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NATURAL GAS SYMPOSIUM

SYMPOSIUM

BEFORE THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDRED NINTH CONGRESS

FIRST SESSION

ON

NATURAL GAS

JANUARY 24, 2005

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CONTENTS

STATEMENTS

NATURAL GAS SYMPOSIUM

MONDAY, JANUARY 24, 2005

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

The committee met, pursuant to notice, at 1:05 p.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. Hello, everyone. This is not a formal hearing, so I do not think we will be using the gavel very much.

But before I have a couple of remarks and yield to Senator Bingaman for a few remarks, it is obvious from the crowd that an awful lot of people want to speak and they all cannot. So we have done our best to put people here at the table with us in different panels that we have selected that we think will, in total, represent most of the issues on the topic. But we will not get that done unless we follow the rule, which is even a little stricter than the house rule, and Senators cannot do it, but we expect you to, and that is going to be 2 minutes each. I do not know what we will do if you exceed it, but even though it is nice and warm in here, a cold pitcher of water on your head would not feel very good.

[Laughter.]

The CHAIRMAN. In any event, you are all welcome to the conference. It is pretty obvious that by your attendance and by what we have read in advance of it that natural gas, in all of its aspects and ramifications, is terrifically important to our country and to many institutions, entities, users, consumers in the United States.

I want to thank all the different groups and individuals that have submitted proposals. It is most interesting. I cannot say we have read them all, but summaries of many of them would indicate that these summaries that you have given us and submissions are very, very important. By using them all, it should give us sufficient information to move ahead with what we ought to be doing.

Thank you again to those of you who are going to participate, and all of you here in the audience that are interested in the discussion, we thank you for being here.

Now, there was a gentleman from the U.S. House of Representatives, Michael Wu, who for a long time was a terrific staff man with reference to putting together energy policy. Linda Stuntz, who is here, knew him because of their work together in behalf of all of us, and I think that we would like her, if she would, to say a few words in recognition of Michael so that we would all know about him and spend a moment or so thinking about him. Linda.

Ms. STUNTZ. Thank you very much, Mr. Chairman.

Many of us in this room, between the years of 1977 and 1994, had the opportunity and the privilege to work on matters relating to natural gas, as well as other energy matters, with Michael Wu who was Mr. Dingell's chief counsel on energy during all that time.

Michael died last Tuesday after a terrible car accident on Christmas eve. I asked and appreciate the chairman granting me a moment to remember him with all of you here, so many of his friends, and I would simply ask we could have just a moment of silence in honor of Michael and in support of his family. Thank you so much.

The CHAIRMAN. Thank you very much. We will do that.

[A moment of silence.]

The CHAIRMAN. Thank you, Linda, and thank you, everyone.

I think for staff members—and there are many—who work for all of us, I think what has just transpired here would indicate that there are people working for us, Democrat or Republican, that can truly rise above partisanship and do marvelous things for our country and he was one of them.

The high level of response indicates that we have a shared concern about the natural gas challenges that we face as a Nation. The chart on my left illustrates the core problem. Our consumption is outstripping production at an increasing rate. You can see that as those lines diverge. In 2004, we imported 15 percent of our natural gas. These charts and the information come from the Energy Information Agency. Their estimates are that in 2025 we will have to import or find a substitute for natural gas in the quantity of 25 percent, as compared with the 15 that we do now, almost double.

The chart on my right demonstrates in their opinion, where most of the imported natural gas is expected to come from, LNG, liquified natural gas. According to the EIA, in 2004, we imported 6 million cubic feet of LNG. In 2025, they think the importing will be 6.4 trillion cubic feet. Now, I am not saying these are the reality. I am saying this is what they put down as the ways to meet the demand versus the current expectations of supply.

So progress so far on siting these LNG's has been nonexistent, almost impossible to get done.

These two charts summarize why there is a natural gas crisis, in terms of demand and supply, under current situations. The natural gas crisis affects residential, commercial, industrial consumers and it has cost the consumers many billions of dollars. That is obvious purely and simply because of the price increase.

So we begin this session, those of us in the Senate and those in the House, I hope—I believe that is the case—with renewed efforts to pass a comprehensive energy bill. It is right and I think that it is appropriate that our initial steps would be to assess the natural gas situation and, working together, to attempt to develop solutions.

Now, we have the rules. We are going to try to follow them with a clear understanding that we know you are contributing to our knowledge base. We will use it in due course, but we cannot hear everything each of you wants to say. We are going to hear 2 minutes of what you want to say, and the rest will be made a part of the record and we will read it in due course.

[A prepared statement of Governor Bill Richardson of New Mexico follows:]*

STATE OF NEW MEXICO,
OFFICE OF THE GOVERNOR,
Santa Fe, New Mexico, January 7, 2005.

The Honorable PETE DOMENICI,
Chair, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

The Honorable JEFF BINGAMAN,
Ranking Member, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI AND SENATOR BINGAMAN: I am writing in response to your request for comments regarding the nation's natural gas supply. Although I am not able to speak at your January meeting because of the legislative session in New Mexico, I would appreciate your consideration of my comments.

Natural gas is an important part of New Mexico's economy and of a sound energy policy for the Nation. It is a relatively clean-burning fuel that should be an important bridge fuel as we work together to develop a diversified, economically resilient energy economy more dependent on renewables and new storage technologies such as hydrogen.

The Nation's growing reliance on natural gas has created a supply/demand imbalance and significant price vulnerability affecting American businesses and consumers. The Industrial Energy Consumers of America estimates that the price spike since June of 2000 has cost U.S. consumers and businesses an extra $I50 billion or more. Federal Reserve Chairman Alan Greenspan has noted that the sustained increase in natural gas prices could have structural effects in our Nation's economy. Although it is critical to increase supply, we must also take serious steps that will reduce demand, encourage fuel-switching, and stabilize demand growth. Otherwise we will continue to make ourselves subject to future price increases like the one affecting our Nation so negatively today.

DOMESTIC GAS PRODUCTION

I agree with the Committee's recent emphasis on encouraging the construction of the Alaska gasline, which can introduce a vast amount of natural gas into North American markets. On the other hand, as Governor of the second-leading onshore gas-producing state, I have been deeply concerned by the Administration's emphasis on opening and developing everything available on western public lands. In my state alone, there are two major, immediate examples of the wrong approach to developing our public lands:

- the Interior Department is putting tremendous effort into opening virtually all of Otero Mesa, a Chihuahuan Desert grassland of international ecological significance, to oil and gas leasing—despite the fact that I have offered a sensible and balanced alternative proposal in accordance with the agency's planning rules; and
- the Agriculture Department is moving toward oil and gas leasing in the Valle Vidal, a pristine wildlife and recreation area much valued by local residents (and adjacent to the internationally known Philmont Boy Scout Ranch)—despite the fact that this area was donated to the Carson National Forest by Pennzoil for perpetual conservation.

Access to natural gas resources in the West is not a problem that needs Congressional attention. According to Bush Administration numbers, 88% of the technically recoverable federal gas resources in the five major Western basins are open to exploration and development. These available federal reserves are in addition to significant natural gas available on state and private lands. I would discourage the Committee from streamlining environmental laws and taking other measures to expedite gas production from federal lands. Such an approach would wrongly affect hunters, ranchers, local residents, landowners, and conservationists throughout the West, regardless of party affiliation.

ENERGY EFFICIENCY: REDUCING DEMAND

Energy efficiency and conservation represent the fastest way to reduce demand pressures and to create conditions for long-term natural gas affordability. The July 2004 joint statement of the American Gas Association and Natural Resources De-

*All proposals submitted for the record can be found in the Comittee records.

fense Council showed how collaborative, effective, and sensible the concept of natural gas conservation and efficiency is for our country. This statement was endorsed by the Alliance to Save Energy and the American Council for an Energy Efficient Economy.

Energy efficiency is critical across all sectors of the economy. Fast-growing natural gas demand for space heating and electrical generation can be met in part by various measures that are affordable and will pay off for consumers and businesses. The energy efficiency tax incentives in H.R. 4206 (Cunningham and Markey) and S. 2311 (Feinstein and Snowe) from the past Congress are a good basis for the Committee's consideration. The Congress must act on efficiency immediately, because it is in this area that the greatest gains can be most quickly achieved. Passage of tax incentives will assure that affordable conservation and efficiency measures enter the marketplace quickly.

FUEL-SWITCHING TO CLEAN ENERGY SOURCES

The second step that the Committee should explore and emphasize is how to encourage the clean new technologies that will help meet the demands now being increasingly placed on natural gas. This nation is overreliant on a few fuels, such as oil for transportation and coal for electric generation, and will benefit economically and environmentally from diversifying its energy portfolio by investing in clean energy that can come to market today. In some cases, such as wind and solar, the resources are not always in the same place as the demand, so this also implies a need for new national transmission planning that will allow these valuable resources to be brought to market affordably and soon.

Based on bipartisan support for a resolution co-sponsored by California Governor Arnold Schwarzenegger and myself last June, the Western Governors' Association is now producing a blueprint for 30,000 MW of clean energy development in the West by 2015.

This is achievable—but we need federal help. By producing this amount of renewable energy, the West can help displace and prevent growing demand for natural gas in the electrical sector. The Congress should immediately:

- extend the wind, biomass and solar tax credits for ten years, to remove the stopand-start dynamic of these current federal tax incentives;
- initiate research and investment tax credits for energy storage projects that will help make wind and solar energy more dispatchable;
- adopt a national renewable energy requirement, which will prevent or dampen future price spikes, create thousands or millions of jobs, save vast amounts of natural gas, and strengthen the Nation's economic resilience; and
- embrace a program of advanced clean coal development in the American West, where the gasification of coal promises huge, long-term potential for clean fossil fuel combustion and carbon sequestration.

These steps, taken together, will create a new energy development dynamic that will reduce pressure on natural gas supplies, and assure that this important but finite resource is not overused for our immediate needs.

LIQUEFIED NATURAL GAS

Although I support increasing imports of liquefied natural gas (LNG), I believe that the Nation must look at LNG as a partial solution to its energy challenges.

First, natural gas markets are becoming more global, which implies potential supply and price disruption, as well as price competition, at a scale we have not previously experienced in gas markets. Becoming heavily reliant on imported natural gas can give other nations the opportunity to constrain supply at strategic times, as has happened to the United States in international oil markets with terrible economic effects. Protecting ourselves by limiting our reliance on imported gas is in the national interest.

Second, as recently recognized in a report released by the Sandia National Laboratory, LNG tankers and facilities-are terroristtar gets. This is less true of some of the distributed clean energy facilities that I recommend above, and certainly energy efficiency and conservation constitute no attraction to terrorists.

As past Secretary of the U.S. Department of Energy, I commend you and the members of the Committee for attempting to address the Nation's energy policies. Strong, comprehensive, and balanced energy policy is needed, and you are in position to provide the leadership our Nation needs. Please work toward resolution of

our natural gas challenges in a way that helps address the issues I have put before you today.

Sincerely,

BILL RICHARDSON,
Governor.

The CHAIRMAN. With that, Senator Bingaman, you are not limited by any rule.

[Laughter.]

The CHAIRMAN. Do you have anything to say?

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

Senator BINGAMAN. Well, Mr. Chairman, I want to set a good example and be very brief in my comments. I want to congratulate you on convening this conference and I think it is extremely important that we try to better understand this set of issues. Obviously, a lot has changed with regard to our natural gas supply and usage in recent years, and we have a room full of very knowledgeable people here who are anxious to tell us about it and I think it is a very constructive step that you have taken. So I look forward to hearing the testimony and statements and I hope we get a chance to ask some questions. Thank you very much.

The CHAIRMAN. Thank you very much, Senator Bingaman.

So we are going to proceed now. This will be the order we will use each time. The question now, with reference to panel number one, is increasing the supply of natural gas. Now, we understand many of these issues work in harmony and there may be overlapping. We have selected you on the basis of your talking to us about your ideas on natural gas supply.

We are going to start now on our left with Larry Downes from the Natural Gas Council. Is that correct?

Mr. DOWNES. Yes, it is, Mr. Chairman.

The CHAIRMAN. Now, in each case I am not going to be naming you. You will each tell us who you are as you move around the table. Larry.

STATEMENT OF LARRY DOWNES, CHAIRMAN, NATURAL GAS COUNCIL AND THE AMERICAN GAS ASSOCIATION

Mr. DOWNES. Yes, Mr. Chairman, Senators, thank you. My name is Larry Downes. I am chairman of the Natural Gas Council and the American Gas Association. I am also CEO of New Jersey Resources. We are a local natural gas distribution company.

I first want to say thank you for your leadership in addressing this important issue. Ensuring reasonably priced natural gas for America's customers is among the most important things we can do.

I think you know from our perspective natural gas is America's preferred fuel for homes and businesses. My company is at the front door of many of those homes and businesses, and from that perspective, I want to tell you what I think they would be sharing with you if they were here today.

The facts are we know that demand for natural gas is growing. We know that supply is struggling to keep up. We also know that customers are bearing the burden of record-high prices and that we must take action promptly. But what should we do?

First of all, we need to make an objective, dispassionate reassessment of restricted Federal lands. There are large tracts of Federal lands that are restricted for resource activity. These limitations were appropriate when they were put in place decades ago, but in the interim, significant technological advances have been made in developing our Nation's resources in an environmentally friendly fashion. And as a result, I think it is time that we need to take a fresh look to determine which limitations remain necessary to protecting our environment and really identifying those which do not.

Secondly, we must streamline and expedite the Federal permitting processes and ensure adequate funding. Today permitting processes seriously delay our ability to draw upon our Nation's ample reserve base of natural gas. Given our Nation's needs, we need to expedite these procedures while still observing our core environmental values, and we need to make sure that the Government has the fiscal resources to do so.

Third and very importantly from our perspective, we do not ask that environmental values be relaxed or loosened. It is sometimes suggested that our industry seeks a relaxation or a loosening of our Nation's environmental values. This is simply not true.

Rather, what we are looking for is a reasoned and dispassionate reconsideration of decades-old land limitations, undertaken through the prism of the experience and technological advances that have been gained in those years, to put in place a permitting mechanism that assures proper environmental review while eliminating abuse and delay.

In summary, the time is short. The issues are clear. We need to act.

Thank you for having me.

The CHAIRMAN. Thank you very much.

STATEMENT OF VELLO KUUSKRAA, PRESIDENT, ADVANCED RESOURCES INTERNATIONAL, INC.

Mr. KUUSKRAA. Good afternoon. I am Vello Kuuskraa, president of Advanced Resources.

The CHAIRMAN. Of what?

Mr. KUUSKRAA. Of Advanced Resources International.

Many view that domestic natural gas supplies have peaked and are in terminal decline. We do not have to accept this view. Yes, we are running low on easy-to-find and cheap-to-produce conventional gas. Yet, massive volumes of unconventional gas remain locked in tight gas sands, gas shales, and coalbed methane. Also, our deep gas resources and methane hydrates await technological breakthroughs.

We are in a race between resource depletion and technology progress. The public-private partnerships and research investments of the past enabled technology progress to stay in the lead. Today, with severe reductions in such investments, the iron grip of depletion has moved to the forefront. To correct this problem I would like to propose three actions.

First, create a new set of private-public partnerships with $100 million per year of funding for applied research and technology de-

velopment and demonstrations of advanced natural gas supply technology.

Second, provide targeted investment tax credits for unconventional gas development.

Third, ensure improved access to natural gas resources on Federal lands.

This three-part strategy will enable domestic onshore natural gas production to be 2 tcf per year higher, equal to six LNG plants, and natural gas prices to be significantly lower in the near term. This is not intended to argue that we can do without increased imports of LNG or without the Alaska natural gas pipeline. Rather, with supportive legislation and policies, we can keep from becoming overly reliant on imports.

Thank you for this opportunity.

The CHAIRMAN. Thank you very much.

STATEMENT OF ERIC BARLOW, ON BEHALF OF THE WESTERN ORGANIZATION OF RESOURCE COUNCILS

Mr. BARLOW. Greetings, Mr. Chairman, Senator Thomas, members of the committee. My name is Eric Barlow. I am with the Western Organization of Resource Councils. I live on a family ranch in northeast Wyoming in the Powder River Basin. Living on a ranch that is experiencing coalbed methane development affords me with a different perspective than some of the perspectives you may hear today.

The West is making a contribution to increasing natural gas supply. The significant rise in permitting, active wells, and production are evidence that a boom is occurring the West. However, this is coming at a cost. It is a cost to our water, our air, our land. It is also coming with the associated conflicts and controversies which are a cost to our families, our communities, the industry, and ultimately the consumer.

I come here with a simple message: let's do it right.

Mr. Chairman, there are ample opportunities to go down a road, a flawed path to reducing, weakening protections, to limiting meaningful participation, to further erosions and accountability. This course can only lead to greater conflict. It can only lead to more impacts and less certainty.

It can be done right. Our proposal is for more opportunities for input, stronger values in our resources, all of our resources, greater accountability, not less.

An example of doing it right might be taken from SMCRA, the Surface Mining Control and Reclamation Act. It requires very distinct things. It requires surface owner consent, water remediation and replacement. It requires public input. For 28 years that law has been in effect and the coal mining industry is an integral part, a prosperous part of our energy situation today. I believe following this type of an example, we can go forward and come to a better place for the industry and a better place for all us.

Thank you for your time.

The CHAIRMAN. Thank you very much.

STATEMENT OF NOLTY THERIOT, DIRECTOR, CONGRESSIONAL AFFAIRS, NATIONAL OCEAN INDUSTRIES ASSOCIATION

Mr. THERIOT. Good afternoon, Mr. Chairman and Senators. My name is Nolty Theriot and I am representing the National Ocean Industries Association, the only trade association comprised of all segments of the offshore energy industry. I am delighted to have the opportunity to discuss some of the possible solutions available to increase our domestic natural gas supply, specifically the important choices involving offshore energy exploration and production from the submerged public lands of the Federal Outer Continental Shelf.

At present, over 80 percent of the offshore areas are off limits to oil and gas development. In addition, these areas under drilling moratoria are estimated to hold at least 79 trillion cubic feet of natural gas. This is enough energy to meet current residential needs for more than 15 years.

We understand not all areas are suitable for development. However, before we can have an informed discussion, it is important that we carefully examine all areas likely to contain natural gas and determine which can be harvested using our Nation's highest environmental standards.

We recommend that Congress allow all Federal OCS areas to be assessed for their resource potential, and decisions as to which areas should be off limits and which may be appropriate for energy development be made based on the information gathered.

Another issue affecting the stability of our domestic energy supply is the Coastal Zone Management Act of 1972. Overall, this is valuable legislation, but some interest groups have used the law to stall or hold offshore development in a never-ending loop of permit approvals and appeals. In order to improve the cesium A planning and consistency review process and ensure that it is not inappropriately used as a delaying tactic, we recommend that Congress establish clear information requirements for State and Federal decision-making, ensure timely action by the Secretary of Commerce on State appeals by setting a deadline of 120 days from the date of filing, with limited opportunity for extension, and provide a single consistency certification covering all Federal license and permitted activities.

In closing, I would like reiterate that the ability to meet the Nation's natural gas needs will continue to be in question until promising areas are open for responsible exploration and production and barriers to development are removed.

Thank you very much for your time and attention.

The CHAIRMAN. Thank you.

STATEMENT OF BERT KALISCH, PRESIDENT AND CEO, AMERICAN PUBLIC GAS ASSOCIATION

Mr. KALISCH. Good afternoon, Mr. Chairman, Senator Bingaman and other members present today. My name is Bert Kalisch. I am the president and CEO of the American Public Gas Association. About 950 public gas utilities serve 5 million homes and businesses across America, including 15 communities in New Mexico. We are very pleased to participate.

APGA's number one priority is to bring natural gas prices back to an affordable level. As the voice on this panel closest to the consumer, APGA is keenly aware of the hardships and burdens high natural gas prices have had and continue to have on the customers we serve.

We believe many important steps must be taken to bring natural gas prices back to an affordable level. But one critical step is to increase access to domestic gas supplies, including offshore resources. A big step in this direction is a proposal called SEACOR, State Enhanced Authority for Coastal and Offshore Resources. SEACOR alone could provide access to more than 145 trillion cubic feet of natural gas for potential development.

SEACOR finally makes a distinction between oil and gas production. It requires that current moratoria be set aside. It provides coastal States with greater authority and financial incentives to bear the risks and impacts of offshore drilling activities.

Greater State authority is realized by: extending a State's offshore boundaries from the current 3 miles out to 12 miles; having veto authority on drilling activities out to 40 miles for natural gas, 60 miles for oil.

Greater financial incentives are realized, for example, in California, which received $3 million last year, under SEACOR, it would have been closer to $82 million. Louisiana received $35 million last year. Under SEACOR, it would have been closer to $200 million.

Mr. Chairman, APGA applauds your untiring efforts to try to pass comprehensive energy legislation. Whether the approach taken in this Congress is comprehensive energy legislation or a stand-alone natural gas bill, APGA looks forward to working with you and your staff to pass a bill that restores natural gas prices to an affordable level.

Thank you.

The CHAIRMAN. Thank you very much.

Now we proceed right here. Bob.

STATEMENT OF BOB GALLAGHER, PRESIDENT, NEW MEXICO OIL AND GAS ASSOCIATION

Mr. GALLAGHER. Mr. Chairman, Senator Bingaman, I appreciate very much the opportunity to be with you today and applaud your efforts. You make us proud back in New Mexico, and I appreciate the opportunity.

I think the answer to affordable natural gas is easy: available natural gas makes natural gas affordable. I think you can sum it up in three words: "access, access, and access." If our industry does not have access to Federal lands and waters, our country does not have affordable natural gas, nor will we be able to meet the growing demand. I believe it is that simple.

Several areas. The National Environmental Policy Act. We would like Congress to have a strategy to limit the opportunity to abuse the Federal decision-making and delay decisions.

The Endangered Species Act is broken and needs to be fixed. It is used now as a tool to hinder land management planning and project permitting. We would like Congress to move to require that listing petitions be based on the best available scientific and com-

mercial information and developing specific criteria for what constitutes best available data. Also, avoid having land use agencies treat a species petitioned for listing as a basis for managing the species as sensitive or special status.

In the areas of land use, land use planning is required of Federal land use agencies. We believe that the agencies should use a reasonable, foreseeable development scenario as a planning tool and refrain from using it to suspend development once the well count is reached. Instead, total surface disturbance over time that accounts for reclaimed acreage should be used.

Mr. Chairman, restrictions to drilling in the Potash Enclave came about when potash was considered essential to national security. Through the years, the uses and the values have changed. There are close to 1 million acres of land in southeast New Mexico that are off limits because of potash requirements.

Applications for permit to drill. We believe that we ought to use categorical exclusions for wells and right-of-ways that require minimal surface disturbance and, more importantly, a 45-day permit processing period, after which the permit is approved if it has not been denied with reason.

We would encourage research and development.

We would also encourage having some help, Mr. Chairman, on transportation. Pipeline companies presently have no combination authority on Indian lands, and as such, we have trouble with right-of-ways both before and with——

The CHAIRMAN. Thank you very much.

Mr. GALLAGHER. I hear the buzzer. Thank you, Mr. Chairman. I appreciate the opportunity.

[A prepared statement of Mr. Gallagher follows:]

PREPARED STATEMENT OF BOB GALLAGHER, PRESIDENT, NEW MEXICO OIL AND GAS ASSOCIATION

INCREASING DOMESTIC NATURAL GAS SUPPLY AND INFRASTRUCTURE: AN INDIAN COUNTRY FOCUS

Executive Summary

Over the last half century natural gas companies have built hundreds of miles of gas pipelines that transport New Mexico gas over the land of Indian Nations. This infrastructure has created numerous on-going, steady, high paying jobs for Indian people and has resulted in millions of dollars of tax and other revenue to state and local governmental entities. The success of the New Mexico natural gas industry is reliant upon the cost effective transportation of natural gas supplies across Indian Country.

The financial position of today's natural gas companies serving New Mexico and transporting gas across Indian Country has changed dramatically due to rapidly growing competition in the western gas market and the ever increasing land costs associated with transporting gas across Indian land.

Given the economic realities of the natural gas industry, the companies operating in and serving New Mexico are at a crossroads: either control cost of service, of which right-of-way costs are a component, or face the prospect of losing significant market share, threatening the viability of the companies, and thereby limiting the resources available for investment in New Mexico and Indian Country. The industry's preference is to work with the Indian Nations to develop an even stronger long-term natural gas infrastructure that balances the interests of industry, Indian Country and New Mexico. To achieve this objective, help is needed in controlling the exponential growth of right-of-way costs in Indian Country.

The New Mexico Oil and Gas Association respectfully seeks your assistance in developing win-win investment strategies that build on the value of the current natural gas infrastructure and that multiply that value for the benefit of the natural gas industry and consumers in the West.

STATEMENT OF DR. MARK D. MYERS, DIRECTOR, ALASKA DIVISION OF OIL AND GAS, STATE OF ALASKA

Dr. MYERS. Good afternoon, Mr. Chairman and members of the committee.

On behalf of Governor Murkowski, I would like to thank you for the opportunity for the State of Alaska to address the critical issue of increasing domestic energy supply particularly for natural gas. I am presenting as a petroleum geologist and director of the State Division of Oil and Gas.

Importantly, the State proposal is jointly sponsored by the administration and our legislature. Today I have Representative Ralph Samuels and Senator Gene Therriault with me. Both are key policy makers and subject matter experts on the issue of Alaska's natural gas potential and proposed pipeline projects.

The proposal asks that natural gas pipeline projects have been designed to carry 4.5 to 5.6 billion cubic feet per day of gas to the North American market as early as 2012. At these rates, the proven reserves in the North Slope will last between 16 and 23 years. The remaining gas for a 35-plus-year project will need to come from either conventionally yet-to-be-discovered gas or unconventional gas that is proven in the ground but not proven yet to be commercial. In particular of that category is natural gas hydrates.

The in-place gas hydrates from the North Slope and surrounding offshore areas is an astounding 32,000 trillion cubic feet, and importantly, about 100 trillion cubic feet of that in-place hydrate resource underlies the existing producing oil fields in the Prudhoe Bay area. If these hydrates can be produced economically, as initial research modeling suggests, it would have a huge, positive impact on efforts to bring large quantities of natural gas to the domestic market.

To date, North Slope hydrate research has been funded under the Methane Hydrate Research and Development Act of 2000, which expires this year. This research has produced very encouraging results, including detailed mapping of existing well and seismic data and detailed reservoir modeling, along with computer simulation. However, in order to verify these models and convert this resource into reserves, these simulations must be verified by a long-term program.

Our request is for $70 million over the next 5 years to perform this critically needed, long-term production tests and other important information gathering.

In conclusion, successful long-term production and testing of Alaska's methane hydrate resource could dramatically increase our domestic reserves, could significantly reduce the reserve risk on the Alaska North Slope natural gas pipeline, lead to early expansion of that line to its maximum capacity, and that would benefit producers, explorers, the pipeline project, and the domestic market.

Thank you very much, Mr. Chairman.

[A prepared statement of Dr. Myers, Senator Therriault and Representative Samuels follows:]

PREPARED STATEMENT OF DR. MARK D. MYERS, DIRECTOR, ALASKA DIVISION OF OIL AND GAS; SENATOR GENE THERRIAULT, CHAIR, ALASKA LEGISLATURE, LEGISLATIVE BUDGET AND AUDIT COMMITTEE; AND REPRESENTATIVE RALPH SAMUELS, VICE CHAIR, ALASKA LEGISLATURE, LEGISLATIVE BUDGET AND AUDIT COMMITTEE

STATE OF ALASKA BRIEFING DOCUMENT ON PROPOSAL TO REAUTHORIZE METHANE HYDRATE RESEARCH AND DEVELOPMENT ACT OF 2000

EXECUTIVE SUMMARY

Currently, 59 bcfd of natural gas is consumed daily in the United States. The Energy Information Administration estimates that domestic demand for natural gas will increase to 77 bcfd by 2015, and to 84 bcfd by 2025. If the Alaska natural gas pipeline currently envisioned is built, the 35 tcf of known Alaska reserves could satisfy 4.5 bcfd of the total domestic demand for a period of two decades. Alaska's vast gas resources are estimated to also include 250 tcf of undiscovered conventional resources, 590 tcf of onshore (100 tcf within or near existing North Slope infrastructure), and more than 32,000 tcf of offshore gas hydrates, which could supply a much greater percentage of domestic demand for generations to come, particularly if two conditions are met: 1) gas hydrates can be commercialized; and 2) the rules for access to and expansion of an Alaska natural gas pipeline encourage competition in the exploration for and development of Alaska natural gas. The latter condition is currently the subject of rule-making by the Federal Energy Regulatory Commission. However, the former—commercialization of gas hydrates—is at risk absent Congressional action in 2005. Congressional action is needed to reauthorize Pub. L. 106-193, 114 Stat. 234 (2000), the Methane Hydrate Research and Development Act, and to fund research and field testing under that Act. It is proposed that the Act be reauthorized for a period of five years, with appropriations of no less than $10 million/year in years 1-3 and $20 million/year in years 4-5.

The large quantity of hydrates that underlie the existing Kuparuk River, Milne Point, and Prudhoe Bay Fields could in itself remove all potential reserve risk from year 20-35 and beyond for an Alaska natural gas pipeline producing at 4.5 bcfd. Reducing reserve risk will have a positive effect on project financing and potentially result in a lower tariff, which in turn could lead to increased exploration and early expansion of the pipeline.

INTRODUCTION

Sharply rising U.S. consumption of natural gas coupled with increasing worldwide gas demand intensify the need to find additional sources of natural gas. An increasingly global LNG market is developing based on these growing international energy demands, and upon the enormous natural gas reserves in the Middle East and other areas of the world. Reliance on these supplies worsens the U.S. trade deficit, places the U.S. natural gas market increasingly in direct competition with other regional natural gas markets (many of which are mushrooming), exacerbates public environmental and security concerns with proposed tanker traffic and plant sitings, and increases U.S. reliance on foreign sources for energy supplies.

Undeveloped Alaska natural gas resources, both conventional and unconventional, are capable of delivering a vitally important share of U.S. gas needs. The recent rise in energy costs to what many consider to be a new long-term level has led to negotiations for building an Alaska North Slope (ANS) natural gas pipeline to ship these domestic supplies to distribution hubs serving the lower 48 states. The currently envisioned pipeline would deliver 35 tcf of proven Alaskan gas reserves from existing oil fields at a rate of 4.5 bcfd for more than two decades, supplying about 6% of the 77 bcfd of U.S. demand forecast by the EIA for 2015.

Furthermore, numerous assessments recognize that the total North Slope gas resource far exceeds just these proven reserves. Mean estimates by USGS, MMS, and the State of Alaska place at least 242 tcf of undiscovered, technically recoverable conventional gas under federal onshore and offshore areas (Table 1, AK Division of Oil and Gas, 2005) plus 590 tcf in-place of gas hydrates onshore in permafrost areas, and more than 32,000 tcf in-place of gas hydrates offshore in the Beaufort Sea (Sherwood and Craig, 2001 after Collett, 1995). Alaska's total gas hydrate endowment, including the surrounding federal waters, is estimated at over 169,000 tcf of in-place gas hydrate (Sherwood and Craig, 2001 after Collett, 1995). USGS assessments estimate 40 to 100 tcf of gas in-place in shallow permafrost-associated gas hydrate reservoirs in the infrastructure-served central ANS onshore area alone (Figure 1). The Alaska North Slope is one of the most promising places in North America to determine the resource potential of gas hydrates because of existing infra-

structure, which will prove vital in supporting the emerging technologies required (Johnson, 2003).

Given that all reasonable estimates of the total ANS gas resource are much larger than the 35 tcf basis for the currently envisioned Alaska to Lower 48 gas pipeline, including the vast potential in the form of methane hydrates, it is essential that the federal government take steps to ensure that two conditions be fulfilled: 1) current progress in gas hydrate research and development must continue at full momentum to determine as quickly as possible whether these resources are commercially viable, and 2) the rules for access to and expansion of an Alaska North Slope gas pipeline must encourage industry competition to develop much needed additional gas, both from potential gas hydrate reservoirs and from revitalized exploration for conventional gas reserves. The Federal Energy Regulatory Commission is aware of the second condition, and is actively working to establish rules that will safeguard its ability to require capacity expansion as new reserves become available.

The economic return and risk associated with building the ANS gas pipeline depends largely on its useful lifespan, a function of both available reserves and pipeline capacity. Table 2 summarizes the relationship between project lifespan and reserves for two capacity scenarios, the 4.5 bcfd base case and a 5.6 bcfd expansion case, respectively. In the base case, project life increases from about 2 decades to more than 3½ decades when the available reserves increase from the 30-35 tcf of known conventional gas associated with current oil fields to 60 tcf due to the discovery of new conventional reserves or commercialization of hydrates in place beneath existing infrastructure.

The remainder of this proposal addresses meeting the former condition—federal funding in support of gas hydrate resource commercialization.

CALL FOR LEGISLATIVE ACTION

The Methane Hydrate Research and Development Act of 2000 (Public Law 103-193, 114 Stat. 234) was created to determine whether or not gas hydrates could become a significant source of natural gas in the future. Because this Act expires at the end of the 2005 fiscal year, immediate congressional action is needed to replace it. Governor Murkowski's proposal urges new legislation to cover the five year period 2006-2010, with total appropriations of no less than $70 million. Beginning with annual funding of $10 million to continue and expand ongoing research in 2006-2008, appropriations would increase to $20 million annually in 2009-2010 as the emphasis shifts from laboratory research and computer simulations to field testing and development pilot projects.

As stated in the proposal, the goals of the reauthorization and appropriations are threefold: 1) determine conclusively whether major gas hydrate accumulations can become a commercially producible resource, 2) grow the body of publicly available data, knowledge, and technology relevant to detailed resource assessment, exploration, and production of gas hydrates, and 3) fund a field testing program at a level adequate to remove commercial hurdles that would impede or prevent private industry from pursuing gas hydrate pilot projects. Specific steps will enable achieving each of these objectives and a careful review of the previous legislation may be required to ensure language in the reauthorization that is consistent with this legislative intent.

CONCEPTUAL STEPS AND JUSTIFICATION

The suggestions that follow are not intended to replace careful planning by those managing gas hydrate research and development programs and should not be used in constructing legislative language without broad support of those program managers. At this point, we recommend using language in the reauthorization that will ensure clear legislative intent without specifying detailed procedures for reaching these goals. In the broadest sense, activities fall into two categories: 1) developing improved assessments of both the total resource potential associated with gas hydrates and the volume of hydrate-related gas likely to become commercial over time given that pipeline capacity exists to ship it to market, and 2) developing gas hydrate production technologies, including field tests to prove up and compare alternative techniques. Both goals should be pursued beginning in year 1 with expanded desktop research and maintaining current research programs, leading to a greater emphasis on testing operations in years 4 and 5. Participation in "wells of opportunity" (i.e., industry wells targeting deeper horizons providing opportunity for data acquisition during penetration of shallow gas hydrate-bearing horizons) during years 1 through 4 merits federal funding to share or offset the costs of reservoir evaluation.

Continue technical and commercial assessments of onshore North Slope sub permafrost gas hydrates and their associated free gas resources

Ongoing office, laboratory, and field research projects will feed directly into activities under a renewed gas hydrates act. The most successful research is likely to come from collaborative interdisciplinary teams of geologists, geophysicists, reservoir engineers, petroleum engineers, and commercial analysts representing a cross section of federal and state resource management agencies, industry, consultants, and universities. As stated in the proposal, the Alaska Department of Natural Resources, Division of Oil and Gas is also discussing with the Alaska State Legislature obtaining funding for an additional geologist dedicated to gas hydrate issues. This would facilitate the pairing of state and federal expertise and data sets, allowing for faster and more accurate collaborative resource assessments. In order for this structure to be effective, early administrative attention will be required from the participating organizations to establish the ground rules and data confidentiality requirements. Some of these ground rules and requirements which must be agreed upon early are likely to include issues such as the extent of data sharing, assessment methodologies, conditions for using proprietary data in making public resource interpretations, and specific data types and interpretive results that can be released to the public and/or shared with participating industry to support the conclusions.

Once these resource evaluation and development planning teams are in place, they should be authorized to integrate and expand upon current regional-level assessments of in-place permafrost-related gas hydrate and associated free gas resources. Some of these current assessments include the collaborative efforts underway involving the BLM, USGS, and State of Alaska. Future assessments funded by this legislation should expand upon this coordination, using consistent methodologies across federal and state lands of North Alaska. Assessment provinces should include the known hydrates in and near existing infrastructure on state lands of the central North Slope Colville-to-Canning corridor as well as more remote areas. The first remote provinces to be assessed should include state-lands foothills, the NPRA in the west, and the ANWR 1002 area in the east.

The proliferation of 3D seismic data across large areas of the North Slope over the last decade provides these research teams the opportunity to create much more reliable assessments than has ever been possible before. Access to these privately-acquired seismic surveys is restricted, but includes the state or federal agency that manages the lands in question. By assigning appropriate technical personnel in accordance with their agency's data access privileges, the research teams should be able to obtain, use, and integrate all available 3D seismic data coverage to develop a comprehensive portfolio of specific gas hydrate and associated free gas prospects. In some cases, it may be appropriate to license new or existing seismic surveys for assessment work, or even purchase the rights to release certain seismic data to the public. The portfolio should quantify the geologic risk profile and probabilistic distribution of in-place resource for each prospect using a standard petroleum systems approach. This work has been pioneered with tremendous success in the Milne Point Unit through the BPXA—DOE cooperative research study (e.g., Inks and others, 2004), where it is the basis for highly detailed gas hydrate resource estimates and production profile modeling.

Dedicated logging and/or coring of gas hydrate and sub-hydrate free gas intervals in several key wells per year should be considered beginning in year 1. The additional data obtained will improve assessments of hydrate resource beneath existing infrastructure. Office and laboratory studies should continue into years 4 and 5, when they will begin to benefit from incorporation of the results of more field-based production testing. Subsequent iterations of reservoir performance models will thus be better calibrated and will more reliably forecast production rates and ultimate recovery of untested gas hydrate reservoirs. Better production forecasting will mean better ability to convert assessments of in-place resource to estimates of technically and economically recoverable gas reserves. Ultimately, the research will develop regional depletion plans and realistic potential development programs using reserves and rate profiles to assess regional development economics. The work will extrapolate reservoir models into regionally verified resource potential, construct production rate profiles within a range of expectations, and calculate potential regional gas reserves.

A final step in the office-based research process will be to develop commercial filters to apply to in-place or technically recoverable assessment figures to screen out resources located in accumulations too small to develop profitably. Estimates of the magnitude of reserves that may eventually be shipped would be far more useful than the technically recoverable reserves figures so often cited in resource assessments.

Design and conduct field production tests and pilot development of North Slope hydrates to assess viability of producing free gas and associated methane hydrate by depressurization of the free gas leg

The dearth of factual production data is one of the most critical gaps in commercializing much needed gas hydrate resources. Many in private industry acknowledge the enormous scale of the in-place resource, but without proven production potential, are unwilling to risk large-scale investments in testing and developing these reservoirs. Given the gas supply shortage facing the nation and the likelihood that construction of a gas pipeline will begin in the near future, the national interest is best served by funding public projects to close the gap in collaboration with, but without relying exclusively upon industry.

Beginning in year 1, and working in parallel with the assessment teams, engineers and geologists will be tasked with designing testing operations to begin during year 2 and continuing with the increased funding in subsequent years. Research to date has identified gas hydrate accumulations within the footprint of existing North Slope infrastructure that include a gas hydrate cap in communication with an underlying free gas column (Figures 2 and 3) as viable candidates for initial production testing. Accumulations of this description have been termed Type 1 hydrates (Moridis and Collett, 2003). Conventional completion and production of the free gas column eventually lowers reservoir pressure below the stability limit of the overlying gas hydrate zone, causing it to dissociate and release additional free gas across a broad regional contact. Because hydrates store 164 to 180 times as much methane as the same volume of free gas, their dissociation contributes large volumes of producible gas. The Messoyakha gas field in the West Siberian Basin is often cited as a producing example of a permafrost-associated gas hydrate accumulation, due to the difference between expected and actual declines in both reservoir pressure and production rate.

Feasibility studies carried out under a cooperative project between BP Exploration (Alaska) and the DOE (Howe and others, 2004) have adapted commercially available reservoir simulation software to model schematic and actual hydrate-bearing reservoirs, with more detailed versions in progress (Figure 3).

The following discussion provides an overview of the current understanding in some of the more significant modeling. Cases 1-3 of Figure 4 depict simulated production profiles of a Type 1 gas hydrate representing 15 years of production from the same 300 mD permeability reservoir, but with variations in the type and number of producing wells. The initial plateau flow rates of these three cases are operationally constrained at levels ranging from 25 to 50 million cubic feet per day (mmcfd) per well. A 50 mmcfd plateau rate can be maintained significantly longer using a single horizontal producer than with two vertical producers constrained to 25 mmcfd each. After 15 years, the simulated total flow rates are nearly the same at about 18 mmcfd, regardless of whether one, two, or three producers are involved. Additional models indicate that after the steep decline that initially follows the plateau, the very slow decline rate of later years is due to steady supply of free gas from hydrate dissociation (Figure 5). This modeling is highly encouraging, but requires validation by field testing.

Details of design activities would be determined by the actual team, but a logical workflow would presumably begin with selection of candidate prospects for field testing within areas supported by existing North Slope infrastructure. Potential locations are already available in the Milne Point Unit where collaborative studies have integrated well data and 3D seismic data to quantify both Type 1 and Type 2 (hydrate only) prospects.

Numerous questions will be addressed at the outset of the design phase, including whether to drill a dedicated research well or share one intended for deeper production. Decisions will be required regarding optimal borehole angle, the duration of test production, and facility limitations. Depending on the type of wellbore selected for the testing and pilot program, drilling or work-over and completion operations will be necessary to expose the production zone in the free gas leg. This stage, including formation evaluation, should be complete within the first month, followed by an initial well testing phase that may last several weeks or months.

At this point, it is recommended that the well be placed on long-term production test for meaningful comparison to modeled production profiles. Depending on free gas volumetrics, the difference between original reservoir pressure and the hydrate stability limit, and operational constraints on the test producer's plateau flow rate, a pilot production plan lasting more than two years may be required to monitor the effects of depressurization and consequent hydrate dissociation. Because long term production testing may yield substantial quantities of methane, it will be advantageous to plan for local use of the gas. Possibilities include fuel for testing operations or field utilities, or reinjection for pressure maintenance of other reservoirs.

Design and conduct field production tests and pilot development of North Slope hydrates to assess viability of producing directly from hydrates without free gas depressurization

A second test should be designed to assess the viability of producing directly from hydrates that have no free gas leg available for conventional completion and depressurization. A major share of potential ANS gas hydrate resources appear to be trapped within these hydrate-only areas. Potentially, such a test could be conducted in the hydrate cap of a Type 1 reservoir, in Type 2 hydrates, which are accompanied by an underlying zone of movable water in the reservoir, or in Type 3 hydrates, which fill the entire formation (Moridis and Collett, 2003). The project team will face many of the same decisions as for the free gas/hydrate dissociation test, including site selection, type of wellbore, and duration.

The critical difference between this and a free gas production test is that steps must be taken to prevent further cooling of the reservoir around the producer that would lead to reformation of the hydrates and shut off the flow of gas. The three ways of dissociating the hydrate structure to release gas are by lowering pressure, increasing temperature, or altering reservoir chemistry. However, dissociation is an endothermic (heat consuming) reaction that lowers the temperature of the surrounding formation. So, while it may be possible initially to liberate some free gas simply by lowering reservoir pressure adjacent to the well bore, it can freeze solid again unless heat and/or chemical inhibitors are added to the formation. The optimum test for producing directly from hydrates would provide the capability of experimenting with and comparing various thermal and chemical stimulation technologies. Several processes have been proposed that warrant consideration in the design phase:

- thermal stimulation with steam huff and puff
- thermal stimulation by closed-system circulation of warm water from the surface (either artificially heated on-site or still-warm formation water separated out of production stream from deeper reservoir)
- thermal stimulation by closed-system circulation of hot waters brought directly to the reservoir from a deeper aquifer zone in the same well
- thermal stimulation by in-situ catalytic combustion, electromagnetic, or microwave sources
- inhibitor injection (e.g., methanol)
- Carbon dioxide replacement of methane in hydrate structure (McGrail and others, 2004). If this process becomes viable, it may provide synergistic carbon sequestration benefits, in addition to liberating methane.

It will be up to the test design team to identify and select the most promising of these methods for direct field comparison.

HYPOTHETICAL R&D ACTIVITY AND EXPENDITURE TIMELINE

Table 3 represents a broad framework for executing the suggestions outlined above. This legislative proposal is submitted in recognition of the need for funding rapid and material advances toward unlocking the potential of our gas hydrate resources. Details of research and development tasks and the proposed expenditure timeline are subject to revision by project teams.

RECOMMENDATION

An urgent need exists for the reauthorization of federal legislation appropriating funds to support gas hydrate research and development. In the face of escalating demand and uncertain supply from overseas imports, it is critical that the United States increase domestic supply and diversify its sources of natural gas to include the development of unconventional resources. Known gas hydrates overlying the already-developed oil fields of Alaska's North Slope afford a unique opportunity to meet both objectives provided they can be produced and brought to market economically. The need to better understand hydrate commerciality is all the more pressing given the inter-relationship to planning for the construction, operation, and regulation of an Alaska gas pipeline. The steps suggested here are offered as a conceptual basis for more detailed planning that will be needed to realize the intended goals of the proposed legislation.

[Figures 1-5, tables 1-3, and references have been retained in committee files.]

The CHAIRMAN. Thank you very much.

Dave.

STATEMENT OF DAVE HOUSEKNECHT, RESEARCH GEOLOGIST, U.S. GEOLOGICAL SURVEY

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

My name is Dave Houseknecht. I am a research geologist with the U.S. Geological Survey. As you know, we do assessments of undiscovered oil and natural gas which provides estimates of the quantity, quality, and location of undiscovered gas resources nationwide. I am here primarily as a resource for answering questions.

I will just summarize by saying that the USGS estimates that onshore and beneath State waters of the United States, there are about 600 trillion cubic feet of natural gas undiscovered, roughly half of that conventional and the other half in tight gas sands, shale gas, and coalbed gas.

Our colleagues from the Minerals Management Service do similar assessments of the OCS and they estimate an additional 400 trillion cubic feet offshore.

So we would stand ready to answer any questions you might have about the natural gas resource base nationwide. Thank you, sir.

The CHAIRMAN. Thank you.

Proceed, please.

STATEMENT OF WALTER CRUICKSHANK, DEPUTY DIRECTOR, MINERALS MANAGEMENT SERVICE

Mr. CRUICKSHANK. I am Walter Cruickshank with the Minerals Management Service. Our role here is also to be a resource to help answer questions. I do not have a prepared statement. MMS is responsible for oversight of offshore oil and gas activities, and I would be happy to answer any questions that anyone may have.

The CHAIRMAN. Very good.

STATEMENT OF THOMAS LONNIE, ASSISTANT DIRECTOR FOR MINERALS REALTY AND RESOURCE PROTECTION, BUREAU OF LAND MANAGEMENT, DEPARTMENT OF THE INTERIOR

Mr. LONNIE. Good afternoon, Mr. Chairman. My name is Tom Lonnie. I am with the Bureau of Land Management. I am the Assistant Director for Minerals Realty and Resource Protection here in Washington. I do not have a prepared statement. The Bureau of Land Management, as you well know, issues leases onshore, as well as issues drilling permits and monitors oil and gas production. But I am here also, as Walter, to try and respond to any questions that you may have. Thank you.

The CHAIRMAN. Thank you very much.

Now, we are a little behind. My staff is kind of suggesting that we not have the discussion that we planned, but I am going to have a discussion anyway. That means we are probably going to be a little late at the end. Instead of finishing on time, we might finish 15 or 20 minutes late, but I think there are too many things people would like clarify.

So let us go with Senator Bingaman. Do you have anything you want to move with? Any of you who are prompted by a question to tell us something else, just put up your hand and we will let you.

Senator BINGAMAN. Thank you very much, Mr. Chairman. Let me just ask a question of Mr. Barlow.

In New Mexico, the Oil and Gas Association has adopted what they entitle their "good neighbor initiatives" which are a series of positions that all 300 of their companies are agreeing to try to comply with. I did not know if you had had a chance to look at that, and if you had any reaction to whether that solves some of the potential conflict problems that you were discussing in your testimony.

Mr. BARLOW. Thank you, Senator, for the opportunity.

I have not looked, point by point, through their proposal. Wyoming had a similar type, conflict resolution type of approach that was taken, and it was maybe not quite as point-by-point as that.

That is great that they are acknowledging there is an issue, and if there is acknowledgement there is an issue, then there ought to be a process or an effort to resolve those issues beyond the handshake across the fence. I have neighbors all around me, and I can assure you some of my neighbors take care of the fence better than others. Some do not take care of it all, and some I do not take care of it next to them. So when it is a good neighbor policy, that is fine if you are a good neighbor and if you are dealing with good neighbors. But we have to go beyond that I think we have to go to a place where we not only have good neighborly attitudes, but we have real responsibilities to follow through.

Senator BINGAMAN. Mr. Chairman, I have one other question I was going to ask Mr. Cruickshank. The figure of 400 tcf was mentioned, I think, offshore. Is that your estimate?

Mr. CRUICKSHANK. Yes. It is about 400 trillion cubic feet.

Senator BINGAMAN. Where do you estimate that is? Can you tell us how much of it is in the Gulf and where in the Gulf, how much of it is on the east coast or the west coast, or do you not know?

Mr. CRUICKSHANK. Yes. I can give you our mean estimates for each of those regions. In the Gulf of Mexico, about 232 trillion cubic feet of natural gas, most of that in the central and western Gulf, about 32 trillion cubic feet in the eastern Gulf of Mexico. In the Atlantic, we have about 33 trillion cubic feet of undiscovered natural gas. In the Pacific, about 18, and in Alaska, about 122 trillion cubic feet of undiscovered natural gas.

Senator BINGAMAN. Thank you.

The CHAIRMAN. Let us see. We have got time for a couple more Senators before I get a chance. Anybody on our side? Yes, Senator Murkowski.

Senator MURKOWSKI. I am following up on a question from Senator Bingaman. Mr. Myers, you had indicated that we have got the potential in Alaska for some 32,000 tcf overall. Now, Mr. Cruickshank, you have just indicated the breakdown offshore is about 400 tcf; onshore, 600 tcf. Are Alaska's numbers included in what Minerals Management is including? I understand that this is all undiscovered at this point in time, and one of the purposes of this hearing is to find out what the potential is and how we can access it. But I am confused with the numbers. If you can help me out.

Dr. MYERS. Senator Murkowski, we are looking kind of at two different things. The 32,000 is unconventional resources related to

hydrates. On a conventional scale, we would concur with the Minerals Management Service offshore. If we look at the North Slope onshore and offshore areas, we come up with about 250 trillion cubic feet under mean undiscovered, technically recoverable estimates. That is for conventional gas. For unconventional gas, the numbers are much larger. Of course you have to demonstrate commerciality with the production techniques. So certainly in Alaska we believe we have as much potential onshore as we do offshore.

David Houseknecht is also an expert in that subject matter.

Senator MURKOWSKI. Thanks for clearing that up. Thank you.

The CHAIRMAN. Thank you, Senator.

Senator Thomas from Wyoming.

Senator THOMAS. Thank you, Mr. Chairman.

Let me ask the gentleman, Dr. Myers. In this pipeline, would it be subsidized to the extent that it would be noncompetitive with the continental producers?

Dr. MYERS. Senator Thomas, we have looked extensively at the domestic market, and of course, there have been studies that show an Alaska gas, coming in at 4.5 to 5.6, is basically needed in baseline gas to North America. We believe that we will use largely existing, available pipeline capacity, and therefore it will not have a material price effect on the market. Some folks have modeled maybe a 50 cent reduction in cost for a short period of time, followed by market equilibrium. So Alaska gas has to be competitive in the market at the prices, and our analysis shows that it can be.

Senator THOMAS. It would be a little unfair if these people paid to get you to come in at below the market price. That is my point.

The BLM. Could you say briefly why do we have as much confusion as we have about the length of time to issue permits?

Mr. LONNIE. Processing drilling permits is related to are we getting complete applications, compliance with the National Environmental Policy Act, Cultural Resources Act, Endangered Species Act. We have got to go through all of those steps associated with processing a drilling permit and then apply conditions of approval and stipulations. Sometimes permits are not submitted completely. We have got to go back to operators and request additional information in the application. So that does add to the confusion as to what is the real length of time it takes to process a permit because sometimes the day it comes in the door, it is not complete. Other times it is and we wind up getting it appealed or protested prior to its completion.

Senator THOMAS. Some people think it might be useful if BLM thought a little more about how to make it work more quickly rather than simply explaining why it is.

Mr. LONNIE. We have tried to develop and we have developed procedures over the last 2 years associated with expediting cultural resources clearances. We are working with the SHPO's office in your State of Wyoming, Senator, in terms of how we can more quickly process applications. In addition, we have established workshops to train the cultural resource consultants.

Senator THOMAS. The Powder River thing in Buffalo has made some progress. I hope you can apply that to other locations. Thank you.

Mr. LONNIE. Thank you.

The CHAIRMAN. Before I yield, I want to just ask one of the land managers. You speak of part of the process being impact statements or impact assessments. I understand those are done on a well-by-well basis. Is it for a well?

Mr. LONNIE. It depends on the situation. We also do full-field development type permits, and as Senator Thomas has just mentioned, in Buffalo, as an example, we review what we call POD's, plans of development, which could include up to 60 or 70 individual applications for drilling permits. In other areas where we have got a wild cat well, we may only process one application at a time and do NEPA analysis.

The CHAIRMAN. I would just ask, is there anything we should do to encourage the inclusion of more than one well in an application? Is there anything inhibiting that that we have on the books?

Mr. LONNIE. No. As a matter of fact, we do encourage operators, once they know what their drilling plan is, to submit an application for full-field development so we can review the entire package at once and take into account cumulative impacts so we do not have to go back and reanalyze.

The CHAIRMAN. My second question has to do with any of the three of you. You all give assessments or evaluations of what exists in a certain field, in a certain area, offshore or the like. With modern technology being what it is, are you coming close to what the private sector comes out with in terms of reserves? Do you exchange information? You tell us this has got this much reserves, and the companies come in and develop it. Do you end up being pretty close?

Mr. HOUSEKNECHT. Mr. Chairman, the information available from industry tends to be of a proprietary nature, and so they are hesitant to share with us. However, history has shown that because industry lives on a different part of the probability curve than the Federal Government, they are willing to look at the upside potential when considering an area for exploration, whereas we tend to deal with the median or mean, the expected outcome. So in many cases, industry has a more robust perspective of an unexplored area than we tend to have.

Thank you.

Mr. CRUICKSHANK. If I may add to that answer. For offshore, we do have access to all of the raw exploration data that is generated under any of our permits. So we are able to see that data and make our own assessment of the amount of resources.

The CHAIRMAN. Senator Bingaman.

Senator BINGAMAN. I just wanted to ask the gentleman from BLM. The figures I got were that in 2003 BLM issued about 3,600 well drilling permits, and that that number was 6,100 in 2004, which is a very substantial increase. Are those reasonably accurate figures, or do you have different figures to give us?

Mr. LONNIE. Those are reasonably accurate, and if you include Indian, those figures increase slightly but consistently across both 2003 and 2004. We actually approved approximately 6,400 permits in 2004 and about 3,600 permits in 2003.

The CHAIRMAN. Senator Bingaman, I think that is a good question, but also, if we had time, we should explore—and maybe we will by questions—what were the policies in 2003 versus 2004. It

could very well be that there were very different policies which would have caused that to appear to be much bigger than it is. But we are not going to do that now.

Please, Senator Alexander.

Senator ALEXANDER. Thank you, Mr. Chairman.

Mr. Cruickshank, maybe you know the answer to this. We often compare supplies of energy because if there is more of one kind, maybe the price of natural gas comes down.

Taking an offshore rig, how much gas does it produce? How many plants would a typical offshore rig produce? What megawatt? Give me a range of about how many gas plants. How many gas plants would one rig supply?

Mr. CRUICKSHANK. Senator, I cannot, off the top of my head, convert to megawatts, but the amount of gas a single rig can produce really depends on the resource.

Senator ALEXANDER. Maybe someone can perhaps. If there is a rig in the Gulf of Mexico, will it operate three gas plants at 400 megawatts or 20 or 15 or 10 or 1? Does anyone know?

Mr. CRUICKSHANK. It can be producing anywhere a few hundred thousand cubic feet a day to over 100,000 cubic feet a day. So there is an incredible range.

Senator ALEXANDER. Let me ask it another way then. Can you give me a basis for a comparison? I believe the rig the chairman visited might be 50 miles offshore, very difficult to see. Can anyone give me any comparison basis for how many wind turbines it would take, spread across the ocean, to equal one gas rig that no one could see? Does anyone have an example of that?

Mr. KUUSKRAA. I could just take a quick stab, Senator, to tell you we had a 500-megawatt power plant, which might be equal to 500 1-megawatt windmills. One rig producing about 150 million cubic feet a day, which would be kind of average, would be equal to that.

Senator ALEXANDER. It would about a 500-megawatt.

Mr. KUUSKRAA. 500 megawatts, which could be 500 1-megawatt windmills.

Senator ALEXANDER. Are the wind turbines typically 1 megawatt?

Mr. KUUSKRAA. The new large ones are. The older ones were smaller, Senator.

Senator ALEXANDER. And how tall are these wind turbines?

Senator CRAIG. 320 feet tip to tip on the blade.

[Laughter.]

Senator ALEXANDER. I just wanted to get a visual picture of that, for those who worry about being able to see a gas rig. It might take 500 320-foot wind turbines in the ocean to equal that.

Mr. KUUSKRAA. That is correct, Senator.

The CHAIRMAN. I think you wanted one, Senator. Senator Craig.

Senator CRAIG. Of our known reserves of gas—and I do not know who to ask this to, and I apologize for coming late—and while we have attempted to expedite access—my colleague from New Mexico referenced that word at least three times. How much of the known reserves do we have that under any circumstance are still inaccessible, that would take an act of Congress or a direct change of policy to gain access to, of the figures that you all have given us?

The CHAIRMAN. That is a good point.

Senator CRAIG. Do we have that? We can stack up a lot of figures. How much of it is accessible at today's costs? More importantly, how much of it is not at all accessible still?

Mr. CRUICKSHANK. Speaking for offshore, of the 400 or so trillion cubic feet of undiscovered, technically recoverable resource, a little over 80 trillion cubic feet of that is currently subject to presidential withdrawal or congressional moratoria.

The CHAIRMAN. How much?

Mr. CRUICKSHANK. Over 80 trillion cubic feet.

The CHAIRMAN. Out of how many?

Mr. CRUICKSHANK. Out of 400.

The CHAIRMAN. So the 320 is available within current allowable?

Mr. CRUICKSHANK. In the central and western Gulf of Mexico and Alaska. That is correct.

The CHAIRMAN. Are they offshore that we are now talking about?

Mr. CRUICKSHANK. This is offshore.

Senator CRAIG. What about onshore?

Mr. LONNIE. I do not have a figure for onshore. The EPCA study indicated that at least in the Rocky Mountain area, approximately 85 to 88 percent of the resource is available. Now, what the total figure is I do not have that now, Senator, but I can get that for you.

Mr. KALISCH. Senator, when it comes to some of the restricted natural gas, the potential, the resources, the latest numbers from MMS, I believe that came out in December, there are about 50 tcf off the east coast, 38 off the west coast, and 40 in the eastern Gulf of Mexico where moratoria are in place.

Mr. GALLAGHER. Senator, Mr. Chairman, I think in the Mountain West, I think it is a fair statement to say between 55 and 60 percent of the known reserves of natural gas are under some sort of moratorium, stipulation, or restrictions and would have to take action by the land use agencies or Congress in order to free that up.

Senator CRAIG. And the following thought is if they are under those conditions now, nobody is considering exploration there or permit to explore.

Mr. GALLAGHER. That is correct, Senator.

Senator CRAIG. Thank you. Thank you, Mr. Chairman.

The CHAIRMAN. On offshore, I just want to ask one question and make one point. Do any of you have information on this? Are there any other developed countries that restrict the development of their offshore resources to the extent that the United States does? Does anybody know?

Mr. KALISCH. I am unaware of that, and that includes Canada.

The CHAIRMAN. Please?

Mr. KALISCH. No other country that I am aware of, and that includes Canada which is drilling off their coast just north of our borders.

Mr. CRUICKSHANK. Senator, Canada does have a moratorium on their west coast but not on the east coast.

The CHAIRMAN. And are you aware of other countries that have offshore capabilities that have limitations as strict as the United States?

Mr. CRUICKSHANK. Beyond that, I do not think any country has anything as broad based.

Mr. KUUSKRAA. Senator, we do work overseas and we do not see the kind of restrictions, and even on the west coast of Canada, British Columbia is looking to lift their restrictions.

The CHAIRMAN. I have just one last question. I think there was a discussion of this new approach to offshore drilling that would involve the States sharing in the resource more and deciding more. Did you give us that discussion, Bert?

Mr. KALISCH. Yes.

The CHAIRMAN. Let me ask you a question about that. That is just a proposal at this point. Right?

Mr. KALISCH. Correct. It is just a proposal that APGA has become aware of and we are supportive of.

The CHAIRMAN. Has it been discussed with Governors or State authorities, to your knowledge?

Mr. KALISCH. To my knowledge, yes, it has, and there seems to be a groundswell of support, especially along the coastal States in the Gulf of Mexico where right now the States have all of the mineral rights out to 3 miles and then they share in just 27 percent of the mineral rights out to 6 miles, and then it is 0 beyond that. Under this proposal, all the way out to 12 miles—well, beyond the 3 miles, they would share 50 percent of the revenue. This proposal actually has an impact sharing for the coastal States and for the adjacent coastal States, and the money is shared also with the local governments that are impacted in those local States.

The CHAIRMAN. Let me ask Eric one. You talk about essentially the surface owners who are concerned about a failure to recognize their surface rights as we develop. If I understand, that is one of the concerns you have.

Mr. BARLOW. It is certainly a component of concern I would have, yes, sir.

The CHAIRMAN. Obviously, that gets more severe as more drilling occurs. Right? Because there are more roads. You talked about the abuses. Can I ask you from your side, from the surface rights owners, do you sense that there is a willingness to recognize that the resource has got to be used on the part of the surface owners and that some accommodation has to be made on their part too? Or are the drillers the ones that have to solve this by themselves? I understand some landowners have changed their views dramatically since the prices have gone up in the last 5 or 6 years.

Mr. BARLOW. Thank you for the opportunity to respond to that.

I think that the word you use "accommodation" is very important. There is no way to take someone else's right without them feeling damaged in some way. The situation now is we basically have a supremacy or a majority and a minority in this in the way mineral rights on surface—I do not know anything about offshore, but on the land—are handled. Actually Senator, my family owns mineral rights. We have chosen not to lease our mineral rights for development because we feel so strongly that it is being done in a manner that is not respectful to the other resources, including our land, but also the water, et cetera.

So I believe there are companies out there and there are landowners out there that come to mutual understanding and come to

maybe some kind of an accommodation, but there are also companies—I can tell you the court date is coming up in the next 2 months where my neighbors are going to court trying to come to some understanding with the producers that there is not an understanding.

The CHAIRMAN. Senator, you wanted to say something.

Senator THOMAS. These are actually comments.

I should not do this in a gas meeting I suppose. I think we have to make some priorities, and in terms of use of resources, a lot of them probably ought to be made differently. All the electric plants that have been built in the last 15 years have been gas-fired, where coal is the resource that is most available. I think we need to make some distinctions there because gas is so much more flexible for other uses.

Secondly, access. Certainly I am one who likes to have access and common use, but there are some areas in which we do not want to have drilling. I think for the producers to get along well, they have to understand there are some places that need to be set aside.

Finally, Eric, you have already touched on it, but as we speak, the Wyoming legislature is dealing with this split estate situation again and I hope they can do it on the State level as opposed to the Federal because I think they are more aware of how it can be handled. Thank you.

The CHAIRMAN. Thank you, Senator.

Now we are going to proceed.

Senator MURKOWSKI. Mr. Chairman?

The CHAIRMAN. Yes.

Senator MURKOWSKI. Just one quick comment. I have been sitting here trying to figure out if the biggest problem is the restriction on access to the land. But in listening to the panelists here, it is not just the restriction on the land caused by the Federal Government or whatever policies we have. We also have restrictions to access because the technology has not advanced far enough. I go back to my colleague here from Alaska. We do not know how much is out there. We believe that there are huge quantities, but we are strapped because we do not have access to the technology yet.

So I think it was you, Mr. Kuuskraa, that mentioned we have got a race between resource depletion and the technology progress. We might not be depleting to the level that others would have us believe if we can advance the technology in very sound ways to accommodate the interests of everybody here. That is not a question but just a comment about access that way.

The CHAIRMAN. Thank you very much. That is a very good observation.

However we do this, we are going to have the next panel. I assume you all are going to leave and another one is going to come on. Thank you all very, very much.

[Pause.]

The CHAIRMAN. All right, we are not on schedule, but we have at least proved it will work.

Panel two is going to discuss LNG. So let us start right on our left here with you, Mr. Sharples, the Center for LNG. Would you please tell us who you are and then give your 2 minutes, as best you can?

STATEMENT OF RICHARD J. SHARPLES, EXECUTIVE DIRECTOR, CENTER FOR LIQUID NATURAL GAS

Mr. SHARPLES. Mr. Chairman, thank you very much. My name is Dick Sharples. I am the executive director for the newly formed Center for LNG. We represent actually 65 companies and associations interested in the safe and secure development of a North American, particularly the United States, LNG business.

As you mentioned in your introductory remarks, the U.S. Energy Information Administration recently predicted that the demand for natural gas was expected to grow about 25 percent in the next 10 years. Both the EIA and the National Petroleum Council have recognized that LNG, along with the development of other domestic resources, will be necessary to meet future demand.

One of the greatest benefits of LNG is that new supplies of natural gas could enter the market here in the United States within the next few years, well ahead of many other opportunities, and begin to offer relief to American consumers.

It must also be recognized that LNG is being delivered safely to America and around the world today. The LNG shipping industry has a safety record spanning more than 45 years. LNG has been delivered across oceans without any major accidents or safety problems either in port or on the high seas. During this time, DOE has referenced in a recent Sandia study that there have been more than 80,000 LNG cargo deliveries, covering more than 100 million miles, without incident. Today more than 150 LNG ocean tankers safely transport more than 110 million metric tons of LNG annually to more than 40 ports around the world.

The LNG industry is already subject to strong and successful Federal oversight, and we as an industry support the continuation of both the Federal oversight role and the extensive coordination that exists among local, State, and Federal agencies to facilitate and streamline regasification terminal permitting. The center supports an open, inclusive, and thorough regulatory process, but we also support an efficient process that recognizes the urgency associated with bringing new supplies of energy to this country.

As for the risks associated with energy deliveries, we as a Nation need to keep those risks in perspective. As the Sandia report points out, when examining risks associated with LNG delivery, the Nation must not focus solely on the consequences of an event, but more importantly, there needs to be a thorough assessment of the probability of an event occurring. We can then concentrate our efforts on continuing to reduce those probabilities.

The robust worldwide trade of LNG that takes place every day is proof that LNG can be handled safely and securely, and we as an industry, as regulators, the executive branch, and Congress must play a leadership role in communicating with the public so that they can make informed decisions about constructing much needed energy infrastructure.

In summary, our natural gas challenges will not be solved solely by expanding production in the Rocky Mountains or the Outer Continental Shelf or solely by building an Alaskan natural gas pipeline. We must also import LNG.

Thank you very much for the opportunity, sir.

The CHAIRMAN. Thank you very much.

Linda.

STATEMENT OF LINDA STUNTZ, MEMBER, NATIONAL COMMISSION ON ENERGY POLICY

Ms. STUNTZ. Good afternoon. My name is Linda Stuntz and I am grateful to appear before you today on behalf of the National Commission on Energy Policy, of which I am a member, along with 15 other people of divergent backgrounds and political stripes, ranging I would say from a representative of the NRDC to the chairman emeritus of Conoco.

We addressed energy policy in a wide-ranging study issued in December. Among the topics we addressed was liquified natural gas and natural gas supply generally. I would highlight today two of the recommendations.

One on safety. With respect to safety, the commission prepared a paper which was peer reviewed and which we would be happy to make available to the Congress and the committee. Essentially what we concluded is that LNG does not appear to pose greater public safety hazards than other widely used sources of energy, such as petroleum and its byproducts, at this time.

Secondly, we looked at the regulatory process. While we support a strong Federal role in the siting of LNG facilities, we do believe that cooperative federalism, which is a term some you may recall from electricity, is necessary for effective implementation of LNG proposals. While the commission believes FERC's authority for siting and regulating onshore LNG terminals is clear, we would support FERC's recommendation for legislation confirming this to reduce litigation and any uncertainty. We do, however, point out that there are many other matters in which State concurrence and cooperation is essential, air, water. FERC does not have eminent domain to site LNG terminals. So if there is ever going to be one, there has to be some collaboration and cooperation. We think this can happen.

Education is necessary and getting the real story out about what the real safety risks are and are not. Thank you very much.

The CHAIRMAN. Thank you.

Please proceed.

STATEMENT OF GARY SYPOLT, PRESIDENT, DOMINION TRANSMISSION

Mr. SYPOLT. Good afternoon, Mr. Chairman and other distinguished members of the committee. I am Gary Sypolt, president of Dominion Transmission, the subsidiary of Dominion Resources that owns and operates the Cove Point LNG import terminal in southern Maryland.

Since Dominion reactivated the Cove Point terminal in the summer of 2003, we have received over 100 ships of LNG and delivered over 287 bcf of gas into the mid-Atlantic market. Cove Point's maximum send-out rate is about 1 bcf per day, enough to heat about 3.4 million homes. And we are now seeking FERC approval to almost double that capacity to 1.8 bcf a day.

While FERC has been aggressively working to advance LNG development, there are steps Congress should take to help.

First, jurisdictional disputes cannot be allowed to place worthy projects in limbo. Congress should reiterate that FERC, after thoroughly considering input from other Federal agencies, State and local governments, and affected citizens, has the final say in siting onshore terminals. These facilities are national in scope and importance and a clearly defined regulatory path, including enforceable time frames, will benefit all parties involved.

Congress should also codify FERC's Hackberry policy, which allows new import facilities to be built without open access requirements and unnecessary economic regulation. And in doing so, the expansion of existing facilities, such as Cove Point, must be included as such projects are the most direct and least environmentally intrusive way to quickly expand import capacity.

LNG is not a cure-all fix for our supply needs. The pipeline from Alaska and improved access to both onshore and offshore gas reserves are the other critically important pieces of the puzzle.

I commend the committee for focusing its attention on this issue and hope your deliberations will be successful. And I will be happy to answer any questions later.

The CHAIRMAN. Thank you very much. I am sorry we do not have your nameplate there, but would you tell us who you are?

STATEMENT OF STACY GERARD, ASSOCIATE ADMINISTRATOR FOR PIPELINE SAFETY, DEPARTMENT OF TRANSPORTATION

Ms. GERARD. Yes, Mr. Chairman. I am Stacy Gerard. I am the Associate Administrator for Pipeline Safety, U.S. DOT. We set the safety standards for LNG facilities and inspect those facilities for compliance with those standards. We work cooperatively with the FERC and the Coast Guard to consider the need to improve those standards long term and to look at the need for investing in technology for risk assessment and mitigation controls that might be appropriate. We consult with FERC prior to their siting facilities, and we are cooperatively involved today in an educational program with the National Association of State Fire Marshals to undertake important community education about the risks and controls that we impose and to get people to understand how LNG is safely monitored.

Thank you.

The CHAIRMAN. Thank you very much.

Marilyn, would you proceed?

STATEMENT OF MARILYN SHOWALTER, PRESIDENT, NATIONAL ASSOCIATION OF REGULATORY UTILITY COMMISSIONERS

Ms. SHOWALTER. Yes. I am Marilyn Showalter. I am the president of the National Association of Regulatory Utility Commissioners. I am also the chair of the Washington State Utilities and Transportation Commission.

The State regulators are the ones who deal directly with businesses and citizens, who are the ones who are paying the rates. And we also deal, of course, with the utilities that we regulate. We are the ones who have to raise the rates for natural gas and also electricity. We are very keenly aware of the relationship between

natural gas and electricity prices and the demand that electricity places on natural gas prices.

Our general approach to natural gas I think is reflected by your conference here. It is three-pronged. We think you need to look at diversification, conservation and efficiency, and supply. So with respect to liquid natural gas, that is a way to increase supply.

Ms. Stuntz alluded to the role of State and local governments in liquid natural gas issues. She mentioned air and water. I would also add public safety, emergency preparedness in siting of facilities connected to LNG facilities. So all of that means, I think, that State, Federal, and local governments need to cooperate and coordinate.

In that respect, NARUC and DOE have a partnership, with the help of ICF Consulting, in which we are going to release two reports this February, next month. One is a white paper on issues, such as the ones I just mentioned, that State commissions, legislatures, and environmental agencies need to face. The other is a communications model for dealing with communications issues that citizens need to know. We look forward to sharing that with you next month.

Thank you.

The CHAIRMAN. Thank you very much.

The FERC representative, Mr. Robinson.

STATEMENT OF MARK ROBINSON, DIRECTOR, OFFICE OF ENERGY PROJECTS, FEDERAL ENERGY REGULATORY COMMISSION

Mr. ROBINSON. Senators, my name is Mark Robinson. I am the director of the Office of Energy Projects at the commission. We are the office that is charged with creating the record from which the commission makes decisions on hydropower projects, interstate natural gas pipelines and storage facilities, as well LNG facilities.

First, I should identify my bias. I have been involved with siting energy infrastructure for 27 years, from hydropower and the associated electric transmission lines to gas pipelines, storage facilities, and now LNG. I, therefore, tend to see energy from the ground up. A lot of folks at FERC see it from the consumer back, and we have a chairman who is very capable of looking in both directions and seeing it both ways. I have the luxury of showing you my bias today and speaking from the ground up.

There are a couple of things about LNG that I think I want to make clear to the committee as they are contemplating legislation.

One is that there is a risk associated with LNG that is developing in this country that I have termed an irrational risk standard. There is the potential for the public to get to a point on infrastructure where they want you to be able to answer, as a policy maker or as a legislator, that they are not at risk, that there is no risk associated with whatever infrastructure it is that you may have to have to accommodate our economy. I cannot do that and I do not think anyone can. But there is a demand for that type of risk assurance that I think we have to be careful about, especially if you are contemplating legislation, that we do not somehow get into the posture where we, through legislation, develop a standard that cannot be met.

The other point that I want to make on LNG—and eventually I will talk about siting, but since I am on the next panel, I will do siting there and it covers LNG and everything else that we deal with.

But the other issue I wanted to mention to you is the jurisdictional eminent domain aspect of this. It would be very helpful if, in any legislation, it was made clear that the FERC is the jurisdictional entity for siting, which is as we understand it now, but it needs to be codified, and with that, if we acquired, under section 3 of the Natural Gas Act, the right to allow for eminent domain where necessary. Right now, an LNG facility that would be in the public interest and would have the permits from the State, the permits from all the Federal agencies and the authorization from the commission could be stopped by a single homeowner if that homeowner was in an exclusion zone that we had determined needed to be under the control of the LNG plant operator, and they would be unable to acquire that property.

So it is something that we have for pipelines, we have for hydroelectric projects. It makes sense, I think, to also allow it for LNG facilities.

The CHAIRMAN. Thank you very much.

Mr. CRUICKSHANK. Walter Cruickshank, Deputy Director of Minerals Management Service. We work in cooperation with the Coast Guard in looking at offshore LNG terminals. Again, I am here just to help with any questions anybody may have. Thank you.

The CHAIRMAN. Let us hear from the Coast Guard. Captain, thank you for coming.

STATEMENT OF CAPTAIN DAVID SCOTT, CHIEF, OFFICE OF OPERATING AND ENVIRONMENTAL STANDARDS, U.S. COAST GUARD

Captain SCOTT. Thank you for inviting me, Mr. Chairman. Good afternoon, Senators.

My name is Captain Dave Scott. I am the Chief of the Office of Operating and Environmental Standards here at the Coast Guard headquarters in Washington. I am principally involved in LNG in three main areas, and my office is the one at headquarters responsible for processing the applications for LNG deepwater ports, which we currently are working on eight of them. Two of them have been permitted and six are now undergoing environmental review. We are expecting probably several more applications for offshore terminals here in the next couple of months.

The second main responsibility that my office has deals with the security policy for siting of shore-side LNG terminals from the waterways management and vessel safety and security navigation point of view. In that regard, I work very closely with my colleagues at DOT, Office of Pipeline Safety, Minerals Management obviously on the offshore stuff, and over the past 18 months, I have been kind of a regular fixture over at FERC as well.

The third major responsibility of my shop is developing the safety standards for LNG vessels themselves. Right now the worldwide fleet is about 160 LNG vessels. About 40 of them are regular callers in the United States. Unfortunately, we no longer have any U.S.-flagged LNG carriers. We did have eight at one time. They

were reflagged to the Marshall Islands in 1999. So they are all foreign flagged, subject to rigorous international standards, as well as many detailed domestic U.S. standards, and through our process of the inspection and the issuance of what we call a certificate of compliance, we ensure that the vessels that do call on the United States are in compliance with the international standards, as well as applicable U.S. regulations.

So I am here today to provide any kind of technical advice on matters pertaining to the Coast Guard and LNG vessel safety and security. Again, it is a pleasure for me to be here. Thanks for inviting me.

The CHAIRMAN. Thank you.

Senator Bingaman.

Senator BINGAMAN. Thank you very much, Mr. Chairman. I thank all the witnesses.

Let me just ask Mr. Robinson and any of the other witnesses that want to comment on it. I am just a little unclear as to how the Federal jurisdiction in this area is separated out from State and local jurisdiction in the siting of LNG and the permitting of LNG facilities. I saw the executive summary that FERC gave us of their testimony here today, and they indicate that they want to have exclusive jurisdiction over the siting of onshore LNG import facilities in State waters and, of course, as you mentioned, authorizing eminent domain for such facilities.

What would the States' authority be in those circumstances if you have exclusive jurisdiction for the siting of these facilities?

Mr. ROBINSON. The State's role would be unchanged from what it is right now and what it has been for years. The State has authority, through the Coastal Zone Management Act, to not authorize an LNG facility. The State also has authority, through the Clean Water Act, section 401, to not authorize, and therefore an LNG facility cannot be constructed.

What the commission is requesting is that for purposes of the siting process, in determining where a project should be located and it is in the public interest, that that be the exclusive jurisdiction of the commission. The State and other Federal agencies would all have their continuing authorities under other statutes to decide whether they should or should not be constructed.

Senator BINGAMAN. So existing State authority to object or to block the siting of one of these facilities—you are not suggesting they be disturbed or changed?

Mr. ROBINSON. We are not suggesting that that authority be touched in any way, shape, or form.

Senator BINGAMAN. All right.

Let me ask Marilyn if you have any disagreement with that statement of what is being proposed.

Ms. SHOWALTER. Well, there is a court case going on now between FERC and the State of California. NARUC has not taken a position in that case. But it could be that the court would find in that case that current law already gives FERC that kind of authority. On the other hand, what California is asserting is that because this particular LNG plant deals only, it asserts, with in-State services, that in that situation California has jurisdiction.

Now, I should say that that fact pattern of an LNG facility that assertedly deals only with in-State pipelines is probably not typical and may not happen again, as far as I know. So in a case where there clearly is an interstate aspect, you do not have the question.

But I do think that the law at this point is somewhat unsettled and it could be settled clearly or it could be, if it is settled in California's—well, if it is settled in FERC's favor, that is it. If it is settled in California's favor, it does not really answer the question of other fact patterns.

But I do think the issue is who actually gets to decide this question and is it FERC or is it a State in whatever circumstances may apply.

The CHAIRMAN. Is that in a Federal court, ma'am?

Ms. SHOWALTER. Yes, it is.

The CHAIRMAN. So if it is decided there, it will not be determinative for the land. Circuits do not determine law of the land.

Ms. SHOWALTER. Not unless it went all the way up to the U.S. Supreme Court.

The CHAIRMAN. So there would be some reason, in terms of delay, for us to decide which we prefer or not prefer, but which we think is the best policy.

Ms. SHOWALTER. Yes, and you may be aware that Congress put some intent language but that is not quite the same as changing the law.

The CHAIRMAN. Yes, that was my language.

[Laughter.]

The CHAIRMAN. I could not put it in the statute, so I just put it in hortatory language.

But anyway, how about the remaining Senators here? Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Several of you have mentioned the education component and making sure that the communities are accepting. Siting is a very, very, very difficult issue. I think it is probably the most difficult thing that we are dealing with right now.

We have heard the panelists just before you talk about the supply, and I am convinced that there is supply out there. We are entering long-term contracts with folks overseas, and now we have got to figure out how we get the LNG into the country. The number of LNG terminals has not been increasing.

And it seems that since September 11th everybody is shying away from any kind of a facility that might be viewed as an opportunity, whether it is an LNG facility or whether it is the oil terminal that we have in Alaska at Valdez. People are saying, no, if it is going to come my way, I do not want it.

How do we work the education? How do we get beyond this mind set that if we put it in my back yard, my family and I are at risk? What do we do?

Ms. SHOWALTER. Well, I would like to give an example in another arena which is closely related, and that is in hazardous liquid pipeline safety. A few years ago, you may know, we had an accident in the State of Washington and it created great fear and trepidation of pipelines. Stacy Gerard over there, head of Office of Pipe-

line Safety, initiated with, I should say, $800,000 from Senator Gorton——

Ms. Gerard and Senator Murray.

Ms. SHOWALTER. And Senator Murray. It essentially was a program whereby OPS and our agency, the UTC, and local government, mayors and emergency preparedness officials all got together, in essence, a network, and a great deal of education went on. Interestingly, when we had subsequent incidents, which will happen with pipelines, the network really was in place to deal with it. Also the citizenry became far more educated about what was dangerous and what was not and where they could lend their voices. I think it really is a success story, and I think that kind of thing is possible with LNG as well. It takes a lot of work.

Mr. SHARPLES. Senator, if I may add to that because I agree completely. The partnerships are developing. They are developing amongst the agencies, between the States and the Federal agencies and with industry. In fact, one of the driving forces to start the Center of LNG was to provide a resource to provide technical material, educational material that then the individual companies or anyone else could, frankly, use when they go out and have discussions in the local communities. It needs to continue but I think we all recognize the need for the educational tools.

But what I think we also need to realize, though, is there is a need for strong leadership. There are local communities around here who are very strongly advocating the construction of an LNG plant, and usually, if you look at them, the common denominator is one or two or several strong local leaders that have been willing to come out and say I understand the risk. It is a good thing to do. I think that we need to marry those two things: the educational material and strong leadership.

Senator MURKOWSKI. I want to ask the captain here a question about the number of LNG vessels. I heard you say there are 160 LNG vessels, 40 of which are coming into U.S. waters, no U.S.-flagged vessels currently. Now, recognizing what our demand picture is going to look like in just a few years, we are at 59 billion cubic feet a day. By 2015, we are up to 77 and by 2025, we are up to 84. Now, we are going to try to get some of it domestically, but we know we are going to have to bring some, obviously, to meet this demand, imported LNG. Are there enough vessels out there as we ramp up our consumption here?

Captain SCOTT. There has just been a tremendous growth in new builds of LNG vessels worldwide. To construct LNG vessels, they are rather unique. So there are only about, I think, nine shipyards worldwide, three in Korea, a couple in Japan, and the rest in Europe, that really specialize in LNG due to the highly technical nature of it, the kind of materials you have to acquire, the skill sets that the shipyard people have to have.

Right now, I think I said there is between 150 and 160 in service right now. I think the order books indicate for the next several years, there are probably about another 25 or 30 on order at the shipyards. We are seeing China enter the LNG shipbuilding market as well. So I think in the near term, probably in the next 3 to 4 years, we see adequate international shipyard capacity, but beyond that, it remains to be seen.

With regard to the offshore terminals that we see here, as I said, we have eight proposals we are working. We are expecting a couple more. Probably as an economic matter, I do not think you would really see more than probably realistically half a dozen of those actually coming to fruition. I know FERC has quite a number, around 30 or so, shore-side facility applications in process. How many of them might actually eventually come into operation, I do not know.

But I do see adequate shipbuilding capability in the next 3 to 4 years. Unfortunately, though, I do not see it occurring in the United States.

Senator MURKOWSKI. Well, that is the problem. Of course, in Alaska, if they are not U.S.-flagged vessels, we cannot bring the LNG out of State and into the rest of the States.

Captain SCOTT. Right. There is also that pipeline option as well. But that may be something for you to look at the Jones Act perhaps for LNG.

Senator MURKOWSKI. Thank you.

The CHAIRMAN. Senator Craig.

Senator CRAIG. With current costs of construction of LNG port facilities, looking long term, the blended need of both domestic onshore/offshore production in LNG—and none of us disputes the reality of both supplies. Without divulging proprietary information, what is a break even to delivery? In other words, what keeps an LNG plant's lights on? Does anybody have that figure or are willing to talk about it? I know you have the figure.

[Laughter.]

Mr. SYPOLT. I will clarify that Dominion is not the supplier of LNG. We are the terminal operator. We receive the ships. We store it in tanks. We revaporize it and take it to the market.

Senator CRAIG. You have escaped. You are going to double your operating facility. Doubling it at location should cause less regulatory problem and therefore speed up the process, should it not?

Mr. SYPOLT. We believe that it should, sir.

Senator CRAIG. And you are now supplying 3 million households. You could go to 6 million with that capacity?

Mr. SYPOLT. Yes, we could.

Senator CRAIG. Who can answer the first question? In other words, what are we flooring the price of gas at with the construction of LNG facilities?

Mr. SHARPLES. If I may take a stab at your first question, Senator, and I do not have the exact details, but we can get it for you. If you will allow me a band, around the $4 range is what I think most studies have talked about. But I would point out that even by 2025, if you take the National Petroleum Council estimates, which are not far off EIA numbers, you are looking at only 15 percent of the natural gas in the United States coming—I think it is between 14 and 17 percent of the natural gas in the United States is coming from LNG.

Senator CRAIG. No. I appreciate that.

Mr. SHARPLES. So I think the question is, on the margin, what is the most expensive gas? I think that we can very clearly have some more costly domestic supplies than that.

Senator CRAIG. I concur.

Mr. SHARPLES. And we may knock a few of those out and replace them with some of this gas, but I do not believe it is going to set the price for gas.

Senator CRAIG. Thank you.

The CHAIRMAN. Well, it might be that small percentage you are speaking of, but in terms of terminals and the like, it is only 13 times the capacity that we have now. So whatever we have got, that is a pretty big chunk. I do not know that we can do it.

Let me ask Ms. Stuntz. In terms of the economics of energy dependence, what is the difference between becoming more and more dependent upon crude oil for our existence and becoming more and more dependent upon LNG for our existence?

Ms. STUNTZ. That is a very difficult question, Mr. Chairman.

The CHAIRMAN. It seems to me it is simple. There is no difference.

Ms. STUNTZ. Well, the only difference is natural gas is interesting. It is not located in exactly the same places that oil is, and in fact our largest supplier right now is Trinidad and Tobago. That is not going to last indefinitely. The commission looked at this. There are substantial western hemisphere supplies of gas, Latin America, Colombia, Venezuela. Will the reserves ultimately be located in the places where we are worried about oil reserves now? At the end of the day, yes. So I think, as you know better than anyone, we have to do what we can to boost domestic supplies and to place our bets in as many places as we can so that we reduce our vulnerability. That is the best we can do.

The CHAIRMAN. Well, I agree with that, but from the standpoint of a balance of trade, it is the same.

Ms. STUNTZ. Yes.

The CHAIRMAN. And we dramatically increase the balance of trade either way.

Ms. STUNTZ. Yes, sir.

The CHAIRMAN. I do not know to whom this applies, but probably industry as much as the Government. There is no doubt in my mind that LNG has some of the characteristics of nuclear power in the sense that people are so frightened of it and I would say without hesitation that in both instances they are frightened about things that are non-facts, but people could argue about that. But I have heard people that oppose LNG equate the explosive range of LNG by equating it with a Hiroshima bomb to a 500-meter hazard zone. Some of you might have heard that. One of you talked about risks. Well, it obvious that neither of those are right at all with reference to LNG.

I would suggest if we are going to grow independence and use, somebody has to do a real educational piece for the American people and for a lot of leadership in the country or we will be so slow in getting there that we will become drastically dependent and unable to supply products that are like natural gas for America's future. Is that the industry? Who is that? Does anybody have any ideas? Yes, ma'am.

Ms. GERARD. I think we are convinced that it has to be a partnership effort that we were alluding to earlier, and we have asked the National Association of State Fire Marshals to play a role in this as their Governors' senior risk managers at the State level.

They are producing a product that is comparable I think to the product that Marilyn mentioned that NARUC is working on. I think through a collegial approach, involving Federal, State, local government and industry and with local emergency response representatives, we have a hope. The fire service of the country is still its hero, especially since 9-11, and with the State fire marshals agreeing to play a lead role in this, I think we have a real opportunity. They can host the rollout of these educational programs with local officials that they have a relationship with. Gary Powell from the State of Alaska is involved in the project.

The CHAIRMAN. Senator Craig.

Senator CRAIG. Mr. Chairman, it still remains a siting issue, and putting them in the right locations and then disallowing people to build up next to them. It was not my friend's feed lot that caused the problem in the beginning. It was the folks who decided to move in next to it and disliked the odor after they got there and tried to shut it down. The same problem is here. Let us site them appropriately in those distances that create the margins of safety and get smart about it and be willing to be tough enough to put the prohibitions for urbanization in place to disallow it from happening.

Ms. STUNTZ. Senator, if I might just add. In this case there is one hopeful development and that is the development of these offshore unloading and regasification facilities. There are a number of applications now that Captain Scott could speak with you about. But that technology—and there are varying, different kinds—if it proves out, could make this simpler, at least in some places. But I remain concerned that folks in the Northeast and California who probably need this the most are still having difficulty dealing with it.

The CHAIRMAN. Yes. What is new?

[Laughter.]

Mr. SHARPLES. If I may add. First of all, I think the last point is very critical, and that is the reason that we have isolated pockets that need this energy is because there are infrastructure bottlenecks getting energy to them. So we have to find solutions in terms of how do we site things where we need them, in addition to where we would like them to be.

The other thing I would like to say is that while we as an industry are very hopeful on the offshore technologies—and there are a large number of applications pending, as Captain Scott mentioned—there are technological issues and there are economic issues. It is not a panacea. There may be places. There may be individual facilities that make economic sense, but as of today, it is not a panacea to answer all the questions. They do not make sense in some cases.

The CHAIRMAN. Very good. Thank you. I thank all of you for the excellent testimony.

We are going to get to the next panel. Senator Bingaman, will you start this next session for me please?

Senator BINGAMAN. Why do we not go ahead and get started? All right. This panel is dealing with natural gas infrastructure, what legislative and regulatory policies should be implemented to en-

courage needed additional safe and adequate infrastructure for natural gas transmission, distribution, and storage.

So we will start with the State of Louisiana. Scott Angelle. Is that the correct pronunciation?

Mr. ANGELLE. Yes, sir.

Senator BINGAMAN. Please go right ahead.

STATEMENT OF SCOTT ANGELLE, SECRETARY, LOUISIANA DEPARTMENT OF NATURAL RESOURCES

Mr. ANGELLE. Good afternoon. My name is Scott Angelle. I am the secretary of the Louisiana Department of Natural Resources, and I bring to you today a real Louisiana accent——

[Laughter.]

Mr. ANGELLE [continuing]. And a real passion to continue helping America meet her energy needs.

Louisiana has a long and distinguished history of oil and gas production. Currently 34 percent of the Nation's natural gas supply and almost 30 percent of the Nation's crude oil supply is either produced offshore Louisiana or moves through the State's coastal wetlands. This production is connected to nearly one-half of the total refining capacity in the United States.

Governor Blanco has asked me to convey the State's desire to not only continue this production, but to seek additional ways to increase it and to continue to ensure that the supply is provided to the rest of the Nation.

We understand just how vital these energy resources are to the Nation's economy, but Louisiana, like other coastal producing States, sustains impacts and bears the cost of onshore support infrastructure. In my State, some of this infrastructure contributes to the loss of more than 24 square miles of our coastal land each year, a rate of land loss believed to be the fastest on the planet Earth. In fact, during the time of this afternoon's meeting alone, Louisiana will lose a football field-wide area from the Capitol Building to the Washington Monument. If what is happening in Louisiana today were happening in this city, the steps of this building would be washing away today, the White House tomorrow, and perhaps the Pentagon soon thereafter.

When States like yours, Senator Bingaman, holds drilling on Federal lands onshore, they receive 50 percent of those revenues in direct payments, which is appropriate. In contrast, Louisiana produces an average of 5 billion—that is billion with a B—off its shores and gets only a fraction of a percent back. We believe this inequity is profound. It is critical we receive our Federal share of revenues to build and maintain onshore infrastructure to continue to support this production activity. We believe it makes sense to take care of the energy-producing States that produce the energy for the benefit of the rest of the Nation.

Today, 4 months after Hurricane Ivan, a significant amount of oil and gas production has yet to be fully restored. According to analysts, oil prices would realistically be $75 a barrel had Ivan made a direct hit on the infrastructure of Louisiana.

Like a good bank account, one must make a few deposits to make a few withdrawals. Relative to America's energy industry, Lou-

isiana has made her share of deposits and we need to make a withdrawal on the Federal Treasury to protect the infrastructure.

Help us to allow us to continue helping America. What else must Louisiana do to get the attention? Just last month, the Federal Government sited the newest LNG facility in America in Cameron Parish, Louisiana. We are doing our share but we do need some help to protect our infrastructure.

Thank you very much.

The CHAIRMAN. Thank you very much.

Mr. Secretary, I did not leave because you were coming up. I know you very well, and I guess it is fair to tell you I knew what you were going to say.

[Laughter.]

The CHAIRMAN. Let us proceed. Go ahead, ma'am.

STATEMENT OF CHRISTINE HANSEN, EXECUTIVE DIRECTOR, INTERSTATE OIL AND GAS COMPACT COMMISSION

Ms. HANSEN. Mr. Chairman, Senator Bingaman, thank you for the opportunity to testify. I am Christine Hansen, the executive director of the Interstate Oil and Gas Compact Commission, a compact representing 30 oil and natural gas producing States. Our current chairman is a former chairman of this committee, Governor Frank Murkowski of Alaska. The IOGCC is the Nation's leading advocate for conservation and wise development of our domestic resources.

Increasing domestic supplies of natural gas has a myriad of components, including the infrastructure component. In the year 2000, the IOGCC and the National Association of Regulatory Utility Commissioners, in response to a 1999 report by the NPC on natural gas, formed a regulatory work group to look at impediments to infrastructure development because the NPC identified regulatory impediments as being something important to look at. We have given the committee copies of that final report, so you have all of our recommendations in front of you.

Specific recommendations contained in that report which also, by the way, praises FERC—FERC was a member of that committee, and oftentimes the States forget to mention when they think the Federal Government is doing something well. In that report we praised FERC's streamlining efforts on pipeline siting.

We focused on the need to streamline State and local permitting and called for consideration of things like pre-approval of utility corridors. Louisiana then was a pilot project, and I have distributed copies of that pilot project report, proving that our recommendations do work.

I want to comment just on the INGAA recommendation on property tax. We have not looked at the impact of that on the States, and I think that a study would be appropriate before the Congress did anything to change the property tax.

I also would endorse the need for education. There are some overriding issues that complicate infrastructure needs and at their base is the lack of education of the public but also of the State and local government leaders.

Thank you, sir.

The CHAIRMAN. Thank you very much.

Mr. Cooper.

STATEMENT OF MARK COOPER, DIRECTOR OF RESEARCH, CONSUMER FEDERATION OF AMERICA

Mr. MARK COOPER. Mr. Chairman, thank you. My name is Mark Cooper. I am director of research at the Consumer Federation of America.

The first time I testified on this issue was 25 years ago before this committee almost to the day. In the past 25 years, we have failed to adopt a coherent, balanced policy. We are paying the price today, but if we fail in the next 25 years, the price will be much greater. So I commend the committee for starting fast, for pitching a big tent, and hopefully we can get a policy that balances consumer and producer interests.

I have been asked to talk about infrastructure. Natural gas transportation, distribution, and storage infrastructure exhibit characteristics of natural monopoly and public goods. They are a natural monopoly in the sense that there are not likely to be redundant facilities in a given area because of high fixed and sunk costs. They are a public good in the sense that the benefits of reliability and market disciplining that inhere in these facilities are non-excludable. All of the consumers in an area receive those benefits whether or not they bear the costs. These are classic economic characteristics.

As a result, the occurrence of market failures of commission, the manipulation of markets, or omission, socially irresponsible undersupply, is likely to occur unless there is public policy.

We believe a critical first step in building the consensus that we have failed to build in the past 25 years is to restore confidence in the transparency and fairness of these markets. And that means starting with an infrastructure, including an information infrastructure, that people believe in and therefore will be willing to make the hard choices that we firmly believe must be made.

Four suggestions to start with.

First, evaluate alternatives including infrastructure savings as a critical component. If we do something that saves on an LNG plant or a pipeline, that is a benefit to society we should not miss.

Second of all, stop deregulating where markets are too weak to protect consumers. That will first diminish abuse, but even more importantly, it will restore the utility finance model to build these infrastructure facilities. The merchant builders of infrastructure are having difficulty. We need to restore faith in the utility finance model.

Third, adopt requirements to expand storage. We have inadequate storage. Every price shock we hear, stocks were low. Well, we need policies to guarantee storage is there.

And finally, we need a reporting system of prices and stocks and balance in supplies that is honest, audited, and instills confidence in the public.

Thank you.

The CHAIRMAN. Thank you very much.

You are on this one also.

Ms. GERARD. Stacy Gerard, Pipeline Safety, Associate Administrator, DOT. It is our job to be the safety regulator to make sure

that the natural gas pipelines are safe and that people can be confident that they are safe.

In the last couple years, we have raised those safety standards in a very significant way to a higher level than they have been in the past 30 years. These are risk-based regulations. We took a scientific approach. Concentrate the protection on places where people can be affected. The industry supported this approach and we are moving into full implementation. And from a consumer standpoint, that is an important thing.

We are pleased that the gas industry has stood with the Federal Government and State government here to support more transparency, but from a safety side so that we have much more public reporting on how the pipelines are managing the testing and repair. So from a consumer standpoint, it is a really good thing that people will be able to see how it is working from a safety standpoint.

The CHAIRMAN. INGAA.

STATEMENT OF KEITH RATTIE, CHAIRMAN, CEO, AND PRESIDENT, QUESTAR CORPORATION

Mr. RATTIE. Senator Domenici, Senators Bingaman, Murkowski, and Craig, thank you for inviting us here today. My name is Keith Rattie. I am chairman, CEO, and president of Questar Corporation. We are one of the fastest growing natural gas producers in the United States. We are also in the interstate pipeline business, and we own a natural gas utility.

But I am here today on behalf of the Interstate Natural Gas Association of America, INGAA. I am the current INGAA chairman.

The bottom line is that America will need all the natural gas the market can deliver over the next couple of decades. We cannot conserve our way out of the supply problem except at an unacceptable cost to our economy and our standard of living. We do not have the luxury of choosing to just say no to new pipelines or to new natural gas development or to LNG terminals required to access the massive amounts of natural gas that have been found in this country and around the globe. In short, we need new supply from new areas and new pipelines to move more gas.

INGAA joins with the many others who urge Congress to act to remove government-imposed barriers to domestic natural gas supply, but new gas supply will not solve the problem without new pipelines to transport it. And if you remember just one thing from my statement today, I would like you to remember this number. $200 billion. That is how much more consumers will pay for natural gas between now and 2020 if we do not fix the government-imposed barriers to new pipeline and LNG import terminal construction.

Now, Congress gave FERC authority to approve interstate pipelines in 1942. FERC has done much to improve its processes and expedite permits in recent years. I will give you some current examples on that in Q&A if you are interested. But other Federal and State agencies frequently challenge FERC's role as lead agency. They do so by exploiting conflicts in Federal statutes, notably NEPA, the Coastal Zone Management Act, and the Clean Water Act. Now, we are not asking you to remove the authority granted

to other agencies under these statutes, but what we are asking for is a little adult supervision. Congress should do these six things.

One, affirm FERC's role as lead agency for pipeline and LNG terminal permitting and construction under the Natural gas Act.

Two, task FERC with coordinating all environmental reviews under Federal law, including NEPA.

Three, affirm that FERC has siting authority for LNG terminals.

Four, codify FERC's Hackberry decision. This, by the way, is one excellent example of how common sense and a commitment to process improvement can make a difference.

Five, require other Federal and State agencies to use the FERC administrative record as sole record for all reviews and appeals. This will prevent other agencies from sitting out the FERC review process and then subsequently conducting their own duplicate proceedings with a duplicate record.

And finally, number six, require expedited judicial review by the U.S. Court of Appeals for the D.C. Circuit when disputes do arise over FERC-approved projects.

And I will be glad to explain all of this in Q&A. Thank you.

The CHAIRMAN. Thank you very much.

Mr. Robinson.

Mr. ROBINSON. Senators, we need help. We need help with siting, and we need help with siting basically because it is not good enough to site infrastructure where people want it, where people can accept it. I will use LNG as an example. We have 13 pending LNG applications at the commission right now. Probably two-thirds of those have no real opposition whatsoever. We have also authorized three new LNG facilities in this country. Those LNG facilities that are not opposed and those LNG facilities that have been authorized are all in the Gulf. It is not enough to put LNG in the Gulf. We will probably never see or I would be hard-pressed to imagine that we will ever get another pipeline across the Hudson River. You can put all the LNG that you want to in the Gulf of Mexico and you will not do one thing for New England in terms of their gas supplies. So we need a siting policy which is rational and allows for everybody's input and decisions to be made that are in the regional interests, not governed by parochial restraints.

Three points to have a rational siting process.

First, you have to have clear jurisdiction for a lead agency, an agency that people look to to make that decision.

Second, you need the development of one Federal record. All agencies that operate under Federal statute or State agencies that operate under delegated actions from the Federal statutes need to cooperate with the commission and develop one record from which all those actions can be taken in a time frame established by that lead agency. That is just good government, to have everybody do it at one time and use one record.

There needs to be some teeth in it, however. If an agency does not take that action within the time frame required by that Federal agency, it should be assumed waived, that their authority is assumed waived if they do not take that action in a reasonable time frame.

The third element that you need, beyond the clear jurisdiction and one Federal record, is you need to have a direct appeal of all

of those actions to the Federal Court of Appeals, not a series of sequential administrative and State court and Federal court appeals that can kill a project with a death by a thousand cuts just in terms of the time frames associated with going through all those appeal processes.

If we have those three elements in a siting process that only you can provide to us, we can rationalize the siting for not only natural gas, but I offer it as a model for any infrastructure development that people are interested in seeing move forward in this country.

The CHAIRMAN. Thank you very much.

Mr. Davies.

STATEMENT OF PHILIP DAVIES, VICE PRESIDENT AND GENERAL COUNSEL, ENCANA GAS STORAGE, INC.

Mr. DAVIES. Thank you, sir. My name is Phil Davies. I am Vice president and general counsel of EnCana Gas Storage, Inc. However, today I am here to speak on behalf of my company and two others, Pine Prairie Energy, a Sempra company, and eCORP, LLC. Together those companies represent amongst the largest independent storage developers operating in North America today.

I would like to talk very quickly about the changing nature of gas demand. We are all aware that demand is increasing, but its nature is changing as well and it is changing in a radical way. It has become increasingly weather-dependent and it has become much more variable. Stable industrial load is being displaced by more variable residential and commercial demand and by gas-fired generation, the latter being the largest single contributor to increasing gas demand spikes.

Now, the extreme price volatility that we have seen during periods of peak gas demand demonstrates that the current delivery infrastructure can no longer consistently satisfy the demand spikes that frequently challenge its capacity. And failing to identify and respond to this dynamic by increasing investment in our gas delivery grid will only perpetrate the extreme price volatility that we have witnessed over recent winters.

Mr. Rattie and others have spoken about the need for additional transmission capacity. Our focus is on the need for more storage and on looking for vehicles or ways in which policies can be adopted to encourage incremental investment in storage. Storage is unusual because it requires a substantial up-front investment in the form of cushion gas and cushion gas at today's prices can easily equal 50 percent of the capital costs of the storage facility if it is a reservoir facility. With salt it is somewhat less. By contrast, cushion gas would have represented less than 10 percent of capacity invested in a similar project were it built in 1975 and less than 25 percent were that project sited in 1995.

At prevailing gas prices, simply put, new gas storage development is becoming cost prohibitive. We would recommend reforms to tax depreciation rules which recognize this reality and we have outlined some of the suggestions we have in our more detailed proposal.

I would like one more word to express a comment about leadership. I think these are uncertain times and those are the times for

leaders to emerge. I compliment you and your committee members for convening this conference.

I also want to compliment the FERC for focusing on storage. It has been a subject which has had a lot of staff time. They have issued a storage report and made storage the feature the piece for this year's natural gas state of the industry conference. They have also shown regulatory flexibility in relaxing some of the more onerous regulations that apply to independent storage, and we congratulate them for that as well.

The CHAIRMAN. Thank you very much.

Please.

Mr. CRUICKSHANK. Good afternoon once again, Mr. Chairman.

The CHAIRMAN. Yes, indeed.

Mr. CRUICKSHANK. Walter Cruickshank with Minerals Management Service, and we oversee the infrastructure for development of resources on the OCS. I would be happy to answer any questions the committee may have.

The CHAIRMAN. All right.

BLM.

Mr. LONNIE. Good afternoon, Mr. Chairman. Tom Lonnie, Assistant Director for Minerals Realty and Resource Protection with the BLM. We process right-of-way applications and applications for gathering systems on public lands.

The CHAIRMAN. Senator Bingaman.

Senator BINGAMAN. Thank you very much.

Again, I will ask Mr. Robinson, since this is obviously an area you spend a lot of time on, and then Mr. Rattie if he has a different perspective.

INGAA's recommendations and I think what you have said as well are that FERC be given clear authority to establish an administrative schedule for the NEPA review and associated permitting decisions for all relevant Federal and State authorities. Are the respective State agencies in agreement with this, or is there substantial push-back from them on this idea?

Mr. ROBINSON. Well, it is actually an idea that we have implemented administratively at the commission through what is called a pre-filing process where we try to gather all the agencies, State, Federal, local, and have them, from the very beginning, identify issues and work them out with us. The problem with that process is that it is administrative, and as long as the project is well received and going well, then everybody plays nice. As soon as you come to a project where there is an agency that does not necessarily think it is a good idea, that has a tendency to break down. That is why we would ask that legislatively we have this one Federal record concept in place. Again, it does not remove anyone's authority, but requires them to play in one game and not try to kill a project with a death by a thousand cuts.

Senator BINGAMAN. So how does this work then? States do have authority under the Coastal Zone Management Act and under the Safe Drinking Water Act. And you say their authority would not be overridden or diminished. But you would give them a schedule for carrying out that authority or exercising it, or how would that work?

Mr. ROBINSON. Again, that is exactly the way we try to work it now, and in most instances it works quite well. The States will develop their record with us, use our NEPA document in many instances, and then take their action in a time frame which is consistent with the commission's time frame. What we would like to see is that be a legislative requirement so that the agencies have to perform in that fashion as opposed to picking and choosing.

Senator BINGAMAN. Mr. Rattie, you are in agreement with what he has just described as the right way to proceed?

Mr. RATTIE. I certainly endorse what Mark has just said. Let me give you an example. I think we are seeing great progress in this area. We have got a long ways to go. If someone had told me 2 years ago that we were going to file an application with the FERC for a significant pipeline expansion in the Rockies and get the certificate 90 days later, I would have told you you were absolutely nuts. But we did just exactly that. We received a FERC certificate for an expansion of a pipeline in central Utah in 90 days. We used the pre-filing process. FERC, I believe, has shown a serious commitment to try to expedite and streamline the permitting process.

Now, this was in an area where there were not a lot of issues to resolve, but it shows you what can be done if we use a single process. The situation we have today is everyone deems themselves responsible which means no one is accountable. We have got to fix that.

Senator BINGAMAN. I would just ask one other question, this to the representative from the Department of Transportation. We passed that legislation to give additional authority to you folks with regard to pipeline safety. Are you persuaded that that has given you the wherewithal or what you needed in order to solve some of these obvious problems that existed with pipeline safety?

We had a terrible tragedy in our State a few years ago, as you will remember, near Carlsbad, New Mexico, where several people were killed because of a rupture in a pipeline that had not been tested maybe since it was constructed. Are you confident that the testing is occurring on a regular basis and that those kinds of problem do not continue to plague us?

Ms. GERARD. Well, it is a 10-year process. We put the regulations in place in accordance with the schedule. In that law, we are a year past that point where the companies are required to have identified the sites where the protection is required. I believe that the community that you are speaking about would be protected under that risk-based scheme that I spoke about before. A lot of emphasis has been put on protecting people who are unsheltered in outdoor areas where they are known to congregate. We have, again, enlisted the support of local officials in identifying those places.

So the process is well underway, but it will take a 10-year period to get all the testing and repair done. That testing and repair could lead to some capacity issues because until the repairs can be made, there may be pressure reductions that are necessary. But the testing is underway that you are referring to.

The CHAIRMAN. Thank you, Senator Bingaman.

Senator Craig.

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

Mark, let me ask you this question. Do you know if the 404 permit for the Islander East pipeline has been let?

Mr. ROBINSON. No, it has not.

Senator CRAIG. Well then, Mr. Rattie, do not get your hopes up. [Laughter.]

Senator CRAIG. The reason I say that and the need for what Mark has just told us, Mr. Chairman and our ranking member, Senator Bingaman—I think we are 27 months now or better?

Mr. ROBINSON. Over 2 years.

Senator CRAIG. Over 2 years since FERC said go.

The CHAIRMAN. What is this on, Senator?

Senator CRAIG. This is on the Islander East pipeline in the State of New York.

Mr. ROBINSON. It goes from Connecticut to New York.

Senator CRAIG. Does it feed New York City?

Mr. ROBINSON. Long Island, yes.

Senator CRAIG. It feeds Long Island.

Twenty-seven months later, the Army Corps of Engineers has not yet agreed that FERC is right in what they did. Here is an example of duplicative process, waste of resource, and the right hand questioning the left hand's actions.

Now, it is a very cold winter. New York City is experiencing record temperatures and this morning the national news suggested that the consumer of New York would pay a higher energy bill this year than ever before. Shame on us.

Thank you for holding this hearing.

Mr. Rattie, until we get those bottlenecks out of the way, do not bet your company's bank on 90-month—what did you say?

Mr. RATTIE. Day.

Senator CRAIG. 90-day permit issuances.

Mr. RATTIE. Well, let me just help underscore your point. The price of gas on the spot market today is about $6 in Chicago. It is about $20 in Transco zone 6. High prices convey a very simple message.

Senator CRAIG. Where is Transco zone 6?

Mr. RATTIE. That is the New York area. We do not have enough pipeline capacity to move the gas into where the market needs the gas. So, Senator Craig, you are spot on.

I was only offering a hopeful vision of what might be achievable if we could get all parties to agree to let FERC take the role as lead agency and let their record stand.

Senator CRAIG. Well, the reality is that the consumers of New York City today are, in fact, paying a phenomenally high price for a scarce supply because we cannot get it to them because we let our agencies fall over each other.

The CHAIRMAN. Well, I was going to ask the question a different way, but I was going to say New York residents ought to look at Chicago and say what happened, because the bill in Chicago did not go up. New York's went up because they did not have enough gas because of no pipelines. But if you woke up in Chicago, even if you had the same weather, the same thing did not happen. That is what we understand, and I was going to ask why but you just told us, I assume. Is that correct?

Mr. DAVIES. I have an additional comment, if I may. Chicago is representative of a market that is well balanced with both incremental pipeline capacity. There has been a number of new lines sited there. It also well balanced in terms of its access to storage capacity.

The CHAIRMAN. Senator Bingaman.

Senator BINGAMAN. Mr. Chairman, it seems to me we ought to be telling the Secretary of Defense to get the Army Corps of Engineers off the dime here. I mean, he has got a few other things to worry about, but this is obviously in his jurisdiction.

Senator CRAIG. Senator Bingaman, it is the New England district office of the COE, and if you need the name of the player up there, who I have been corresponding with for well over 2 years who cannot give me an answer yet, I will be happy to supply it.

The CHAIRMAN. Well, the Secretary of Defense may have direct authority but my subcommittee appropriates its money.

[Laughter.]

The CHAIRMAN. So I guarantee you you have taught me something today, and they will probably react much, much more adroitly when we call them in and talk about it. I hate to say that but that is the reality of it. You might find that works here. We will see since my staff will remind me about this.

Let us see. I had one other question. You have already supported the idea about one central FERC line of authority. Does everybody agree with that or do you not agree with it? Anybody on this side? Do you agree with that, Mr. Cooper?

Mr. COOPER. Let me make a point about process because the important point and the political point—and we have emphasized this in our comments—is that at the end of the day, the point here is to make sure that the parties affected feel that they have had the opportunity to be represented in the process. I agree emphatically that one fair chance to speak is all you ought to get, all you need to get, and if you organize the process carefully and make that record a part of it, the Army Corps of Engineers ought to be able to challenge the FERC's judgment at some point and that ought to be part of the record. If it gets litigated, it is a little bit peculiar but the Army Corps of Engineers might sue the FERC if they really think they have made a mistake. But that does not have to slow the process down beyond one set of approaches.

And the same thing would be true of the State of Washington. They ought to have a fair chance to be part of that record, to insert documents in that record so one record versus two records is not the issue. A complete record is the issue.

So in that sense, I think that is the right way to approach it, and I do not object to a single process, as long as we develop ways for everybody to get their point in, to have their right to object and move it along.

Mr. ROBINSON. If I could just make one quick point to that. In terms of the public having the right to be involved, this morning with our chairman and Commissioner Suedeen Kelly we met with two of your colleagues, Senators Kennedy and Kerry and the mayor of Fall River where there is a proposal to build an LNG plant. Prior to that meeting, I went back and looked at the number of opportunities. We had 12 different meetings in their area by FERC

staff to take comments and discuss with the people that would be affected, and we had six different meetings directly with the mayor himself about that project. We have the most public process that I am aware of in the Federal Government for taking comments and concerns and making sure that they are in the record.

One other point, using Islander East as an example. Even there where the Corps of Engineers has not acted in over 2 years, all we are really talking about is having the Corps develop their record as we develop ours, at that same time, and then take their action. Failure to take the action can be as damning as saying no when it comes to energy infrastructure because pretty soon we will get to the point where the first dollar will not be invested. People will not come to you and ask to develop infrastructure because they do not know what the process is going to be like and how long it is going to take. It is just not a transparent process. You are stopped at different points along the way. What I have proposed, as far as a rational siting process, would respond to those types of first-dollar concerns.

The CHAIRMAN. Well, I guess I would just close these comments by saying it is so obvious, I guess, to everybody in this room listening to the discussion, including the comments that Mr. Cooper had from the Consumer Federation standpoint, that we ought to fix this. But I would bet that it has not been fixed because it is not easy to fix. I mean here. But maybe we will give it a try and see if perhaps we can.

I want to thank all of you. It is good to see you again, Scott. It is a pleasure. I hope I can get down there again to visit with you.

Let us get the next panel please.

I understand that this is a place where we all could take a break even though we are a little bit behind. So let us take 15 minutes and come back and start.

[Recess.]

The CHAIRMAN. If you all would take your seats, we would appreciate it. Okay, is everybody in place?

I was looking out there and telling Senator Bingaman what a wonderful crowd you are and that you all stayed for the whole afternoon. I will not tell you what he said, but in any event, I assume you are all here because it is your job. That is good. That is all right with me. If you stay here and learn something because you are getting paid to, that is okay.

In any event, we are going to proceed, and we thank you for what we have done so far. The participation I think has been good. Certainly we could have taken any panel and taken a half-day. We just do not have that much time, so we are going to pick and choose. On the last panel, on liquified natural gas, the one before that, we are going to have another full hearing on it because of some of the very significant ramifications for the future.

So we are going to proceed on the environmental side. We will hold ourselves to the 2-minute rule and have some questions that will follow. IPAA, Lee Fuller, will you start?

STATEMENT OF LEE FULLER, VICE PRESIDENT OF GOVERNMENT RELATIONS, INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA

Mr. FULLER. Thank you very much, Mr. Chairman, and Senator Bingaman. I am Lee Fuller. I am here on behalf of the Independent Petroleum Association of America.

Let me state at the outset that independent producers understand that energy must be developed with environmentally sound practices. No one questions the need to manage the environmental consequences of energy development. However, no regulatory system will ensure perfect compliance with its standards. Nevertheless, the regulatory process must be fashioned to provide essential protection without becoming a barrier to action.

Producers operate in a dual regulatory world, generally coping with both State and Federal requirements. Most Federal regulatory laws are written to delegate their implementation to the States. This structure is essential and should be enhanced.

Equally important, States have long been the primary regulators of the natural gas production process. Congress needs to avoid yielding to the false arguments that only Federal regulations, only the Federal process can effectively regulate.

Managing Federal resources presents a different challenge. A portion of the onshore Federal reserve base is off limits and underlies national parks or wilderness areas, but the remainder of these Federal reserves principally underlies multiple use lands, lands where energy development should be treated equally with the other uses of the land. 36 years ago, Congress enacted the National Environmental Policy Act, NEPA, creating a mechanism to ensure that the Federal Government fully considers the environmental consequences of its actions when it makes decisions. Significantly when NEPA was enacted, Congress sought to create and maintain conditions under which man and nature can exist in productive harmony.

Times have changed. Opponents of development move their agenda first to a philosophy of preservation and now, apparently, to one of prohibition. NEPA and other Federal land management processes have become tools to prevent Federal decisions through delay and litigation rather than assure effective environmental management. Congress needs to assure that the Federal decision-making is just that, a decision-making process, not a tool to prevent decisions.

Thirty-six years ago, man also landed on the moon and a terrible offshore oil spill occurred near Santa Barbara. Today we are sending remote satellites to the moons of Saturn and we are using similarly advanced technologies to develop our offshore oil and natural gas resources. Yet, today we are arbitrarily foreclosing the development of critical national resources at a time when there can be no question that those resources are crucial to meeting key energy needs, key to the retention of thousands of important domestic jobs and essential manufacturing industries. Congress can no longer ignore the consequences of its failure to address this critical issue.

Independent producers remain the principal player in developing America's natural gas resources, drilling 90 percent of the domestic wells and producing about 85 percent of domestic natural gas. Fed-

eral environmental regulatory policies and procedures can determine their success or failure. Providing a balanced, predictable, and well-reasoned Federal framework is essential.

Thank you.

The CHAIRMAN. Thank you very much.

We will proceed now with the NRDC representative. Thank you for coming, ma'am.

STATEMENT OF SHARON BUCCINO, SENIOR ATTORNEY, PUBLIC LANDS PROGRAM, NATURAL RESOURCES DEFENSE COUNCIL

Ms. BUCCINO. Good afternoon. My name is Sharon Buccino and I am a senior attorney in the Public Lands Program of the Natural Resources Defense Council.

I would like to emphasize two points this afternoon.

The first is we can increase domestic gas production without relaxing environmental protections. There are significant untapped gas resources open to development today. As Senator Thomas recognized earlier, there are some places that are too sensitive to drill, and these should remain off limits, including the moratoria areas of the Outer Continental Shelf.

Second, environmental review and public participation are critical to ensuring that energy development moves forward in a way that minimizes impacts and reduces controversy. Despite advances in technology, exploration and development have lasting impacts. I did bring with me a picture of the development in Wyoming's Powder River Basin. As you can see, energy development has a lasting impact. It is changing the landscape of the West. It is depleting scarce water resources and destroying trout streams and farmers' fields.

The key to accelerating energy development is to identify these impacts and address them. NRDC supports the National Commission on Energy Policy's recommendation to increase the funding for BLM and the Forest Service to manage our public resources wisely and efficiently.

In conclusion, we should act now on what is certain. We know that renewables and energy efficiency are the fastest, cheapest, and most reliable way to solve our Nation's natural gas shortage. We should act on these measures and give them a chance to work before accepting irreversible damage to our treasured landscapes in the West and our coastal resources. These are based on uncertain estimates of dramatic new supply needs. We should remember that it was just a few years ago that the National Petroleum Council concluded—and I am quoting—"sufficient resources exist to meet growing demand well into the 21st century."

Thank you.

The CHAIRMAN. Obviously they were wrong.

STATEMENT OF JASON GRUMET, EXECUTIVE DIRECTOR, NATIONAL COMMISSION ON ENERGY POLICY

Mr. GRUMET. Mr. Chairman, you have probably figured out that I am not Linda Stuntz. I am, however, Jason Grumet. I am the executive director of the National Commission on Energy Policy, of which Linda was one of our finest commissioners.

Natural gas, of course, was a——

The CHAIRMAN. You are here because she cannot be here.

Mr. GRUMET. I am here because she cannot be.

The CHAIRMAN. Very fine.

Mr. GRUMET. Thank you.

As was said on the first panel, I think our commission agrees that the key to balancing the precious balance between our energy needs and our natural resource needs is access. I think that we believe many good decisions are being made to balance that access, but we, of course, recognize that there is inefficiency, there are situations where over-restrictive or under-protective decisions are made. And our commission, in studying the problem, came to the conclusion that it is really the inadequacy of information that often leads to these decisions. So we are proposing in our report two, I think, modest but important efforts to increase the quality of information.

The first, as Sharon just pointed out, is a targeted increase for BLM resources. Now, the BLM budget, with many good offices here, was increased significantly in 2001, but we believe not enough of those resources are going into the land use management. Still 162 plans are in process. Many of them are delayed. We did a study with the Teddy Roosevelt Conservation Partnership, and everyone agreed from hunters to developers to environmentalists that good information, good data gives you good decisions and less litigation.

Secondly, we also propose that on a national basis, we should have a better understanding of our overall energy resources. And our commission is proposing to synthesize and augment the collection of data so that we have a comprehensive national inventory every 5 years of our fossil, of our renewable, and our efficiency resources. We are not proposing to do inventories in national parks or wilderness areas, but we are proposing that the Outer Continental Shelf requires a better understanding and that the natural gas resources there on the Outer Continental Shelf can, in fact, be understood in ways that do not damage the environment or marine life.

Thank you.

The CHAIRMAN. Thank you very much.

We are going to go here. The Wilderness Society.

STATEMENT OF DAVID ALBERSWERTH, PROGRAM DIRECTOR, THE WILDERNESS SOCIETY

Mr. ALBERSWERTH. Thank you, Mr. Chairman. We appreciate very much being invited to this very interesting forum this afternoon.

The Wilderness Society supports the idea of developing natural gas on our public lands. We believe that that is a legitimate use of the public lands, but not everywhere.

We question the presumption that current environmental statutory and regulatory safeguards represent severe impediments and restrictions to the oil and gas industry's ability to obtain sufficient access to that resource. An examination of the pertinent facts regarding the BLM's onshore program reveals that, as we heard from Mr. Lonnie this morning, that 88 percent of the natural gas occur-

ring in the overthrust belt on public lands is currently available for leasing and development. The BLM issued over 6,400 drilling permits last year. That is more than we had originally thought they had from earlier data we received from them. The BLM has under lease right now about 42 million acres of public lands, with approximately 12 million acres in production.

And we have found, in looking at some of the data made available by the BLM, that protected lease stipulations—these are special stipulations often criticized by the industry—are frequently waived at the request of the operator by the BLM.

Moreover, review of the annual reports of various production companies that operate on the public lands reflects large profit increases during the past few years and also indications of increased gas production and additions to reserve estimates.

The fact of the matter is that current public land management policies favor the extraction of oil and gas resources at the expense of environmental integrity of our western public landscapes. Proposals from some industry representatives that Congress act to weaken these environmental and decision-making processes as a means of increasing gas supply and thus lowering prices will, instead, only weaken existing protection for the environment and lead to no more supply.

We have a couple of recommendations, but in view of the time here, you can ask me about those.

Thank you.

The CHAIRMAN. Just two?

Mr. ALBERSWERTH. We have five.

The CHAIRMAN. We will ask you about them.

Mr. ALBERSWERTH. Thank you.

STATEMENT OF WILLIAM WHITSITT, PRESIDENT, DOMESTIC PETROLEUM COUNCIL

Dr. Whitsitt. Mr. Chairman, I am Bill Whitsitt, president of the Domestic Petroleum Council. I represent the large independent exploration and production companies. We have made a number of recommendations, but I have been asked to focus a few comments on technology at this session.

Let me read you one sentence. "From coast to coast, innovative E&P," exploration and production, "approaches are making a difference to the environment. With advanced technologies, the oil and gas industry can pinpoint resources more accurately, extract them more efficiently and with less surface disturbance, minimize associated wastes, and, ultimately, restore sites to original or better condition." That sentence is from a DOE report under the Clinton administration and it as true today as it was then.

Failure to recognize that our technology has advanced and continues to do so runs the risk of leaving us in a perception and policy time warp that may preclude us from adopting good energy policy as we take another shot at it. Failure to recognize how exploration and production has improved and technologies have improved may lead us to not consider the ability to access certain areas that were put off limits decades ago.

I want to just highlight two elements today. There are two charts here. One talks about our ability now to drill multiple wells from

single pads, to drill and complete multiple wells from a single well bore, to extended reach drilling and other technologies that allow us to access places we could not even several decades ago.

The other on the other side is just a schematic of one offshore project that is state-of-the-art today where the well completions are actually subsea, allowing us to gather oil and gas through central facilities, far fewer facilities, that can be as far away as from here to Baltimore, maybe even further, and certainly well over the horizon.

Thank you very much.

The CHAIRMAN. Just a question. How long is that? The scope of one of those horizontal—what is the furthest you can go?

Dr. Whitsitt. Well, the extended reach well there—I just got a note this morning, in fact, from one of our producers that they are in the process of drilling one they expect to be 4 miles. Now, an extended reach well like that, of course, cannot be used everywhere because it is going to be limited by geology, going through sand versus rock and so forth. But again, it gives us an option that we did not have maybe several decades ago.

The CHAIRMAN. Is 2 miles becoming ordinary?

Dr. Whitsitt. It is certainly more frequent now than not, and that will continue to increase.

The CHAIRMAN. Thank you.

Mr. LONNIE. I am Tom Lonnie with the BLM. I am the assistant director for Minerals Realty and Resource Protection here in Washington.

The CHAIRMAN. Thank you.

Senator Bingaman.

Senator BINGAMAN. Let me just be sure and just give anyone a chance to speak up if they want to. My strong impression from the testimony and the written statements here is that there is a virtual consensus that the BLM and the Forest Service both should be given additional resources with which both to act on applications but also to monitor compliance with various conditions that they put on leases. Is that what everyone agrees? Mr. Fuller, do you agree with that or not?

Mr. FULLER. I definitely agree with that, but I would probably go a bit beyond that in that I think there are other agencies like, for example, the Fish and Wildlife Service who have to consult in these processes. We also need to be certain that they have adequate funding to participate in it. That can include EPA in some cases as well.

Senator BINGAMAN. You say the funding for those three agencies—are those the main ones that need to have better funding in order that we avoid these conflicts, to the extent possible? Mr. Grumet?

Mr. GRUMET. Senator, I think that is the right list. I would just add that I think we are not talking about impossible amounts of resources in the scale of things. We proposed a 10 to 20 percent increase in the BLM budget, on the order of $9 million to $18 million, which is of course significant for the BLM but something that I think would go a long way toward making the process more efficient.

Ms. BUCCINO. I would just like to emphasize the importance of the monitoring side of things and gathering the information and not just processing the permits. One specific example, a lot of times what we are seeing is in doing the environmental analysis, you may end up with a finding of no significant impact that is based on measures that are taken to mitigate the impacts that may occur. It is absolutely critical to have the monitoring to assure that that mitigation is actually happening, and that monitoring and the mitigation is not happening now because the resources are not there.

Senator BINGAMAN. Bill.

Dr. Whitsitt. Senator, let me just add a couple of quick points here. We have actually visited with some of the OMB budget examiners and I am not confident that they are on the same page as we are at this point. We really are going to need help on this funding. Forest Service, BLM, of course, are top priorities for us.

In New Mexico, for example, in the Farmington field office that I know both of you are very familiar with, a poll of the producers and their drilling plans for next year shows a substantial increase in the number of permits that will be sought compared with the fine improvement that that office has had over the last 3 years in doing more permits, but they are still going to be asked for more there than they have been able to produce to date.

Mr. ALBERSWERTH. Senator Bingaman, if I may. We agree with that as well.

We would suggest that the committee might want to examine, though, whether or not one means of getting that resource to the agency is through cost recovery efforts. I know that there has been criticism of OMB's attempts to have the BLM ask the industry to cover some of their increased administrative costs through cost recovery initiatives, and we think that this might be an opportunity that you might want to look at in view of limitations on appropriations for BLM programs.

The CHAIRMAN. Well, I do not know whether I agree with that or not. But Senator Bingaman, if we can work on this and make sure that when we give the BLM and the Forest Service and the Fish and Wildlife more money, that they are going to use it for what we are talking about. I am going to lead the show and you and I can do it together even though it is appropriations because it is not right for us to keep saying they have to do it if they cannot do it.

Now, it used to be we were not sure they were trying to do it, at least to this Senator. But I think they are trying. I do not think anybody is trying to really tell them they should not. It is just that the resources are very limited, and it may they cannot find help either.

Let me ask the BLM Director. What do you think about this? Do you need more resources to get more done? Some are saying that there is a surplus of leases and approved drilling permits and that there is no need for any increase in access. How do you feel about that versus resource availability?

Mr. LONNIE. Well, I support the President's budget, Senator.

[Laughter.]

The CHAIRMAN. We do not even know what it is.

Mr. LONNIE. But there is no question that if we had additional resources, then we would put them towards whatever activities that were identified.

The CHAIRMAN. I should not have asked you that.

[Laughter.]

Mr. LONNIE. Thank you.

The CHAIRMAN. But anyway, we accept your answer with tongue in cheek.

How about this? The argument is that there is a surplus of leases and approved drilling permits and we do not need to increase it. Now, I am not talking about money. I am talking about that set of facts. Is that true or not?

Mr. LONNIE. Well, there are a number of reasons why leases may not be drilled that are in existence, and I am sure some of the industry people could speak to that. But usually it takes a while to develop a prospect, to actually pick up all the leases in a certain area. Before drilling commences, maybe the seismic work has been done. There has been limited exploration. There are a number of drilling permits that have been approved where wells have not been spudded, but normally our statistics show that over a 4- or 5-year period, about 80 percent of the permits are drilled.

The CHAIRMAN. Do you have any comments about that?

Mr. FULLER. I would be happy to and I think Bill has some as well.

I think what is important to understand is that we are not a just-in-time business. We have to be well ahead of time when we are going out for leases and getting all the leases that we need to be able to find a prospect that makes sense to drill. We have to get the drilling permit after that. We have to comply with whatever stipulations exist on the leases or on the drilling permit that may define when we can do things and under what conditions we can do things. It is difficult to look at any snapshot in time and judge where we stand.

We are also an industry that lost 65,000 employees in the 1998-99 downturn. We also lost a lot of rigs during that period of time. So there is a build-back that is taking place, and it is taking place slowly because it is hard to attract people into that kind of a cyclical industry.

So what we have seen, what we have appreciated is the effort that has been underway to try to get through the backlog of permit applications and get through the leasing process.

Not all leases will ever be drilled. I think that is another factor. I looked at a document that we had from one of our 1985 publications where Senator Simpson had written an article and made the point that only 1 in 10 leases got drilled at that point in time. So I think we are much better now, but we have to build to it.

Bill may have some other things he wants to add.

Dr. Whitsitt. Let me just say that, Senator, your staff has a copy of our 10 reasons why it is necessary and normal to have an inventory of leases and permits.

The CHAIRMAN. Let me ask if you would put that one up that NRDC put up, please. Did you have a comment?

Ms. BUCCINO. Yes. I just wanted to comment on what I think those numbers also show, which is we have been able to increase

the leases and the number of applications for permits to drill without relaxing the environmental standards. At least in some of the testimony that was submitted by some of the industry representatives on this question, there were frequent suggestions that there needed to be exemptions from the Safe Drinking Water requirements, the Clean Water requirements, the Clean Air requirements. We have industry saying we can drill and protect the environment at the same time. So we should not need to create exemptions from the environmental statutes.

The CHAIRMAN. I wanted to just ask a question and I do not know the answer to this, but I will ask the Wilderness Society and the NRDC. You have got a photograph of this. Is that methane bed gas?

Ms. BUCCINO. Right.

The CHAIRMAN. Are either of you aware of the huge ranch in northern New Mexico that is called the Vermejo Ranch? Are you aware of it?

Mr. ALBERSWERTH. I have heard of it but I am not familiar with it, Senator.

The CHAIRMAN. Are you aware of it? It is owned by Ted Turner.

Ms. BUCCINO. Right. Yes, I am aware of it. My understanding is that there have been some things done there in terms of best management practices and doing things right, and I think it is worth emphasizing that a number of the environmental groups, the Wilderness Society stated explicitly we are not opposed to natural gas production. The important thing is to do it right. Some of these permitting processes like the storm water permitting requirement that has been an issue is the process that allows those best management practices to be put in place and to be enforced.

The CHAIRMAN. Well, the point I was going to make is—it is interesting because I did not hear from any of those who were worried about great landscapes and wilderness type areas to even comment on the fact that Mr. Turner, a friend of mine, drilled 1,500 gas wells on the Vermejo Ranch. He did not ask your permission. He did not ask yours. He did not ask ours. He did not follow the national environmental impact law. He drilled them and nobody is talking about it even to this day, about whether they should have been drilled.

But I would venture that if that were public lands, there would be no chance that there would have been 1,500 wells on that property. That is just an observation.

Mr. ALBERSWERTH. Senator Domenici, I think that is because we all in this room feel that we have a stake in those public lands and we do not have a say about what Mr. Turner does on his land.

Senator THOMAS. If you own the surface and the mineral, you have a lot more freedom to do what you want to do.

The CHAIRMAN. No, but the point is Mr. Turner does not feel like that.

Mr. ALBERSWERTH. I see what you mean.

The CHAIRMAN. You understand. All of you have praised him because he is not a landlord that is supposed to be any less concerned about environmental issues on his land as we are on ours. I just make the point because it would be nice to go up and look at his

with some of you all and say what happened here. And maybe we will invite you and maybe we can do that.

Mr. ALBERSWERTH. I would like to do that.

The CHAIRMAN. Maybe the people down there so you do not have to come from Washington.

Any of the rest of you, Senators?

Senator THOMAS. I would like to.

This picture here I think you mentioned, Sharon, that you can refurbish this and put it back in the original state. Was that not you?

Ms. BUCCINO. No. My comment actually was the lasting impact it has in changing the landscape.

Senator THOMAS. I thought somebody said——

Dr. Whitsitt. Senator, first of all, that is our goal, is to put the land back in the shape that we find it and even better. In fact, in our prepared statement that was filed, we have an example again from New Mexico where the Forest Service thought they were going to prevent us from going into an area because it was undisturbed, and our companies, with aerial photography, proved that it was actually an old gas field that you could not even tell had been disturbed. That is our goal.

Now, I do not know what that picture shows. Clearly there is going to be an impact where we have oil and gas activity. The question is are we doing it the right way, are we managing, are we reclaiming those drill sites, and today are we using the new technologies that I mentioned to drill more wells from a single pad. We just saw in Wyoming, for example, the Pinedale office that I think some have criticized for granting exceptions. They have got an application pending, one pad, 16 wells from one drilling location, probably using some of those very technologies that are shown there.

Senator THOMAS. The Jonah Field there, right.

Well, these are fairly short-lasting. These wells do not last forever. They are fairly short. But you have to take care of the roads. You have to take care of the water in the meantime, which has been difficult because the gas is there in the water, the power lines that are in and so on. But they can be.

I was going to ask about the horizontal drilling. If you go down to the big reserves at 18,000 feet, can you do these things economically?

Dr. Whitsitt. I think you are testing me at the limit of my knowledge here. Horizontal drilling—I am not familiar with how deep you can do it in a situation where you have got the geology that you are describing. I know that some of our companies are producing wells from very deep formations in Wyoming. I doubt that there is horizontal drilling there.

Senator THOMAS. No, I am not suggesting that but I am saying these unconventional techniques—can you do it at a reasonable cost whether it is 18,000 feet or whether it is 4 miles horizontally?

Dr. Whitsitt. If we are talking about some of those completion technologies, this is the type formation—this is a tight sand, gas trapped in the rock. Clearly the fracture stimulation technology and the things that are necessary to produce this can be done at

fairly deep levels. The extended reach drilling, as I said, is limited by the geology and that kind of thing and the horizontal is as well.

Senator THOMAS. This Jonah Field you talk about, instead of being able to drill a hole and the gas moves in there, the gas is in pockets, so you have to have a well every here and there in order to get to the gas. So they are all quite different.

Maybe we ought to have a royalty going to the BLM. If they get some production, they ought to get a little piece of the action to be able to fund their work.

The CHAIRMAN. That was suggested.

Dr. Whitsitt. Actually they get a lot of royalties when we get production.

Senator THOMAS. But it has to go around through guys like this—oh, excuse me—on Appropriations.

[Laughter.]

The CHAIRMAN. He means direct.

Ms. BUCCINO. I just wanted to comment. We do support these advanced technologies, and I think what is important is that the environmental standards and the process is in place to ensure that they happen and that they produce the results.

Senator THOMAS. But if they are not noneconomic, it is not going to happen.

Ms. BUCCINO. That is right.

You mentioned the water. That is a real problem in terms of produced water from coalbed methane. And there are technologies that are being developed. They are not being used everywhere.

Senator THOMAS. There are technologies and it can be done and there is good evidence that it is being done, and I think we ought continue to improve that.

The CHAIRMAN. I would say—Senator Bingaman, maybe you would agree—that our staff on the issue of horizontal drilling—we hear a lot about it and I go to the floor and show this map when we have ANWR and show how many we can drill from one pad. But I think we ought to get information about what it really is, where can you use it, how deep can you use it, what formations. It does not do us much good to have the theory if they cannot use it. I do not like to talk about ANWR if they cannot use it in ANWR. So we could get that from some source I assume.

My last one has to do with there is a contention—and I will ask the IPAA. I think the Wilderness Society maintains that the protective lease stipulations are frequently or maybe even usually waived by BLM. What is your response to that? Maybe we would ask you also.

Mr. FULLER. Well, our experience with the process has been that there is an opportunity to go in and seek a waiver of a lease stipulation. I think that each of those decisions that are made are made on the basis of the conditions in place at the time, and the fact that a number of lease stipulations are waived does not mean they are being waived improperly. It is part of the process. I do not have data on how many have been done. I do not have data on the details of it. Maybe Bill has some information on that.

Dr. Whitsitt. Senator, one of the things that I was struck by with some of the testimony about, for example, sage grouse waivers—I actually went back and talked to the folks in Pinedale and said

how does that happen. They are saying 90 percent of these are granted. They said, well, of course, because we have consultation with the producers and if we go out in this permitting process and we do not find any sage grouse, we will say there are not any sage grouse here. And if you file an application, we will probably accept it to waive that one stipulation. But I have got a list here somewhere. There are 73 other conditions of approval or stipulations, and the BLM has to take all of them into account, and this is in the Pinedale area.

So if you say that because they granted a number of these and people who were not going to get them did not file for them, somehow that leaves you with the notion that the BLM just grants most exceptions, I think that is just not accurate.

The CHAIRMAN. BLM, do you want to comment?

Mr. LONNIE. Yes, I would like to. About this time last year, I was out in Pinedale and visited the Pinedale anticline and took a look at the pilot project that Questar has going on where they are drilling numerous wells off of one well pad. As part of that, BLM worked with State game and fish to allow an exception, which is really a one-time granting of moving forward with winter drilling in big game habitat. It was primarily deer habitat. What I did find out was that these were not even stipulations associated on this existing lease. They had been added later as conditions of approval associated with the full-field development EA.

I mention that because this was a situation where both the operator and the BLM had issued a lease with valid existing rights, but the operator was still willing to allow no drilling in the winter period.

The other reason to grant these exceptions is the condition may not exist, as Mr. Whitsitt has just pointed out, but in addition, it could be an open winter and the animals are not there, so there is no reason why not to allow the operator to move in.

But I think the other part of this is many times our offices will get a call requesting an exception and they will say no. So those statistics again never show up.

Mr. ALBERSWERTH. Mr. Chairman?

The CHAIRMAN. Yes, please.

Mr. ALBERSWERTH. The reason that I brought that issue up is because there is an issue where many folks in the industry point to what they characterize as restrictive stipulations that effectively put off limits a large proportion of the Federal natural gas. So we looked at some of the data in Pinedale, and they do a very good job in Pinedale of publishing this data. And it showed clearly that in 85-90 percent of the time when the operator came in to ask for exemptions—they are called exceptions—they were granted, so the point being that that resource is, in fact, not off limits and those conditions are frequently amended at the industry's request.

Senator THOMAS. One of the things I think that you see where you are talking about Pinedale is there is sort of a broader plan for the whole area. So you can have pretty intensive—Alcan has the Jonah Field over here, but then they have also made arrangements over time for wildlife migration through another part. So they took a broader look at the whole area, as they did this, rather than taking each block at a time. So I think that works very well,

to see what you are going to do with the whole area and how it is going to look as you move along.

The CHAIRMAN. I would say that your contention that you found how many of the restrictions had been waived and therefore concluded they got to drill or they got their permits, I do not think that is consistent with what has been talked about here because waivers do not mean that the permit has been cleared of restrictions. You can get many, many waivers, but if there are multiple restrictions, you could still be left with an inoperative process. Say there were 80 and you show up that they got 78 waived. That might not be a terribly relevant statistic with reference to whether we are getting something done. At least as to the numbers. It may be relevant as to restrictions.

Mr. ALBERSWERTH. Mr. Chairman, my impression is, though, that the reason that those were asked to be waived was because that waiver would allow that operator to go in there and operate. You should ask Mr. Lonnie about that.

The CHAIRMAN. So he is saying that is different.

Mr. LONNIE. Well, I am not familiar specifically with what he is pointing out, but the cases that I am familiar with in Pinedale deal with agreement from State game and fish, monitoring that was done by the operator to see what impact was on big game, and that was being reviewed for more of a long-term study because there are significant impacts of moving all this activity into these short windows of opportunity in the summer or early or late fall because of the socioeconomic impacts, rig availability, and availability of crews. There are a lot of factors to take into account and this is something that is being looked at in that portion of Wyoming and other places right now.

Dr. Whitsitt. Mr. Chairman, can I give you an example of the same thing? Again, in the Farmington field office, there is a consultative mechanism with the environmental organizations and others on under what conditions might there be an exception granted to one of these stipulations. The Farmington field office manager tells us that that information then is shared with the industry. If they believe they can meet the criteria, then they will apply for an exception and they will be granted. So he expects 100 percent to be granted. The people who cannot meet the criteria are not going to apply. So to say that because they granted 100 percent, it does not make any difference. It does not make any sense.

The CHAIRMAN. I have two more quick ones, if you do not mind. Could I ask the NRDC? You are a chief counsel, so I would think maybe you would have a feeling for this. Do you see the court system as increasingly becoming the forum for policy making decisions on environmental issues?

Ms. BUCCINO. I can give you some numbers in terms of the role of appeals and litigation by conservation groups. In fact, there was a GAO report that just came out recently, and one of the things they looked at was the MMS numbers offshore. The period of time they looked at was from the fiscal years 1999 to 2003, and MMS reported no lawsuits challenging the 5-year offshore management plan or the parcels that were included in the 13 lease sales during that period. They also reported no challenges to the over 2,800 drilling permits at issue.

We did attempt to get a sense of some of the litigation that has been happening onshore, looking at applications for permits to drill, for example. Between 2001 and 2002, there were 7,158 APD's issued and only 15 were appealed through the Interior Board of Land Appeals process or litigated in Federal court. That is .2 percent, so two-tenths of a percent.

So in my view that is not where the decisions are being made. They are being made in the halls of Congress and the agencies that are managing the lands.

The CHAIRMAN. If you have no opinion on this, fine, but why do we constantly hear—or maybe I do—that courts are the stumbling block, that too many cases are being decided in courts and too much policy is being made there? Am I not hearing that?

Dr. Whitsitt. Senator, we also hear about challenges, both court and administrative challenges. The problem that I think Mr. Lonnie and others in the Department might be able to comment on is that apparently there is not a national clearinghouse to even know how many challenges there are of what form, particularly court challenges. So we do not know what the aggregate is. We hear from an individual company or members of ours, but I am not sure that the data is compiled anywhere to know. I think that is one of the findings the GAO made in its recent report.

Senator THOMAS. Court challenges are generally at a higher level of decision-making, not at the permit level. Do you not think that is where the challenge is normally?

Dr. Whitsitt. Undoubtedly, it is part of it.

Mr. FULLER. I think we have sensed that there have been challenges to the resource management plan process, which, if it is successful, forces the entire plan to be revisited and an entire set of environmental documents be put together, all of which are susceptible to challenges. There have been environmental impact statements that have been challenged on some of the larger areas and have delayed for those for some period of time.

I agree with Bill. We are having a difficult time getting the precise details. We had hoped the GAO report was going to provide a better measure of that, but it found that essentially there was not a good tracking measure and we are continuing to look into it.

The CHAIRMAN. Ms. Buccino, did you say filed or did you say finalized?

Ms. BUCCINO. I was talking about the number of cases that had been filed. I do think it comes back to the issue of having adequate information and having the resources to do the analysis and do the land use planning right in the first place because if you can get all the issues on the table and all the players to the table and resolve those before going to court, that is clearly the beneficial solution for everyone.

The CHAIRMAN. Yes.

Mr. LONNIE. In some States right now—Utah would be one example—almost every one of our oil and gas lease sales has been protested over the last 2 years. The last protest that was resolved was a November 2003 protest. So we have got numerous cases where bidders have bid on parcels and we are withholding issuance until we have an opportunity to resolve those protests.

In other areas, in Montana and Wyoming, those lease sale cases have gone to IBLA, district court, and the Tenth Circuit, and recently three parcels in Wyoming were withheld and we are currently under litigation in two different areas in Montana.

Ms. BUCCINO. There is an important distinction to make. He referred to protests, which is very different from an appeal to the Interior Board of Land Appeals, an administrative appeal, or litigation in Federal court. GAO specifically chose not to look at the protest numbers and the reason was because that is simply asking the agency to look at the decision before they have made it. So it is giving a chance to look at it again, as opposed to the distinction between an appeal, a formal administrative appeal, and litigation. So I would argue that those are the relevant numbers to look at and they are very small, even in Utah.

The CHAIRMAN. Well, we are not going to have enough time to get into what this all means. Are protests really being used as a means of delay or are they all very legitimate? We do not have time for that, but it is good to talk about it here.

Thank you very much. The next panel will please come. Oh, excuse me. Senator Alexander had a question.

Senator ALEXANDER. Well, it takes us to the next panel, but I want to ask it of the two witnesses here who will not be with the next panel from the Wilderness Society and NRDC, if I may.

There are different ways to bring the cost of gas down, and supply is one, and we are about to talk about another, which is very important, and that is conservation. The question I have is about diversification. I would ask each of the two of you. It seems to me we have limited options in diversification.

In thinking of coal and nuclear in particular, in either case does your organization see a real option in terms of clean coal or in terms of nuclear power as a way of creating more energy in a way that permits the air to be clean but also increases our supply of that source of energy as a way of bringing down the cost of natural gas?

Ms. BUCCINO. NRDC has been very active—our staff member, David Hawkins—on the issue of coal gasification. I should mention there was a specific proposal submitted by Bill Rosenberg which, while we support the concept, while NRDC supports coal gasification and has worked very hard on it, the critical element in there is for recapture of the carbon dioxide, and that is not built into the proposal that was submitted. So while the Rosenberg proposal addresses the criteria pollutants, it does not address and could cause significant increases in carbon dioxide, which we strongly oppose.

Senator ALEXANDER. And on nuclear?

Ms. BUCCINO. The nuclear issue is more difficult for us, and I am not an expert in that area, so I guess I really do not have an answer for you on that.

Senator ALEXANDER. But you see more promise in the clean coal technology.

Ms. BUCCINO. Yes. It needs to be done correctly, but absolutely.

Senator ALEXANDER. Mr. Alberswerth.

Mr. ALBERSWERTH. Senator, our interest as an organization really is the management of Federal public lands and we have not been involved in the debates on coal gasification and nukes.

Senator ALEXANDER. And one quick question. We were talking about the visual impact of what can happen. I remember down in Tennessee what we used to call strip mining, surface mining. That was a big visual problem. What is the attitude of each of your organizations on the prospect, say, of a picture of 500 1-megawatt wind turbines 320 feet high as opposed to a single gas rig?

Ms. BUCCINO. I heard your questioning earlier. I mean, those are very important and difficult issues. NRDC does feel that the solution to bringing gas prices down is to focus on the demand side, to promote more aggressively renewables and energy efficiency. We are strong advocates of wind power. We believe, as in dealing with any issue—the siting issues were addressed in the last panel. Those are critical issues and again you come back to the importance of the process, having meaningful environmental review and public participation to make sure that the impacts are identified and addressed.

Mr. ALBERSWERTH. We do support the development of more wind power. We think there are opportunities, especially on private agricultural lands in the Great Plains, for instance, where, for the past 20 years, rural communities' economies have been suffering, and it might be a good opportunity for some additional economic development in those communities. So we do not think it is the full answer to our future energy needs in this country, but it certainly should be part of the mix in the appropriate places.

Senator ALEXANDER. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much. I heard the last part. I will have to read the record for the first part of your question. Very interesting.

I think we are finished with this panel and we are back on track. I want to thank each one of you for coming and spending so much time.

This is the second-to-the-last panel. This one has to do with diversification and conservation. Remember our 2-minute rule, although we are doing very well. We appreciate that. It looks some faces are reappearing from before, and that is good. We will start with you please. You have been here before, but you are wearing a different hat now and we look forward to hearing from you.

Ms. SHOWALTER. I am Marilyn Showalter, president of the National Association of Regulatory Utility Commissioners. As I mentioned earlier this afternoon, our approach is that sustainable policies should include supply and conservation and diversification. They are all important.

With respect to diverse supply, in the recent past, most of the Nation's electric generation capacity that has been added since 2000 uses natural gas, and this has caused a strong pressure on natural gas, as well as price pressure in electricity, which we now realize the risk of putting too many electricity eggs in the natural gas basket.

NARUC supports resource planning with an eye towards diversity, but we do believe that what makes the most sense for any particular utility or particular State is going to vary. If I could give you an example. In my State of Washington, the largest utility, Puget, needed to meet additional demand, and I am speaking of electricity now. It found that the lowest hanging fruit was con-

servation, then a natural gas plant at that time, and then the next two acquisitions it is going after was wind. But that may vary a lot in different parts of the country.

NARUC does support looking at renewables. I mentioned wind already, but as well as the others. And we also are a partner with DOE in examining clean coal technologies.

But with respect to conservation, we like to think of it as conservation and efficiency. Sometimes conservation connotes that you are doing without, and that can be important, but efficiency, which is getting the same service for less gas or electricity, is equally important. I would just like to point out there that that too varies with region and locale, and I will give just one example. Again, Puget Power, our largest utility, has 300,000 smart meters for its residential users, and there is a great deal of information that can be produced from them. On the other hand, little Nespelem electric coop still reads its meters by people calling on the telephone in to the electric office, and that is the most efficient for them.

So we think all of these are very important, but you do need to allow each locale to arrive at the best solution.

Thank you.

The CHAIRMAN. Thank you.

You are next, sir.

STATEMENT OF STEVE NADEL, EXECUTIVE DIRECTOR, AMERICAN COUNCIL FOR AN ENERGY EFFICIENT ECONOMY

Mr. NADEL. Thank you, Mr. Chairman. My name is Steve Nadel. I am the executive director of the American Council for an Energy Efficient Economy. We are a nonprofit research organization that has worked on policies for promoting energy efficiency for the past 25 years. I wanted to make two points here today.

First is that energy efficiency policy action is the best way to bring down natural gas prices over the next 5 years. Demand and supply are in very tight balance, and just a small reduction in energy demand could have a very significant impact on prices over the next few years before other resources start coming into play.

We did a recent study using the same computer models employed by the National Petroleum Council and found that reducing natural gas and electricity use by 4 to 5 percent over the next 5 years, nothing that dramatic, could reduce gas prices by about 25 percent between now and 2010. After then, the price increase goes down a little bit because other gas supplies come in. Overall, we are saying over these next 5 years, we could save over $100 billion for American consumers and businesses. So we think this is a very important, quick and first step that should be taken.

Second, there is a foundation already. The Senate Energy bill, S. 2095 from the last Congress, had solid building blocks for such an effort, but we think it needs to be significantly expanded. Let me just mention a few of those now.

The S. 2095 included a number of consensus minimum efficiency standards on different products. We have been working with industry. We have five more ready to be added and we hope to have a couple of other consensus agreements before legislation moves.

Second, we recommend that an energy efficiency resource standard be established. This would be to set energy savings goals for

the energy suppliers, the gas and electric utilities. It should be legislation that passed in Texas. It has been enacted for several years now. Then Governor Bush signed it into law, and it sets savings targets that the utilities need to meet each year. I think it has been quite successful and should be brought nationally.

Third, the pending legislation included a number of tax incentives. We recommend a couple of refinements to them while trying to keep the costs very modest. We understand that the budget deficit is quite dire. Particularly we recommend adding air conditioners to it because air conditioners often use power from peaking plants that are fired with natural gas, and we also improve the furnace standards because those were not quite adequate.

Finally, we recommend an energy efficiency and conservation campaign to encourage consumers to reduce their use of natural gas and electricity. In particular, we think expanded funding for the Energy Star program would be a good place to start.

Thank you.

The CHAIRMAN. Thank you very much.

Mr. Cooper.

STATEMENT OF ROGER COOPER, EXECUTIVE VICE PRESIDENT, AMERICAN GAS ASSOCIATION

Mr. ROGER COOPER. Mr. Chairman, thank you for having this conference today.

I am Roger Cooper from the American Gas Association. AGA has two recommendations on improving energy efficiency.

First, we need to change how we measure energy efficiency to avoid ignoring huge energy losses. What are these energy losses? It is the loss of energy when we extract a raw material, turn it into electricity, and deliver it to a customer. Typically about two-thirds of the energy is lost in that process, but currently we tend to ignore in our energy efficiency measurements looking at that side of the equation.

So AGA requests that existing Federal energy efficiency legislation be amended so that we measure not only the energy efficiency of the appliance, as we do today, but we also look at the energy efficiency in a full-fuel cycle, so from wellhead to burner tip, from mine mouth to electric appliance.

Our second point suggests how to align the interests of gas distribution utilities and the customers for greater conservation. In the past quarter century, the average residential household has reduced their natural gas consumption by 25 percent, about 1 percent a year on average. Pretty dramatic. But that is not enough. Today most natural gas distribution utilities can earn their fair, State-approved returns, approved by the public utility commissions, only by getting their customers to use more, not less, natural gas. Now, that is often the case with many businesses, but the good news is that it need not be the case.

The solution lies in changing utility rate designs. Properly done, using so-called conservation tariffs that are approved by State public utility commissions we can reduce natural gas consumption, we can lower bills to consumers over time, we can increase energy efficiency and provide a reasonable return to shareholders. This concept has been endorsed by NARUC, by the Natural Resources De-

fense Council, by the ACEEE, and other organizations and put in place by Northwest Natural in Portland, Oregon.

Thank you.

The CHAIRMAN. Thank you very much.

STATEMENT JEANNE CONNELLY, VICE PRESIDENT, FEDERAL RELATIONS, CALPINE CORPORATION

Ms. CONNELLY. I am Jeanne Connelly with Calpine Corporation. Calpine owns about 100 power plants in 21 States.

A lot of attention has been paid to improving efficiencies on the demand or the customer side, but we believe that it is also possible to improve efficiency on the supply side in the production of electricity. We have heard from many people that the majority of new power plants that have been built in the last decade have been gas-fired. But something interesting happened in the late 1990's. While the amount of electricity produced from gas continued to grow, the amount of gas used to produce that electricity did not grow concomitantly. And the answer is improved efficiencies because at that same time in the late 1990's, a lot of the new, very efficient, combined-cycle natural gas plants started to come on line. They use somewhere between 30 and 40 percent less natural gas to produce the same amount of electricity as the older, inefficient gas plants.

So from 1999 to 2003, the amount of electricity produced from gas increased 11.5 percent, but the amount of gas used to produce that electricity increased only 1 percent. So you had a savings of 650 billion cubic feet of gas.

What has driven this improvement in efficiency has been competition. If you take the two neighboring States of Texas and Louisiana, both very dependent on natural gas for electricity production and their industrial processes, but Texas which has a competitive market for energy improved the efficiency of its gas-fired generation by over 10 percent from 1999 to 2003, while Louisiana, which still operates as a regulated monopoly system, improved their efficiency by only 1 percent. And the difference is that in a competitive market, the most efficient units get called on first. They are dispatched first.

So our proposal for reducing the use of natural gas is to encourage all public utilities to use a system of efficient dispatch, whereby the most efficient units are dispatched first, whether they are owned by the utility or the power is generated from a non-utility owner, as long as it is available in the same region. And then the oldest, most inefficient units might never be called on or they would only be called on at times of peak usage.

If all gas-fired generation were from the new, combined- cycle plants with an average heat rate of 7,500, in 2003 the country could have saved another 650 billion cubic feet of gas, just in 2003. And this translates into millions of dollars of savings to ratepayers where the cost of gas is passed right through to the ratepayer. And the environmental benefits are tremendous as well since you have quite a reduction in emissions of NO_x and carbons.

Since some regions of the country that have old and new gas also have an over-capacity of power right now, you could do this without having to have capital expenditures.

Thank you.

The CHAIRMAN. Well, you offer a pretty easy solution.

Ms. CONNELLY. Well, it is not a panacea. It is just one small solution.

The CHAIRMAN. We are moving over here.

John.

STATEMENT OF JOHN KANE, SENIOR VICE PRESIDENT OF GOVERNMENTAL AFFAIRS, NUCLEAR ENERGY INSTITUTE

Mr. KANE. Mr. Chairman, members of the committee, thank you very much for the opportunity to come before you today. I appreciate that. My name is John Kane. I am with the Nuclear Energy Institute.

I wanted to make three key points and then just cover a little background.

First, energy diversity we believe is essential to our national security and our economic security.

Second, the course we are on now does not get us here. The chart you used, Mr. Chairman, earlier to show the growth in production of gas as an electricity source in the last 10 years makes that point.

And thirdly, we believe one of the best ways to take the pressure off the unsustainable demand for natural gas is to build new nuclear power plants in the United States. We did it before and we can do it again in the nuclear industry.

In the 1973 Arab oil embargo, we found that about 20 percent of our electricity supply was coming from oil, about 3 percent from nuclear. Building new nuclear plants for the rest of that decade and through the 1980's and 1990's, we reversed those numbers. We now have 3 percent of our electricity supply from oil and about 20 from nuclear.

High prices for natural gas and the intense price volatility we have seen over the last few years are caused by this unsustainable demand. The situation is complicated during the winter months when limited supplies of natural gas are needed for home heating and industrial purposes. New nuclear baseload power plants can relieve that pressure on the natural gas supply and set us back on a path towards a diverse national energy policy that protects us from supply and price shocks in any one fuel sector.

This country faces a critical need for investment in emission-free, next-generation nuclear power plants to relieve this pressure, to help preserve the fuel and technology diversity, to make our air cleaner, and to strengthen the U.S. national security.

The Federal Government plays a key role in encouraging investment in the first generation of new plants, and this committee, we are very pleased, has led the way in that regard. Construction of new plants in this country requires a public-private partnership between the Federal Government and industry to mitigate first-time costs. After new plant development kicks in, this kick-start process that has been proposed before should be dropped and let market forces take over.

We are very pleased that you have chosen to hold this conference today, especially to focus on the diversity of fuel supply. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much.

STATEMENT OF PETER VAN ALDERWERELT, SENIOR VICE PRESIDENT, PPM ENERGY, PORTLAND, OR

Mr. VAN ALDERWERELT. Mr. Chairman, members of the committee, I am Peter van Alderwerelt, senior vice president at PPM Energy in Portland, Oregon. Thank you for inviting me to participate today.

The CHAIRMAN. You are welcome.

Mr. VAN ALDERWERELT. PPM Energy is a wholesale supplier primarily involved in the development of wind projects and marketing wind energy to the electric utilities. In fact, we are the second-leading marketer of wind power in the country.

We are also engaged in gas-fired generation and gas storage facilities. The assets allow PPM to deliver products and services that help our customers manage risks and uncertainties in their power and natural gas businesses.

If we do not do something to promote a more diverse generation portfolio, the electricity sector is going to become even more dependent on natural gas, leading to higher electricity and natural gas prices, greater imports of LNG, and a less secure energy future.

There is no one magic-bullet solution. There are a variety of technologies that can and should be employed to ensure our new generating capacity is sufficiently diverse. PPM Energy believes that with appropriate government policies, renewable energy, in particular wind power, can help significantly reduce the demand for natural gas in the electricity sector.

The U.S. Department of Energy has estimated we can feasibly install an additional 100,000 megawatts of wind capacity by 2020. This additional generation would reduce natural gas demand by about 6 bcf a day, or 10 percent of total domestic gas consumption. We would save $12 billion to $15 billion per year by reducing LNG imports and would save untold billions of dollars by taking demand pressure off of gas and reducing its price.

PPM believes Congress and the FERC can take several steps to enable wind power to meet its full potential and dramatically reduce natural gas price and supply volatility.

First, Congress should extend the renewable production tax credit scheduled to expire December 31, 2005. The PTC is needed to help address the cost burden associated with integrating wind facilities into the transmission grid.

Second, Congress should adapt a national renewable portfolio standard that establishes a renewable energy target for each retail electricity supplier. Unlike the PTC, the RPS provides stability by establishing short- and medium-term goals to enable investors to make decisions on more than a 1-year basis. PPM envisions the PTC being phased out as the RPS kicks in.

Finally, Congress and FERC should both seek to implement policies that eliminate penalties associated with integrating wind into the electric grid. For instance, we applaud the recent decision by Southern California Edison to seek FERC approval for a plan to roll in the costs associated with new transmission that will enable the addition of wind power in the Tehachapi Mountains in California. Forcing wind energy developers to raise enormous capital to pay for transmission construction is a deterrent. Neither Congress

nor FERC should prohibit utilities from engaging in creative approaches to encourage the additional development of wind power.

Mr. Chairman, thank you again for inviting me.

The CHAIRMAN. Thank you very much.

Mr. Rosenberg, delighted to have you here.

STATEMENT WILLIAM ROSENBERG, SENIOR FELLOW, KENNEDY SCHOOL OF GOVERNMENT, HARVARD UNIVERSITY

Mr. ROSENBERG. Thank you. I think I have been introduced already. I am a senior fellow at the Kennedy School of Government at Harvard. I last testified before this committee as the Assistant Air Administrator in the first Bush administration during the Clean Air Act debates of 1990.

I would like to, respectfully, offer a proposal for a national gasification strategy to gasify domestic coal, biomass and pet coke resources that we have in ample supply to produce a major new gas supply comparable in energy content to the 1.5 tcf expected throughput of the Alaskan gas pipeline. This could be accomplished by constructing 50 gasifiers over a 10-year period, approximately five a year, that produces on site synthesis gas that would be sold under long-term contracts to major industrial and electric generator customers. The synthesis gas could be substituted for large demand of natural gas, and when that substitution occurs, if it is of large enough scale, it would reduce overall natural gas demand, thereby reducing overall natural gas prices, and it would free up pipeline capacity because this gas would be produced on site and would not have to be moving through the infrastructure.

In a sense a national gasification strategy is a supply option, a demand-reduction option, and an infrastructure stretching option. It certainly diversifies our natural gas resources and in the future, if it were large enough, there would be a point on that chart we saw in the beginning for gas produced from domestic gasification.

I would like to bring to the attention of the committee a letter that was sent to the committee last Friday by leaders in the chemical, glass, forest products and paper and fertilizer industries supporting the development of a national gasification strategy, which would offer the same type of financial incentives to construct the gasifiers that this committee offered to the developers of the Alaskan gas pipeline, essentially loan guarantees and accelerated depreciation.

We have done calculations that say with the availability of low-cost financing, the synthesis gas could be delivered to the industrial and electric customers at a price of $4 to $4.5 per million Btu in a current market of $6 to $7, or as we heard in the New York market of $6 to $20.

There are two significant environmental advantages for gasification. The first is that compared to a PC plant, an IGCC plant, which is a gasifier producing synthetic gas to be used in a turbine, emits much less air pollution regulated by the EPA, including mercury emissions.

And secondly, new gasifiers can be designed and we would suggest they would be required to be designed to be carbon-capture-ready that could accommodate equipment needed to capture and sequester CO_2 when that becomes economic under Government pol-

icy. We also support the funding of demonstrations of commercial gasifiers operating with CO_2 capture and sequestration in this decade.

In summary, Mr. Chairman, the national gasification strategy is feasible as a new gas supply option. We have the domestic resources. We have the technology and we have the financial model to make this happen in the short term.

Thank you.

The CHAIRMAN. Thank you very much.

STATEMENT OF BEN YAMAGATA, EXECUTIVE DIRECTOR, COAL UTILIZATION RESEARCH COUNCIL (CURC)

Mr. YAMAGATA. Mr. Chairman, members of the committee, CURC is a national organization of major coal producers, major utility users, equipment and vendors. I am last on the panel, so let me be brief and make two points to you, if I may.

The CHAIRMAN. No. You have an important role.

Mr. YAMAGATA. Thank you.

First of all, on behalf of the organization, we are about ready to suggest to the committee and to the Congress a proposal for utilization of advanced coal-based technologies, which I hope will be forthcoming in a matter of days.

And secondly, I want to try and address the question of whether our proposal is really realistic, that is, in the context of the budget constraints of this committee and others in Congress.

The underlying premise of the proposal is that coal, through the use of advanced clean coal technologies, can be and is a substitute for natural gas. But it is not a panacea. We need the diversity of energy resources and we need the use of energy efficiency in order to meet our energy supply and demand requirements in this country.

Our proposal in the near term would be to ask the committee to consider a program to refuel existing natural gas combined-cycle units by producing coal-derived synthesis gas. We know how to do this technically. The challenges here are one of cost, infrastructure availability, and optimization of putting the two technologies together.

The second near-term or medium-term proposal is to have the committee cause to have constructed a series of pioneer plants, that is, a limited number of plants for the advanced use of clean coal technologies, both IGCC and other types of advanced systems. What we need to do is put plants in the ground.

And then finally and in the longer term, as this committee and you, in particular, Mr. Chairman, have supported for decades now, is the targeted use of funds for research, development, and demonstration of new technologies.

Let me address the second point and that is how realistic is this. There are 200 gigawatts or thereabouts of natural gas combined-cycle units that have been permitted in the last 12 or so years. 12 gigawatts of that, we understand, are within 10 miles of coal transportation, answering one of the infrastructure issues.

Secondly, as all of you know, we have 250 years of coal supply in this country.

And finally and most important, last year as part of H.R. 6, this committee and this Congress, or at least this Senate, tried to enact incentives that totaled $2 billion in loan guarantees and loans for advanced coal-based systems, as well as $1.6 billion in tax incentives for those same systems.

Thank you.

The CHAIRMAN. Thank you very much. You refreshed our recollection.

I have one. Mr. Rosenberg, why did you think you had to bring us this big plan? Could we not do it a little bit at a time? In that regard, I want to ask you how much you expect your proposal will cost and the total capital and maybe some idea about the operating costs over a sustained period of 5 or 10 years.

Mr. ROSENBERG. Mr. Chairman, this is a 10-year goal. Obviously, it would be done in bite-size pieces. We do think that 1.5 tcf of gas as an alternative supply is something worth moving towards. How fast the committee goes would be a function of appropriation capability.

But since we rely mostly on loan guarantees, we have built into the proposal a security to the Federal risk through what we call a three-party covenant with respect to electric plants. The public utility commission would have to agree, before the Federal loan went into effect, to establish rates to pay the mortgage so there would be no default. And we, therefore, estimate that the scoring costs for the program would be 10 percent of the capital. If this were a 1.5 tcf program, the loan guarantees would be in the range of $30 billion and the cost to the budget would be about $3 billion. If this were a portion of that, say, 5 or 10 plants to begin with, that would be reduced substantially.

We think that loan guarantees are the least-cost way of stimulating the investments. They would require 20 percent equity contributions, and essentially that is the model that you used for the Alaskan gas pipeline.

So the scale of the program would be up to the committee. The goal would be to develop a source of domestic supply comparable to the domestic supply we expect to get from Alaska, and together that would be a very substantial domestic initiative.

The CHAIRMAN. Other questions, Senators?

Senator THOMAS. Yes, sir. I have a couple.

John, on the nuclear thing, one of the reasons I believe that the recent generation plants have been gas is they are smaller and they are closer to the market. You do nuclear plants, they are larger. Do we have the kind of electric distribution and transmission system to get it to the market?

Mr. KANE. Yes, sir, we believe we do. We are looking at putting new nuclear plants in the United States, and we have a process underway now called the early site permitting where we are working with the Nuclear Regulatory Commission to get these sites qualified to put new nuclear plants in at a future date. It would involve making sure that the site had adequate infrastructure, including transmission, to be able to meet those new power distribution requirements.

Senator THOMAS. That has been a little difficult, as you know. Some of it is the electric power distribution systems do not want

somebody else messing around in their area and so on. So it is a problem.

Mr. KANE. We think it is not insurmountable, sir.

Senator THOMAS. Good.

On the wind energy, what are the chances of making those more efficient so that you do not have to have so many of those on every hill and in the valley.

Mr. VAN ALDERWERELT. Right. Actually progress in that regard has been quite impressive over the last 30 years. The production cost of wind has come down about 80 percent. There are continuous strides being made. Today's standard size wind turbine is 1.5 megawatts and General Electric has plans to take that to 2 or 2.5 megawatts.

Senator THOMAS. Yes, but most power plants in our area are 2,000 megawatts.

Mr. VAN ALDERWERELT. Well, you still need a lot of generating units.

Senator THOMAS. You sure do.

Mr. VAN ALDERWERELT. But all in all, the technology still has the lowest environmental impact considering there is no air, water, or hazardous waste.

Senator THOMAS. Sure. No, that is true. Just the visual part of it is going to be a problem.

Mr. VAN ALDERWERELT. I think they look pretty good.

[Laughter.]

Senator THOMAS. It depends a little on your point, I suspect.

Mr. ROSENBERG, YOU TALKED ABOUT USING COAL TO DEVELOP GAS. WYOMING IS THE LARGEST COAL PRODUCER. THE MARKET IS A LONG WAYS AWAY. YOU SAID YOU DO NOT NEED ANY MORE FACILITIES TO GET IT THERE. I DO NOT UNDERSTAND THAT.

Mr. ROSENBERG. Well, you would have to ship the coal like we already ship Wyoming coal to the various parts of the country.

Senator THOMAS. It is not very efficient, as you know. It costs $5 to dig the coal and $15 to get it to St. Louis.

Mr. ROSENBERG. One of the advantages of gasification is you can use high-sulfur coal because you take out the sulfur before you combust the coal.

Senator THOMAS. My point is coal is generally located one or two places. The market is all over, so you are going to have to have a distribution system for gas if you do that.

Mr. ROSENBERG. Well, the distribution system for gas is on site. It is a dedicated plant. So there would have to be a distribution system for coal, but all the coals would be relevant for this.

I might make one other point to the chairman on the scale. If it is done on a large-scale basis, it will have the same impact as the Alaskan gas pipeline on all demand for natural gas and all supply. So a large domestic supply of synthetic gas, according to our calculations, would reduce the cost of gas for everyone because the demand would have been reduced and therefore the pressure on the prices would have been reduced.

One of the biggest problems we face today is that we built so many of these natural gas combined-cycle plants, they ran the price up for everyone else. So to the extent that that demand is taken off line, by using those natural gas plants for the generation of an

IGCC plant, you would have less pressure on gas prices, and so the overall prices would be reduced. And we would recommend that a major study be undertaken to——

Senator THOMAS. One of the major ideas that is going around from the President and the administration is to use hydrogen for car use not gas.

Mr. ROSENBERG. Well, this would produce that. Basically you need to gasify the coal first and then separate the carbon and the hydrogen second. So to the extent you have demonstrated how to separate the CO_2 and that becomes economic, then you are left with hydrogen. This could be an excellent source of that hydrogen in the long run.

Senator THOMAS. Good.

The CHAIRMAN. Senator Bingaman.

Senator BINGAMAN. Let me ask you about the analogy that you have made several times here to the Alaska pipeline. You indicated that Congress weighed in to provide loan guarantees and accelerated depreciation in the case of the pipeline, and I strongly supported doing that, but much of the justification there was that this was an enormous project. This was a $10 billion project, the construction of this pipeline, and it was not reasonable to expect one or a few private companies to just underwrite that without some backstop by the Government.

What you are suggesting here, as you said, is something that can be done in bite-size pieces. Each utility that has one of these plants that needs to have this gasification technology built in can go ahead and do this. The justification to me of the Federal Government coming in and underwriting it or providing a backstop is less compelling when you have got a whole bunch of utilities, each one of which has responsibility for solving a piece of this problem.

So what is your reaction to that?

Mr. ROSENBERG. Senator, these are bite-size $500 million pieces that would be developed by much smaller companies potentially for the use of a particular chemical plant or a paper plant or a glass manufacturer or a combined-cycle gas plant. Most of the combined-cycle plants, particularly the ones that are in the most trouble, are not owned by integrated utilities. They are owned by smaller companies who would not have the capability of raising this kind of money.

There is also a technology risk that the financial community has indicated to us that even though the technology is proven, there is not a lot of experience with it. So it would be very difficult to finance without the support of a Federal loan guarantee or a State public utility commission essential guarantee of the credit.

So in the regulated utilities, that may be the case, but in the unregulated areas and for the people who own these plants that are selling it into the open market and particularly for the industrial customers, putting up $500 million or $300 million for one of these plants is a very major undertaking and would be done at high capital cost. So this is a way to have access to the credit if the Congress believes it is important to develop this gas supply.

Senator BINGAMAN. Clearly I would agree with you. To the extent that an effort is needed to demonstrate the technology, then clearly that is something that is appropriate for Congress to step

in and say, "Look, the taxpayer ought to help demonstrate the technology and make it clear to everybody that this works and that this can be done in a cost effective way."

When you start saying we should underwrite or we should provide a subsidy for the construction of 50 plants, which was your proposal, as I understood it, I think there I have some doubts as to whether the justification is as strong as it was in the case of the underwriting or backstopping of the costs of constructing the Alaska pipeline.

Mr. ROSENBERG. If this is not done, we will end up with many more pulverized coal plants that will be higher-polluting. We will continue to operate pulverized coal plants, and we will be importing more liquified natural gas because, to the extent we can find a genuine domestic option, that will reduce that amount of liquified natural gas.

So there are really two goals here. One is the goal that Ben Yamagata talked about and you just mentioned, which is demonstrating the technology as a commercial vehicle. That is a very important goal. If the committee, however, wants another goal, which is to find a source of domestic gas to add to the limited supply we have in lieu of importing more LNG, then you get into the scale issue. How much do we want to develop and how fast do we want to put it on line so that we do not have to import that much LNG.

Mr. YAMAGATA. Mr. Chairman, if I may, just to add to the point that Bill Rosenberg has made, I consider myself to be the hors d'oeuvre of the small bite-size pieces he is talking about.

[Laughter.]

Mr. YAMAGATA. We are looking at a deployment program that is really geared towards putting some plants in the ground. We need to do that because of cost issues and risk issues. Our analysis also shows at this time that loan guarantees are one of several preferred options, including other types of tax incentives, ergo my reason for suggesting to you that you traveled some of this terrain before in H.R. 6 with both the authorization of loans and loans guarantees and the tax incentives you provided in last year's bill. And that is the platform that we would like to use to consider this new program we are talking about.

The CHAIRMAN. Thank you very much.

Senator Bingaman.

Senator BINGAMAN. I just wanted to ask to be sure that I am clear on what you are proposing. Your suggestion was that we provide some level of tax incentive or tax support to take the existing coal plants and equip them with this gasification technology so that they can produce gas. And you are also suggesting that separate from that, we use tax incentives and Federal support to assist those natural gas-fired plants so that they can become users of coal as their fuel, so that we would be providing a subsidy for both ends so that each of these two would have the capability to operate, to take coal and turn it into gas basically.

Mr. YAMAGATA. They have to have the option, Senator, of using it as advanced technology. Coal-based either to refuel existing natural gas combined-cycle units, or alternatively, new green field applications or to repower existing coal units, yes, that you have

those kind of incentives to allow industry to look at that menu and decide which makes the most sense. But the endpoint here is to develop the new technologies.

The CHAIRMAN. Senator Alexander.

Senator ALEXANDER. Thanks to all of you for your comments, and I thank Senator Bingaman for his.

I understand and fully support the nuclear option and look for ways to expand that.

The coal option is extremely intriguing to me as a solution. As I look around the table, if Mr. Rosenberg can persuade the Natural Resources Defense Council, who was here earlier, to support your program and Calpine to build a plant with it, then we have not got a clear air problem in the United States and gas prices would be lower. I have overstated it a little bit, but not by very much.

If I am not mistaken Calpine is only building natural gas power plants. Right? That is all you are going to build.

Ms. CONNELLY. That is right.

Senator ALEXANDER. And you are not going to build one of his because your investors right now would not tolerate it because there is too much risk. Is that right?

Ms. CONNELLY. We actually are very interested using syn gas in the natural gas combined-cycle plants.

Senator ALEXANDER. You are.

Ms. CONNELLY. We are.

But the big expense comes in building the gasifier.

Senator ALEXANDER. And you believe the technology is to the point where it is a proven technology, but as he said, the experience with the technology is not enough yet.

Ms. CONNELLY. Absolutely. We are actually looking at pet coke as opposed to coal just because it is a byproduct of the refinery process, and there are a lot of our gas plants that are very near the refineries where the pet coke exists. It is a low-value byproduct that we ship to Latin America at the moment for the most part, but it could be gasified. You could do a 50/50 mix of natural gas and gasified pet coke, and for one gasifier of pet coke, we could run 10 or 11 natural gas plants on a 50/50 volumetric mix.

But I think we need the loan guarantee because it would be $2 billion to build the pet coke gasifier. So if you had the loan guarantee for the gasifier, then I think the rest of the economics would work.

Senator ALEXANDER. I think Senator Bingaman's point is worth listening to. I understand the Alaska gas pipeline proposal. That is one way to do it.

But there is one other very powerful argument for this sort of combination that has not been mentioned today and that is the worldwide impact of the success of it, which is what, as I understand it, brings the Natural Resources Defense Council to consider this, which is if we do not find some new technology for making electricity from coal, India and China and countries all over the world are going to build coal plants with the old technology and they are going to throw so much junk into the air that it will not matter what we do here. So there is a powerful national interest in our seeing if we can find a sensible way to encourage coal gasification if it is commercially possible, not just for our own energy

independence and clean air but because we are affected by what goes on around the world as the wind blows. I hope you will pursue that.

I would like to ask just one question. Tell me what you can about carbon recapture because, as I understand it, there is no way to do that quite yet.

Mr. ROSENBERG. Well, that is the point.

Senator ALEXANDER. But what we are talking about here is coal gasification takes the sulfur and the nitrogen and the mercury out of the air. It only leaves the carbon. If you recapture the carbon, you have something that is almost too good to be true if it is commercially viable.

Mr. ROSENBERG. And that is why we think there needs to be a two-tier strategy, Senator, and that is what was approved by the energy commission. One tier is to deploy the technology not only for the electric sector, but also to reduce the cost for the industrial sectors that are closing their plants, laying off people, and shifting production abroad.

Senator ALEXANDER. Like chemical plants.

Mr. ROSENBERG. Like chemical plants. There was the old Union Carbide plant in West Virginia. It was closed down and the production was moved to Germany, and 7,000 people lost their jobs. I am told by the chemical industry there have been 90,000 layoffs because of the price of gas and there has been similar experience in the fertilizer industry.

So we would agree with much of what CURC said but would extend these incentives to the gasification of coal to be used as an alternative gas supply for industry as well.

In terms of what to do with the carbon, that is the big question. So we think the committee should examine the demonstration programs that are being thought through at the Department of Energy to, as soon as possible, demonstrate the operation of a gasifier that in fact captures and sequesters the CO_2 in all the oil and gas wells or other geological sequestrations. That will be pretty expensive to do. It is much more expensive to capture the CO_2 than not capture it. We estimate that would cost an extra penny and a half a kilowatt hour. On a base of 4 cents, that is a big number.

So a few of those plants should go forward, and I think there is a great role for this committee, and in your prior legislation you talked about that. But there is also a logic for putting in place a fleet of plants that could use that technology as an add-on after it is developed if the policies are such where that is economic. So moving forward with gasification lays a technological foundation to build upon for capturing the CO_2 later on.

The CHAIRMAN. Senator, did you have anything?

Senator BURR. Mr. Chairman, I am just so delighted to be here and be part of this.

Let me just say as a new member of the Senate but one who is on the third session of Congress writing an energy bill, you are all right. There is nobody that I have heard from today that was wrong.

The challenging thing is that at the pace we are going at, we are going to do very little unless we can actually get a bill written, signed into law, and get everybody at the table in agreement that

it is a blueprint for the next decade or two decades to proceed forward. We can talk about new technologies. We can talk about windmills, but as long as there is somebody at the table that does not like to see them, then that is an option that will fall short of its capabilities.

I will have questions of all of you as this period goes on.

At the end of the day, somebody has to ask the question, if the government were not here, if we were not the backstop, if we were not the seed money, what would the marketplace do. If in fact your technology—and I am not assessing it—were the panacea—and it would if it captured the carbon, as Lamar said—where is Wall Street? Where is the capital? Why is it not chasing it? Maybe it will.

I understand that the Federal role is a very, very important one in getting new technologies and new thoughts started. We are at a point now where we need to make sure that we get something in the law that sends us forward. If not, everybody at the table has a problem.

Thank you, Mr. Chairman.

The CHAIRMAN. Senator, thank you very much for your observations and I am very glad that I kind of twisted your arm to make a few comments. We welcome you on the committee. While you are new, you will not be one who is lacking in information.

Senator, did you care to say anything?

Senator MURKOWSKI. I will just follow up on the comments from Senator Burr because I have been chewing on this whole discussion about the loan guarantees. And I am kind of in a difficult spot here because the Alaska gas line got the benefits, and I cannot say, well, good for us and you guys are all on your own. But I do recognize that that was a unique project. Senator Bingaman, you mentioned we were talking about a $10 billion project. In actuality, we are looking at an $18 billion project, $20 billion project.

So I appreciate that $500 million is big and it is a tough thing for investors, but I think you do have to go back to the question that Senator Burr has raised, and that is, what would the marketplace be doing if the Government were not here? Do we get to the point where we establish some kind of a bank or institution here to provide that backstop for these loan guarantees that are that incentive, if you will? It is a tough, tough question.

Being a big energy proponent, I want to do all that we can to do that encouragement, but we have got to recognize the slippery slope. Do you put a price tag associated with the project or do you look to the longer-run potential? Some big questions but no easy answers.

Mr. ROSENBERG. Can I try to answer that?

The CHAIRMAN. Well, let us be brief, Mr. Rosenberg.

Senator MURKOWSKI. I would love it if you could answer it.

Mr. ROSENBERG. I think if we did not provide this, we would build more pulverized coal power plants and we would import more LNG. That is the status quo.

Senator MURKOWSKI. Which is not where we want to go.

Mr. ROSENBERG. That is correct.

Senator MURKOWSKI. If we are talking about energy security, we do not want to be encouraging that.

The CHAIRMAN. Let me say I think the discussion and the technology and doing something so we can use more coal is probably as vital as anything we can do just because we have so much of it. Currently it is pretty obvious we are not going to use it to substantially solve the crisis of the next 25 years without some breakthroughs, some changes, and that is very, very important.

I would say I am the only one here I think who had experience with a major effort on the part of the Federal Government to create synthetic fuel oil, both crude oil and natural gas. We created a very big operation called the Synthetic Fuels Corporation, a creature of then-Governor Rockefeller, subsequently Vice President Rockefeller's task force. You know it did not get very far. It was about as grandiose—maybe three times as grandiose as your plan for 50 plants. It does not sound like much to you, but a big, big thing for us to undertake up here.

It turned out that once you put it in place, it was—what is it—the donkey that you throw the arrows at. That is what it was for everybody that wanted smaller government. Whether it was spending real money or borrowed money, everybody took a shot at it in their campaigns. I am going to get rid of it. Finally, after one little start, a number of people climbed up the pole and put up the American flag and claimed great success for capitalism, free enterprise. We killed it. So we did nothing.

I would want us to proceed. I hate to say it, but I am a sucker for big science and big technologies. So you do not have a hard job convincing me. But we have to do something that we can get done. You mentioned an energy bill must be done. Yes, we have to. But we have to make sure it has enough diversification in it that we can get it done, but more important, that it will work. We do not want to do one that says it is a great bill. We have got to make sure it will work.

But I do not think any of the current sources of energy ought to be worried about the other source of energy. So I do not think natural gas current producers ought to worry about coal gasification. I do not think the proponents of nuclear power—and I am one of them—ought to worry about coal gasification and other things. The truth of the matter is we are going to need much of all of those, or at least the perfection of most of those, to get through.

And at the same time we have to do renewables. I would say to you, the proponent of wind energy here, we are all with you. What we really would hope you would do is to be realistic about what it can do. You cannot come up here and say renewables will do the job. It just will not unless you include nuclear, hydropower, and a number of other things in the definition of renewables. You just cannot do it. And you cannot say wait until we have done renewables to do others. That would be an invitation for an abdication of what we ought to do. So if we would be realistic, we ought to get moving.

I am interested in analyzing further with our staff and you what do we have to do to prove this up and what can be done that does that the best way the soonest. And we will do that if we can.

Now, did somebody ask to speak? You did, sir.

Mr. NADEL. Yes, I just wanted to add one point. I agree with you we need a diverse set of resources. We have been talking a lot

about coal gasification, and if I understood correctly, the hope is it can maybe come in at $4 to $5 per mcf, not counting the subsidies. A lot of people on this side of the table are also talking about energy efficiency, which is typically half the cost. So let us not forget the cheaper stuff while we are trying to develop some more expensive but longer-term options.

The CHAIRMAN. Sir, we are all for it. In fact, we hope you will give us your list and we will try to do every single thing that is practical about efficiency. We promise you. We just are not sure that that will do it either.

Mr. NADEL. I agree we need a mix.

The CHAIRMAN. Just like I said to our friend from the renewables side.

Now, having said that, is it all right now to proceed, everybody? Thank you, panel. We will move to the last one.

This panel is FERC and the EIA market data. So let us begin. These are chief risk officers. So let us take our 2 minutes each and have a discussion, and we will be finished today unless something very important is raised from the floor. We will start with you, Mr. Anderson.

STATEMENT OF BOB ANDERSON, EXECUTIVE DIRECTOR, COMMITTEE OF CHIEF RISK OFFICERS

Mr. ANDERSON. Thank you, Mr. Chairman and members of the committee, for this opportunity to speak.

I am Bob Anderson, executive director of the Committee of Chief Risk Officers. We are a professional association of more than 30 major energy companies. What we do is develop and publish risk-related best practices for companies and markets.

While we have recognized some improvements in market information, we believe the current quality of readily available market information is merely adequate for the short term. At the CCRO, we focus on promoting solutions, and we work to advance the financial health for both companies and markets.

We are now leading a project we call the Energy Data Hub. The data hub is or would be an independently operated repository for transaction data coming from all market participants. As nonprofit organization dedicated to this role, the energy data hub we envision would be free from commercial conflicts of interest and would be a leap forward for energy markets. Easily accessed data from the hub would offer a much more complete and detailed picture of the energy markets than are currently available. Wholesale gas and power market participants of all sizes, including buyers, sellers, and brokers, may voluntarily submit daily gas and power transactions and perhaps storage information as well. The resulting unbiased data would be readily accessible to all market participants, including prospective energy buyers, sellers, and intermediaries, market observers, such as regulators, rating agencies, and the investment community, accounting firms and index publishers. The benefits from the energy data hub would be undeniable.

Most importantly, we believe this data hub can be established without significant regulatory burden or cost to the taxpayers. We are not advocating any mandate or any new regulatory body.

With the encouragement and support from this committee, the CCRO can help our industry to come together to create this energy data hub resource we all need to strengthen confidence in energy markets and improve transparency.

I encourage this Senate committee to work with the CFTC and with the FERC to encourage development of this important resource. We at the CCRO stand ready to help you do that.

The CCRO is currently working through the demonstration phase of the data hub and we would welcome you or one of your staff to join us and observe our progress or make suggestions. I look forward to answering any questions you have.

The CHAIRMAN. Thank you very much.

AEP, thank you for coming.

STATEMENT OF KEITH BARNETT, VICE PRESIDENT, FUNDAMENTAL ANALYSIS FOR AMERICAN ELECTRIC POWER

Mr. BARNETT. Good afternoon, Senators. Thank you for having me here today. I am Keith Barnett, vice president of fundamental analysis for American Electric Power.

For the past 7 years, I have been involved for my company in trying to predict the natural gas inventory number that comes out every week. We pay attention to this number because it is one of the key drivers to the natural gas market prices and indirectly, therefore, power prices.

This is the single most important piece of information that comes out and creates volatility in the market. We see it every week. The daily weather number is the second most important thing that drives market volatility. Now, market volatility is an okay thing. It is a good thing because it sends price signals when it is related to supply and demand, and my responsibility is supply/demand inventory and infrastructure. So you do have hurricanes and you have other things that can create price volatility, but week in and week out, this number is critical.

Enhancing the quality of this number should reduce unnecessary volatility and keep the volatility that is there focused on true supply and demand forces. So that is why we have made some common sense recommendations.

First, that EIA should expand their weekly survey to match their monthly survey, to survey all the storage fills that they already do monthly.

Secondly, EIA should have an analyst that does the same thing as somebody that works for me. Every week they look at the weather data and a whole host of other things, and they try to predict the number before the number comes out. Then this analyst could check the submittal before it is released to the public and say this does not really look right, and then they could do data verification if necessary.

And third—as you well know, FERC has done some great work in this area to look at daily storage. We do not advocate that EIA get involved in that. But a number of interstate pipelines already report weekday storage inventory numbers. We use those. But we would recommend to FERC to expand that on the electronic bulletin boards that already provide operational data to provide weekday-only, interstate pipeline-only storage inventories. That would

be sufficient to give the market a good indicator in those instances where maybe the data quality does not work at EIA and a bad number gets out, which we recently saw.

Now, EIA has done a good job and they have really improved the process. Partially because they have improved it so much, this number has become ever much more important to the industry. That is why they can and should do more.

Thank you.

The CHAIRMAN. Thank you very much.

Mr. Chapman.

STATEMENT OF GARY CHAPMAN, SENIOR COMMERCIAL MANAGER, DOW CHEMICAL

Mr. CHAPMAN. Chairman Domenici, distinguished members of the committee, my name is Gary Chapman and I am a senior commercial manager at Dow Chemical. In that capacity, I buy and sell natural gas for Dow, the Nation's largest industrial consumer of natural gas.

I represent today the Consumers Alliance for Affordable Natural Gas, a broad coalition of natural gas consumers.

The U.S. gas market is badly out of balance. Demand is rapidly growing and domestic supply is falling. As a result, the U.S. natural gas prices are the highest in the world and are driving U.S. jobs offshore as energy-intensive industries struggle to compete.

No single policy can, by itself, close the current supply-demand imbalance. There is no single silver bullet. We believe that the solution is a balanced portfolio of initiatives that reduce demand and expand supply, including efficiency, conservation, fuel diversity, including nuclear and clean coal technologies, supply expansion, including more environmentally sound U.S. gas production, and infrastructure improvement.

While we believe there are serious flaws in the reporting and trading systems, make no mistake. The root cause is a fundamental imbalance between supply and demand.

We recommend the following key actions to address the committee's question on natural gas market data.

First, the EIA should be directed to implement daily inventory reporting and improve the accuracy and reliability of the information.

Second, CFTC should be directed to examine the effectiveness of the current daily trading limit standards in reducing the unnecessary price volatility. Why are natural gas daily limits double that of any other energy commodity and four times that of agricultural commodities?

The CHAIRMAN. Would you state that again? Why are?

Mr. CHAPMAN. Why are natural gas daily limits on the NYMEX futures exchange double that of any other energy commodity, crude, heating oil, gasoline, and four times that of agricultural commodities, corn, wheat, soybeans?

Third, CFTC should be authorized and directed to study the potential negative influence of hedge funds and other noncommercial players on price volatility and recommend to Congress any statutory changes that are needed to enable appropriate oversight of market players.

Thank you for the opportunity to speak.
The CHAIRMAN. Thank you very much.
Mr. Harvey.

STATEMENT OF STEVE HARVEY, DEPUTY DIRECTOR, MARKET OVERSIGHT AND ASSESSMENT, FEDERAL ENERGY REGULATORY COMMISSION

Mr. HARVEY. Thank you. My name is Steve Harvey. I am Deputy Director of Market Oversight and Assessment with the Federal Energy Regulatory Commission. My group's job is to oversee physical electric and natural gas markets, and consequently we are very focused on access to market information and the validity of market information in natural gas.

First, with regard to price reporting, we entered the fray, the commission did, about 2 years under the leadership of our chairman related to concerns at the time about truthfulness in reporting prices. What I have seen I believe over the last 2 years have been enormous and concrete improvements in that process that has literally made it a good deal more reliable. But more importantly than what I have seen, we have, in fact, documented and reviewed what appears to be increasing confidence on the part of the industry, on the part of customers, and on the part of producers in that process.

Now, having said that, price discovery is not a static process. As industry needs changes, that kind of process is likely to change. We have heard a couple of ideas already on this panel. So as those change over time, we see our job as making sure that we do not reduce the quality and the value of that information as it gets to people who are active in the marketplace.

Switching to storage reporting, right now the markets are clearly characterized—and we have heard many discussions of this today—by concerns about balance between consumption and production. As a result, the reporting of storage numbers becomes the key short-term price driver over and over again.

Last September, the commission held a technical conference where we raised some questions about the timing and about the quality of the process for reporting. Though we heard many concerns, we also heard a great deal of confidence in that process at the time. However, the late November EIA storage report I think raised those questions again when that came through and created a bit of anomaly in the marketplace.

We presented in late December our interim report on our understanding of what had happened in that process. That was a result of extremely good cooperation with the EIA and with the company that was involved. Short term, I am pleased to say that in both cases, EIA and the company involved, we are in the process of actively reviewing their processes short-term and moving to strengthen those, which I think was important at the time for confidence overall.

We hope to complete our review here very quickly and get the information available to people to continue this discussion. I have spoken, I know, personally with many customers who felt strongly affected by that late November number, and we think that this will remain an active issue.

Thanks.

The CHAIRMAN. Thank you very much.

Mr. Levin, glad to have you here.

STATEMENT OF ROBERT LEVIN, SENIOR VICE PRESIDENT, NEW YORK MERCANTILE EXCHANGE (NYMEX)

Mr. LEVIN. Thank you very much, Mr. Chairman and Senators. On behalf of NYMEX, we thank you for inviting us to be here today.

Fundamental, reliable, timely information on supply and demand is very valuable for the market, for market participants and the marketplace. The timely release of inventory data, such as currently takes place on a weekly basis, we think satisfies that and it is very helpful to the industry.

By way of history, natural gas did not experience that for many years while the crude oil and petroleum products markets did, and we think that was something lacking in natural gas. So we are glad to see it is in there now.

Currently the EIA releases the information weekly. In general, we think there is a high degree of integrity with what they do and reliability and quality. It may not be perfect but, on the other hand, I do not know that I could tell you what perfect is. So I am going to let that one alone.

In general, we think the Government administering the release of data is beneficial. It does not prevent private efforts at that, and at the same time, government does have the force of law and many other benefits behind it and no incentive to do anything but provide the best data.

As for the views on the release of the inventory data, there was a time when NYMEX preferred that it not be released during the most active trading periods, and over time, we shifted our views from that because energy markets are 7 by 24, and because of that, the major participants in those markets are active at all times, but not everybody else is. First of all, entities that do not focus solely on trading are certainly not focused on trading 7 by 24, and medium and smaller sized trading entities are not either. So we are big advocates of having that data released during the most active trading periods of, in this case, natural gas.

If somebody finds that the potential impact from that release—a temporary impact—is something they are concerned about, they can, of course, not participate and they do not need to be affected, but it does not force anyone that does want to participate when things are most active from being able to do so. And it also protects those smaller entities from the disadvantage they have with the large ones because if they want to participate and react to information in lower active trading periods of the market, say, the late afternoons or the weekends, they have go to those big entities, and they pay a premium for that service.

Thank you.

STATEMENT OF ELIZABETH CAMPBELL, DIRECTOR, NATURAL GAS DIVISION, ENERGY INFORMATION ADMINISTRATION

Ms. CAMPBELL. My name is Beth Campbell, Elizabeth Campbell, and I am the director of the natural gas division, which is the data

collection survey arm of the Energy Information Administration related to the natural gas data.

We operate a number of annual, monthly, and now for the last 2½ years, weekly surveys. In particular, we operate the weekly natural gas storage report, which is the basis of the usually every Thursday release of inventory data. We operate this survey since May of 2002. It is a highly followed survey and its operation is extremely important to us. We have tried very hard to operate it effectively.

We have had a number of issues in its operation and development. We addressed one of the most important, which is the issue of revisions and posting of revisions through a public comment period in the summer of 2002. As a result of that process, we posted in the Federal Register in 2002 our policy for addressing revisions to data. That is the policy which we have been following since that period of time, and it was the policy we used in late November when a revision was necessary.

This policy is now up for review. We have released a Federal Register comment request which closes February 7 to ask whether or not there might be an alternative to that policy.

I would be happy to answer any other questions.

The CHAIRMAN. Thank you very much. For a while, we did not think you were coming, and we needed you, so we are very glad you came.

Please proceed.

Ms. HANSEN. I am Christine Hansen again, executive director of the Interstate Oil and Gas Compact Commission, and glad to have an opportunity to talk about this issue.

The IOGCC really has no comments on the storage side of the data issue, but on the supply side, on the production side, the States would offer that they have a great deal of information. Because the States tax production, the States are uniquely qualified to assist with accurate supply data because we do tax and we tax based on production.

It is also important for the companies who are responding to this tax to report to the States accurately because they do not seem to want to overpay that tax to the States.

So the States have what I believe is extremely accurate supply information, and the Senators all know that 85 percent of the natural gas consumed in this country is produced by one country, the United States of America, and we import most of the rest from Canada, with a small amount coming in from LNG. So we have got 85 percent of the production in my member States and, of course, the offshore production.

The data hub that is suggested was something that I thought might be an interesting way to use this State information. It is in the revenue departments or the treasury offices of the States, depending on the State. But the data hub, with the ability of technology to go out and reach out and take information from a computer and put it somewhere else would have the advantage of not requiring the State to do anything differently. We would not have to add employees or go to any expense. We just have to find a way to cooperate with such a data hub.

Those are my comments.

The CHAIRMAN. Thank you very much. I appreciate it.

STATEMENT OF SKIP HORVATH, PRESIDENT AND CEO, NATURAL GAS SUPPLY ASSOCIATION

Mr. HORVATH. Mr. Chairman, I am Skip Horvath, president and CEO of the Natural Gas Supply Association, here today also representing the Domestic Petroleum Council, the U.S. Oil and Gas Association, and the Natural Gas Council, which consists of all the major sectors of the natural gas industry, producers, pipelines, and distributors, all the major trade associations.

We reached a broad consensus agreement in answer to your question, is the natural gas price reporting, the storage reporting adequate for a well-functioning gas market? Our short answer is yes, it is. And that is a considered answer.

Let us take price reporting first. Mr. Harvey referred to a survey FERC did last year. Let me draw two facts from that survey that are telling.

First, 90 percent of the respondents use natural gas price indices in their commercial contracts. That indicates a reliance on this. They have choices. They can go to NYMEX. They can do a physical trade themselves. They do not have to do that, but they did.

Secondly, they also asked the question, what is your confidence level on natural gas price indices? It came out a 7 on a scale of 1 to 10, and that is pretty good.

So we are pretty pleased that the industry, post Enron, came to FERC with ideas of how to discipline ourselves. FERC did more than we asked but we accepted it, and it seems to have worked.

On the storage, we concur. EIA has done a responsible job and a good job with the storage. There was an incident last year in November, referred to already by other panelists, unfortunate, and it resulted in the whole industry saying with EIA let us take another look at this, at the protocols. They have issued a public notice where industry is responding. And let me tell you EIA has been extraordinarily responsive and responsible—and I am not just saying that because they joined us just now. I would have said it even with them not being here on the panel—in this regard and listening to the industry. We are sure they are going to do the right thing when they get all the input in. What we do not need right now is Congress legislating anything in this regard. This is not something that is broken right now. It needs tweaking.

Finally, let me point out that the oversight that FERC does of the industry has really managed to discipline us lately. No one likes to be investigated, but we think that those investigations need to continue because they make us look down at the line every time we hear about an investigation or an audit and make sure we are on the proper side of it, and we do that.

Thank you very much.

The CHAIRMAN. Thank you. We do not have a name tag for you, but would you tell us who you are?

STATEMENT OF RICHARD A. SHILTS, DIRECTOR, DIVISION OF MARKET OVERSIGHT, COMMODITY FUTURES TRADING COMMISSION

Mr. SHILTS. Yes. I am Rick Shilts. I am the director of our division of market oversight at the Commodity Futures Trading Commission. I do not have a prepared statement, but I am here to serve as a resource for any questions about the CFTC's oversight of the futures market.

The CHAIRMAN. People say you are very important, so we are glad you came.

[Laughter.]

The CHAIRMAN. Senator Bingaman, do you have any questions?

Senator BINGAMAN. Let me just ask about this proposal that we heard from Mr. Anderson for establishing an energy data hub. Did any of you who have not commented on that wish to comment? It seems to me that you have got EIA doing a rulemaking now to see how it can improve its reporting of this data, and yet, Mr. Anderson, your view is that something more is required. There ought to be a not-for-profit corporation established which would be this energy data hub which would function outside the Government and would collect all this information and make it available to everyone who wants to see it. Frankly, I am agnostic as to which way works best, but I am just wondering whether there is a need that is going unfilled that would justify establishing this.

Mr. Horvath, do you have a point of view or Ms. Campbell?

Mr. HORVATH. Yes. I will start. If an energy hub has merit, the market will produce it. It is as simple as that.

Senator BINGAMAN. Mr. Anderson is saying that is what is happening. You are trying to produce it. You are trying to establish this.

Mr. ANDERSON. Right, yes.

Senator BINGAMAN. And you think that the interest is going to be there to get that done?

I agree with your point, Mr. Horvath, that this is not something Congress should legislate. But I am just wondering, is it something that there is a need for?

Ms. Campbell.

Ms. CAMPBELL. I just wanted to note that EIA does not have any transaction-based data, and that is a distinction in the kind of data——

Senator BINGAMAN. I see. So the transaction-based data is the one thing that you do not have and you are not planning to have and this energy data hub would have.

Mr. ANDERSON. That is right. The concept is that there is a lot of information, as Skip mentioned correctly. There is better information today than we had a few years ago. What we are trying to do is to look towards the future and where do we need to be, rather than staying where we are now. What the data hub would do is bring to bear lots of information that is not available anywhere right now.

So we are trying to bring some new transparencies to the markets that does not exist today. Whether or not other information would eventually find its way into the hub, that is entirely up to the market, to EIA itself, and others. But the initial intent and the

driving force behind the interest in the hub today is transaction information. It helps us all understand where and why the gas market is behaving the way it is.

The CHAIRMAN. Senator, would you yield?

Senator BINGAMAN. Sure.

The CHAIRMAN. Is there not a proprietary interest aspect to the accumulation of this data?

Mr. ANDERSON. Yes, sir, absolutely and that is one of the reasons we are doing this demonstration within the CCRO. We have 11 members today contributing daily data into our demo. Much of it that we want to look into has to do with just that issue. Can you generate these transactions anonymous and still provide the information at a level that is extremely useful to everybody. We are really enthused at where we are right now. We think that can be overcome.

The CHAIRMAN. Thank you.

Senator Bingaman.

Senator BINGAMAN. That is all I had, Mr. Chairman. I think it is an interesting idea and maybe it will help.

The CHAIRMAN. Before I yield to Senator Alexander, let me ask Mr. Anderson. In your testimony, you suggested some other things that you thought EIA could do that they are not doing. Could you talk about those again and see if she would respond?

Mr. ANDERSON. That EIA could do?

The CHAIRMAN. You talked about the American Electric Power recommendations.

Mr. BARNETT. That was me.

The CHAIRMAN. Excuse me, Mr. Barnett.

Mr. BARNETT. Beth, it is actually nice to put a face to the voice. I have talked to her on the phone over the years a few times.

First, EIA has substantially improved from when they first started out. I want to make sure that you understand they have got credit. We are not really asking you, but in this forum you asked what could happen. We are not asking you to legislate something.

The CHAIRMAN. No, I understand.

Mr. BARNETT. Frankly, the notice that they have sent out in the Federal Register—I do not know that we are even going to respond to it because it is really more focused on how should we talk about the revisions after they happen. What I would like to see is a better protocol to avoid having them in the first place.

As it stands right now—and I could pull out the data—but they survey something like 56 respondents and 200-and-something storage fills which cover statistically a very high percentage of working gas, something in the neighborhood of 89 to 92 percent of the working gas in the three different regions.

However, whenever there is a discrepancy in the number—and people look at this number very closely, and if it is not in a fairly tight band, prices move a lot. They look at it and they say we do not know if it is a statistical problem, a reporting problem, or if supply and demand is doing something that we are not smart enough to figure out. So they always choose the worst case scenario and they assume that something bad is happening in supply and demand and prices take off.

So what we are really advocating is to go ahead—and maybe they have to go back through the process that is set up in the Government associated with getting permission to survey additional respondents on a weekly basis. But let us just get the survey aligned monthly and weekly so that piece of uncertainty is gone. We no longer have to worry about that.

And then secondly, EIA has some very capable analysts. I have talked to many of them over the years. They are all real busy is the problem. But find one and say, look, talk to people in the industry, find out what process and procedures they use to predict this number because by Monday every week, we have already decided what we think the number is and so has the industry. So by Monday, the same information could be available to this analyst, and I think, generally speaking, they are reviewing their numbers on Tuesday. The analyst could come in and say here is my projection. If you are off by more than X, maybe you better check your data.

We think those are common sense things to do. They have hurdles. I understand why they have some issues.

Ms. CAMPBELL. Do you want me to respond to that?

The CHAIRMAN. That is why I wanted you to be here because he had said that.

Ms. CAMPBELL. We do have a sample survey in which we have 56 responding units of the approximately 120 responding units that we have for the monthly survey. It is operated as a sample survey, and it achieves approximately 91 to 96 percent coverage of the inventory that we are sampling for, which means that there are approximately 64 reporting units that are not included in the sample each week that are reporting to us each month. But we are, nonetheless, in spite of that difference, getting 91 to 96 coverage, which is an excellent coverage rate.

Now, when you are operating a sample survey, you have essentially two types of error that you describe. One is called sampling error, which means you did not design your sample well enough or completely enough. And the other is something called non-sampling error, which says that the people that are reporting to you make some kind of mistake.

What frequently happens when you expand the size of the numbers of people who are reporting to you is you have more people who have a chance to make a mistake. And given that we have 64 additional respondents to pick up for somewhere between 1 to 4 percent coverage for each region, we think that what we have picked up there, in terms of reporter burden, which we are measured for under the Paperwork Reduction Act, which is why we have to go to the Office of Management and Budget to receive—we can make small changes in the number of our sample if someone buys or sells or whatever, but we cannot do that, which would be more than a doubling of the reporting burden that is involved here, without going back through OMB for a clearance.

So we feel that the sample that we have selected is efficient and effective. That, we think, is going to be the most cost effective way for us to operate the survey and also to provide quality coverage.

We do not believe that what the problem was recently was related to the size of the sample. It was related to what happened

within the sample reports. We do believe that if we were to add those additional 64 respondents, we would have a sizable non-response problem and that we would end up having to estimate for them, which is essentially what we are doing in the estimation methodology that we have now. So we do believe that this is both cost effective for the Government and responsible in terms of the reporter burden for respondents.

Now, with respect to the other issue, which is we do believe that we should have reviewed and we have reviewed the quality review proceedings within our agency as to what we are doing each week to try to assure the best quality estimate. We do track the same materials that you do track. We do track the weather. We do track the 5-year and the 1-year averages. We do track what is available in terms of trade press on other people's estimates, ICAP and others. So we are fully aware of those and they are involved in our procedures. Mistakes do happen.

The CHAIRMAN. Thank you very much.

Did you want to comment, Mr. Horvath?

Mr. HORVATH. Yes. I just want to add one more to Mr. Barnett's suggestions and your own. We noticed that in looking at the glitches that occurred over the years, we saw two big ones. One was July 3. One was day before Thanksgiving, so suggesting a pattern. Taking a look at internal procedures not just at EIA but even within companies, who is on vacation, who has the authority, who is signing off on it, is something appropriate.

And the second thing, of course, is this one in November happen to occur when we were setting up price for the following month, so it affected the whole month's worth of prices for consumers, anywhere between I think FERC estimated $200 million to $1 billion to consumers. It is a lot of money. It warrants looking at whether or not we want to have a storage report coming out during that settlement period. Another quick fix. That is with my NGSA hat on, not the whole industry's.

The CHAIRMAN. I had a question of NYMEX, but we will submit that and let you answer it, if you do not mind.

Yes, sir.

Mr. CHAPMAN. Can I make a comment about the EIA?

The CHAIRMAN. Please do.

Senator ALEXANDER. I would like to hear NYMEX' response to your question about trading limits before we leave. Please go ahead and ask whatever you wanted to, but you asked a question about whether having narrower trading limits would make a difference. You are not the only chemical company who has asked that question.

Mr. CHAPMAN. I am in a dilemma. Do I ask this question or go back to the first?

The CHAIRMAN. Go ahead. I was going to ask it and that is what I was going to submit, but go ahead. That is fine. Let us do it right now.

Senator ALEXANDER. Ask the one you want to ask.

Mr. CHAPMAN. One of the other suggestions that we have talked about—and we did it at the end of September with the other conference—was relative to reporting storage information daily. One of our big focuses is to reduce unnecessary price volatility. The day

the storage report comes out is the most volatile day of trading. It just so happens that there is currently a parimutuel, over-the-counter financial product that pays off in terms of dollars per bcf change in inventory versus an expectation. And this parimutuel derivative adds significantly to what I think is an unnecessary price volatility on Thursdays.

We have talked a little bit about the amount of extra resources that it would take for the EIA to provide that. That is true. Perhaps the marketplace through CCRO or others might look to do something along those lines. A number of individual pipelines are voluntarily posting their information. However, without the information being aggregated in some fashion or another, independent like EIA or another way, the marketplace has a difficult time figuring out what to do with it.

The CHAIRMAN. Do you want to comment on that?

Ms. CAMPBELL. I need to defer to the Federal Energy Regulatory Commission in this area because they are the ones who are considering the issue of requiring daily reporting. There is no daily commodity reporting run by any statistical agency.

Mr. HARVEY. We did discuss this last September in a technical conference. We did suggest some ideas like going towards more of a daily reporting, but never in the context of reporting to EIA, making that information public through some kind of standardized, probably Internet interface. There are, at least in the cases of interstate pipelines, systematic ways of doing that. Because of the history here, they are not done as systematically as they might be. So that is one of the issues that we wanted to have discussed at that time and it came up, but it was never in the context of going to the EIA. That would have been doing it in a way that was more accessible so that more people could commercially go in and handle that.

The CHAIRMAN. Senator Alexander.

Senator ALEXANDER. My question is the question Mr. Chapman asked earlier which is basically, as I understand it—your question is not the Government doing this, but if NYMEX narrowed the trading limits for gas to reduce the volatility of the price, what would be the effect of that. You wondered why the trading limits were broader for gas than it is for?

Mr. CHAPMAN. Than it is for any other commodities that we could find. The current trading limits on natural gas are $3 per MM Btu, ball park, around 50 percent of the current value of gas. In the last 5 years, from 2000 to 2004, the prices exceeded 50 cents 40 times and 75 cents 20 times and never hit the price limit as compared to these other commodities that I mentioned.

Mr. LEVIN. That last statement actually is not accurate but it is also not relevant.

The first thing I would answer is very straightforwardly there is an easy way to eliminate price volatility and it is called hedging. And it is as sample as that. That is why markets such as NYMEX exist. There are also a lot of ways to compete with what NYMEX does to accomplish the same end, and lots of companies do it and they get price certainty and they eliminate price volatility.

Over the years, NYMEX has had a variety of different policies on its price limits. We at one point had very narrow ones compared

to what we currently have. They existed as no limits on the front month, but 10 cent limits in subsequent months. Over time, the reason that we changed them was that we found that our price limits were artificial, not most of the time, but when they are hit or when they stop a party from achieving the price that is going on in the cash market while we stop trading, it has a number of effects.

But first let me emphasize the cash market goes on whether we do or not. It just does not happen to be as transparent. It does not happen to be as level. It does not happen to be as fair. So that is the first implication of us trying to get out of sync with the cash market. And there are market participants who enjoyed it when we were not there, enjoyed it when our market stopped and they kept on trading and would enjoy it again.

Continuing in that vein though, that meant that parties that were in our market that were using us to manage price risk because the cash market was moving either higher or lower than where we artificially constrained them were no longer benefiting from risk management or price management because we trapped them. We were like a roach motel. And that is not the purpose of a commodities exchange either. We are trying to be a public marketplace where everybody can come to to lay off risk, not force them so they are incurring more risk.

The last thing that we did is we found that in some of the ways that we had our price limits, that though there were the best of intentions, each time we had them, we caused even distortions in our own market going back to when we had the very narrow range, probably similar to what goes on in the other markets. And I think they have just the policies that we had, front month, many of them if not all, unlimited movement, the back months much smaller movements. What you find is that when the back month price limit is reached, then parties start running to the front month not because they want to use the front month, but that is the best thing——

Senator ALEXANDER. So you have no limits?

Mr. LEVIN. Well, we did not at that time. Now we do. And over time we increased them——

Senator ALEXANDER. I was assuming you have now no limits.

Mr. LEVIN. No. We have limits. We have $3 per million Btu limits.

Senator ALEXANDER. What is your theory of limits based on what you said for the last 5 minutes?

Mr. LEVIN. What I was explaining was where we were and why we changed it and opened it up.

Senator ALEXANDER. You gave 5 minutes of reasons why limits were bad and interfered——

Mr. LEVIN. That is right and now we have a very wide limit. But no, our limit is actually up, Senator, to the point of we give the market 5 minutes to digest it and then we go on trading after it. That is what we found to be the best policy. So that is how we currently operate. What we are trying to do is just give everybody a sense and once you hit a limit, that they have to time to digest, make sure that they have got their customers, their brokers, their

customers' orders are right, to talk with their customers. We at one point had an hour.

Senator ALEXANDER. When you hit the limit, you stop for 5 minutes, digest it, and go on.

Mr. LEVIN. That is right. At one point it used to be an hour and we found that was too long and people complained that the cash market was going on and you were not. So I appreciate your question because I left that unclear. It helped me clarify. Thank you.

The CHAIRMAN. Everybody here understood it all. Right?

[Laughter.]

Senator BINGAMAN. The part that I am not clear on is why there is such a disparity. You have much narrower limits in these other commodities, as I understood Mr. Chapman's comment. Why do you have much narrower limits in the other commodities than you have in natural gas?

Mr. LEVIN. I cannot speak for all the other commodities. I can speak for when we have had narrower limits and in the markets where we seemed to, percentage-wise, have it ourselves, it is because in those markets, they do not have the same level of volatility.

Mr. Chapman's interpretation is somehow that because NYMEX lets it happen, that causes it. We think, frankly—and we cannot be very respectful of him—we think that is a flat earth mentality. I cannot put it any other way. We reflect what is going on in the market. That market goes on whether we are there or not and there are a lot of big entities. The fact of the matter is, when it was still around, Enron Online was our biggest competitor, and does anybody doubt for a second that when they were competing with us, they would not have been very happy for us to artificially have constrained ourselves with price limits or to close our market altogether. They would not and they did not, and they operated when we did not. That is the way the natural gas market is today.

I do not mean to just use them. There are other companies that are out there and do it. It is less transparent. It is not designed to be a public marketplace and have all the protections we have, that have the competition we have. It is designed to be a dealer market outside of NYMEX. So that is the choice. People can make it.

But once again, to eliminate price volatility, hedge. it is as simple as that.

The CHAIRMAN. You had something.

Mr. SHILTS. Yes. Just to address your question, the CFTC itself does not require exchanges to have price limits, and essentially it is a business decision of each exchange. So each exchange and the Chicago Board of Trade may view their grain markets differently and decide to impose narrower limits because they are less volatile than some of the other markets. The NYMEX has their own views as to how they want to impose limits looking at volatility in those markets.

The CFTC's view—we have looked at this many times over the years, and I cannot express as colorfully as Bob, but in general, price limits, while they may stop trading for a while to give people an opportunity to assess what is going on in the market, but there are these very real costs involved where the activity in the cash

market is going on, traders that want to get out of their positions or that want to establish new positions are not able to do that. That is the fundamental purpose of a futures market, the ability to lay off risk and to trade, and also the price discovery process has ceased when trading cannot occur.

The CHAIRMAN. We are going to finish, but Mr. Chapman, you seem like that right hand of yours really wants—your body wants to react to it. Right?

Mr. CHAPMAN. My organization, Dow Chemical, is a very large hedger on the NYMEX and the over-the-counter exchange markets. We do a lot of that.

My comments were very focused on reducing unnecessary price volatility. I cannot quantify that for you because we do not have the information on how much of this is caused by unnecessary—but when the markets are running hard, even a large player like Dow cannot catch up to some of the other guys.

Thank you.

The CHAIRMAN. A very good point.

Well, I hope everybody enjoyed it. We stand in recess.

[Whereupon, at 5:50 p.m., the conference was adjourned.]

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