

Question 33. Some ETA’s Annual Energy Outlook forecasts energy demand through 2025. In part, the model assumes the supply will “be there” to meet demand. What if it isn’t? What will happen if key non-OECD countries, and even OPEC countries, delay the necessary investment in energy projects? To have any success in hitting the production numbers out in 2012 and 2105, that investment has to start now and continue on schedule. As I understand, for many projects, 2006 is a key year for investment in order for production that we are showing coming online in 2012 to happen on time. But that may not all happen on time. What is Plan B?

Answer. ETA’s projections do not constitute national energy goals. They represent the EIA’s estimate of plausible scenarios for the evolution of energy markets based on past data and EIA’s modeling methodologies. Also, the EIA generally produces multiple scenarios with different underlying assumptions. ETA’s projections, along with others, such as those from the International Energy Agency and private industry, are useful to provide insights to government and industry as to what U.S. and global energy markets might look like over the long term. They also help industry to evaluate the profitability of energy investments. Nonetheless, there is no guarantee that the future will confirm the accuracy of these forecasts. Looking back on past forecasts, we have many examples where the expected and actual results differed by substantial amounts.

We believe that the combination of market forces combined with the Administration’s energy policy will provide enough energy supplies to enable continued economic growth and prosperity. We can not predict with certainty whether there will be enough expansion of world oil supply relative to growing world demand to return oil prices to the levels we have seen in prior years. If prices remain high, we expect that many non-conventional resources will be developed and we also expect that more advanced energy efficiency technologies will enter the market. For example, we already see a heightened interest in coal-to-liquids and other advanced energy supply technologies. Likewise, manufacturers plan to produce more hybrid vehicles in response to a heightened consumer interest in fuel efficiency. Therefore, alternative energy technology is America’s “Plan B”. “Plan B” will be implemented primarily by market forces, but the government also plays an important role.

Question 34. It would appear that Plan B should have to address demand at some level. What is DOE doing now to improve fuel economy, promote renewable fuels and get some of the new technologies that experts such as Amory Lovins (ultralight, ultra-sound materials) have suggested?

Answer. The Department’s Office of Energy Efficiency and Renewable Energy (EERE) has a balanced and focused portfolio of research, development, demonstration and outreach programs aimed at improving the energy efficiency of our economy and increasing the productive use of domestic renewable energy resources.

One of EERE’s primary areas of strategic focus is reducing our dependence on foreign oil. The Department’s Vehicles Technologies program seeks to develop more energy efficient and environmentally friendly highway transportation technologies that will enable America to use significantly less petroleum. Additionally, through partnerships with industry, government and technology programs the President’s Hydrogen Fuel Initiative works to develop the technologies and infrastructure needed to produce, store, and distribute hydrogen, and to use it in stationary, portable, and vehicular applications. The Biomass Program is working with industry to develop biorefineries that can use a variety of feedstocks to produce transportation fuels and high-value products that will substitute for oil. Taken as a whole, these programs will put more vehicles on the road that are energy efficient and run on alternative energy sources, thereby lessening our dependence on foreign energy sources.

The Department also has an aggressive effort to promote the acceptance and use of renewable and efficient technologies by the public, industry, and the Federal Government.

Question 35. EIA projects a 50 percent increase in our demand for petroleum products by 2020. This will place enormous strains on our existing infrastructure. Is that what we want? What are we doing now to ensure that the crisis we are already in doesn’t worsen? What can we do to incentivize more investment in nec-

essary infrastructure? Are there better solutions? What are you and your staff doing to monitor this?

Answer. It is worth noting that ETA's projections are plausible scenarios for the evolution of energy markets based on past data and ETA's modeling methodologies. Also, the EIA generally produces multiple scenarios with different underlying assumptions. ETA's projections, along with others, such as those from the International Energy Agency and private industry, are useful to provide insights to government and industry as to what U.S. and global energy markets might look like over the long term. We therefore must be prudent and anticipate that petroleum product demand could be 50% higher by 2020. We can not predict with certainty whether there will be enough expansion of world oil supply relative to growing world demand to return oil prices to the levels we have seen in prior years. If prices remain high, we expect that many non-conventional resources will be developed and we also expect that more advanced energy efficiency technologies will enter the market. For example, we already see a heightened interest in coal-to-liquids and other advanced energy supply technologies. Likewise, manufacturers plan to produce more hybrid vehicles in response to a heightened consumer interest in fuel efficiency.

Our goals have been and will continue to be to ensure a reliable, affordable, and environmentally sound energy for America's future. DOE is developing technologies to expand energy supplies and reduce energy demand, implementing programs to encourage or require increases in energy efficiency, working in collaboration with industry to deploy advanced energy technologies and providing a wide variety of other services including assessments of new energy policies.

QUESTION FROM SENATOR AKAKA

Question 1. Next year, several fuel regulations, beginning in January with implementation of the Renewable Fuels Standard, will go into effect. This will include a normal transition to summer grade fuels, further phase out of MTBE, and the transition to ultra-low sulfur diesel. The implementation of all these regulations could disrupt our supply of refined products significantly.

Because Hawaii has long had the highest gasoline prices in the nations, I want to be sure that the implementation and transition go smoothly, so we don't become vulnerable yet again to price spikes. What is the Department of Energy doing to ensure that these transitions go smoothly and don't cause prices to spike once again?

Answer. The gasoline programs mentioned in your question are administered by the U.S. Environmental Protection Agency (EPA). However, the Department of Energy has provided advice to EPA to ensure that implementation strategies do not inadvertently constrain fuel supplies. The Department has, since the Clean Air Act Amendments of 1990, provided important assistance to EPA's many fuel programs, starting with the Reformulated Gasoline Program. Implementation of the ultra-low sulfur diesel program has been in progress for over four years and we have monitored the refinery industry's progress and have every reason to believe that they will be able to meet these requirements. We are currently working with EPA to implement the Renewable Fuels Standard (RFS). As required by the Energy Policy Act of 2005, the Department will assess whether the RFS would cause significant adverse impacts on consumers or be a burden on small refiners. If needed, a waiver of the first year of the program in whole or part can be provided.

QUESTIONS FROM SENATOR CANTWELL

Question 1. During our hearing on October 27, you said that the Department knew it would miss Tri-Party Agreement milestones. Can you please list all milestones that the Department knows it will miss? Can you please list the milestones that the Department believes it could miss?

Answer. The Department remains committed to the Tri-Party Agreement and to meeting all objectives for completing the cleanup of tank waste and closing tanks at Hanford. However, because of difficulties, such as sludge removal issues at the K Basins and Waste Treatment Plant (WTP) issues, some of these milestones are not achievable. The Department informed the State of Washington, members of the Washington Congressional delegation, and committees of jurisdiction, including the Senate Energy and Natural Resources Committee, on October 6, 2005 when it knew that milestones would be missed. In that notification, the Department stated its belief that three near-term interim TPA milestones, one for the WTP and two for K Basins, are not achievable:

- Complete WTP hot commissioning by January 31, 2011 (M-62-10),
- K East sludge removal complete, by January 31, 2006 (M-34-34), and

- Containerize K West Sludge, by June 30, 2006 (M-34-35).

The Department also believes three near-term milestones associated with the commissioning of the WTP, the treatment of tank waste, and certain tank retrieval related activities are in jeopardy:

- Complete four limited retrieval demonstrations and retrieve waste from all tanks in Waste Management Area-C (WMA-C) in accordance with the TPA retrieval criteria by September 30, 2006 (M-45-00B),
- Submit supplemental treatment technologies report, by June 30, 2006 (M-62-08), and,
- Submit final waste treatment baseline by June 30, 2007 (M-62-11).

The Department will notify Congress and the State of Washington should other milestones be in jeopardy.

Question 2. Will you acknowledge today that the Department will miss the TPA milestone (M-45-00B) related to completing retrievals from the C-Tanks by September, 2006?

Answer. The M-45-00B milestone is complex with multiple sub-elements ranging from retrievals and technology demonstrations to the submittal of Tank Waste Retrieval Work Plans and Integration Plans. A number of those sub-elements have been successfully completed and progress is being made on the remaining sub-elements. The Department does not know at this time whether all elements of this complex milestone will be completed by September 30, 2006, and, therefore, appropriately informed the State of Washington congressional delegation, and committees of jurisdiction, including the Senate Energy and Natural Resources Committee, that some elements of the M-45-00B milestone are in jeopardy of being missed.

Question 3. If you believe you still can meet the M-45-00B milestone, can you please inform me how the DOE-Inspector General's audit "Accelerated Tank Waste Retrieval Activities at the Hanford Site," report IG-706, was wrong in its investigation or findings?

Answer. As was discussed with the Washington Congressional delegation, and committees of jurisdiction, including the Senate Energy and Natural Resources Committee on October 6, 2005, some elements within this milestone are in jeopardy. IG-706 looked at one element within the M-45-00B milestone, i.e., completing the retrieval of all 16 tanks within C Farm by September 30, 2006. That element of M-45-00B is in jeopardy, yet the Department continues to strive to complete that element in full compliance with the M-45 retrieval criteria despite the challenges encountered in retrieving the C farm tanks. The three tanks retrieved to date have been retrieved in compliance with established Tri-Party Agreement (TPA) standards. As noted in any accompanying response, M-45-00B contains multiple elements, some which have already been met and others that are underway. The Department does not know at this time whether all elements of this complex milestone will be met by the date specified in the TPA.

Question 4. If you do believe the IG-706 audit was correct in estimating that you will miss the M-45-00B milestone, what specifically is your plan to ensure that the funding is available to get tank cleanup back on track?

Answer. We consider the M-45-00B milestone to be in jeopardy, but are making every effort in an attempt to achieve the June 30, 2006, date. The challenges related to this milestone are of a technical nature and are not related to funding. Nonetheless, the Department will request the necessary funds for safe tank retrieval.

Question 5. The IG found a number of factors responsible for the delay including the fact that DOE did not base its retrieval schedules on "cost estimates and prior experience," among other factors. Further, the IG noted that the cost of meeting the M-45-00B milestone will more than double. Can you commit to me that the Department will inform the appointed conferees for the Energy and Water Appropriations Bill that it supports an increase in funding over the administration's FY '06 request for "Radioactive Liquid Tank Waste Stabilization and Disposition" in order to address the funding shortfalls identified in the IG report?

Answer. Constraints on the rates at which individual tanks can be retrieved are related to technical challenges, not funding. If this milestone becomes unachievable, the Department will work with the State of Washington on a revised strategy to complete the milestone. The Department will request the necessary funds for safe tank waste retrieval.

Question 6. Can you commit to me that the FY '07 request from DOE as it relates to "Radioactive Liquid Tank Waste Stabilization and Disposition" will be adequate to get the C-Tank retrieval program back on track?

Answer. The Department will request the necessary funds for safe tank waste retrieval.

Question 7. Are you still committed to the funding level of \$625,893,000 for “Major Construction-Waste Treatment Plant” in the administration’s FY 2006 request?

Answer. The Department remained committed to the Administration’s FY 2006 request of \$625,893,000 for “Major Construction-Waste Treatment Plant”. Congress has since voted to fund the Waste Treatment Plant at a reduced level.

Question 8. The Department has said that it won’t release information related to the revised cost and construction schedule for the vitrification plant until next summer. I understand that some of the preliminary work done by the Army Corps of Engineers is available right now. Can you share that information with me or this Committee?

Answer. The preliminary U.S. Army Corps of Engineers report constitutes an element of the Department’s current consideration of steps necessary for sound contract administration in the Waste Treatment Plant project. DOE will be using this report, and others, to develop contract negotiating positions, funding decisions, Administration decisions and other project management positions. As such, the Department believes public disclosure of this document would impair the Department’s ability to carry out this responsibility. We will provide this information if formally requested by the Committee Chairman, but will request that the documents be maintained in confidence by the Committee.

Question 9. Can you commit that you will make available the final report regarding the revised cost and schedule for the vitrification plant as soon as possible? Can the report be released so we can be knowledgeable of its contents by the time the Department submits its FY ’07 appropriations request?

Answer. The final report being developed by the U.S. Army Corps of Engineers is scheduled to be delivered to the Department in June 2006 and, therefore, will not be available at the time the President’s budget is delivered to the Congress in early February. However, the Department will provide Waste Treatment Plant information if formally requested by the Committee Chairman, but will request that the documents be maintained in confidence by the Committee.

Question 10. As you are aware, DOE changed its RFP process for cleanup work. I’m particularly referring to the RFPs for work at three Hanford sites. Each RFP provides that DOE will only require the new contractor to contribute to the employees’ current pension system for the first five years of the contract. Beyond the fifth year of the contract, there is no requirement for contractors to contribute to the site-wide pension system. It sounds to me like this change to the RFP process undermines worker pensions and medical benefits after the first five years of the contracts in an effort to produce “savings.”

In light of the recent debate in Congress about the future solvency of our private pension trust fund and more importantly, the requirement that companies with traditional defined benefit pension plans meet their funding obligations, please explain why the change in the RFP process not an example of an employer—in this case, the DOE—dropping its pension obligations to its employees? How else has DOE trimmed its budget and cut “costs”?

Answer. There is no pending DOE RFP that might extend beyond five years that imposes a five-year limitation on incumbent employees participating in a defined-benefit pension plan. DOE’s policy is not to require termination of defined benefit-plans for incumbent employees after a five-year period. Most major DOE solicitations in FY 2005, including the ongoing recompetition of the work to dismantle the Fast Flux Test Facility and the River Corridor Closure Project awarded this year, provide that if incumbent employees are in a defined-benefit plan they will stay in the plan after new contract award, pursuant to plan eligibility requirements and consistent with applicable law and policy; i.e., “if you’re in, you’re in.” These procurements also provide that new employees hired after the award of new contracts will be offered market-based benefit programs competitive for the industry. This policy of protecting the interests of incumbent employees and requiring market-based pension benefits for new contractor employees will be reflected in future RFPs.

Question 11. A cut in pension benefits won’t attract the best workers—but bring in cheap labor. Instead of retaining an experienced workforce who understands regulations and safety procedures, cutting benefits inherently attracts a more transient workforce with less training on how to handle highly radioactive waste at Hanford. How will these changes impact the ability for contractors to recruit and retain skill workers?

Answer. The Department’s Requests for Proposals are designed to encourage proposals from would-be contractors to perform with excellence. Crafting proposals for compensation packages for new employees is an element to be considered, including pension plan packages that attract newly-hired employees likely to be able to fulfill performance expectations DOE would demand of new contractors. Requesting offerors to formulate appropriate market-based pension and welfare benefits for new

employees is an important element of seeking excellence and proficiency in business practices for performance of DOE work.

Question 12. Last year, there was a proposal to shut down the medical screening program for the Hanford workers. I was pleased to know that instead of closing down the center, the Department made an administrative decision not to discard a successful program, recognizing that there are many major health problems that exist at Hanford. I trust that DOE will continue to stay on this path, to help workers better understand what may or may not be happening to their bodies. Secretary Bodman, please describe the Agency's plan for continuing the worker screening program at Hanford.

Answer. The Department of Energy (DOE) is committed to funding all existing regional medical screening programs, including two programs at Hanford.

The Former Worker Medical Surveillance Program (FWP) was initiated as a pilot in 1996 to date has screened over 30,000 former workers from a portion of the DOE defense nuclear complex. Free medical screening for former Hanford workers in the building trades (construction workers) commenced in 1997. To date, 2,850 former Hanford workers in the building trades have been screened by the ongoing program. The screening targets health problems resulting from exposures, including asbestos, beryllium, cadmium, chromium, lead, mercury, noise, radiation, silica and/or solvents. The project is being carried out by a large group led by The Center to Protect Workers' Rights, an applied occupational health research and development center of the Building and Construction Trades Department of the AFL-CIO, in partnership with Duke University Medical Center, University of Cincinnati Medical Center, and Zenith Administrators. Free medical screening for former Hanford production workers (non-construction workers) also commenced in 1997. To date, 2,306 former Hanford production workers have been screened by the ongoing program. This project screens for asbestos, beryllium and noise. Medical examinations take place in the Tri-Cities area, Spokane, Seattle, or Portland. It is being carried out by the University of Washington.

Question 13. We've recently learned that the Hanford Employee Welfare Trust (HEWT) is reducing life insurance benefits for 1,800 Hanford Retirees. Currently, retirees 65 years of age and older receive life insurance equal to half of the salary at which they retired. Under the new plan, they'd receive no more than \$20,000 in September 2005 and that would drop to \$15,000 in September 2006. What role does the DOE play in the decisions of contractors to change benefit packages for retirees? How much does DOE stand to save by reducing life insurance benefits for 1,800 retirees? What can we do to ensure that the benefit package they were promised were honored?

Answer. The Hanford Employee Welfare Trust (HEWT) was established by 12 participating contractors to administer a common set of benefits on their behalf. These benefits include life insurance, medical, dental, vision and disability. The HEWT administers these benefits through a Board of Trustees, who have the authority and responsibility to manage the trust.

The Department of Energy (DOE) is not a party to, nor does it control, the HEWT medical and life insurance program. DOE policy precludes the Department from undertaking sponsorship, administrative, or fiduciary responsibilities for benefit programs for contractor employees, retirees and their beneficiaries. DOE's involvement regarding contractor benefit programs is limited to reimbursing its contractors for the allowable costs of those benefits and performing oversight responsibilities required by the Federal Acquisition Regulation, the Department of Energy Acquisition Regulation, and applicable oversight regarding contractor compliance with the Employee Retirement Income Security Act and Internal Revenue Code.

DOE policy requires its contractors to conduct a periodic assessment of their benefit programs and to submit a corrective action plan when the total value of benefits provided by a contractor exceeds benefits offered by similar companies by more than five percent. A benefit value study for active and retired employees participating in the HEWT and the Hanford Multi-Employer Pension Plan, which was prepared in 2005 by Hewitt Associates, LLC., demonstrated that the total value of benefits provided to those employees exceeded 105% of the total value of benefits provided by similar companies. The study further indicated that the value of the HEWT post-retirement life insurance benefit is nearly 100 times that of comparable companies. In light of these findings, the Board of Trustees of the HEWT significantly reduced the retiree life insurance benefits offered under the HEWT, although those benefits remain above the market value of retiree life insurance benefits offered by similar companies. It is estimated that these changes in retiree life insurance benefits will save DOE approximately \$3 million during calendar years 2005 to 2007.

Question 14. Secretary Bodman, according to a White House press release on March 9, 2005, you stated that "we have implemented 95 percent of [the Adminis-

tration's energy policy]". Are you referring to completion of the 105 recommendation[s] in the President's May 2001 energy plan? Could you provide me with specific correlation between each recommendation and the actions of this Administration?

Answer. Yes, my statement referred to the progress the Administration has been making on implementing the 105 recommendations made in the National Energy Policy (NEP) report adopted by the President in May 2001, which can be viewed in its entirety at: www.pi.energy.gov/pdf/library/NEPImplementationReport012505.pdf.

Question 15. Secretary Bodman, the President stated "there's ways for the federal government to lead when it comes to conservation" and you testified about some current Administration efforts. When was the Energy Savers booklet first written and what updates did the Energy Department make if any to it recently? Please describe the Department's efforts to reach out to energy intensive industries. Is this a new effort, or part of ongoing efforts by EERE's Industrial Technologies Program?

Answer. The Energy Savers booklet provides homeowners with tips for saving energy and money at home and on the road. It was first developed in the Summer of 1998, and the most recent revisions of September, 2005, include the updating of all relevant energy use statistics in addition to adding a home office section, driving and car maintenance section, and including a short primer about renewable energy. It is available in English and Spanish and our website at www.energysavers.gov.

The Industrial Technology Program (ITP) is sending teams of energy experts to conduct 200 targeted assessments of the nation's most energy-intensive industrial plants. ITP will also deliver an outreach program to staff at more than 50,000 plants by providing tools and materials to help plants reduce natural gas and electricity use. Current efforts continue ongoing activities funded through the Industrial Technologies Program's Best Practices and Industrial Assessment Center activities.

Question 17. Secretary Bodman, the President's budget requests have consistently called for a reduction in funding for EERE's Industrial Technologies Program. If those cuts had been accepted by Congress, what change in national energy use would we have seen?

Answer. Over the past 30 years, industry has shown a remarkable ability to improve energy efficiency, greatly increasing economic output without a corresponding increase in energy use. From 1973 to 2003, industrial output as measured by the industrial production index of the Board of Governors of the Federal Reserve System almost doubled, increasing from 56.2 (where the 1997 level is 100) to 110.9. Over the same period, industrial energy use remained virtually the same, decreasing from 32.653 quadrillion BTUs to 32.608. Most of these improvements were the result of general improvement and efficiency decisions, such as the routine replacements of older capital with more efficient units. Industry has been increasing energy efficiency, and we expect them to continue to do so. While the Department's efforts also contributed to some improvements in industrial energy efficiency, it is difficult to speculate on what impact hypothetically lower funding in recent years would have had.

Congress has provided for our request to reallocate some funding for the Industrial Technologies Program to higher priority programs. The program continues to focus its collaborative R&D on projects with the biggest potential for energy savings.

Question 18. Secretary Bodman, given the growing demand for oil in Asia, do you believe that oil derived from the Arctic National Wildlife Refuge (ANWR) could be diverted to supply Asian markets? If drilling in the Arctic National Wildlife Refuge is authorized this year, when will it begin to have an impact on gasoline prices? What do you believe that effect will be?

Answer. Whether oil produced in ANWR is exported to Asia or consumed domestically depends on a multitude of factors, among them West Coast refining capacity, other domestic and foreign crude oil production, petroleum product consumption, and relative crude and product prices.

The specific characteristics of ANWR oil production relative to domestic and world refining capacity will be a factor in determining whether ANWR oil is exported; namely, whether ANWR oil production is light or heavy, sweet or sour. Asian refineries are not currently configured to process heavy sour crude oils, whereas the U.S. West Coast refineries are. If ANWR crude oil production is light and sweet, then it is more likely to be exported to Asia, than if it is heavy and sour.

ANWR oil production is likely to displace West Coast crude imports of foreign oil, but some factors might make it advantageous to both consumers and producers for crude oil produced from ANWR to be exported. Oil, like any other commodity, moves to that market which places the highest value on its qualities. If ANWR crude is permitted to move to that regional world market which values it the most, then the

U.S. trade deficit is minimized and the exportation of ANWR crude oil would offset any importation of foreign crude and petroleum products of equal value.

Because of the Arctic weather limits the pace of exploration and development on the Alaska North Slope, it would take between 8 to 12 years between the opening of ANWR to petroleum development and the commencement of ANWR oil production. The last major Alaska North Slope oil field to have been brought into production is the Badami oil field, which is located near the western border of ANWR. The Badami field was discovered in 1990 and went into production in 1998. This 8-year development period does not include the additional 2 to 4 years that would be required to set up a Federal leasing program for ANWR and to collect and process ANWR seismic data.

Question 19. Secretary Bodman, do you support more transparency in the oil and gas markets, as would be provided in my bill S. 1735?

Answer. The Administration has not yet taken a position on the specific bill you refer to. However, we are supporting current efforts to improve oil and gas market data collection and transparency. We support more transparency in the oil and natural gas markets, especially to acquire improved world-wide oil and gas data. We have worked with the International Energy Agency and other organizations to improve near-term market assessments, especially since the proper functioning of futures markets requires reliable and consistent data.

Question 20. Secretary Bodman, I understand that the Department of Energy has a gas price hotline, but can't do anything about the complaints it receives except forward them on to other agencies. Can you tell me how many complaints the Department has received this year and what, if any thing, the Administration has done about them?

Answer. The Department of Energy maintains a toll-free telephone number (1-800-244-3301) and a web site (www.energy.gov) where Americans can register a complaint if they suspect they are a victim of gas price gouging. Because the Department of Energy has neither the legal jurisdiction to investigate these complaints, nor the authority to prosecute suspected gougers, our role has been to collect, collate and transmit this information to the appropriate authorities; for example, the Federal Trade Commission (FTC), or, the appropriate State Attorney General. Between January 1, 2005—November 9, 2005 the Department of Energy has logged a total of 32,348 complaints. 8,100 of these complaints have been received since September 5th, just after Hurricane Katrina hit. This information is transmitted to the relevant State and Federal agencies on a weekly basis.

Question 21. Secretary Bodman, I believe harnessing the ocean's abundant natural energy holds considerable long-term promise as a clean, distributed, and renewable energy resource. Can you tell me if the Department has conducted any R&D into wave energy? How does our national effort compare to those of other countries?

Answer. The Department is currently supporting a wave energy R&D project via our Small Business Technology Transfer program. We are participating in a collaborative effort led by the Electric Power Research Institute to study wave energy's status, and potential demonstration sites in the United States. The U.S. Navy has also invested in wave technology R&D and is operating a small pilot project near a Marine base in Hawaii. The Department is closely following worldwide developments in the technology by becoming a member of the International Energy Agency (IEA) Implementing Agreement on Ocean Energy Systems to better understand the status and potential of ocean energy technologies. Participating members in this agreement include Canada, Denmark, the European Commission, Ireland, Japan, Portugal and the United Kingdom. The United Kingdom supports the most extensive R&D program for wave and ocean current energy technology.

Question 22. Secretary Bodman, can you provide me an update to the Department's R&D efforts on lightweight materials for vehicles? What is the prognosis for these technologies? Do you believe carbon-fiber shows promise in vehicle applications?

Answer. The Department's R&D that is aimed at developing lightweight materials for vehicles is progressing well. Progress was made this year in a number of technical areas including magnesium casting, carbon fiber production, and design data development. Recent fuel price volatility has stimulated interest in these technologies. We believe carbon fiber shows great promise and we're continuing to develop the tools and processes that can help make it a cost effective alternative to lightweight materials such as aluminum and magnesium.

Question 23. Secretary Bodman, how has the last 3 years of escalating gasoline prices affected demand by American drivers? Have we seen a correlation between a certain level of price increase and less demand by American drivers? What is the actual level of reduced today compared to 3 years ago (please respond in the context of a doubling of retail gasoline prices)?

Answer. The U.S. average retail price for regular gasoline has increased from about \$1.40 per gallon in August and September 2002 to \$2.90 per gallon in September 2005. However, even during this period while gasoline prices more than doubled at the pump, gasoline demand has continued to increase steadily. Gasoline demand is relatively inelastic, meaning it does not respond readily to changes in price. This is because so many people depend on gasoline for daily, non-discretionary travel, and there is no readily available substitute.

Looking at the graph,* we can see the linear trendline for finished gasoline product supplied is positively sloped, depicting the overall upward trend in gasoline demand as it has increased from 9.3 million barrels per day in August 2002 to 9.5 million barrels per day in August 2005. While it is likely that gasoline demand would be even higher now if retail prices had remained under \$1.50 per gallon, as people have curbed some discretionary driving due to higher prices, higher prices have not stopped demand growth.

Question 24. Secretary Bodman, what are the crude oil extraction costs for major oil producing countries, including our own? How does that compare with oil derived from shale or coal?

Answer. Given the absence of total cost data for conventional oil production in the United States and the world, and given the accounting issues of defining what costs are included and how joint costs are allocated among oil fields, one has to rely on indirect indicators of the relative cost of conventional oil production among the world's petroleum provinces. Generally, there are three metrics for indirectly measuring an oil field's production cost, which are presented in the following order of relative importance: 1) the size of the field (i.e., the original oil in-place), 2) the percentage of original oil in-place that has been produced, and 3) the quality of the oil (i.e., its API gravity). Because most giant fields that are the target of significant exploration activity produce middle gravity oil, our analysis below focuses on the first two metrics.

These two metrics can be applied using two different perspectives. One focuses on the relative size and age of conventional oil fields operating in the United States relative to the rest of the world. The other focuses on the "frontier" for finding new giant oil fields,¹ with the understanding that these new fields will generally be the lowest cost opportunities for an incremental conventional oil production.

From the first perspective, all of the giant U.S. onshore lower-48 oil fields were found between the late 1800s and 1940. Most of these fields have produced most of the recoverable oil in-place, and, in all cases, these giant oil fields are now producing oil using tertiary production methods (i.e., the injection of steam or carbon dioxide to produce oil), which is the most expensive means of producing oil.² In contrast, Alaska oil production should be somewhat less expensive to produce than onshore lower-48 production because most of the giant fields found on the North Slope were discovered in the late 1960s and early 1970s, and because they haven't produced as much of the original oil in-place (because they have not been in production anywhere near as long as the giant onshore lower-48 fields).

In contrast to the U.S. onshore lower-48, most of the giant fields producing overseas were discovered much later so they have not produced as much of their original oil in-place, both because of their relative age and because of OPEC production constraints. In the Middle East, most of the giant oil fields were discovered in the late 1940s through the 1970s, and the average giant field size is much larger than the giants fields found in the U.S. onshore lower-48. Most of the giant Russian oil fields were also discovered in the late 1940s through 1970s time frame, but the production costs should be higher than in the Middle East both because the average field size is smaller and because a larger percentage of the original oil in-place has been produced.

From the "frontier" perspective, exploration companies are primarily searching for and finding giant oil fields located in the offshore deepwater regions of the Gulf of Mexico, West Africa, Brazil, Northwest Australia, and Malaysia/Indonesia. So generally one would expect these to be the incremental oil fields with the lowest production cost.

The production costs of most non-conventional liquids are typically higher than the production costs from conventional sources. For example, the production costs are: \$10 to \$15 per barrel for ultra-heavy oil, \$10 to \$20 per barrel for oil sands, and \$25 to \$30 per barrel for gas-to-liquids. The range of production costs for coal-

* Retained in committee files.

¹ In the petroleum industry, a "giant" oil field is defined as having 500 million or more barrels of oil that can be produced over the life of the field.

² "Primary" production refers to oil that is produced without injecting water, steam, or carbon dioxide. "Secondary" production refers to oil produced with the assistance of water injection.

to-liquids and shale oil are likely to be higher than those for the other non-conventional liquids production costs cited above.

Because investments in oil shale and coal-to-liquids are capital-intensive, investors would need to expect a long period of consistently high crude oil prices before they could expect to earn a return on their investment. A recent study by Mitertek (2003) estimated that a flat world oil price of \$42 per barrel (2004 dollars) would make current coal-to-liquids technology economic. Allowing for the revenues associated with cogenerated electricity could lower the required price.

Based on data obtained from the Federally-funded oil shale demonstration plants of the 1970s, capital investment in shale oil processing becomes economic with current technologies when world oil prices exceed about \$70 per barrel (2004 dollars).

Of course, technological breakthroughs could alter the economics and the likelihood of production from non-conventional sources. For example, Shell Oil is currently testing an in-situ oil shale process in the Rocky Mountains that it hopes will be profitable at about \$30 per barrel of petroleum liquids. The Shell process, however, is still in the experimental stage, so there is considerable uncertainty whether this process will prove to be technically and economically feasible.

QUESTIONS FROM SENATOR CORZINE

Question 1. Can you report on the status of the implementation of the energy efficiency tax Incentives included in the Energy Policy Act of 2005?

Answer. The Department of Energy is working in partnership with the Department of Treasury to provide technical expertise as they write regulations for the energy efficiency tax incentives. We expect that these regulations will be completed by deadline.

Question 2. What kind of Steps has the Department of Energy taken to encourage Americans to conserve? Do you think the steps are working?

Answer. DOE has launched an expansive campaign to educate and encourage consumers on energy efficiency and ways to conserve. The *Easy Ways to Save Energy* Campaign announced by Secretary Bodman in October highlights the Department's efforts, in partnership with the Alliance to Save Energy, the Department of Housing and Urban Development and the Environmental Protection Agency.

This campaign includes:

- *Visits by Senior DOE Officials* around the country to encourage energy conservation.
- *Energy Savers*, a booklet providing comprehensive efficiency and conservation tips to save energy and money at home. The booklet is also paired with www.energysavers.gov, a web resource for consumers and businesses looking for ways to save energy. Highlighting the EnergyStar label for consumers is a key ingredient.
- *Energy Saving Expert Teams*, an effort to provide guidance to both federal facilities and America's most energy intensive factories, DOE is sending teams of experts around the country to give assessments, analysis and evaluation of sites and feedback on how to save energy.

These among other efforts express DOE's commitment to promoting energy efficiency and conservation. We have seen a significant increase in visits to DOE web resources, expansive national distribution of materials, and expanding partnerships with efficiency advocate groups. The impacts of outreach efforts are difficult to measure, however, we believe that we are providing Americans with resources they can use to make energy efficiency and conservation a priority.

Question 3. Does it make sense to ask oil companies who have reported record profits this quarter even in the wake of hurricanes Rita and Katrina, to invest in increasing our refinery capacity?

Answer. Refinery investments, like any other, must reflect longer-term expectations of profitability. Until recently, the rate of return on refinery investments has been lower than investment in other sectors of the industry. In addition we should acknowledge that there has not been a favorable regulatory climate for energy infrastructure investments, especially refineries. Recently, the returns on refinery investments have increased, and industry is responding by announcing additional refinery investments. Marathon, Exxon, Valero, Sunoco and other U.S. refiners have recently announced plans to increase their refinery capacities. Most refiners are reviewing opportunities to expand capacity to meet growing demand and many more projects will no doubt emerge in the coming months and years. Also, by streamlining the environmental permitting provisions, as in Energy Policy Act of 2005, the regulatory barriers to refinery investments will be reduced.

QUESTIONS FROM SENATOR SALZAR

Question 1. I want to ask you about the schedule for loan guarantees as provided for in the Energy Policy Act of 2005. While these new programs will not solve the near term problems of this winter, funding these loan guarantees will provide a stepping stone for America's energy future. Title 17 of the Energy Policy Act instructs the Department of Energy to establish a program to provide federal loan guarantees for coal gasification, renewable energy and other technologies that will be vital for promoting U.S. energy security and independence. These technologies are very important to me and to Colorado. I would appreciate if you could comment on the Department's implementation plans for these loan guarantees and provide this Committee with a short summary of your implementation plan and implementation schedule.

Answer. Title XVII of the Energy Policy Act of 2005 authorizes DOE to provide loan guarantees for renewable energy systems, advanced nuclear facilities, coal gasification, carbon sequestration, refineries, energy efficiency, and many other types of projects that use improved technologies in commercial projects that enhance energy economy and reduce emissions of pollution and greenhouse gases. The Department is assessing procedures to comply fully with the provisions of the Federal Credit Reform Act and OMB Circular A-129. The Department's Chief Financial Officer is heading up our efforts in consultation with the energy and science program offices, the Office of the General Counsel, the Office of Policy and International Affairs, and others. The Department has not developed a timetable for completing these activities.

Question 2. Section 133 of the Energy Policy Act requires you to convene an organizational conference to establish an ongoing, self-sustaining national public energy education program. Under the law, you have 180 days after enactment of the bill to get this ball rolling. Even though that 180 day limit gives you until February, I can't help but think that the country would be better served if this got started now, not at the last possible moment some 4 months into the future. What is the status of developing this energy education program?

Answer. We have plans underway to convene such a conference in January.

Question 3. What is the status and timeline for both LNG terminal construction and for the Alaska pipeline? Is \$14 gas making these projects more feasible? When will these gas streams begin entering the market in significant quantities, and how will they affect gas prices?

Answer. Ten U.S. LNG import terminals (eight onshore and two offshore) have been approved and another sixteen (nine onshore and seven offshore) are currently undergoing regulatory review. Three of the ten approved terminals have broken ground for construction and are anticipated to be in operation sometime during 2008. Additionally, two approved Canadian LNG import terminals which intend to provide pipeline natural gas to the U.S. have broken ground and are also scheduled to be operational in 2008.

The commencement of operations at any new LNG import terminals will increase the supply of natural gas and help mitigate the natural gas supply shortfall in the U.S. LNG has become a global commodity, with prices strongly influenced by global supply and demand. Consequently, the price of natural gas in the U.S. will be impacted by many factors affecting the global supply and demand of natural gas, such as the discovery of new sources of natural gas and the cost and availability of alternative sources of energy to natural gas.

The Alaska Natural Gas pipeline negotiations continue between project proponents and the State of Alaska. Once a commercial project emerges, the Federal Government is ready to expedite the permitting and construction of the pipeline. The three major producers filed a success case project timeline with their State Stranded Gas Act application, which estimated that first gas would flow at 10 years from the date when all government frameworks including Federal legislation and fiscal certainty in Alaska were in place. After the State of Alaska agrees to a contract with a project proponent, that contract is required to be sent to their State Legislature for ratification after a 30 day public comment period.

The current high natural gas prices for this winter's delivery would not be expected to remain at their current level over the 30 year planning period of an Alaska natural gas pipeline. The investment decision will be based on long term price forecasts, not on the short term spot prices; however, a trend of higher prices would encourage prospective investors.

Question 4. Secretary Bodman, is it time for EIA to conduct a thorough review of its long-term demand projections for natural gas? Gas demand seems to be stable, with no signs of heading up to the levels projected by EIA. If we better understand

long run demand trends, won't we have a better understanding of policy initiatives needed in the short, medium, and long term?

Answer. EIA conducts a review of the natural gas demand projections each year as part of producing the Annual Energy Outlook (AEO). The projections are reviewed for consistency with the underlying factors that influence natural gas demand (e.g., energy prices, population, industrial production, disposable income, technology) and compared with other contemporary forecasts, including those from Global Insights, Energy and Environmental Analysis, Energy Ventures Associates, and PIRA Energy Group, among others. The comparison with other forecasts revealed that projected natural gas consumption levels in 2015 in the 2005 Annual Energy Outlook (AEO2005) was relatively consistent with the other forecasts, lower than those produced by Energy and Environmental Analysis and Energy Ventures Associates and higher than those produced by Global Insights and PIRA Energy Group, but all were in a fairly narrow range.

The AEO natural gas demand forecast does not follow short-term fluctuations in demand, even those that may last for a number of years, but is based more on the fundamental long-term drivers of energy markets. EIA does not believe that recent relatively constant natural gas demand levels can persist in the face of growth in the underlying factors that influence natural gas demand. EIA also believes that given current laws and regulations it is unlikely that improved energy efficiency or switching to alternative fuels could offset all of the expected growth in natural gas demand. Nonetheless, EIA recognizes that there is uncertainty about change in the underlying factors that influence natural gas demand levels. For example, there is uncertainty about projected economic growth, technology change, and energy prices. EIA produced multiple scenarios as part of AEO2005 to examine the impact of uncertainty in these factors. The level of natural gas demand in 2025 varies in these scenarios from a low of 28.6 trillion cubic feet to a high of 31.7 trillion cubic feet. EIA believes that this is a reasonable range for future natural gas demand given current laws and regulations and potential variation in the factors that influence natural gas demand.

Question 5. With oil prices high—and the need to bring down the high price of fuel, we need Alternatives. In the aftermath of Hurricane Katrina, we faced a substantial threat to our refinery capacity by having a significant portion of our nation's refineries concentrated in one region. The spread throughout the nation would help provide cost-effective alternatives to gasoline and would help protect against future threats both of price spikes and supply shortages by diversifying our fuel supply and infrastructure.

There are provisions in the Energy Policy Act of 2005 to diversify our fuel supply and infrastructure through crops we can grow here at home and by converting agricultural and forestry residue into energy.

How long does the Department of Energy anticipate it will take to get the first cellulosic ethanol demonstration plant up and running?

Answer. The Department cannot predict with certainty when the first cellulosic ethanol plant will be up and running. There are several companies that believe they have reduced technical risks to the point that at least niche opportunities exist. Other companies have indicated that they could expand their existing facilities to incorporate cellulosic ethanol. Although it is possible that these ventures could occur in the near term, it may well be 2012 or later before the first cellulosic ethanol demonstration plant is up and running.

Question 6. Secretary Bodman, I'd like to discuss the status of the U.S. Program to produce domestic synfuels from coal and biomass. This type of production represents a tremendous opportunity for decreasing America's reliance on imported fuel. It also opens the door for cost-effective carbon dioxide separation and storage, by linking coal gasification plants to enhanced oil recovery opportunities. How is the Department of Energy working to speed this desirable development?

Answer. The Department of Energy has worked for many years on the development of technology/processes for the production of clean liquid fuels and syngas from coal. More recently, the Department has focused its research program on coal to clean hydrogen and coal to syngas. Hydrogen could be used as transportation fuel and thus reduce America's reliance on imported fuel. Domestic production of syngas from coal could reduce natural gas imports.

Three important examples of the Department's work in hydrogen and syngas production from coal are Fuels, Sequestration, and FutureGen. The Fuels program conducts research to promote the transition to a hydrogen economy. Research is targeting reducing costs and increasing efficiency of deriving hydrogen from coal feedstocks as part of the President's Hydrogen Fuel Initiative. When gasification technology is used for hydrogen production, a concentrated carbon dioxide by-product stream can be produced which can be captured and either used for the production

of crude oil by use of FOR technology or it could be permanently sequestered. The Department has a large, on-going research and development program in carbon capture and storage including the support of regional partnerships with goals to identify potential storage opportunities that includes containment in geological formations such as caverns and brine aquifers. The FutureGen project will integrate subsystems and components currently being developed through the Department's research and development programs, including gasification of coal, production of hydrogen, and low cost CO₂ capture and storage technology. FutureGen is aimed at establishing the technical capability and potential economic feasibility of co-producing electricity and hydrogen from coal with near-zero atmospheric emissions.

Liquid fuels from coal is a mature but evolving technology, with costs in the range of \$35 per barrel for mature plants, but no commercial U.S. plants have been built. The primary barrier to commercial introduction of the technology has been the volatility and uncertainty of world oil prices.

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