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ENVIRONMENTAL IMPACTS OF NATURAL GAS SUPPLY

HEARING

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS UNITED STATES SENATE

ONE HUNDRED EIGHTH CONGRESS

SECOND SESSION

MARCH 24, 2004

Printed for the use of the Committee on Environment and Public Works

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ONE HUNDRED EIGHTH CONGRESS
SECOND SESSION

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ENVIRONMENTAL IMPACTS OF NATURAL GAS SUPPLY

WEDNESDAY, MARCH 24, 2004

U.S. SENATE,
COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS,
Washington, DC.

The committee met, pursuant to notice, at 10:02 a.m. in room 406, Senate Dirksen Building, Hon. James M. Inhofe (chairman of the committee) presiding.

Present: Senators Inhofe, Jeffords, Chafee, Thomas, Murkowski, Carper, Voinovich, and Allard.

OPENING STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

Senator INHOFE. The meeting will come to order.

Welcome, Governor. If you would, take your place at the table. We appreciate very much your being here. We want to welcome the witnesses. We are pleased that the Governor is here to share his views on the environmental impacts of the U.S. natural gas supply.

Although the United States is a world leader in natural gas supply, we pay more for it than anywhere on the globe. For the last several years, natural gas prices have been volatile. They have caused manufacturing production costs to increase dramatically. Factories are closing. High paying and irreplaceable manufacturing jobs are leaving the country. Consumers are hurting the most. The tragedy, of course, is that it is completely unnecessary.

Tactics employed to stop exploration in the production of new natural gas sources under the pretense of environmental protection are costing this country dearly and will only get worse if we do not act. There are those who are simply opposed to drilling anywhere, anytime, and will go to all lengths to prevent it from occurring. But we can explore and produce while protecting the environment.

I would like to read a quote,

> "The U.S. oil and gas industry has integrated an environmental ethic into its business culture and operations. The industry has come to recognize that high environmental standards and responsible development are good business."

It may surprise some of my friends that that quote came from a Clinton administration DEQ report entitled, "Environmental Benefits of Advance Oil and Gas Exploration Protection Technology." At least someone in the Clinton administration understood that it did not harm the environment.

Natural gas makes up 24 percent of our energy supply. It is used to provide 19 percent of the Nation's power generation, and 40 percent of U.S. industries rely on natural gas for energy or use it as

a necessary feed stock to produce a variety of products from chemicals to fertilizer to glass.

This morning, I had Senator Larry Craig before the Senate Prayer Breakfast. I am the chairman of that group. He was there as a presenter. When he heard that we were having this hearing, Governor, he said that in his State of Idaho, the cost of fertilizer has doubled in the last 6 months.

Environmental policies, particularly the Clean Air Act Amendments of 1990 and the regulatory uncertainty of the new source review have contributed to a significant increase in demand for natural gas-based electricity generation. The increased demand for natural gas without any increase in supply has translated to high and volatile prices. Because we have vast natural gas resources, our supply problem is one of our own making.

In the chart that is being shown, they are showing the restrictions. The National Petroleum Council's most recent report stated, there are policies promoting the use of natural gas as an environmentally attractive fuel that are in conflict with the laws and regulations that limit access to gas-prone areas where gas can be explored for and produced in an efficient and environmentally friendly manner. The brown shaded areas represent the amount of gas that is effectively off-limits from exploration and development. Under these policies, it is as if we had turned our pride-strong Nation into a man starving to death, complaining about it, and then simply refusing to eat.

What is astounding is that those who are promoting these policies that limit our access to natural gas are also pushing for changes in the Clean Air Act that would dramatically increase the demand for natural gas, further increasing pricing and volatility. I am speaking specifically to people who are trying to regulate carbon dioxide. Experts agree that traditional domestic gas sources are being depleted and are insufficient to meet future demands. They point to the Rocky Mountain area as a premier future gas supply in the lower States.

Unfortunately, according to the NPC, much of the mountain areas are effectively off-limits to production because of regulatory uncertainty. Producers, like any business, require certainty to operate successfully. They must be able to plan their investments and have a reasonable certainty of return. The uncertainty is the result of an obstruction pattern played out by radical environmental groups who rely on regulatory and legal challenges to constantly impede and delay until the point where exploration dies. They work hard to put more laws on the books with which producers must comply in order to stop production or delay it indefinitely. Their obstructionist agenda has been working and the increases result in a volatility of natural gas pricing, and has cost this country jobs. It is only going to get worse if it continues.

The NPC report concluded that 69-trillion cubic feet, or 29 percent of the area's technical base, is effectively off-limits to exploration and development. Further, an additional 56 TCFs of potential gas faced significant costs in delays to develop.

The next chart takes three to hold it. It shows what a producer must go through in order to obtain a Federal lease and permit on BLM or Forest Service areas. You remember on the previous chart

we had that center brown area. That is primarily what we are talking about here. There are huge reserves and huge opportunities. This is what they have to go through. They are not willing to do it. If they do it, it is expensive.

Again, this chart just shows the leasing and permitting process before any exploration or production. We probably could not make a big enough chart that would capture the delays in building new pipelines to get a supply into the area which needs it the most, such as the Northeast.

Having a clean and safe environment is critical, but contrary to the opinion of the radical environmentalists and their supporters, we can have a clean environment without sacrificing U.S. competitiveness and jobs.

I come from a gas-producing State, the State of Oklahoma. We are going to have a witness here from the State of Oklahoma, Bob Drake. We have vast reserves. We have the ability to explore for gas. But in the areas where the reserves are the largest, we do not. This is an old thing called supply and demand. The demand for natural gas is there, but the environmentalists have stopped us from being able to produce it.

That is what this hearing is all about. I will recognize Senator Jeffords for his opening statement.

[The prepared statement of Senator Inhofe follows:]

STATEMENT OF HON. JAMES M. INHOFE, U.S. SENATOR FROM THE STATE OF OKLAHOMA

I want to welcome our witnesses, and I am pleased that Governor Carcieri of Rhode Island is here to share his views on the environmental impacts of U.S. natural gas supply.

Although the U.S. is a world leader in natural gas supply, we pay more for it than anywhere on the globe. For the last several years, natural gas prices have been volatile—they have caused manufacturing production costs to increase dramatically; factories are closing, high paying and irreplaceable manufacturing jobs are leaving the country, and consumers are hurting the most. The tragedy of course is that it is completely unnecessary. Tactics employed to stop exploration and production of new natural gas sources under the pretense of "environmental protection" are costing this country dearly and will only get worse if we don't act. There are those who are simply opposed to drilling anywhere, anytime and will go to all lengths to prevent it from occurring. But we can explore and produce while protecting the environment.

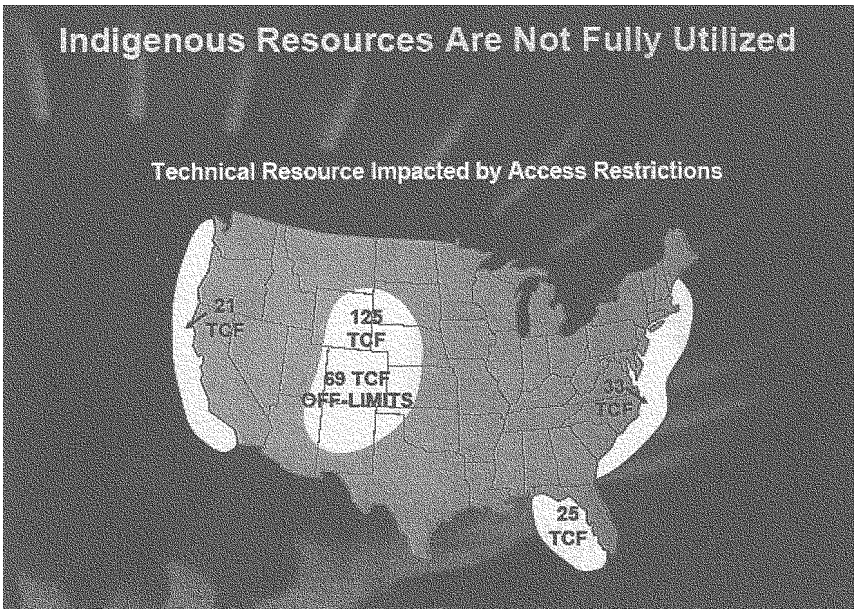
I would like read a quote:

> "The U.S. oil and gas industry has integrated an environmental ethic into its business culture and operations. The industry has come to recognize that high environmental standards and responsible development are good business."

It may surprise some of my friends that the quote is *from a Clinton Administration DOE report* titled "Environmental Benefits of Advanced Oil & Gas Exploration & Production Technology." While the former President's policies did not encourage oil and gas exploration, at least someone in his Administration understood that it didn't harm the environment.

Natural gas makes up 24 percent of our energy supply—it is used to provide 19 percent of the nation's electric power generation (used in over 60 million households), and 40 percent of U.S. industries rely on natural gas for energy or use it as a necessary feedstock to produce a variety of products from chemicals and fertilizer to glass.

Environmental policies, particularly the Clean Air Act Amendments of 1990 and the regulatory uncertainty of New Source Review have contributed to significantly increased demand for natural gas-based electricity generation. The increased demand for natural gas, without any increase in supply, has translated to high and volatile prices. Because we have vast natural gas resources, our supply problem is one of our own making.

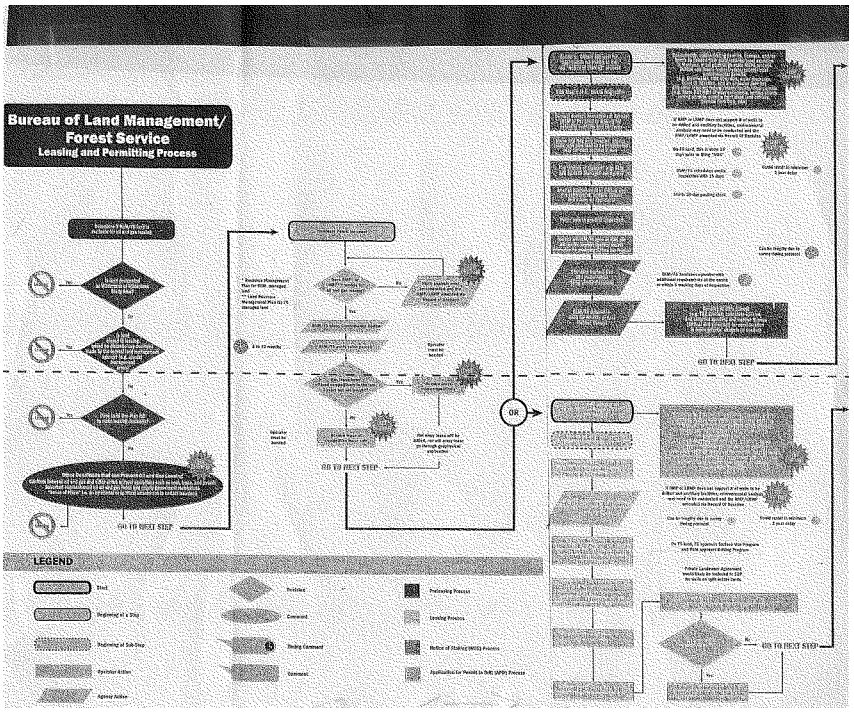


The National Petroleum Council's most recent report stated that our policies promoting the use of natural gas as an environmentally attractive fuel are in conflict with laws and regulations that "limit access to gas-prone areas where gas can be explored for and produced in an efficient and environmentally friendly manner." The shaded areas represent the amount of gas that is "effectively" off limits from exploration and development. Under these policies, it's as if we have turned our proud, strong Nation into a man starving to death, complaining about it, and then simply refusing to eat. What is astounding is that those who are promoting these policies that limit our access to natural gas are also pushing for changes in the Clean Air Act that would dramatically INCREASE our demand for natural gas, further increasing pricing and volatility, and I am speaking specifically to people who are trying to regulate carbon dioxide.

Experts agree that traditional domestic gas sources are being depleted and insufficient to meet future demand. They point to the Rocky Mountain area as the premier future gas supply in the lower 48 states.

Unfortunately, according to the NPC, much of the mountain areas are "effectively" off-limits to production because of regulatory uncertainty. Producers, like any business, require certainty to operate successfully. They must be able to plan their investments, and have a reasonable certainty of a return. The uncertainty is a result of an obstructionist pattern played out by radical environmental groups who rely on regulatory and legal challenges to constantly impede and delay until the point where exploration dies. They work hard to put more laws on the books with which producers must comply, in order to stop production or delay it definitely. Their obstructionist agenda has been working and the resulting increase and volatility of natural gas pricing has cost this country jobs—and its only going to get worse if it continues.

The NPC report concluded that 69-trillion cubic feet or 29 percent of the area's technical base is "effectively" off-limits to exploration and development. Further, an additional 56 TCF of potential gas faced significant costs and delays to development.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Forest Service
Leasing and Permitting Process
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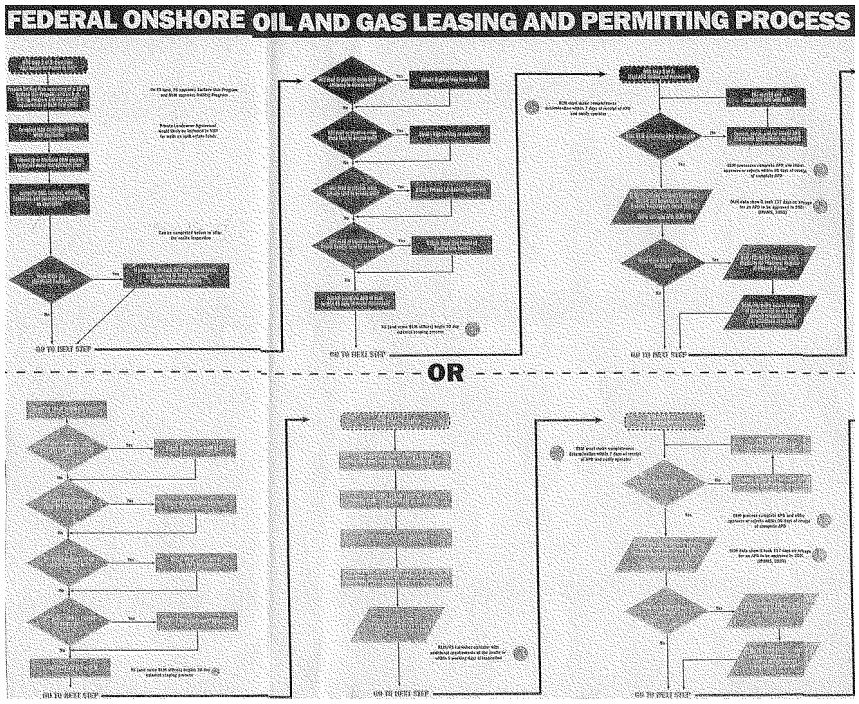
FEDERAL ONSHORE OIL AND GAS LEASING AND PERMITTING PROCESS
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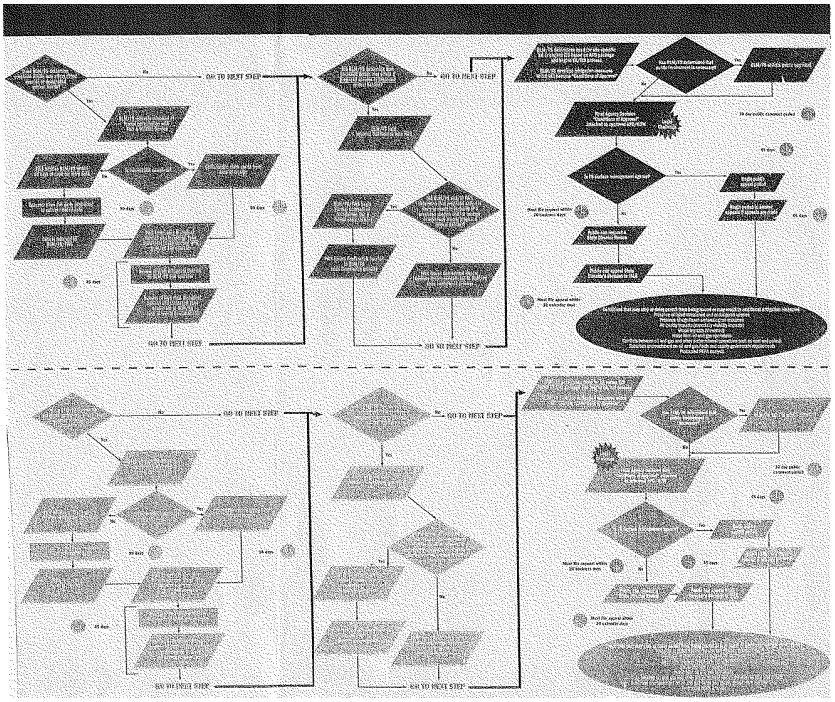

This chart shows what a producer must go through in order to obtain a Federal lease and permit on BLM or Forest Service land. Again, it depicts the process before any actual disturbance of land occurs. By the way, the nine red stop signs are opportunities for legal challenges.

Again, this chart just shows the leasing and permitting process, BEFORE any exploration or production. We probably couldn't make a big enough chart that would capture the delays in building new pipelines to get the supply into areas which need it the most, such as the Northeast.

Having a clean and safe environment is critical, but contrary to the opinion of the radical environmentalists and their supporters, we can have a clean environment without sacrificing U.S. competitiveness and U.S. jobs. Pursuing environmental policies that force natural gas, while preventing increased supply through obstructionist tactics is irresponsible and hurts our workers, our consumers, and our nation.

Senator INHOFE. Senator Jeffords.

OPENING STATEMENT OF HON. JAMES M. JEFFORDS, U.S. SENATOR FROM THE STATE OF VERMONT

Senator JEFFORDS. Thank you, Mr. Chairman. Thank you for holding this hearing, and a sincere thanks to all of the witnesses, many of whom have traveled across the country to provide testimony to this committee.

The committee will be examining several very important issues today as we take testimony on the environmental effects of natural gas supplies. The first issue is obtaining a better understanding of the environmental effects of natural gas use. Natural gas is the least carbon-intensive fossil fuel. On a full life-cycle basis, from the time it is produced at the wellhead to the time that it is burned, natural gas contributes at least 20 percent fewer greenhouse gas

emissions than oil, and at least 50 percent less than coal to our environment.

In relation to other fossil fuels, natural gas also results in lower emissions of sulfur, volatile organic compounds, and particulate matter. All of these reduce the emissions support efforts to improve our local air quality.

This is important because as the chairman knows I feel that the country has a long way to go in improving its air quality. As we do so, and as we seek to address climate change, natural gas will continue to play a very important role. In combination with energy conservation, natural gas will help us bridge our current energy needs with a non-carbon emitted and renewable energy sources that will become more and more a part of our generation mix.

I look forward to hearing from witnesses about whether and how our currently high gas prices are driving renewables and conservation in the short term. I also want to hear about whether this committee should be doing more to encourage the Environmental Protection Agency's Natural Gas Efficiency Program to step up their efforts and assist the gas industry in implementing short-term measures to address high prices.

The second issue that we must examine is the effective environmental laws, if any, on various sectors of the economy, including energy industries, like the production of natural gas. Of course, this committee's first and foremost responsibility is to assure that the Nation's laws are protective of public health and of the environment. It is also our job to set performance standards for industries, such as the gas industry, which are adequately protective and whenever possible, fuel neutral. These standards should not be skewed to protect any one industry, but should encourage sustainable economic development.

Finally, the third issue we must examine are the effects of the environment of natural gas production and sufficiency of our country's environmental laws to address any adverse impacts. We must be mindful that as beneficial as the use of natural gas has been to generate electricity, heat our homes, and produce commodities, it has also had real environmental impacts on our country's public and private lands.

I feel that a good understanding of these issues is extremely important. I think that even more the case now is that the energy bill that the Senate has before it, that would exempt natural gas and oil production sites from Clean Water Act, Storm Water permits, and would exempt hydraulic fracturing from the Safe Drinking Water Act. Therefore, I am pleased that we will hear from witnesses, both from natural gas producers and individuals, who have examined drilling sites about the efficiency of these laws and protecting the environment.

Covering the issues, I have outlined will provide a comprehensive outlook in this particular sector. I look forward to hearing the witnesses, Mr. Chairman. I thank you for holding these hearings.

[The prepared statement of Senator Jeffords follows:]

PREPARED STATEMENT OF HON. JAMES M. JEFFORDS, U.S. SENATOR FROM THE STATE OF VERMONT

Mr. Chairman, thank you for holding this hearing, and a sincere thanks to all the witnesses, many of whom have traveled across the country to provide testimony to the Committee.

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Finally, the third issue we must examine are the effects on the environment of natural gas production and the sufficiency of our country's environmental laws to address any adverse impacts.

We must be mindful that, as beneficial as the use of natural gas has been to generate electricity, heat our homes, and produce commodities, it has also had real environmental impacts on our country's public and private lands. I feel that a good understanding of these issues is extremely important.

I think this is even more the case now that the Senate has before it an Energy Bill that would exempt natural gas and oil production sites from Clean Water Act stormwater permits, and would exempt hydraulic fracturing from the Safe Drinking Water Act .

Therefore, I am pleased that we will hear from witnesses, both natural gas producers and individuals who have examined drilling sites, about the sufficiency of these laws in protecting the environment.

Covering the issues I have outlined will provide a comprehensive look at this particular sector. I look forward to hearing from the witnesses.

Senator INHOFE. Thank you, Senator Jeffords.

We will take in the order of their arrival our members who wish to have opening statements. You were the first to arrive, Senator Chafee. Do you have an opening statement?

After the opening statements, I will recognize you to introduce Governor Carcieri.

You are recognized.

OPENING STATEMENT OF HON. LINCOLN CHAFEE, U.S. SENATOR FROM THE STATE OF RHODE ISLAND

Senator CHAFEE. Thank you, Mr. Chairman. I just have a very brief opening statement.

First of all, I want to thank you for holding this hearing, and as you mentioned, to also welcome Governor Carcieri here this morning, the Governor of my State.

I will say that to some extent natural gas is suffering from its own success, recognizing the many benefits of natural gas. Its popularity has caused increased demand which, in turn, has driven up the price. As we discuss the problems associated with high natural gas prices, I would like to make sure that we do not lose sight of diversity and conservation. Ensuring that the Nation employs a diverse range of fuel supplies, and ensuring that we do as much as we can to conserve energy can only make the country and the economy stronger in the long run.

I do believe that the reserves of natural gas, both domestic in Senator Murkowski's home State and foreign, are still strong. We must work harder at delivery systems of this natural gas to the consumer, either by pipeline or by LNG.

I look forward to introducing Governor Carcieri later.

Senator INHOFE. Good. Senator Carper, did you have an opening statement?

Senator CARPER. I do have just a quick statement, if I could. Governor, what is it like being a Governor these days?

Governor CARCIERI. It is a little different than it was a few years ago.

Senator CARPER. Senator Voinovich and I are what we call "recovering Governors."

Governor CARCIERI. You had the good years. You avoided the budget problems.

Senator CARPER. We did. We were very, very fortunate.

Senator INHOFE. Your time has expired.

[Laughter.]

OPENING STATEMENT OF HON. THOMAS R. CARPER, U.S. SENATOR FROM THE STATE OF DELAWARE

Senator CARPER. It probably has. Thank you for joining us today.

I just want to piggyback on the comments of Senator Chafee. It is important that we find places where we can bring natural gas where it does exist to our markets and for us to be able to use, particularly in this country. We are facing these huge deficits and trade deficits, many of which are related to the import of oil and the reliance on foreign sources of energy.

This past couple of weeks I have asked some of you to consider signing onto a letter to the President. A number of you have, and I just want to thank you for doing that. The letter focuses on what Senator Chafee was mentioning there, and that is conservation. In 2000, the Energy Department promulgated a regulation calling on the adoption of something called "SEAR 13" standards dealing with energy efficiency for air conditioning systems. A SEAR 13 standard was adopted which basically said that by 2006 our air conditioners need to be about 30 percent more energy efficient.

The long and short of that is that what flows from that higher standard is the emission of about 2.5 million tons less of carbon dioxide, but maybe more importantly, about 48 to 50 electric power plants will not have to be built between now and 2020. Let me say that again. What flows from simply raising the air conditioning

standards to a SEAR 13 not only means about 2.5 million tons less of CO_{-2} that we would generate in this country, but it also means close to 50 power plants that we are not going to have to build.

As you all know, most of the power plants being built these days are powered by natural gas. To the extent that we do not have to build those power plants, then that is a good thing for our environment and for the supply of natural gas. As we use less natural gas, hopefully we will be able to see the prices moderating.

Many of our colleagues have signed the letter and I thank you for doing that. The letter is simply a letter to the President that says, "Mr. President, we have had a difference of opinion. We will have 30 percent more efficient air conditioners by 2006." The Administration has sought to replace that with a more modest standard, a SEAR 12, which is 20 percent more energy efficient.

We fought it out in the courts and the Second District Court said that the higher standard should stand. The air conditioning industry said last week that they felt that they could live with the higher standard. We are delighted with that. The majority of our colleagues have now signed the letter.

It says, "Mr. President, please do not appeal the decision of the Second District Court. Let it stand." If the industry says they can comply with the higher standard, by golly, we should support that and applaud that.

So I would just say to my colleagues that we will look for ways to find extra natural gas. That is important. But let us also find ways to use less of it, which is also important.

Thank you.

Senator INHOFE. Thank you, Senator Carper.

Senator Thomas.

OPENING STATEMENT OF HON. CRAIG THOMAS, U.S. SENATOR FROM THE STATE OF WYOMING

Senator THOMAS. Thank you, Mr. Chairman. I think it is interesting. I am very much involved in the energy policy, which we have not been able to get passed. We need to move on that. Actually, interestingly enough, it has been opposed by some of the folks who are now talking about the needs that we need to fill. Certainly we do. But you can coordinate energy and environmental policy. That is part of what we are trying to do with the bill.

One of the things I disagree a little with, my friends, is that if you are going to have a policy in the future, coal has to be part of that. We need to do more research so that it is clear. But we have more supply of fossil fuel of coal than we do of gas. Furthermore, gas is much more flexible and can be used for many things. This idea that we are going to try in the future to generate electric totally with gas I think is a mistake in terms of policy. But we need some diversity here. Certainly we need conservation and efficiency. We need to work on that. But with respect to what we are talking about here today, we need to expedite permitting and procedures. Some of these permits that you talk about, even though they may need to be there, they do not need to take 6, 8, or 10 months to accommodate. We found that in many instances. We are trying to do that on public lands with the BLM permitting. Without

changing the result, you can have a much more efficient system of doing the permitting and causing those things to happen.

If we can do that, we have to have access to some of the more economic reserves. They are obviously off limits. I am one who thinks there ought to be some public land set aside and not used for that. But for the most part, particularly BLM land should be available for multiple use. I think it is very good that we take a look at what impediments there are that could be changed with respect without reducing the effectiveness of the environmental protection. I think we can do those things.

I guess that is what we are talking about here today, Mr. Chairman.

Senator INHOFE. Well, those are the sentiments I tried to express. I think during the course of this hearing it would not hurt to put the original chart back up so we can see what areas he is talking about and where the capacity is.

[The prepared statement of Senator Thomas follows:]

PREPARED STATEMENT OF HON. CRAIG THOMAS, U.S. SENATOR FROM THE STATE OF WYOMING

Energy demand is on the rise—be it oil, natural gas, nuclear, coal, or renewable resources. Domestically, predictions show only coal sector production to increase but even that might cause some to pause given the uncertainty surrounding environmental regulations. Bottom line is that the U.S. will be importing more energy than ever before. What happened to the talk about energy and national security? It's time to seriously look at our policies.

It is the policies of the past that got us here today. For example, let's take natural gas. In the 80's and 90's there was a surplus of supply and weak demand. This kept prices low. The market was influenced by certain legislative and regulatory measures. Two measures that impacted gas development included the Powerplant and Industrial Fuel Use Act of 1978 (PIFUA) and the Natural Gas Policy Act of 1978 (NGPA). While the PIFUA placed restrictions on industrial and power generation uses of natural gas, the NGPA set in motion a process that encouraged gas supply growth. Amendments in 1987 to the PIFUA removed restrictions on the use of gas in power generation, and the Natural Gas Wellhead Decontrol Act of 1990 removed wellhead price controls.

Capability of natural gas continues to increase. Growing demand and limited supply has resulted in tighter markets, higher prices and greater volatility. This will continue until we can bring additional supplies to the market. In addition, with the current world oil supply situation and the flurry of environmental regulations facing refiners, we can expect to see gasoline prices remain high as well.

We must focus on the policies of today so we can have a plan for the future. We have to coordinate energy and environmental policies. For example, the electric industry has made a lot of changes. We no longer have just the vertically integrated utilities. In fact, close to 40 percent of generation comes from marketers—most of these new merchant generators are powered by natural gas.

Our government policies particularly, environmental polices, encourage the use of natural gas but do not address the corresponding need for additional natural gas supplies. Companies are switching from coal to natural gas. Why is this? Coal is our most abundant fuel source and should be used for electric generation and we can do this an environmentally responsible way. Natural gas is more flexible and can be used for different things such as heating homes and businesses. If we are to restore some kind of fuel diversity to our electricity sector, we need to provide a regulatory environment that will enable investors to consider coal plants. Right now, with the uncertainty about new source review, mercury, visibility and a host of other issues, building a new coal plant is just "too hard" even in a State like mine.

Mr. Chairman, it is my hope that we can pass the energy bill so we don't continue, willy-nilly, down a path with no plan and pass a law here, a regulation there with no clear thoughts of coordination or where these policies lead us into the future.

Senator INHOFE. Senator Voinovich.

OPENING STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

Senator VOINOVICH. Thank you, Mr. Chairman, for having this hearing today. The natural gas crisis that has plagued this Nation for the last 46 months has caused the hemorrhaging of thousands of jobs and has severely impacted the way of life for millions of Americans who struggle each day to pay their utility costs. These folks are not even on most people's radar screens, but I am sure that the Governor knows in his large urban areas that there is the demand for live heap than has been more than any time in the history of this country.

Alan Greenspan has said "I am quite surprised at how little the natural gas problem has been getting because it is a very serious problem." The people of Ohio get it. I welcome Dennis Bailey from PPG Industries who will testify today on the effective natural gas crisis on the company's operations in Ohio and throughout the country.

I also thank Morane Molded Plastics in Ohio for submitting testimony. I would ask that it be inserted in the record, Mr. Chairman.

Senator INHOFE. Without objection, so ordered.

Senator VOINOVICH. Manufacturers are a key ingredient of our Nation's economy and the backbone of Ohio. They rely on natural gas heavily for fuel and power as a raw material. It also plays an important role in another significant part of our economy that people forget about it, and that is agribusiness. U.S. natural gas prices are the highest in the developed world. Since 2000, natural gas has been hovering between $5 and $6 per thousand cubic feet, roughly twice its historical level.

During this time Ohio has lost about 200,000 manufacturing jobs. These jobs are simply not migrating to another region. They are going overseas, or the businesses are just going out of business.

Let me quote from a Washington Post article that ran last week. I would ask that the entire article be inserted in the record.

> "Across the country one in every 10 chemical-related jobs has vanished in the past 5 years, nearly 100,000 workers. The chemical industry's eight-decade run as a major exporter has ended with a $19 billion trade surplus in 1997, becoming a $9.6 billion deficit this year."

That is a dramatic change.

Senator INHOFE. Without objection, so ordered.

Senator VOINOVICH. According to a February 17th *Wall Street Journal*, which I would also ask to be inserted in the record, "Almost all new production of chemicals and plastics will take place in the Middle East and Asia. Charles O. Halliday, chairman and chief executive of the DuPont Company, told investors in December that 'High energy costs will prompt the company to shift its center of gravity overseas.'" The DuPont Company is going to shift its center of gravity overseas.

Senator INHOFE. Without objection, so ordered.

Senator VOINOVICH. High natural gas prices have resulted in the permanent closure of almost 20 percent of the United States' nitrogen fertilizer production capacity and the idling of an additional 25 percent. In Ohio the chemical company, Lubrizol, has indicated that they will move operations overseas because of natural gas

price volatility. Last year their gas price was up $50 million over what it was the year before.

This only tells part of the story. The natural gas crisis has also caused all consumers over $130 billion over the past 46 months. It is estimated that the increased natural gas prices in 2004 will cost Ohio households $543 million than in 2002. Think about that. These are just ordinary citizens.

In my own case, my gas bill is up 100 percent over what it was 2 years ago. Prices are so high because over the last decade the use of natural gas has risen while domestic supplies have fallen. The reason for these trends lies in our environmental policies. Basically what we have done is that we have limited the supply, and we have exacerbated the demand. Now the chickens have come home to roost. We are paying for it dearly because in establishing our environmental policies, we have not harmonized our environment, and our energy, and our economy, but we have been very narrow-minded in terms of putting these policies together.

I have a chart here from the Energy Information Administration which shows the trend to continue. Natural gas consumption increases across all sectors, especially for electric generators. It is going off the chart.

I might make an editorial comment that that presumes that the economy keeps growing. The disastrous part of this is that we will not reach this consumption because businesses are going to go out of business. The demand will not be as much because the customers are not there for it.

Chart 2 shows what will happen if we do not start increasing our supply of natural gas. The top line shows the Energy Information Administration's, which is a part of the Energy Department, prediction that natural gas consumption will continue to increase again. We hope they are right.

My concern is that this consumption will not increase because of the jobs we are losing to other countries. The bottom line is that predicted production for North America, Canada, and Mexico, EEI predicts that the shortfall between consumption and production will be met by a substantial increase in liquefied natural gas. By the way, do you know where that is coming from? Qatar, Algeria, Nigeria, Australia, Indonesia, and the United Arab Emirates.

Here we go again. We have 60 percent of our oil coming from overseas. Now we are going to do natural gas. Right now, LNG represents about 1 percent of our use. It will be up by 2025 by 15 percent to meet the demand.

We have a very serious crisis today. We have to do something about it. I come from a State that sees it every single day. We have to get with it. We do not have time to go through 2 or 3 years of debate, as we did last time. Those of us Republicans and Democrats have to get together and do something about this problem. It is already too late in some sectors of our economy.

Thank you, Mr. Chairman. I would ask that the chairman put my entire statement into the record.

Senator INHOFE. Without objection, so ordered.

[The prepared statement of Senator Voinovich follows:]

PREPARED STATEMENT OF HON. GEORGE V. VOINOVICH, U.S. SENATOR FROM THE STATE OF OHIO

Mr. Chairman, thank you for calling this hearing on the environmental impacts of U.S. natural gas supply. High natural gas prices present a serious challenge for our nation. The natural gas crisis that has plagued this Nation for the last 46 months has caused the hemorrhaging of many jobs and the bleeding will not stop until people start taking notice of the situation and we start doing something about it. It has also severely impacted the way of life for millions of Americans who struggle each day to pay their utility costs.

The fact of the matter is that people just don't seem to understand the severity of the situation. Federal Reserve Chairman Alan Greenspan testified for Congress several times last year on this matter and stated: "I'm quite surprised at how little attention the natural gas problem has been getting, because it is a very serious problem."

Unfortunately, it is a very serious problem that the people and businesses in my State of Ohio know all too well. Mr. Dennis Bailey from PPG Industries, which is a global manufacturer, will testify today on the effect natural gas prices are having on the company's operations in Ohio and throughout the country. I thank him for coming and look forward to hearing his testimony. I also thank another Ohio manufacturer—Martin Kelly with Moraine Molded Plastics Inc.—for submitting testimony on this important matter and ask that it be inserted into the record.

As I have explained many times before this Committee, manufacturing is a key ingredient of our nation's economy and is the backbone of Ohio. Manufacturers rely on natural gas heavily for fuel and power and as a raw material. In fact, natural gas accounts for more than 40 percent of commercial energy consumption. Additionally, natural gas plays an important role in another significant part of our nation's and Ohio's economy—agribusiness.

This reliance on natural gas by the core of our economy means that increases in natural gas prices have a very pronounced and negative effect. Since 2000, natural gas has been hovering in the U.S. between $5 and $6 per thousand cubic feet. This is roughly twice its historical level!

During this time, Ohio has lost about 200,000 manufacturing jobs. These jobs are not simply migrating to another region—they are going overseas and they aren't coming back. This is because other countries do not have the high costs that we place on our industry, such as rising health care costs, litigation, regulatory burdens, taxes, unfair competition from China, and escalating natural gas costs.

The natural gas prices in the United States are the highest in the developed world. As a result, many companies are becoming less competitive on a global scale and are being forced to cut costs or move operations overseas. There are numerous examples of this and I will name a few.

Just last week, on March 17, the *Washington Post* ran an article entitled: "Chemical Industry in Crisis; Natural Gas Prices are up, Factories are closing, and Jobs are Vanishing." I will read a few lines but ask that the entire article be submitted into the record:

> "Across the country, 1 in every 10 chemical-related jobs has vanished in the past 5 years—nearly 100,000 workers . . . The chemical industry's eight-decade run as a major exporter has ended, with a $19 billion trade surplus in 1997 becoming a $9.6 billion deficit last year . . ."

That is horrifying. The chemical industry is the second largest consumer of natural gas, and they simply cannot pass these higher costs on to consumers because they compete in a world marketplace. Instead, they pick up and move overseas.

Zaclon, Inc. is a chemical manufacturer based in Cleveland, Ohio. Last year, Zaclon's president testified before this Committee that its natural gas costs increased 63 percent between 1999 and 2002.

Lubrizol Corp., a chemical company located in Wickliffe, Ohio that employed 1,778 people in 1999 and now employs 1,522, has indicated that they may consider moving operations overseas because of natural gas price volatility.

Due to high natural gas prices, the Dow Chemical Company, which is headquartered in Midland, MI, is shutting down several plants and will eliminate 3 to 4,000 jobs.

High natural gas prices have resulted in the permanent closure of almost 20 percent of the U.S. nitrogen fertilizer production capacity and the idling of an additional 25 percent. The Potash Corporation, one of the world's largest fertilizer producers who spends $2 million per day on natural gas, has announced layoffs at its Louisiana and Tennessee plants due to high natural gas prices.

According to a February 17, 2004 *Wall Street Journal* article entitled "Natural Gas Costs Hurt U.S. Firms", which I also ask be entered into the record:

> "Almost all new production of chemicals and plastics will take place in the Middle East and Asia . . . Charles O. Holliday Jr., chairman and chief executive of DuPont Co., told investors in December that high energy costs will prompt the company to shift its 'center of gravity' overseas."

Although these businesses are all severely impacted, this only tells part of the story. The natural gas crisis has cost *all* consumers—residential, commercial, and manufacturing—over $130 billion over the past 46 months and this is only direct costs. So while high prices are causing people to lose their jobs, it is also increasing the costs of simply living. It is estimated that increased natural gas prices in 2004 will cost Ohio households $543 million more than in 2002.

Home heating prices are up dramatically—forcing folks on low and fixed incomes to choose between heating their homes and paying for other necessities such as food or medicine.

Donald Mason, a commissioner on the Ohio Public Utilities Commission testified last year that:

> "In real terms, the home heating cost this winter will increase by at least $220 per household. That might not sound significant, but during the winter season of 2000–2001, one gas company in Ohio saw residential nonpayment jump from $10 million a year to $26 million."

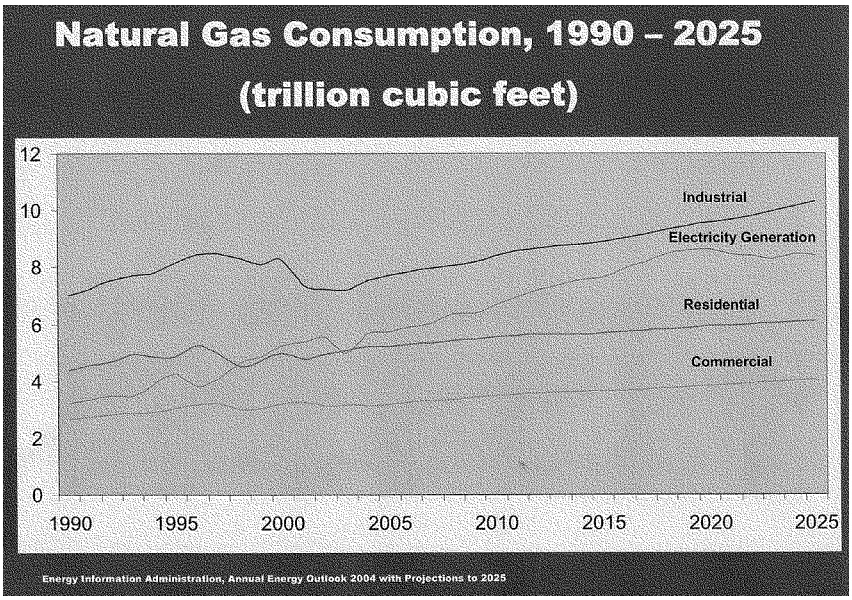
I could go on and on about the devastating impacts of high natural gas prices, but I will now move on to the very important question for today's hearing—WHY? Why are natural gas prices so high in this country?

The answer is pretty simple and anyone who has taken Economics 101 will understand. Over the last decade, use of natural gas has risen, while domestic supplies have fallen. The reason for these trends lies in our environmental policies.

In regards to supply, we have greatly restricted our ability to explore and produce natural gas because of the barriers enacted in our environmental laws. We must enact an energy policy that knocks down some of these barriers and opens up some of our public lands and new frontier areas to development. As I have done often over the past few years, I implore my colleagues to move past their partisan bickering and enact an energy policy for the good of this country.

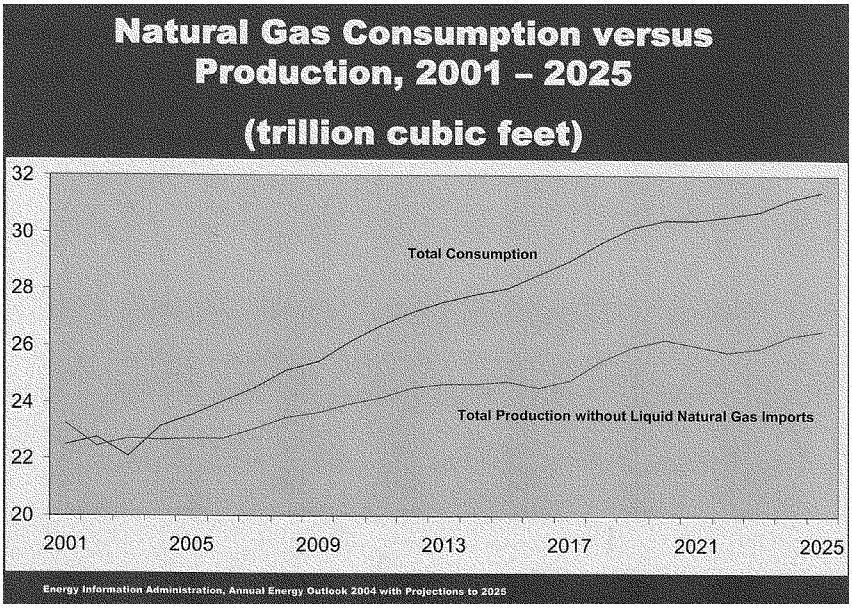
In regards to demand, Congress has enacted environmental policies over the past few decades that have encouraged increased use of natural gas for electricity generation. In fact, nearly 88 percent of the new power plants that have been built since 1992 are natural gas fired. We must harmonize our energy and environmental policies to make sure that we maintain a diverse fuel mix for electricity generation and do not further exacerbate the natural gas problem.

If we do not take action today, the result will be overwhelming to our nation's economy. [CHART 1] As you can see from this chart, the Energy Information Administration (EIA) predicts that natural gas use will continue to increase across all sectors, especially for electricity generators.



Regrettably, some of my colleagues—many of them on this Committee—have offered legislative proposals that would further increase the use of natural gas for electricity generation and cause more fuel switching from coal to natural gas by placing a cap on carbon dioxide emissions. These proposals would put coal out of business although it is our most plentiful energy source and the least costly. We simply cannot and should not place a cap on carbon dioxide emissions.

[CHART 2] This second chart shows what will happen if we don't enact an energy policy and start increasing our supply of natural gas. The top line shows EIA's prediction that natural gas consumption will continue to increase. My concern is that this consumption won't increase because all of the jobs will be in other countries.



The bottom line is the predicted production from North America (U.S., Canada, and Mexico). EIA predicts that the shortfall between consumption and production will be met by a substantial increase in Liquid Natural Gas (LNG) imports (from Trinidad and Tobago, Qatar, Algeria, Nigeria, Oman, Australia, Indonesia, and the United Arab Emirates).

EIA predicts that LNG, which only accounts for 1 percent of current U.S. natural gas supply, will have to increase to 8 percent by 2010 and 15 percent by 2025 to meet demand. If this is the case, we will soon be talking not only about our country's dependence on foreign oil but also foreign natural gas. Further, there have been recent reports that LNG facilities are receiving stiff resistance from communities on both coasts from Maine to California.

In conclusion, I think it is important to note that rising energy prices have preceded every economic downturn during the post-World War II period. I know firsthand that it has been a significant factor in Ohio's current economic situation. Unless we stop artificially increasing demand and decreasing supply for natural gas through irresponsible environmental policies, our Nation will only continue to lose jobs.

The past 46 months have been a trying time for businesses and families alike, and we must act now to harmonize our energy, environment, and economic needs by passing the energy bill and enacting common sense environmental laws.

Mr. Chairman, I again thank you for calling this hearing, and I look forward to hearing from our witnesses.

Thank you.

[From the Washington Post, March 17, 2004]

CHEMICAL INDUSTRY IN CRISIS—NATURAL GAS PRICES ARE UP, FACTORIES ARE CLOSING, AND JOBS ARE VANISHING

(By Greg Schneider)

WASHINGTON.—Soon after the Flexsys chemical plant celebrates its 75th anniversary this month, demolition crews will tear it down.

"Nothing over three inches high is going to be left here," plant manager Jon McKinney said.

The former explosives factory gave the town its name, and its demise will eliminate 205 jobs and yet another piece of the once-powerful U.S. chemical industry.

Chemicals are an unglamorous part of the manufacturing world, with products that have unpronounceable names and often hazardous qualities. But they are essential to a host of industries, from automaking to textiles to agriculture. Hardeners make tires more durable. Polymers put the spring in athletic shoes, and nitrogen fertilizers increase crop yields.

As the nation's manufacturing base seems to shrink daily from factories closing or relocating overseas, the health of the chemical sector is a crucial measure of how deep the problem goes. And chemicals are in crisis, squeezed not only by cheap foreign competition but also by soaring energy costs.

Across the country, 1 in every 10 chemical-related jobs has vanished in the past 5 years—nearly 100,000 workers—and that number would be worse if not for a surge in one segment, pharmaceuticals.

The chemical industry's eight-decade run as a major exporter has ended, with a $19 billion trade surplus in 1997 becoming a $9.6 billion deficit last year, according to the American Chemistry Council.

Governors and chemical executives have appealed to the White House and Congress for help. They argue that the chemical problem is making the nation's broader manufacturing meltdown even worse, pushing factories to relocate offshore not only for cheap labor but to be near chemical suppliers.

"It's a very trying time in the nation's manufacturing base," said Mark Zandi, chief economist for Economy.com Inc. Ultimately, little can be done to stop the drain of jobs as companies cut costs and use technology to improve productivity, he said.

"Workers in the chemical industry are really getting hit hard, much harder than the companies themselves," Zandi said.

The Flexsys plant in Nitro is closing because a sister plant in Belgium costs less to operate. In nearby South Charleston, Union Carbide Corp. has cut its workforce in half, to about 1,200 people, in the past 3 years. Bayer AG is shutting one of its two Charleston-area plants.

It's the same story in other chemical-heavy regions of the country, such as the Gulf Coast.

"Right now we've got big operations just shutting down because they cannot compete on the world market," Louisiana Gov. Kathleen Babineaux Blanco (D) said in a telephone interview. "We've had shutdowns before but they've always been temporary. We've not seen anything like this before."

Troubles began over a decade ago with the fall of communism, when countries of the former Soviet Union—as well as China—discovered they could compete in the world market for chemical products. Cheap labor and a freewheeling attitude toward safety and the environment helped them keep prices low.

As the global economy slowed, industries that consume chemical products came to depend on those lower prices to offset declining sales and profits. U.S. chemical makers struggled to cut costs and keep up. Then, around 2000, an unexpected problem hit: Natural gas prices went up.

Chemical plants are especially sensitive to natural gas prices because they use it both as a fuel and as a "feedstock" or ingredient in making plastics, resins, fertilizers and more. In the past 5 years, U.S. natural gas prices have roughly doubled as more and more electrical plants consume the clean-burning fuel but supplies stay stagnant. Other parts of the world—including Western Europe—pay far less.

"We have the highest natural gas prices in the industrialized world," said R. William Jewell, vice president for energy for Dow Chemical Co. in Houston. In the past 2 years, Dow has closed four major chemical factories in North America—one in Louisiana, two in Texas and one in Alberta, Canada—and replaced them with production from Germany, the Netherlands, Kuwait, Malaysia and Argentina, he said.

"These jobs didn't leave the U.S. because of labor costs, they left the U.S. because of uncompetitive energy costs," Jewell said. "It's very hard to have vitality in manufacturing and it's very hard to have strong growth in jobs if you don't have a competitive infrastructure anymore. . . . You can't just wish these jobs back."

Chemical jobs tend to be so well-paying—in the $50,000 to $70,000 range—that they're virtually impossible to replace in the communities that lose them, said David E. Dismukes of the Center for Energy Studies at Louisiana State University. Every time a factory cuts back or shuts down, the impact ripples out through the suppliers, restaurants and car dealerships that surround it.

"For a small State like Louisiana that is so dependent on those facilities, this really is a tough one for us," Dismukes said. "When they go away it has a devastating impact on small rural communities up and down the river where many of these are located."

The problem is similar to the death of steel mill towns in the Midwest and Pennsylvania in the 1970's and 1980's, said Michael Hicks of the Center for Business and Economic Research at Marshall University in Huntington, W.Va. In 24 months,

from January 2001 to December 2002, West Virginia's chemical workforce declined nearly 17 percent, to 12,000 people, Hicks said.

"It's a story that West Virginia has continued to feel for well over two decades now, with the decline in coal mining and steel production now followed by these challenges to the chemical industry," he said.

Even plants that stay in operation are providing fewer jobs.

For example, Bayer Polymers LLC operates a plant on an island in the Kanawha River in South Charleston. Barges bring long cylindrical tanks of liquid propylene oxide to a pumping station on the north shore. The material flows under the river to a maze of pipes, valves and vats on the island—nearly a mile long—where it goes through chemical reactions to become a polymer used in foam cushions for car seats, mattresses or athletic shoes.

The entire facility is operated by two people sitting in a control room watching computer monitors, aided by a team of eight technicians that handles repairs and maintenance.

In less than 4 years Bayer has increased the plant's output by 20 percent without adding any employees. The plant also has cut energy consumption by 9 percent since last year. Nonetheless, its costs are up 25 percent over the past 5 years, said site manager Glenn Kraynie.

It's a dangerous cycle. Rising costs cut into profit and make it harder to continue investing in improvements, which in turn makes it harder to compete with ever more efficient overseas rivals, said Attila Molnar, president and chief executive of Bayer Corp., the German company's U.S. arm.

"It is a very, very serious issue," Molnar said. "You shift manufacturing or production [to] where you produce the cheapest. . . . Production in the U.S. is in danger today."

"There are at least two basic solutions," Molnar said. Do something about energy prices, such as burning more coal or drilling for more natural gas, and use technology to continue to make chemical factories more efficient. That means producing more with fewer employees.

"There's nothing there that says the jobs you have today will be the same jobs we have 10 years from now. That cannot be," he said. "Be prepared for change. That's the only way we can survive, the only way I can see we will be successful in the future."

That's a hard prescription for towns like Nitro, population 6,824, which stands to lose a chemical plant that once employed 900 people. The 202-acre riverfront facility started as a World War I explosives plant for making nitrocellulose, and the town was built to support it. Monsanto Co. bought the site in 1929 and has been making rubber additives ever since, today in a joint venture with Akzo Nobel NV called Flexsys. But with worldwide prices for its products down 42 percent, the company decided last fall to shut Nitro's factory down at the end of this month.

"I'm 45 years old and I've lived in this Kanawha Valley my whole life," said Dave Hardy, a lawyer and Kanawha County commissioner representing both Nitro and Charleston. "This valley was built on the chemical industry, and now in my adult lifetime . . . the chemical industry is contracting literally year by year. There is nothing that is filling the void."

"Instead, the State is promoting tourism and gambling," he said. But West Virginia hasn't given up on the industry. Its statewide Chemical Industry Committee, a trade association, has been working to attract companies by touting the state's long embrace of an industry scorned in some places as environmentally undesirable.

It doesn't help the cause, though, that the committee's chairman is McKinney, the Flexsys manager, whose own company couldn't afford to stay in business there.

[From the Wall Street Journal, February 17, 2004]

NATURAL-GAS COSTS HURT U.S. FIRMS—HIGH PRICES ARE PROMPTING COMPANIES TO CONSERVE AND MOVE WORK OVERSEAS

(By Russell Gold)

High natural-gas prices in the U.S. are taking an increasing toll on a range of companies, forcing them to change how they operate and even to shift work to parts of the world where energy prices are lower.

Some companies are updating or retuning older equipment and fixing minor leaks they used to ignore. Others are switching packing materials or looking to overseas sources for plastic wraps, fertilizer and other basic goods that are made from natural gas—moves that ultimately will mean the loss of U.S. jobs.

For manufacturers already dealing with rising health-care costs for their workers, high natural-gas prices mean another unavoidable cost that can't be passed on to customers. Much of what these companies produce vies for customers in a global market with many lower-cost overseas rivals. The squeeze between cost and pricing pressures means less money for capital investment and for hiring new workers—and potentially a drag on economic recovery. Higher natural-gas prices also undermine U.S. efforts to reduce the nation's dependence on overseas sources of energy.

Manufacturing companies say they realize they can't ignore the problem any longer. "The high spikes we saw in natural-gas prices were a wake-up call to management," says Jim Pease, corporate energy manager for Unilever, the Anglo-Dutch food company that has increased its spending on energy-efficiency measures since 2001. "The old days of stable, cheap energy prices are over."

After decades of being cheap and plentiful, U.S. natural-gas prices left the range of $2 to $3 per million British thermal units of the latter 1990's and hit two sharp spikes in the past 4 years before settling in to an average weekly spot price above $4 per million BTUs, where they have remained for an unprecedented 15-month run. U.S. natural gas is the most expensive in the industrialized world, averaging $5.50 per million BTUs for the past year.

At Amazon.com Inc. of Seattle, higher natural-gas prices have raised the price of air pillows used to buffer its products while in transit. Last year, air pillows made up 40 percent of the packaging cost of each Amazon box, up from 30 percent a year earlier. The plastic pillow that contains the air is made from natural gas.

The Internet retailer said it is considering using fewer air pillows or turning to more wraparound cardboard boxes, which it dubs "ravioli" wrap. Customers prefer the air pillows, but the rapidly inflating cost "affects our ability to keep prices low," says spokesman Chris Bruzzo.

The root of higher natural-gas prices is a Federal policy that promotes use of the relatively cleaner-burning fuel without providing incentives or means for natural-gas companies to increase production. So while demand soared in recent years, especially from a raft of new gas-fired power plants, producers have struggled with supply. Most North American gas fields are years past their prime, and environmental restrictions prevent drilling on many of the most promising areas.

The chemical industry, which uses natural gas as a fuel and as a raw material, has been hit hardest. The rising cost of U.S. natural gas began battering these manufacturers at the same time the weak economy was damping demand for commodity chemicals and foreign producers were increasing their share of the U.S. market for chemical-based products such as plastic shopping bags.

U.S. chemical makers have lost an estimated 78,000 jobs since natural-gas prices began to rise in 2000. Louisiana, a hub of chemical production, lost 4,400 chemical-related jobs over the same span, or about 15 percent of that workforce.

Almost all new production of chemicals and plastics will take place in the Middle East and Asia, where natural gas is more plentiful, producers say. Charles O. Holliday Jr., chairman and chief executive of DuPont Co., told investors in December that high energy costs will prompt the company to shift its "center of gravity" overseas.

Last month, Mr. Holliday joined top executives of Dow Chemical Co., Eastman Chemical Co., Rohm & Haas Co. and others in a letter asking President Bush and congressional leaders to lower royalties on some gas production, to allow more drilling in the U.S. and to reduce the incentives that promote the use of natural gas for electricity generation. If nothing is done, they warned, "investments and jobs will increasingly go to Asia and the Middle East."

Owens Corning, which ran ads in the 1970's urging customers to buy its pink insulation to cut their dependence on foreign oil, now finds itself scrambling to find new ways to cut its dependence on pricey U.S. gas. The company is operating under bankruptcy-law protection while it works out its asbestos liabilities, and high natural-gas prices are squeezing its margins and eroding profits.

"It's still our energy source of choice, but the big issue is the economics of natural gas in the U.S. relative to the rest of the world," said Mike Thaman, chairman and chief financial officer.

The company has begun to import more materials from overseas. Last fall, Owens Corning moved a top executive to Shanghai to find cheaper sources of polypropylene bags used to package rolls of insulation. By the end of this year, the company expects to import as much as half of its packaging material, lowering costs by 20 percent to 25 percent. In the past, all packaging material came from North American producers.

In a couple of years, the company expects 30 percent of its nearly $1 billion a year in purchases of minerals, chemicals and packaging to come from outside North America, up from 10 percent today, company officials say.

Last year, the Toledo, Ohio, company also began to experiment with an insulation factory in Waxahachie, Texas, that was burning as much as $4 million to $5 million in natural gas a year.

The company installed four meters on each of the three enormous production lines to measure natural-gas usage by the minute. Consultants figured out settings for the incinerators and meters that would cut usage without sacrificing product quality. With adjustments, natural-gas use in the third quarter of 2003 was 18 percent below the year before, even though production has increased. The plant is now approaching $1 million in annual energy savings.

Even the smallest adjustments matter. One day last summer, Gary Chastain, the plant's energy guru, saw that the steam boilers overnight had begun using more than double the normal level of gas. He dispatched maintenance workers, who searched for nearly 2 months to find the culprit: a leaking valve that was costing Owens Corning about $460 a day.

The Waxahachie experiment has been so successful that the changes will be replicated in 10 other North American insulation factories and two composite-fiber factories by the end of this year.

THE LINKS BETWEEN AIR QUALITY POLICIES, ELECTRIC POWER AND NATURAL GAS MARKETS, AND MACROECONOMIC IMPACTS:

CLEAR SKIES VERSUS *THE CLEAN AIR PLANNING ACT*

A Policy Analysis Study by

LEXECON, AN FTI CONSULTING COMPANY

On Behalf of

CINERGY CORP.

March 2004

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THE LINKS BETWEEN AIR QUALITY POLICIES, ELECTRIC POWER AND NATURAL GAS MARKETS, AND MACROECONOMIC IMPACTS:

THE CLEAR SKIES ACT OF 2003 VERSUS *THE CLEAN AIR PLANNING ACT OF 2003*

A Study by
LEXECON, An FTI Consulting Company
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EXECUTIVE SUMMARY

The current Congress is debating a number of proposed bills that would fundamentally change the way air pollution from electric power plants is regulated. These bills would partially supplant the current multitude of separate regulatory regimes, with consequences for levels of air emissions as well as for consumer prices of electricity and natural gas service and the growth of the nation's economy. Lexecon has been asked to consider the differences in the national and regional economic effects between two of the most prominently mentioned policy alternatives: The Clear Skies Act of 2003 ("Clear Skies")[1]and The Clean Air Planning Act of 2003 ("CAPA")[2].

The public's interest is best served by achieving reductions in pollutant emissions in the most cost-effective manner possible. In the case at hand, both Clear Skies and CAPA promise significant reductions in emissions levels produced by the US electric generation sector over the coming decades, with CAPA targeting somewhat lower levels of emissions from power plants. The two bills differ, however, in key dimensions of regulatory predictability, flexibility, level of control, timing, and scope. The variations

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** This study was completed in November 2003 based on information available at that time.

1 The Clear Skies Act of 2003, S. 485.

2 The Clean Air Planning Act of 2003, S. 843, introduced by Senator Thomas Carper.

result in substantial differences in the costs the nation will bear to achieve target levels of pollution control. A major portion of these costs arise from the need to retire and/or retrofit coal-fired power plants in order to meet the emissions targets.

By focusing on the cost side of the cost-benefit equation, this study offers policymakers additional insights into the resource costs, direct consumer costs, and the regional macroeconomic impacts of the CAPA policy relative to the Clear Skies policy. We find that:

- The CAPA bill portends substantially higher real costs for the nation's economy than Clear Skies. That a more stringent policy would generate higher costs is not surprising. Yet, we find that, in present value terms (i.e., dollars of present worth), the CAPA bill would increase the direct costs borne by the nation's generators by approximately $117 billion more than Clear Skies.

- These cost impacts are not limited to those regions with a relatively larger share of coal-fired electric generation facilities. Although targeted largely at emissions from coal plants, the CAPA bill (relative to Clear Skies) would increase both the demand for and price of alternative fuels used by power plants – particularly natural gas.

- Due to the integration of the national energy and economic systems, increases in natural gas prices under the CAPA bill (relative to Clear Skies) are felt in regions throughout the US. On average, from 2005 to 2021, we find that regional wholesale natural gas prices are on the order of 5.6% to 7.0% higher under the CAPA bill as compared to Clear Skies. Since natural gas is such an important input to the economy, and especially the production of electric power, these increases in gas prices inhibit gas-using productive activities, lower real income, and raise the price of finished goods throughout the US.

- Higher gas prices under the CAPA bill have corresponding impacts on consumers' direct expenditures on natural gas. We find that residential gas customers' average annual bills increase the most in the colder climate areas of the country, such as New England, New York, the Mid-Atlantic, and the Midwest. Commercial gas customers see the biggest jump in their gas bills in New York, Florida, the Midwest, and the Mid-Atlantic. Industrial customers are hardest hit in such regions as Texas and the Gulf Coast (where gas is used extensively, for, e.g., chemical manufacturing), as well as in Florida.

- The combination of higher gas prices and the relatively higher costs to generators of implementing the CAPA bill puts upward pressure on electricity prices. We find that the CAPA bill has its largest impacts on

electricity prices (relative to Clear Skies) in Texas, the Mid-Atlantic, Southern New England, Northern New England, Florida, and New York.

- Higher real resource costs and higher gas and electricity prices under the CAPA bill translate into lower levels of such macroeconomic variables as Gross Regional Product (GRP), employment, and tax collections. Gross Domestic Product, as it is measured,[3] is lower by an average of $42 billion per year, or approximately $500 billion in present worth, under CAPA. This equates to a $404 average annual decrease in measured economic output per household in the US. The regional GRP and real personal income effects are most adverse in the Texas, Northern New England, Southern New England, Mid-Atlantic, Midwest, and New York regions. Regional adverse effects on employment are largest in the Midwest, the Mid-Atlantic, Texas, and California, as are the adverse effects on tax collections.

- Finally, in the absence of either a Clear Skies or a CAPA multi-pollutant emissions control bill, the current patchwork of regulatory regimes offers the potential for lesser or delayed environmental benefits, achieved in a less cost-effective manner.

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[3] I.e., the monetary value of such amenities as improved air quality is generally not fully captured in measured Gross Domestic Product.

I. INTRODUCTION: THE CASE FOR MULTI-POLUTANT LEGISATION

The current Congress is debating a number of proposed bills that would fundamentally change the way air pollution from electric power plants is regulated. Lexecon has been asked to consider the national and regional economic effects of two of the most prominently mentioned policy alternatives: the Clear Skies Act of 2003 ("Clear Skies")[4] and the Clean Air Planning Act of 2003 ("CAPA").[5] Figure 1 summarizes the emissions targets under each of these two bills.

The Clear Skies and CAPA bills arise out of a broad consensus that the public interest would be served by legislation to modernize and rationalize the Clean Air Act. By most accounts, the Clean Air Act of 1970 (including subsequent amendments) has contributed significantly to improved air quality in the US.[6] By some accounts, it has reduced power sector emissions of six key air pollutants by 29%, while the US economy has continued to expand and energy consumption has risen 45%.[7]

At the same time, the Clean Air Act's pollutant-by-pollutant approach to regulation has been criticized as a source of cumbersome and costly complexity for both power generators and regulators. The present piecemeal regulatory regime requires many sequential scientific and technical decisions by the Environmental Protection Agency ("EPA") and the States. These decisions are time-consuming and heavily litigated, leading to delay and substantial regulatory uncertainty. Regulatory uncertainty can be a significant obstacle to investment in new generating capacity, as

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[4] The Clear Skies Act of 2003, S. 485.

[5] The Clean Air Planning Act of 2003, S. 843, introduced by Senator Thomas Carper.

[6] See, e.g., EPA, The Benefits and Cost of the Clean Air Act, 1970 to 1990, October 1997, p. 56.

[7] Testimony of Jeff Holmstead, Assistant Administrator, US Environmental Protection Agency, before the Committee on Environment and Public Works, United States Senate, November 1, 2001. The six "criteria" pollutants controlled by the Clean Air Act are carbon monoxide, ground-level ozone, lead, nitrogen dioxide, particulate matter, and sulfur dioxide.

well as in retrofitting existing generating capacity with pollution control equipment. Thus, such uncertainty can both delay environmental improvements and raise the costs of environmental regulation.

Figure 1 – CAPA and Clear Skies Emissions Targets

Pollutant	2000 Emission Levels	2003 Clear Skies Act	2003 Clean Air Planning Act
NO_X Cap (millions of tons)	5.1	2008: 2.1 2018: 1.7 69% reduction by 2018	2009: 1.87 2013: 1.7 69% reduction by 2013
SO_2 Cap (millions of tons)	11.2	2008: 4.5 2018: 3.0 73% reduction by 2018	2009: 4.5 2013: 3.5 2016: 2.25 80% reduction by 2016
Mercury (tons)	48	2010: 26 2018: 15 69% reduction by 2018	2009: 24 2013: 10 80% reduction by 2013
CO_2 Cap (billions of tons)	2.4	None	2009: 2.6 2013: 2.3 Caps emissions at the 2001 level.

Sources: EPA Clear Skies Web site, www.epa.gov/clearskies, accessed on Sept. 9, 2003; Clear Air Planning Act Summary from Senator Tom Carper's Website: http://carper.senate.gov/, accessed on Sept 9, 2003.

Absent passage of a multi-pollutant bill such as Clear Skies or CAPA, the EPA is required to promulgate new mercury control standards for fossil-fueled power plants in December 2004[8]. These standards will require plants to adopt maximum achievable control technologies ("MACT"). Based on experience with the implementation of other CAA provisions, the implementation of mercury MACT rules is expected to be complex and contentious, ultimately leading to time-consuming and expensive litigation.

[8] Working Group for the Utility MACT Formed Under the Clean Air Act Advisory Committee Subcommittee for Permits/New Source Reviews/Toxics. "Recommendations for the Utility Air Toxics MACT: Final Working Group Report." October 2002, p. 2.

Because key aspects of the MACT standards will remain uncertain throughout this process, power plant owners will face substantial regulatory and planning uncertainty, making it risky for them to invest in mercury reductions.

The proposed multi-pollutant bills such as CAPA and Clear Skies could in part avoid the expected cost, delay, and uncertainty of implementing mercury MACT rules. Further, mercury MACT rules, once implemented, would rely on inflexible (and thus expensive) pollution control policies, very likely requiring the retrofitting of virtually all affected plants, thus making it more likely that units would be retired.

In addition to mercury, other pollutants are (or are likely to be) the subject of rulemaking procedures, with their attendant delay and uncertainty, for designing and implementing new regulatory controls. For example, the EPA is now drafting a final rule on "8-hour ozone" standards,[9] and has recently commenced a rulemaking that will reduce emissions of fine particulate matter (PM-2.5).[10]

The electric power industry has opined that the current regulatory uncertainty forms an impediment to efficient pollution mitigation:

> We count nearly a score of new requirements that may impact fossil power plants, all with separate and often conflicting timetables, implementation rules, and purposes. The net result is a planning nightmare that makes it virtually impossible for Cinergy to have any stable notion of what requirements will be in place for our plants at any point in the future. In this chaos, we simply cannot accurately assess which plants should be retrofit with controls, which plants should be

[9] Proposed Rule to Implement the 8-Hour Ozone National Ambient Air Quality Standard; Proposed Rule," 40 CFR Part 51, June 2, 2003.

[10] "Implementation Rule for PM-2.5 NAAQS," Federal register, Vol. 68, No. 101, May 27, 2003.

> switched to natural gas, which plants should be retired, and when any of this should take place.[11]

Prominent environmental groups (including the Natural Resources Defense Council, the Clean Air Task Force, and the National Environmental Trust) have also identified a public interest need to reform the Clean Air Act:

> The Act is designed to address air pollution from the power sector...on a pollutant-by-pollutant basis. The result is that there are numerous EPA regulatory initiatives all underway at present affecting different pieces of the power plant pollution problem, on different time scales, and with different geographic targets and often different criteria. Each of these regulatory proceedings are subject to delay and court review...The time has come to improve on the Act's current regulatory scheme for power plants...Surely the devil will be in the details but the stage has been set for a policy discussion that could drive us to a better, cleaner outcome.[12]

While there appears to be general agreement that new legislation is desirable, there is a not-surprising diversity of opinions regarding the specific design of new legislation. A number of "multi-pollutant" bills have been introduced. These bills differ in terms of the pollutants they would control, their timelines for implementation, the level of reductions they would require, and the mechanisms of control to be used (e.g., MACT v. cap and trade).

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[11] Testimony of William F. Tyndall, Vice President, Environmental Services and Federal Affairs for Cinergy Services Inc., Before the Committee on Environment and Public Works, United States Senate, June 12, 2002.

[12] Testimony of Armond Cohen before the Subcommittee on Clean Air, Wetlands, Private Property and Nuclear Safety, Committee on Environment and Public Works, May 17, 2000. Testimony submitted on behalf of Clean Air Task Force, Clear the Air, National Environmental Trust, United States Public Interest Research Group Education Fund, Natural Resources Defense Council, Izaak Walton League of America, Ohio Environmental Council, Illinois Environmental Council, Southern Environmental Law Center, Legal Environmental Assistance Foundation (Florida), Southern Alliance for Clean Energy, Campaign for a Prosperous Georgia, Physicians for Social Responsibility – Southeast Region, Citizens for Pennsylvania's Future, and New York Public Interest Research Group. (http://epw.senate.gov/107th/coh_0517.htm.)

II. EVALUATING THE COSTS AND COST-EFFECTIVENESS OF AIR QUALITY REGULATION

Proposed changes in air quality policies in the US portend major impacts on the electric power sector. Some distinctive features of the electric power sector must be taken into consideration when identifying the appropriate criteria for evaluating policy alternatives:

- Virtually all households and businesses in the United States are customers of the electric power industry. Policies that raise costs and prices for electric power service will have direct and indirect impacts on virtually every US resident.
- While electricity is a necessity in our modern economy, the generation of electricity from fossil fuels is an important source of air pollution in the United States. Power generation contributes approximately 67% of SO_2 emissions, 25% of NO_x emissions, and 37% of man-made mercury emissions.[13]
- Painful recent experience has shown that failures in electric power supply are highly costly. Policies that raise the cost of, or otherwise impede, investment in adequate electric infrastructure have implications for the reliability of the nation's electric power service.

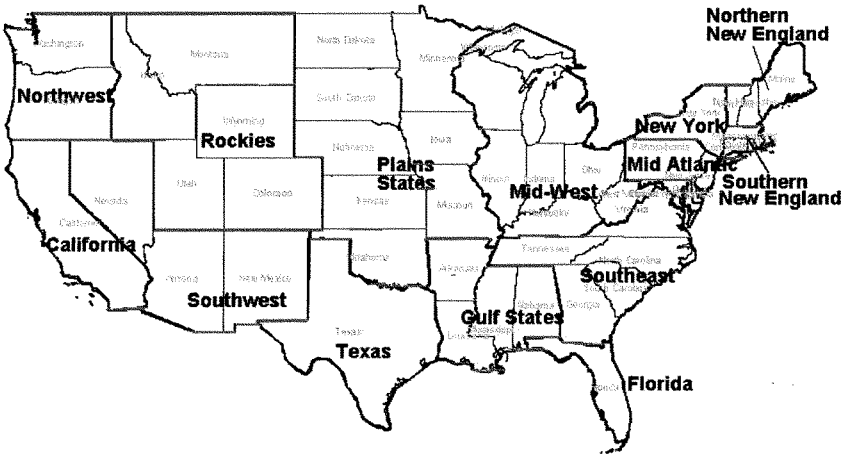
The national interests ride not only on clean air, but also on efficient and cost-effective adaptation by the electric power sector to air quality regulations. Of course, we as a nation have an interest in cleaner, rather than dirtier, air. However, we also have a compelling interest in achieving the benefits of emissions reductions as efficiently and effectively as possible.

This study focuses on the potential cost impacts of the CAPA and Clear Skies bills. We analyze each bill's impacts on retail prices paid for electricity and natural gas

[13] Testimony of Christine Todd Whitman, Administrator, US Environmental Protection Agency, before the Committee on Environment and Public Works, United States Senate, July 26, 2001, at 6.

by homes and businesses, as well as resource costs for the electric power sector, throughout the nation and on a regional basis. (Figure 2 represents the regions studied.) We then analyze the macroeconomic implications of those price and cost impacts on regional income, employment, and tax revenues. By focusing on the cost side of the cost-benefit equation, this study offers policymakers additional insights into the resource costs and macroeconomic impacts of the Clear Skies and CAPA policies relative to one another at a national and a regional level.

Figure 2 - Regions Studied



A. Cost Drivers

Certainty

As noted above, the current Clean Air Act regime creates marked regulatory uncertainty for the electric power sector – a sector that requires substantial, regular investments in long-lived capital assets. These assets are diverse, including generating plants, transmission and distribution wires and stations, pollution control equipment, and gas pipelines. In many cases, investors can only expect to recover their investments in these assets over very long time periods. These investments become more costly when there is relatively more uncertainty about future regulatory policies that affect the value of the assets.[14]

Flexibility

Sound economic policy requires that, to the greatest extent possible, decision makers affected by a policy be allowed the greatest flexibility in determining how best to achieve the policy's objectives.[15] Command-and-control-type regulations, which mandate certain technologies or prohibit cost reducing cooperation through emissions trading, cause higher costs of compliance. The cost-effectiveness of relying on market-based mechanisms to achieve pollution control targets has been demonstrated by the success of policies such as the Acid Rain Program.[16]

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[14] Uncertainty increases costs because of the additional risks it represents. Higher risks increase the cost of capital to investors, and hence increase the returns that investors require to participate in the sector.

[15] Also, the ways the market-based policies are implemented affect the incentives faced by the industry. To the extent the policies distort incentives or unintentionally subsidize one approach versus another, the resource costs required to achieve compliance will also be raised.

[16] See, e.g., United States Environmental Protection Agency, "Progress Report on the EPA Acid Rain Program," November 1999, at 4: "[I]ndependent studies show that real-life experiences with the [cap-and-trade] program reveal greater cost savings than initially expected."

Level

The level of emissions reductions required by an air emissions policy is an important driver of cost. As with most resources, emission reductions present an upward sloping supply curve. That is, the costs of pollution control increase as the levels of control increase. The relevant economic policy question is whether the benefits of incremental reductions in emissions justify the increased costs.

Timing

In an ideal world, perfect information and the ability to instantaneously react to policy changes minimize the cost of compliance. In the real world however, tight compliance deadlines can drive up costs by forcing decisions to be made without the time needed to manage risks associated with technologies, the effectiveness of alternative approaches, and the availability of capacity to build and implement changes. Other things being held equal, shorter implementation deadlines reduce the industry's ability to develop less costly reduction technologies. Increasing the pace of implementation can also raise costs by compressing engineering and construction schedules and forcing companies to pay premiums in order to meet accelerated deadlines. In addition, short deadlines raise the cost of compliance on a present value basis simply by requiring expenditures in earlier rather than later periods.

Scope

Finally, the scope of emissions standards impacts the cost of policies being considered. A CO_2 requirement, for example, increases costs. The proper policy questions then are related to (1) whether the benefits justify the cost, and (2) whether the approach to CO_2 solely in the context of the electric utility industry is an effective approach to achieving an objective of economy-wide reductions.

A comparison of the CAPA and Clear Skies bills (in Figure 3) shows that the CAPA bill is more "costly" than the Clear Skies bill in all five of the foregoing dimensions.

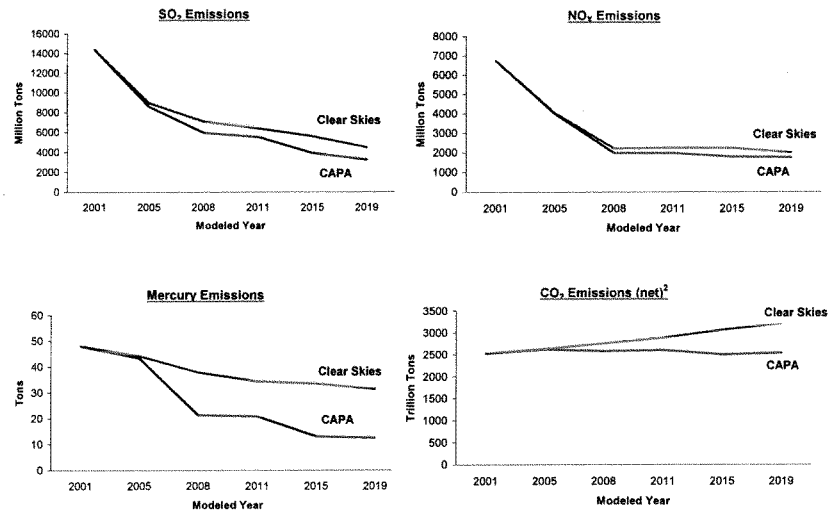
Figure 3 – CAPA versus Clear Skies Provisions

Dimension	CAPA v Clear Skies
Regulatory certainty	CAPA introduces uncertainty with respect to the availability of "offsets" for pollution control at power plants (e.g., through carbon sequestration) and the cost of mercury control technologies (i.e., due to the CAPA bill's lack of a safety valve provision).
Flexibility	The CAPA bill provides less flexibility for compliance because it includes facility-specific mercury limits.
Level of controls	The CAPA bill targets larger reductions from current levels of emissions of SO_2 (80% vs. 73%) and mercury (80% vs. 69%) relative to CSA.
Timing of reductions	The CAPA bill calls for an accelerated implementation of NO_x, SO_2, and mercury reductions relative to CSA.
Scope of controls	The CAPA bill's scope is broader than CSA's, because CAPA includes CO_2.

As shown in Figure 4, these two policy alternatives both promise significant reductions in emissions levels produced by the US generation sector. However, the specific differences of the Clear Skies and CAPA bills will significantly affect both the costs of achieving these reductions and the balance between coal and natural gas as fuels for powering the nation's electric power system.

The cost of achieving the emissions reductions summarized in Figure 4 will be borne directly and indirectly by the nation's consumers of electricity and other products. Notably, Clear Skies and CAPA portend measurably different paths toward the reduction in coal-fired generation in the US.

Figure 4 – Emissions Levels : CAPA and Clear Skies



Notes: 1) 2001 values are actual emissions (Hg emissions are for 2000). 2005-2019 are modeled emissions.
2) Emissions after offsets.

Sources: IPM model output; EIA Electric Power Annual 2001; Testimony of Christine Todd Whitman Before the Clean Air Subcommittee of the Committee on Environment and Public Works, United States Senate, April 8, 2003.

B. Fuel Choices and Fuel Prices

Of course, the implementation of either CAPA or Clear Skies would not occur in a vacuum. As coal use declines, demand for alternative fuels will increase. Natural gas is the fuel of choice for new power generation because it generates less emissions and its construction costs are lower, per megawatt of capacity, than some other technologies. Hence natural gas, in particular, can expect to see its demand pushed upward as the nation shifts away from coal-fired power generation. Increased use of natural gas will, in turn, inevitably put upward pressure on gas prices. The resulting increases in prices will depend on the magnitude and timing of the regulation-induced

demand shifts.

The range of economic effects of environmental policies designed to reduce emissions in the electric generation sector depends on the choices made by participants as they comply with those regulations. To the extent that policies push industry, for example, toward earlier retirement of coal-fired power plants and more use of gas-fired generation, the effects of those policies will spill over to consumers who consume gas directly and indirectly (e.g., in the prices of industrial products made from gas), as well as to consumers who consume electricity directly and indirectly. The direct and indirect effects of the costs of regulatory compliance and the shift toward greater reliance on natural gas can be expected to spread to all regions of the country in varying degrees. The impact will not be confined only to those regions where power is currently heavily dependent on coal-fired generation.

To assess these effects, Lexecon has relied on a two-step process to first model each policy's effect on both natural gas and electric energy prices, and then measure how those prices ripple through the national economy, affecting consumers through their household expenditures and industry through higher costs of production.[17]

A key finding of our study is that, despite a widespread preconception that the costs of coal plant shutdowns and environmental retrofits will tend to be concentrated in those regions with a relatively greater share of coal-fired facilities, the inescapable fact is that regional borders cannot and will not contain the impact of the air pollution policy changes under consideration. The integration of the national energy and economic systems means that increases in natural gas prices will be transmitted throughout the

[17] The electric industry adjustment path implied under the two policy scenarios has been modeled for Cinergy by ICF, utilizing the Integrated Planning Model ("IPM") that seeks to achieve compliance with a given set of requirements at the least possible resource cost. Such models are widely used for planning as well as policy evaluation purposes. The relative regional macroeconomic effects of the two policies are estimated using the REMI model. See Appendix A.

US. Since natural gas is such an important input to the economy, and especially the production of electric power, increases in the cost of natural gas will be felt in almost all regions as rising prices inhibit gas-using productive activities, lower real income, and raise prices of finished goods.

These results are not speculative. They follow from basic supply and demand relationships: Higher demands for natural gas translate into upward pressure on gas prices; and the nation's natural gas markets are extensively linked such that higher prices cannot be contained within a particular region, but ripple outward. The direction and impact of these effects have been found by a number of other studies – including modeling exercises of parties such as the Energy Information Administration (EIA) and the EPA.[18]

Ultimately, the degree to which natural gas prices respond to increases in demand for natural gas depend on industry conditions at that time. If, for example, substantial unutilized and low-cost production capacity exists, the size of the price impact is likely to be relatively less. However, recent concerns about the ongoing adequacy of the US natural gas supply base, as expressed by policies from the Federal Reserve to the EIA, suggest that there is an expectation of relatively less, not more, supply availability in the future.

[18] Generally, analyses of other proposed pollution control regulations have found that policies that are designed to decrease reliance on coal tend to increase demand for natural gas and thereby drive up gas prices. See, e.g., Energy Information Administration "Analysis of Strategies for Reducing Multiple Emissions from Electric Power Plants: Sulfur Dioxide, Nitrogen Oxides, Carbon Dioxide, and Mercury and a Renewable Portfolio Standard (Errata)," July 2001, at 50-57; and U.S. Environmental Protection Agency, "Economic Analysis of a Multi-Emissions Strategy," October 31, 2001 at Tables 5.2.1-5.2.5.

III. THE IMPACT OF EMISSIONS LEGISLATION ON US ENERGY MARKETS: THE LINKAGE TO NATURAL GAS

As described generally above, the two environmental emission reduction policy alternatives compared in this study, Clear Skies and CAPA, differ on a number of dimensions including their timing and extent of emission reductions, as well as mechanisms for achieving such reductions. Upon implementation, both policies would necessarily force those parties most directly affected, i.e., domestic generators of electricity, to make difficult and costly choices about how and when to comply. The differences in the policies, however, suggest that the choices made by generators individually and collectively will vary under the policies. Such differences carry important implications for the cost of achieving compliance, as well as for the levels of coal and natural gas use over the near and more distant future.

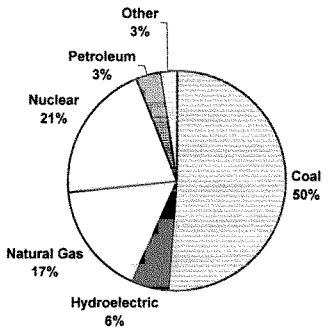
A. Clear Skies, CAPA, and Coal-Fired Generation

To understand the nature of the decisions that will need to be made by the nation's generation owners under these two emission policy alternatives, it is important to understand how electricity, an essential input into the US economy, is produced. In the United States, the vast majority of the electricity produced is generated at relatively large facilities located throughout the country. These facilities are then connected to end users of electricity by an extensive system of both transmission and distribution wires. To produce the enormous amount of electricity used by final consumers each day, these generation facilities use a wide range of different technologies and, importantly, fuels.

Figure 5 illustrates the current mix of fuels consumed by electricity generation in the US. While there are significant regional differences in this mix, it is important to note that the industry today on average relies on the use of coal-fired generation to produce fully 50% of its output. This predominance of coal in today's generation mix is the product of decades of investment decisions made to utilize abundant domestic coal

reserves, as well as the fact that the relatively low price of coal means that coal plants are dispatched before units utilizing more expensive fuels. It is also true that these coal-fired plants on average are much older and were built in an era of more lax air emissions rules. Figure 6 shows that most coal capacity was installed before 1983, while most natural gas capacity has been built in the past 10 years.

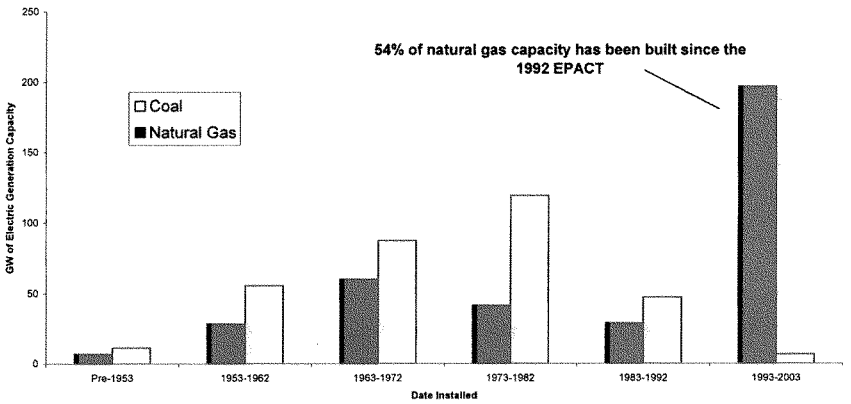
Figure 5 - US Electric Generation by Fuel, 2001



Source: EIA, Electric Power Annual, 2001.

The extent to which the US relies on coal-fired plants is an important piece of the puzzle that needs to be considered when evaluating the desirability and effectiveness of

Figure 6 – Most Natural Gas Electric Generation Capacity Is Less than 10 Years Old



Source: EIA Form-860

any emissions policy affecting the US power generation sector. Although the policies considered here do not single out coal-fired plants, and in fact apply to almost every generating facility in the US, the simple fact is that coal-fired plants produce more of the pollutants addressed by these measures than other technologies.

As shown in the top panel of Figure 7, coal-fired plants produce the bulk of each pollutant covered by the Clear Skies and/or CAPA policies. The bottom panel of Figure 4 shows that coal plants on average have greater emissions per unit of energy produced as well. Thus, any policy that effectively limits these pollutants will place a proportionately larger burden on coal-fired facilities. In fact, most commentators agree that the adjustments that will be required by either policy will have a disproportionate impact on coal-fired plants.[19]

Figure 7 – Emissions Quantity by Fuel Type, 1999

	Thousand Short Tons		
	SO_2	NO_x	CO_2
Coal	11,295	6,547	1,900,304
Petroleum	670	123	91,753
Gas	2	376	198,655

	Tons Per GWh		
	SO_2	NO_x	CO_2
Coal	6.4	3.7	1,075
Petroleum	7.7	1.4	1,055
Gas	0.0	1.3	670

Source: EIA, Electric Power Annual 1999, Volume II.

This impact will be felt in the form of increased costs associated with either installing new control technology on existing coal-fired facilities or by utilizing some system of tradable permits to acquire sufficient allowances to continue operation of coal-fired plants. As control costs rise, generators will examine the cost structure of each plant to determine if it is still competitive relative to alternative fuels and technologies. With heavy costs falling on coal-fired generators, it is logical to expect substantial reductions in coal demand. Yet, the demand for electricity can be expected

to grow, and alternative fuels, particularly natural gas, will have to be substituted for coal in generating the Nation's electricity.

While emission trading provisions utilized by both bills for SO_2 and NO_x will tend to hold down the cost increases, the average cost of compliance will be higher under the CAPA bill as it sets earlier and somewhat stricter standards of control. In addition, the CAPA policy alternative promises a higher relative cost of meeting its compliance goals due to the command and control nature of its Mercury reduction program,[20] as well as the fact that it imposes direct standards on an additional type of emission, CO_2, which is not specifically limited in the Clear Skies alternative.[21]

In short, both CAPA and Clear Skies will raise the cost of coal-fired generation. In doing so, they will reduce the demand for coal, as well as encourage shutdowns and/or retrofitting. Under a CAPA-type policy, the associated cost of coal use will be higher and thus coal demand will be depressed relatively more. Concomitantly, the direct resource costs of having to build new plants and retrofit old plants, as well as the direct costs of having to purchase emission allowances, will fall unevenly on the various regions of the country due to the fact that coal-fired plants tend to be concentrated in a few geographic areas.

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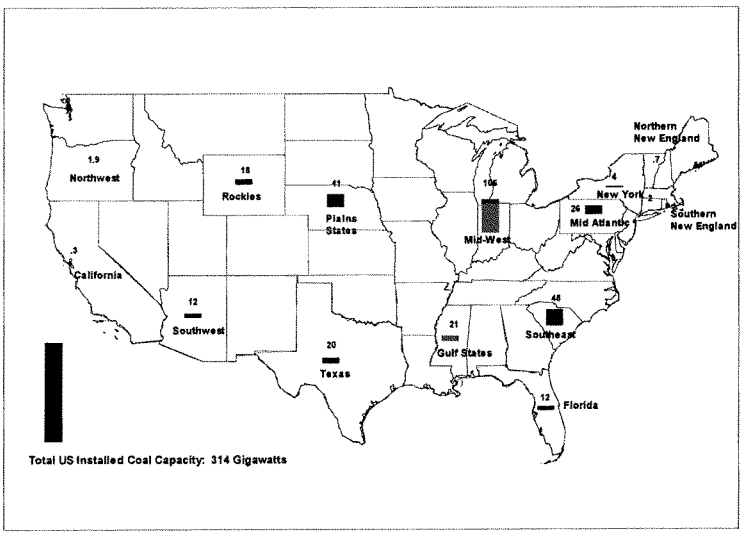
[19] See, e.g., EIA Analysis of S. 485, the Clear Skies Act of 2003, and S. 843, the Clean Air Planning Act of 2003, September 2003, at 9.

[20] While the CAPA bill does allow for a mercury cap and trade program, it also contains specific provisions that dictate minimum levels of compliance on an individual plant level, thereby dramatically reducing the scope of cost-saving trading opportunities. The EIA has recently estimated that these requirements will quickly eliminate trading as a means of achieving compliance under the CAPA bill. See "Analysis of S. 485, the Clear Skies Act of 2003, and S. 843, the Clean Air Planning Act of 2003," EIA, September 2003 at 30.

[21] Although, note that Clear Skies would be expected to provide some CO_2 emissions benefits as a result of its induced substitution away from coal-firing of power plants.

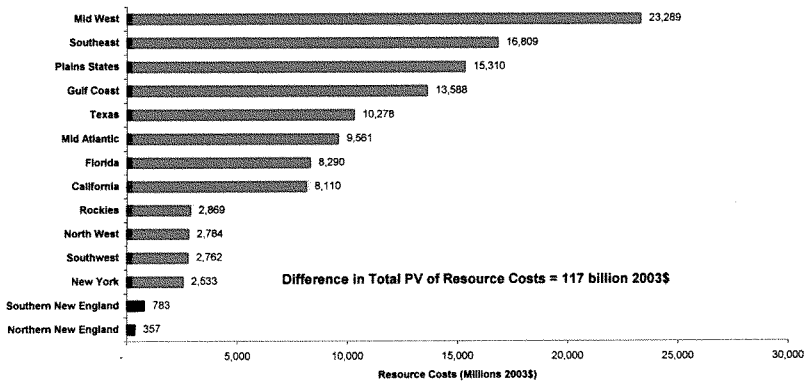
Figure 8 – Location of Coal Capacity (Gigawatts)



Source: EIA Form-860, Existing Capacity as of 2002

Figure 8 shows that regions such as the Midwest and the Southeast have relatively more coal-fired generation. It is no surprise, therefore, that the direct costs of increased fuel, operation expenses, capital additions for new plant and retrofit technologies, and CO_2 emissions offsets (collectively referred to here as "resource costs") are much higher in those regions. Figure 9 illustrates the distribution of resource cost expenditures by region. For example, on a net present value basis, the resource costs differential between CAPA and Clear Skies for four regions (Midwest, Southeast, Plains Sates, and the Gulf Coast) are $69 billion, or approximately 60% of the total US costs.

Figure 9 – Present Value of Resource Costs: CAPA vs. Clear Skies 2005-2021



Source: IPM output

If this were the end of the story, it would be relatively straightforward to estimate the overall and regional effects of these policy measures. However, a complete analysis cannot stop with observation of the direct costs and their regional location. The coal-fired generation segment of the electric power industry does not exist in isolation from other generation facilities, or from the economy as a whole. To understand the costs of CAPA and Clear Skies it is necessary to trace out the filtering of those costs throughout the Nation's economy.

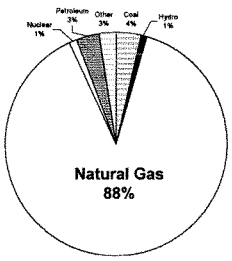
B. Impact on Natural Gas Use by Generators

As coal-fired generation decreases under revamped air pollution control policies, the electric power industry will need to turn to alternative fuel sources to meet the

electricity demands of a growing national economy.[22] While this shift away from coal as a fuel presents an opportunity for a broad array of alternatives from renewables to nuclear generation, recent experience indicates that power generation will shift predominantly toward new and more fully utilized natural gas-fired facilities.

Based on market conditions and decisions by investors in electric generation infrastructure, investments in new power generation capacity over the past decade have overwhelmingly favored the installation of facilities fueled by gas over any other fuel. Figure 10 illustrates that 88% of the power generation capacity added in the US since 1992 has been gas-fired. This is true even though as of 1992 gas-fired generation represented only 21% of installed generation capacity. Indeed, this trend is not likely to abate significantly anytime soon. Among other things, the Energy Policy Act of 1992 ("EPACT") opened the door for non-traditional generation companies to invest in non-rate-base generation facilities by providing access to wholesale electricity markets.[23] As a product of this policy, since the passage of EPACT, there has been a dramatic rise in the level of overall investment made in the electric generation sector by so-called non-utility generators. Figure 11 shows that in the

Figure 10 – US Electric Generation Capacity Installed Since 1992



Source: EIA, Form-860

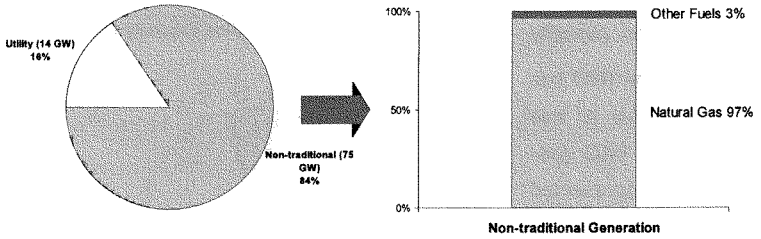
[22] In its base case forecast, the EIA expects electricity demand to increase by 1.8% per year between 2003 and 2025. EIA Annual Energy Outlook, January 9, 2003.

[23] See, e.g., "The Changing Structure of the Electric Power Industry 2000: An Update," EIA, October 2000, at 33.

past two years, non-utility generator construction represents 84% of new capacity built. Of that capacity, 97% was fired by natural gas.

Figure 11 Recent Installation of Non-Traditional Capacity

Non-traditional generating companies have built 84% of new capacity...and most of what they've built is natural gas-fired



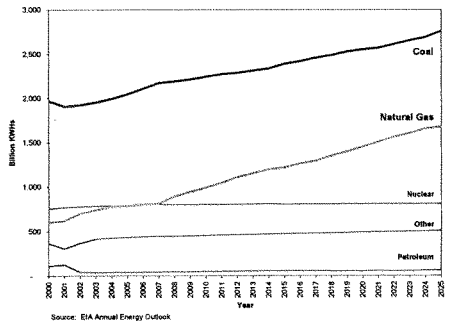
Note: Includes all Electric Generation Capacity built between January 2002 and August 2003.
Source: EIA Form-860

Other energy sources such as wind and solar do not bear the costs of emission allowance purchases under the policy alternatives investigated here. This cost advantage should work in their favor as generation companies seek alternatives to coal-fired production. However, even if there is an increase in the rate of investment in these technologies, it is likely that these alternatives will remain a fairly small portion of the overall generation picture for the foreseeable future absent legislation targeting certain prescribed levels of renewable generation.[24]

[24] For example, various Renewable Portfolio Standard (RPS) proposals have been and are being debated at the state and federal levels. Assessment of the effects of these types of policies is beyond the scope of the analysis presented here.

The move toward natural gas is also reflected in the analyses of the Energy Information Administration. In its assessment of alternative revisions of the Clean Air Act, the EIA has projected the increasing importance of natural gas-fired generation in its "reference case" world (i.e., absent either Clear Skies or CAPA). In the EIA "reference case", the EIA expects gas-fired generation to increase from 700 billion KWh in 2002 to 1450 billion KWh by 2020, a 107% increase (Figure 12). Interestingly, the same figure shows significant additional production from coal-fired plants in the reference case world. By more aggressively pushing the industry away from coal, the CAPA bill relative to the Clear Skies bill can be expected to accelerate the trend toward more generation fueled by natural gas.

Figure 12 – EIA Projected US Electric Power Generation By Fuel (2000-2025)

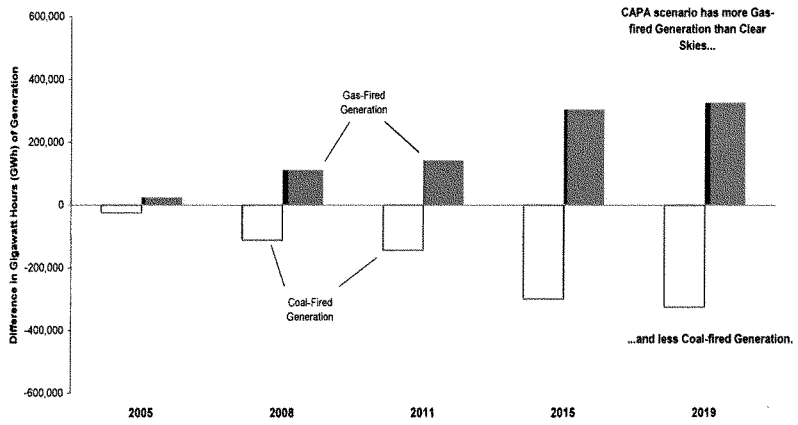


Based on this evidence, an emissions policy that imposes a more costly compliance path is likely to spur a greater move away from coal and toward gas as a fuel. This result was confirmed by the Integrated Planning Model (IPM) which was used to estimate the relative impact of CAPA- versus Clear Skies-type policies on the electric generation sector across the country and over time. As shown in Figure 13, this analysis finds that, relative to a world in which Clear Skies is implemented, the CAPA policy will cause a large increase in natural gas demand by generators and a

corresponding decrease in demand for coal.

Figure 13 illustrates the significant decline in the amount of annual electric energy produced by coal-fired generation under CAPA relative to Clear Skies.[25] It is evident that the magnitude of this effect is substantial. The decline of approximately 300,000 GWh by 2015 represents a change in output that is roughly equivalent to the EIA-projected total 2015 retail sales of electricity to customers in the six New England states and New York.[26]

Figure 13 – Differences in US Electric generation from Coal and Natural Gas: CAPA vs. Clear Skies

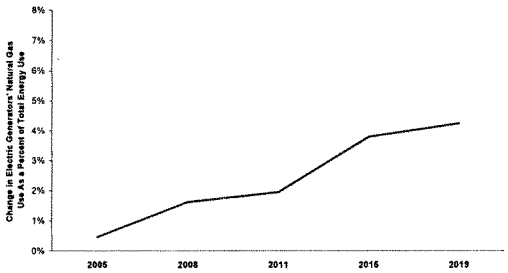


Source: IPM model output.

[25] A recently released study by the EIA also predicts a shift from coal to natural gas under a CAPA versus a Clear Skies policy. See "Analysis of S. 485, the Clear Skies Act of 2003, and S. 843, the Clean Air Planning Act of 2003," EIA, September 2003 at 9-10.

Figure 13 also reveals that, at the same time that coal-fired generation is decreasing, gas-fired generation is increasing in the IPM model. The change in relative demand for input fuels can be seen on a percentage basis in Figure 14. This chart shows the difference in natural gas use by electric generators as a percent of total fuel use on a Btu basis under the CAPA as compared to the Clear Skies policies. The overall increase in demand for electricity causes the amount of gas-fired generation to increase under both policies, but Figure 14 shows that natural gas demand under the CAPA alternative increases at a significantly higher rate.

Figure 14 – Increase in US Electric Generators' Natural Gas Consumption as Percentage of Generators' Total Energy Consumption: CAPA Relative to Clear skies



Note: Includes only "cost of service" regions. Competitive regions not included are New England, Mid Atlantic, Texas, and New York. California is also excluded.
Source: IPM model output.

C. Regional Impacts on Natural Gas Markets and Consumers

A favorite maxim of economics holds that, in the end, the answer to many questions boils down to "supply and demand." This lesson offers a useful insight here regarding the impacts of increasing the amount of demand for a product – natural gas in this case – through a policy that promotes more gas-fired generation and less coal-fired generation. Holding the influence of other supply and demand factors constant, adding large amounts of natural gas demand into the marketplace cannot help but put upward pressure on gas prices. Moreover, these effects are magnified the more quickly gas

[26] EIA Annual Energy Outlook, January 9, 2003, Supplemental Tables 65 and 66.

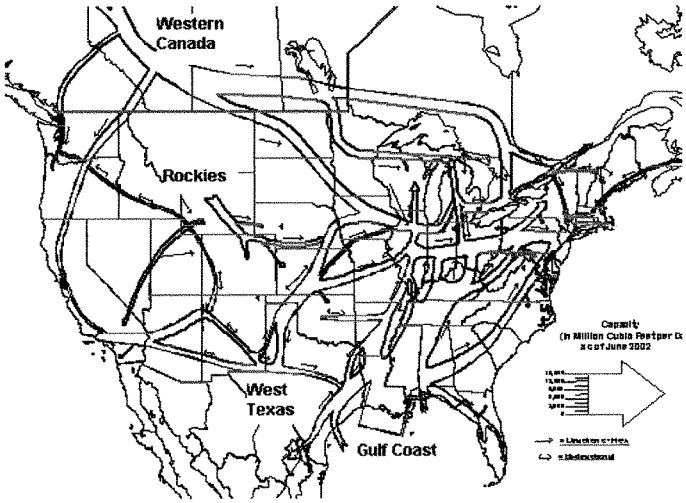
demand is increased and the more quickly the gas market is therefore required to adapt. In fact, recent, memorable episodes of rapidly rising natural gas prices confirms that when the natural gas delivery system is pushed to its limits, gas price levels and price volatility can increase dramatically.[27]

As mentioned above and shown in Figure 8, there is a concentration of coal plants in a few regions in the United States. Predictably, under both CAPA and Clear Skies, the increased demand for natural gas tends to come from these regions as generators make output decisions under the different policy alternatives. However, it would be incorrect to assume that the price impact of rising natural gas demand would be somehow confined to those same geographic areas.

As shown in Figure 15, there are very large inter-regional flows of natural gas in the United States. Typically, the natural gas resource is found concentrated in areas such as West Texas, Gulf Coast Offshore, the Rockies, and Western Canada. These production areas are typically far from major consuming areas, thus requiring the development of an extensive network of natural gas pipelines to move gas from where it is sourced to where it is needed. What this means, of course, is that gas produced, say, on the Gulf Coast has numerous possible outlets, including staying on the Gulf Coast, flowing north to the Midwest, or flowing northeast to areas such as New York and New England. With so many options, the market itself makes it difficult for any regional disparity in prices to remain, since higher prices in one region will pull more natural gas supplies to that region, thus putting downward pressure on prices locally as supply increases, while prices in other regions will rise as available supply moves away. This process results in a natural gas price equilibration across the country that tends to iron out regional price differences over the longer run.

[27] FERC Staff Investigating Team, "Report on the Natural Gas Price Spike of February 2003," July 23, 2003.

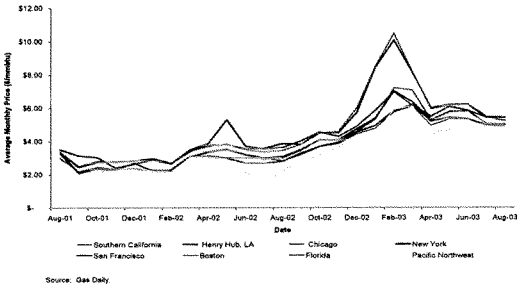
Figure 15 - Major Natural Gas Pipeline Transportation Corridors to Market Areas



Source: EIA, GasTran Gas Transportation Information System.

This process of natural gas price equilibration can be seen in Figure 16, which shows natural gas prices at a widely traded production area point (Henry Hub, Louisiana), as well as in numerous end use areas around the country (such as San Francisco, Chicago, and New York). This figure indicates that while price

Figure 16 – US Wholesale Natural Gas Markets are Linked: Natural Gas Prices at Selected Locations, 2001 – 2003



Source: Gas Daily.

levels in different regions might vary due to the costs of transportation to move gas from one region to another, in general, the up and down movement of prices is reflected in all regions.[28] Figure 16 does show some short-term deviations, notably for Florida in May 2002 and the Northeast in the winter of 2002-2003. These shorter-term deviations reflect the fact, for example, that existing pipeline infrastructure is becoming constrained and thus increasing the value of access to pipeline capacity. This is then reflected in the price of delivered gas in affected regions. Note that these deviations, however, are not long-lived, and prices in these regions tend to equilibrate back to a common national pattern over the long run.[29]

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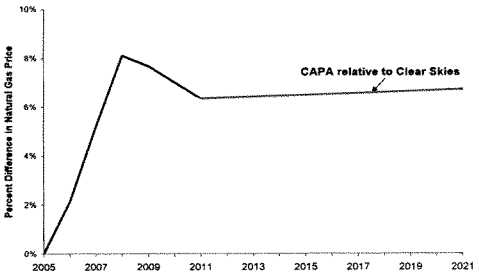
[28] Numerous studies of the US natural gas spot market have confirmed the level of integration between regions across the country following a period of wellhead price deregulation and promotion of open-access transportation policies at the federal level. For example, "while the estimated speed of adjustment to price shocks exhibits considerable variation depending on the economic distance between regions, natural gas spot markets in most regions are highly integrated. This presumably reflects the beneficial effects of wholesale price deregulation and open access policies in the natural gas pipeline industry." Cuddington and Wang, "Assessing the Integration of US Natural Gas Spot Markets: Evidence from Daily Price Data," Georgetown University working paper, February 2003, at 29. And, "The present analysis suggests that open access has brought competition to the national market for natural gas." Doane and Spulber, "Open Access and the Evolution of the US Spot Market for Natural Gas," *Journal of Law & Economics*, vol. XXXVII, October 1994, at 513.

[29] Were these price differences to persist, these differentials would act as a signal to the marketplace that additional natural gas infrastructure is required. Once constructed, this new capacity would tend to dissipate any differential. Evidence of this can be seen in the increase in prices out of constrained basins such as Alberta and the Rocky Mountains when the Alliance Pipeline and the recent Kern River Expansion respectively came into service. See, e.g., "Canadian Gas Completions Rebound; Production Lags," *Oil & Gas Journal*, June 19, 2000; "Kern Expansion Shakes Up Western Markets," *Gas Daily*, May 12, 2003.

What are the implications of an integrated US natural gas market for the regional impacts of a CAPA- versus a Clear Skies-type policy across the United States? First, changes in demand, even if geographically isolated, will tend to show up in the level of prices at major trading hubs in the production areas where natural gas is produced. Figure 17 exhibits the difference between natural gas prices at Henry Hub in Louisiana[30] under CAPA relative to Clear Skies, as predicted by IPM modeling. The higher natural gas prices under CAPA are driven by CAPA's relatively greater pressure on natural gas demand.

Figure 17 – Wholesale Natural Gas Prices are Higher in CAPA Relative to Clear Skies

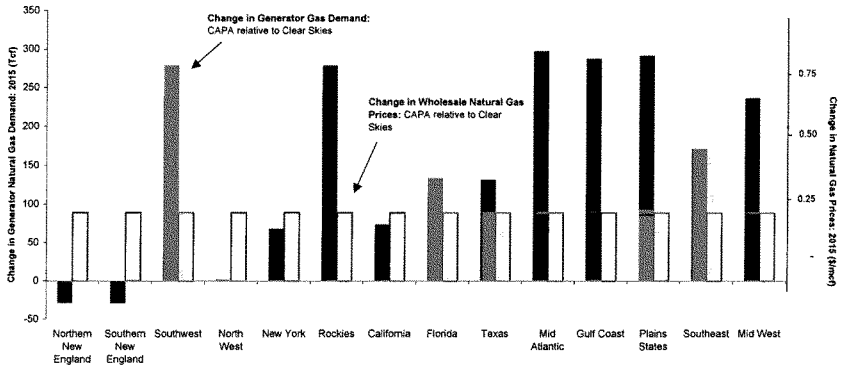


Source: IPM model output.

Second, the national linkages of US natural gas markets mean that changes in Henry Hub prices induced by CAPA and/or Clear Skies will tend to be reflected in the prices of delivered gas in every region of the United States. Figure 18 shows the change in gas demand in 2015 under the CAPA and Clear Skies policies by region, compared to the associated induced change in wholesale natural gas prices in those same regions. This analysis reveals that the price impact of changing natural gas demand is spread relatively uniformly across regions, even though the change in the usage of gas for generation in each region varies significantly.

[30] The Henry Hub location represents a physical location accessible by a large number of different pipeline transportation systems. Due to this convergence of large volumes of natural gas flows, the Henry Hub point has developed into perhaps the most liquid and highly utilized trading point in the US natural gas market. In addition to the trading of physical gas at this point, Henry Hub also represents the clearing point for a large number of financial derivative products such as the NYMEX natural gas futures market.

Figure 18 – Change in Wholesale Natural Gas Price Compared to Change in Electric Generator Gas Demand: Clear Skies Relative to CAPA



Source: IPM model output.

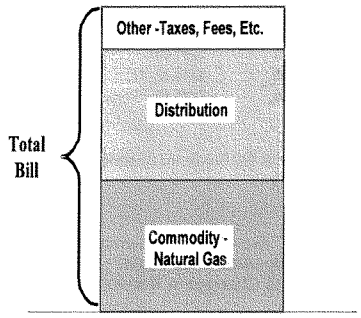
Other studies of emissions legislation done by the EIA and EPA corroborate the existence and the direction of impacts resulting from the policies being proposed. For example, the recently released EIA assessment of CAPA and Clear Skies finds that gas demand by electric generators will be higher by 13% in 2025 and gas prices will increase by almost 5% under a CAPA- versus a Clear Skies-type policy.[31] The relatively lower impacts predicted by the EIA compared to the IPM outputs we have employed appear to reflect different estimates of future supply/demand conditions, and

[31] The differences are likely to be even greater in the intervening years due to the timing of policy implementation, however, the EIA has only reported demand and wellhead price data for the CAPA 4P case in 2010 and 2025. See "Analysis of S. 485, the Clear Skies Act of 2003, and S. 843, the Clean Air Planning Act of 2003," EIA, September 2003, at Tables B2, B7, E2, and E7.

in particular, how sensitive natural gas prices will be in the future to changes in supply and demand.

The study of the impact that increased natural gas generation would have on gas prices is especially timely given the recent rise in average gas prices and the industry consensus that gas prices in the future will tend to be higher and more volatile than they have been historically. While there is a range of opinion about how high natural gas prices will actually be, all seem to agree that increasing demands for gas combined with more costly marginal supplies will tend to "tighten" the gas markets, making them more sensitive to incremental changes in demand. For example, a recent report by the National Petroleum Council concerning current natural gas supply and demand conditions highlights a growing concern that declining productivity of existing resources, as well as a continuation of policies that promote natural gas use over other fuels, can yield "undesirable outcomes," i.e., higher natural gas prices.[32]

Figure 19 – Elements of a Consumer's Natural Gas Bill



These widespread changes in natural gas prices have direct and quantifiable effects on natural gas consumers throughout the Nation. As illustrated in Figure 19, the bill paid by any individual consumer of natural gas, whether that consumer is a residential household, a commercial mall, or an industrial factory, is either explicitly or implicitly made up of three primary components: (1) the cost of acquiring the gas commodity itself on the wholesale

[32] See "Balancing Natural Gas Policy – Fueling the Demands of a Growing Economy, A Report of the National Petroleum Council," September 25, 2003.

market; (2) the cost of distributing that gas to the consumer's location; and (3) an assortment of taxes and regulatory charges associated with receiving gas services. Most state regulators allow gas utilities to recover their prudently incurred gas commodity costs on a dollar-for-dollar basis.[33] As the cost of the commodity increases, as predicted above under the CAPA versus a Clear Skies policy, this will be directly reflected in the average prices paid for gas by consumers.[34]

Figure 20 Annual Natural Gas Bill Increases per Customer: CAPA Relative to Clear Skies

	Average Annual Gas Bill Increase Under CAPA 2005-2021			Highest Single Year Gas Bill Increase Under CAPA 2005-2021		
	Residential	**Commercial**	**Industrial**	**Residential**	**Commercial**	**Industrial**
Texas	$14.55	$147.21	$55,880	$20.22	$204.53	$77,640
Mid Atlantic	$23.05	$164.92	$5,390	$32.03	$229.14	$7,489
Southern New England	$22.02	$159.75	$2,173	$30.59	$221.96	$3,019
Florida	$6.87	$242.14	$47,807	$9.55	$336.42	$66,423
Northern New England	$20.80	$123.11	$9,660	$28.90	$171.05	$13,422
New York	$23.14	$249.02	$3,388	$32.14	$345.98	$4,708
Plains States	$23.14	$142.69	$4,980	$32.14	$198.26	$6,919
Southeast	$17.65	$117.07	$9,341	$24.52	$162.66	$12,979
Gulf Coast	$15.50	$113.15	$44,479	$21.53	$157.21	$61,799
California	$13.94	$154.18	$4,984	$19.36	$214.21	$6,925
Mid West	$26.72	$166.13	$5,003	$37.12	$230.82	$6,952
North West	$23.13	$145.31	$8,045	$32.13	$201.90	$11,177
South West	$14.43	$154.32	$9,101	$20.05	$214.42	$12,645
Rockies	$22.71	$133.79	$5,313	$31.55	$185.89	$7,382
National Average	**$19.12**	**$158.06**	**$15,396.07**			

Source: IPM Model Output; EIA, Form EIA-176, "Annual Report of Natural and Supplemental Gas Supply and Disposition," 2003.

[33] See, e.g., "Rate Hike Requests Pour in as Winter Approaches," Gas Daily, September 22, 2003; "Winter Heating Bills to Be Higher for Colorado Springs, Colo.-Area Residents," The Gazette (Colorado Springs), September 16, 2003; "Avista Utilities Requests Changes in Natural Gas Prices," PR Newswire, August 1, 2003.

[34] Of course, there can be timing issues associated with the pass-through of price changes by a regulated entity, or there may be certain customers who have access to supplies that have locked in prices for some period of time. However, to the extent that differences in policies create persistent changes in the price of natural gas, end users will not be able to avoid bearing the burden of these higher prices.

Figure 20 reflects the greater magnitude under the CAPA bill of the increases in bills actually paid for natural gas service by the average customer in residential, commercial, and industrial classes in each region across the country. These increases reflect the impact of increasing natural gas wholesale commodity prices. The relatively greater upward pressure on residential gas customers' average annual bills under CAPA is most pronounced in the colder climate areas of the country, such as New England, New York, the Mid-Atlantic, and the Midwest. Commercial gas customers see the biggest jump in their gas bills (relative to Clear Skies) in New York, Florida, the Midwest, and the Mid-Atlantic. Industrial customers are hardest hit in such regions as Texas and the Gulf Coast (where gas is used heavily, e.g., chemical manufacturing), as well as in Florida.

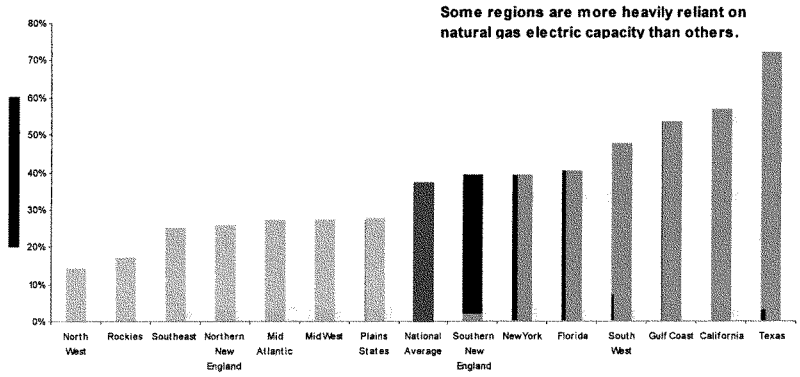
D. Regional Impacts on Electricity Markets and Consumers

Higher natural gas prices, as well as other resource costs, have direct and quantifiable effects on electricity consumers throughout the nation. The magnitude of these effects varies by region, depending on (1) the mix of generation resources in the region, and (2) the regulatory structure that determines the prices paid by retail customers.

Higher natural gas prices will raise the average cost of producing electricity. This cost increase will be relatively more pronounced in those regions where gas-fired generation represents a substantial portion of existing capacity. As shown in Figure 21, natural gas fuels approximately 40% or more of the capacity in seven of the fourteen regions studied.[35] And, as shown in Figure 10, gas-fired capacity has been the overwhelming choice for newly built generation facilities in recent years. To the extent that future environmental regulations force the retirement of existing coal-fired capacity,

it is likely that the gas share of capacity will grow even more rapidly.

Figure 21 – US Installed Natural Gas Capacity by Region: Percent of Total Capacity



Source: EIA, Form-860.

Higher natural gas costs will be largely passed on to consumers in the form of higher electricity prices. We have modeled retail electricity price impacts both for regions that remain predominantly subject to traditional cost-of-service regulation ("traditional regions")[36] and for regions where state-level restructuring has made retail prices more directly dependent on wholesale electricity market prices ("competitive regions").[37]

[35] These figures show installed capacity within each region. Some regions rely substantially on imports of power from neighboring regions.

[36] "Traditional regions" are Plains States, Florida, Midwest, Southeast, Gulf Coast, Northwest, Rockies, and Southwest.

[37] "Competitive regions" are Northern New England, Southern New England, New York, Mid-Atlantic, and Texas. California's retail prices are treated as largely unchanged through 2011 due to the

In traditional cost-of-service regions, electric utilities are allowed by their regulators to recover their expenditures for fuel, including natural gas, by passing those costs on to their customers in the form of higher electricity bills. As gas-fired generation becomes a larger share of total generation in a region, and as the price of gas increases, customers' electricity bills will increase.[38] In addition, electric customers will see higher rates to the extent that regulations drive investment in pollution control equipment and new generation plants and those costs are recovered through higher wholesale prices of electric power.

Higher gas prices will also increase retail electricity prices in regions where retail prices are based on wholesale electricity prices. In competitive regions, gas prices are not directly recovered from retail electricity customers. However, the cost of gas to generators is reflected in the wholesale price of electricity to the extent that gas generators are "the marginal unit" that sets the wholesale price. In these markets, an hourly "market-clearing price" is set based on the marginal generator's cost, and all operating generators in that hour are paid the market-clearing price, even if their own operating costs are lower. Thus, raising the fuel price at the margin can have a substantial impact on wholesale prices.

In some parts of the country (e.g., California, Texas, New England, and New York), gas is the marginal generation fuel during a substantial part of each year. For example, the Independent System Operator of New England ("ISO NE") reports that gas was the marginal fuel in 55% of the hours in 2002. (See Figure 22.) In fact, the increased reliance on gas generation has been a source of concern in some markets. Both the New York Independent System Operator and the ISO NE have remarked on

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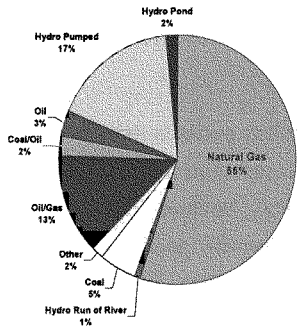
existence of substantial long-term contracts signed by the state, and subject to competitive prices thereafter.

[38] See, e.g., "Aquila Asks Missouri PSC for 19% Electricity Rate Hike," *Megawatt Daily*, July 7, 2003.

the dramatic increases of gas generation and have published studies of local gas markets.[39] While the focus of these studies has been primarily on the adequacy of the gas infrastructure to deliver supplies of gas to maintain electric system reliability, the impact of higher gas prices on wholesale electricity prices has also been noted. For example, in 2001 the ISO NE issued a report finding that "fluctuations in the price of natural gas alone can directly translate into fluctuations in Rhode Island LMPs [locational marginal prices] at almost a 100% linear correlation."[40]

Figure 22 – New England Real Time Market Price Setters by Fuel Type, 2002



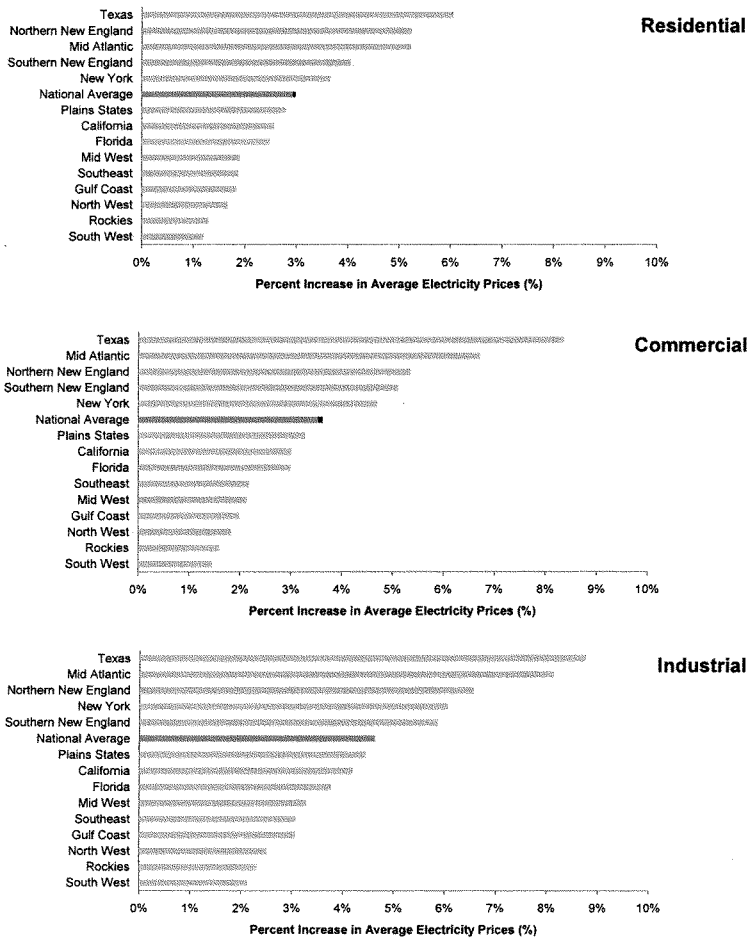
Source: ISO New England "Annual Markets Report, May-December, 2002," August 13, 2003.

In addition to higher gas prices, both the Clear Skies and CAPA policies would result in significant capital expenditure to build new plant and to retrofit existing facilities. However, under the CAPA policy, generators also incur costs to purchase CO_2 allowance offsets. Combining these effects with the cost of operating

[39] See, e.g., Charles River Associates, "The Ability to Meet Future Gas Demands from Electricity Generation in New York State," prepared for New York State Energy Research and Development Authority and New York Independent System Operator, July 2002; ISO New England, "Steady-State and Transient Analysis of New England's Interstate Pipeline Delivery Capability, 2001-2005," January 2001 and February 2002.

[40] ISO New England Inc., "An Assessment of the Impacts of Natural Gas Prices on New England's Wholesale Electricity Prices," July 25, 2001, at 5.

Figure 23 – Retail Electric Price Effects: CAPA Relative to Clear Skies 2005-2021



the electric generation system allows for a total "resource cost" comparison of CAPA versus Clear Skies. Figure 9 shows the present value of the impact of the CAPA bill (relative to Clear Skies) on the total resource costs for each region's electricity supply. In the Midwest region, for example, the present value of the resource cost of the CAPA bill is approximately $23 billion higher in present worth than the resource cost of Clear Skies.

As noted above, higher gas prices and higher levels of capital expenditure for new generation capacity and pollution control equipment will lead to higher electricity prices for retail customers. Figure 23 shows the average electricity price impacts of the CAPA bill, relative to Clear Skies, for each of the regions studied. For example, residential electricity customers in Northern New England would pay on average approximately 5% more for each kilowatt-hour under the CAPA policies than they would under Clear Skies. In New York, industrial customers would pay approximately 6% more under CAPA than under Clear Skies.

Higher prices will lead to higher bills for customers. Figure 24 shows typical electric bill impacts of CAPA relative to Clear Skies for each of the regions studied. Bill impacts are largest in those regions where retail electricity prices are based on competitive wholesale electricity markets and where gas generation makes up a large share of the resource mix. For example, residential electricity consumers in Texas will pay on average $67.40 per year more for electricity under the CAPA policies than under the Clear Skies policies, and the maximum bill impact in any year during the period studied is $87.60.

Figure 24 – Annual Electricity Bill Increases per Customer: CAPA Relative to Clear Skies

	Average Annual Electricity Bill Increase Under CAPA 2005-2021			Highest Single Year Electricity Bill Increase Under CAPA 2005-2021		
	Residential	**Commercial**	**Industrial**	**Residential**	**Commercial**	**Industrial**
Texas	$67.40	$369.45	$7,038.83	$87.60	$480.17	$9,148.32
Mid Atlantic	$43.98	$357.43	$5,774.36	$55.93	$454.61	$7,344.38
Southern New England	$33.61	$359.61	$3,653.17	$45.43	$486.13	$4,938.56
Florida	$31.62	$186.33	$1,873.38	$45.97	$270.87	$2,723.36
Northern New England	$31.58	$227.29	$6,440.61	$42.69	$307.28	$8,707.35
New York	$29.85	$300.01	$11,302.48	$39.22	$394.10	$14,847.02
Plains States	$27.91	$174.26	$3,923.55	$53.96	$336.98	$7,587.17
Southeast	$23.09	$133.68	$7,372.30	$35.66	$206.49	$11,387.65
Gulf Coast	$21.99	$102.71	$2,866.04	$39.93	$186.50	$5,204.19
California	$17.36	$170.82	$1,382.97	$39.19	$385.70	$3,122.67
Mid West	$17.11	$132.30	$5,048.94	$34.35	$265.65	$10,137.48
North West	$13.96	$87.10	$1,183.73	$24.50	$152.88	$2,077.79
South West	$10.93	$77.15	$2,831.46	$37.13	$261.98	$9,614.49
Rockies	$8.70	$67.83	$1,157.89	$29.53	$230.34	$3,931.74
National Average	**$27.08**	**$196.14**	**$4,417.84**			

Sources: IPM model output; EIA, Electric Power Annual, 2001.

IV. REGIONAL MACROECONOMIC EFFECTS

It is true that as a Nation, all else being equal, we have a vested interest in having lower, rather than greater, pollutant emissions such as SO_2, NO_x, mercury, and CO_2. However, the policy conundrum is that we face tradeoffs in pursuing cleaner air. This is certainly true in the case of air emissions policies like CAPA and Clear Skies, where resource costs, higher gas prices, and higher electricity prices are unavoidable. Although assessing the tradeoffs between costs and benefits can be complicated at times, proper public policy dictates that we must take the costs into account and attempt to achieve cleaner air as cost-effectively as possible.

While policies such as Clear Skies and CAPA have their largest and most direct cost impacts on coal-fired plants, and these costs are incurred in regions with more coal-fired generation (see Figure 8 above), it is important to recognize that the effects of these policies spill over to the markets for alternative fuels such as natural gas, and to other regions around the country even if they have little coal-fired generation. As a consequence, the costs of implementing these emissions policies do not fall only on regions with large amounts of coal-fired capacity. In fact, the impacts of higher gas and electricity prices are felt throughout the United States, and in some case, even more strongly by regions with less coal-fired generation.

The economic effects of the policy changes studied here, however, go far beyond the direct resource costs incurred by generators or even by the directly increased bills that consumers and businesses pay for their energy purchases. Because energy is such an important input into our economy, rising energy prices tend to act as a drag on economic output, thus reducing our collective and individual well-being. These macroeconomic effects are felt on a nationwide basis due, in part, to the widespread impact on energy prices, as well as the fact that the highly integrated nature of the US economy means that changes in economic activity in one region tend to spill over to other regions.

This study uses regional macroeconomic modeling to estimate the macroeconomic effects of a CAPA versus a Clear Skies policy on the overall economy as well as on regional indicators of economic activity. These results show that, while not all regions are affected in the exactly same way, and in fact some regions can benefit for limited periods of time due to increased expenditures on the goods and services they produce, a CAPA-type policy relative to a Clear Skies-type policy has significant and widely distributed costs far beyond those regions whose plants are likely to be targeted by these policies.[41]

The overall economic activity in a region or the country as a whole can be summarized by the measure of gross regional product ("GRP"). GRP represents the total value of goods and services produced by a regional economy during a given period of time.[42] Since the effects of a CAPA versus a Clear Skies policy may appear to be more substantial in a region with more overall economic activity, we normalize this measure on a per capita basis to allow easier comparisons across regions.

Regional GRP

The regional GRP effects of CAPA versus Clear Skies are shown in Figure 25. Comparing CAPA to Clear Skies, the average net regional impacts on GRP of CAPA

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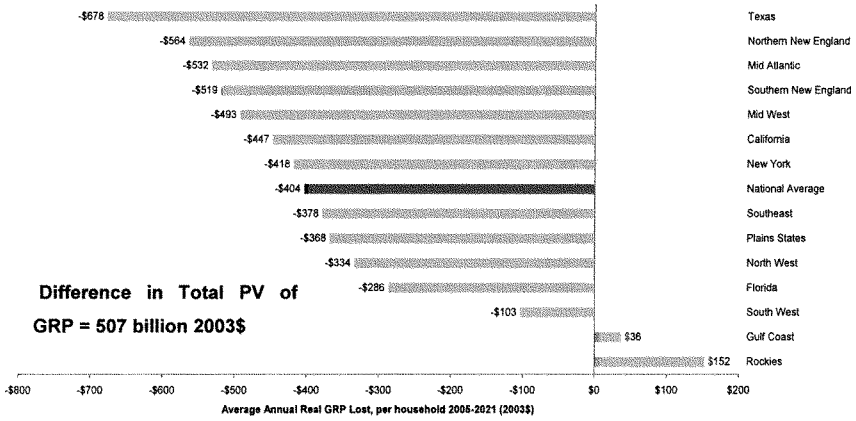
[41] Of course, emissions policies do not have unambiguously negative impacts on all sectors of the economy. Like many public policies, the differences between the CAPA and the Clear Skies policies do create some economic winners, even though they do impose net economic costs on the economy. For example, under a bill that encourages more gas consumption by generators, regions with developable gas reserves are likely to experience a certain level of increased employment. In the same vein, the need to construct significant amounts of new generation capacity and/or retrofit control devices on existing plants will likely produce benefits for the sectors involved in constructing those types of facilities. The macroeconomic model used takes these effects into account in calculating net impacts on a regional basis.

[42] GRP, as it is measured, does not capture the monetary value of such amenities as improved air quality. As mentioned above, this study focuses on the net economic costs of achieving certain levels of emissions reductions.

are negative in all but two regions and range from $152 per household in the Rockies to -$678 per household in Texas. On average, national GRP falls in real terms by about $404 per household per year due to the effects of implementing a CAPA versus a Clear Skies policy.

Figure 25 – Average Annual GRP per Household: CAPA Relative to Clear Skies, 2005-2021

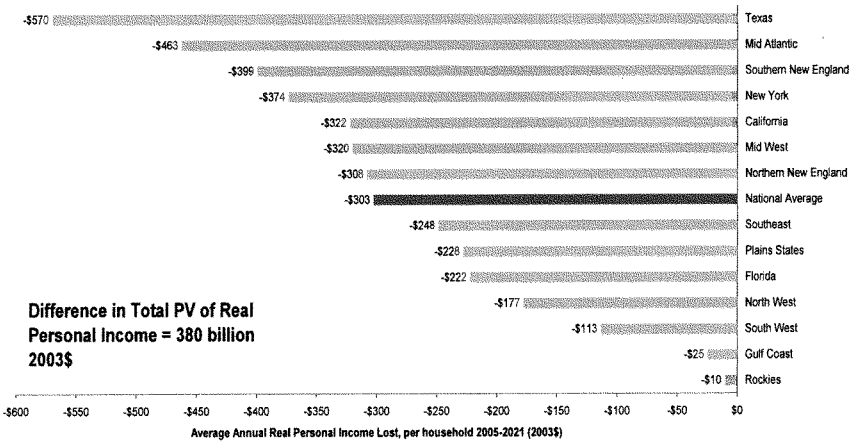


Again, as in the section above which details electric bill impacts on a regional basis, this GRP analysis highlights that the consequences of gas and electric price increases are felt throughout the nation and tend to fall on regions where the changing costs of natural gas have a greater impact on retail gas and electric prices. For example, an interesting result of the analysis is that economic activity in large parts of the eastern United States (e.g., Mid-Atlantic, New England, and New York) is impacted more than the national average. This occurs even though relatively less of the generation compliance activity is actually taking place in those regions.

Regional Personal Income

Figure 26 shows the average annual impact on real personal income per household on a regional basis. This measure of well-being reflects the lost spending power of individuals in that region due to the fact that the rising cost of energy lowers their ability to purchase other goods, while at the same time, declining economic output is reducing total individual income. Again, we see a similar pattern of negative effects. That is, all regions experience some reduction in per household real personal income, but the burdens of the policy are more heavily felt in regions such as Texas, the Mid-Atlantic, and the Northeast.

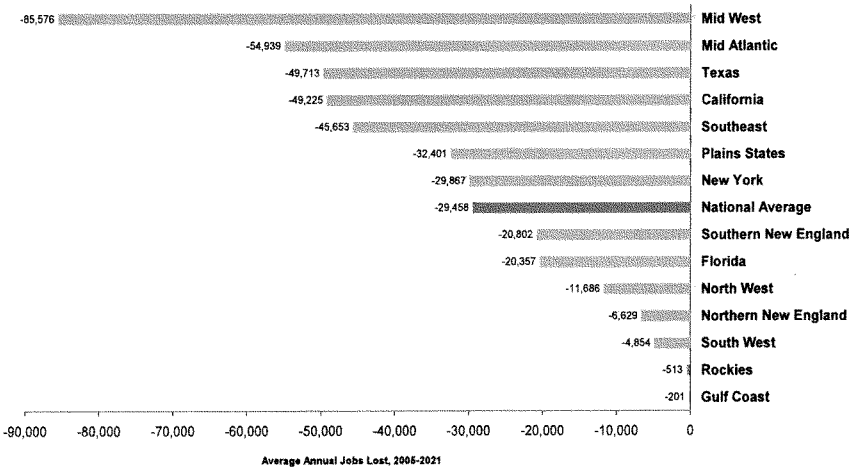
Figure 26 – Average Annual Real Income per Household: CAPA Relative to Clear Skies, 2005-2021



Regional Employment

Figure 27 shows the average annual reduction in employment levels associated with the reductions in economic activity under a CAPA policy relative to a Clear Skies policy. While any level of incremental unemployment may linger for a period as workers attempt to adjust, we would expect that displaced workers would ultimately find alternative, albeit lower paying and/or less productive, employment opportunities. While they are present, however, the negative employment effects of CAPA relative to Clear Skies are most pronounced in regions such as Texas, California, the Midwest, and the Mid-Atlantic.

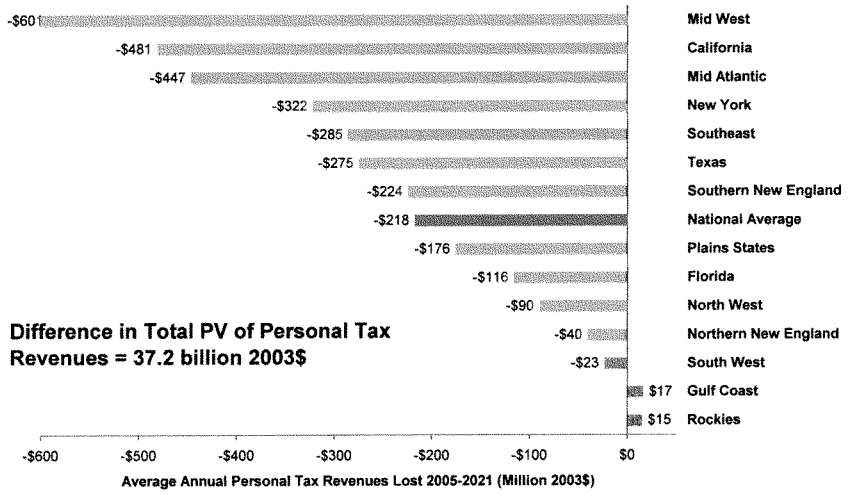
Figure 27 – Change in Average Annual Jobs: CAPA Relative to Clear Skies, 2005-2021



Regional Governmental Revenues

Finally, the net reduction in economic activity would also have an impact on governmental tax receipts. Figure 28 reflects the reduction in personal tax receipts, such as income taxes, payable to federal, state, and local governments. The adverse effects on personal tax revenues under CAPA relative to Clear Skies are largest in the Midwest, California, and Mid-Atlantic regions. In addition, the net reduction in economic activity would also lower corporate tax receipts paid to the government as business earnings and sales decline.

Figure 28 – Average Annual Personal Tax Revenues Lost under CAPA, 2005-2021



V. CONCLUSION

The public's interest is best served by achieving reductions in pollutant emissions in the most cost-effective manner possible. In the case at hand, both Clear Skies and CAPA promise significant reductions in emissions levels produced by the US electric generation sector over the coming decades, with CAPA targeting somewhat lower levels of emissions from power plants. The two bills differ, however, in key dimensions of regulatory predictability, flexibility, level of control, timing, and scope. Such variations result in substantial differences in the costs the nation will bear to achieve target levels of pollution control.

To provide economic insights to policymakers for consideration of the CAPA and Clear Skies policies, we have modeled (under each policy) resource costs for the electric power sector, as well as consumer prices for retail natural gas and electricity service, and have quantified the macroeconomic impacts of these resulting costs and prices. We find that:

- The CAPA bill portends substantially higher real costs for the nation's economy than Clear Skies. That a more stringent policy would generate higher costs is not surprising. Yet, we find that, in present value terms (i.e., dollars of present worth), the CAPA bill would cost the nation's generators approximately $117 billion more than Clear Skies.
- These cost impacts are not limited to those regions with a relatively larger share of coal-fired electric generation facilities. Although targeted largely at emissions from coal plants, the CAPA bill (relative to Clear Skies) would increase both the demand for and price of alternative fuels used by power plants – particularly natural gas.
- Due to the integration of the national energy and economic systems, increases in natural gas prices under the CAPA bill (relative to Clear Skies)

are felt in regions throughout the US. On average, from 2005 to 2021, we find that regional wholesale natural gas prices are on the order of 5.6% to 7.0% higher under the CAPA bill as compared to Clear Skies. Since natural gas is such an important input to the economy, and especially the production of electric power, these increases in gas prices inhibit gas-using productive activities, lower real income, and raise the price of finished goods throughout the US.

- Higher gas prices under CAPA have corresponding impacts on consumers' direct expenditures on natural gas. We find that residential gas customers' average annual bills increase the most in the colder climate areas of the country, such as New England, New York, the Mid-Atlantic, and the Midwest. Commercial gas customers see the biggest jump in their gas bills in New York, Florida, the Midwest, and the Mid-Atlantic. Industrial customers are hardest hit in such regions as Texas and the Gulf Coast (where gas is used extensively, for, e.g., chemical manufacturing), as well as in Florida.

- The combination of higher gas prices and the relatively higher costs of implementing the CAPA bill puts upward pressure on electricity prices. We find that the CAPA bill has its largest impacts on electricity prices (relative to Clear Skies) in those regions that rely substantially on natural gas to generate electricity, and where retail electricity prices are based in part on competitive wholesale electricity market prices. Electricity bill impacts from the CAPA policies are largest in Texas, New York, Southern New England, Northern New England, and the Mid-Atlantic.

- Higher real resource costs and higher gas and electricity prices under the CAPA bill translate into lower levels of such macroeconomic variables as Gross Regional Product (GRP), employment, and tax collections. Gross Domestic Product, as it is measured,[43] is lower by an average of $42 billion per year, or approximately $500 billion in present worth, under CAPA. This equates to a $404 average annual decrease in measured economic output per household in the US. The regional GRP and real personal income effects are most adverse in Texas, Northern New England, Southern New England, Mid-Atlantic, Midwest, and New York regions. Regional adverse effects on employment are largest in the Midwest, the Mid-Atlantic, Texas, and California, as are the adverse effects on tax collections.

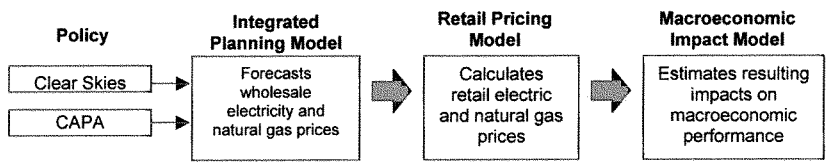
[43] I.e., the monetary value of such amenities as improved air quality is generally not fully captured in measured Gross Domestic Product.

The design of environmental regulations that benefit the public requires the consideration of both costs and benefits. This study has focused on the cost side of the equation, finding that the CAPA policies lead to higher consumer prices for electricity and natural gas service; lower economic activity; and lower tax revenues.

APPENDIX A: Modeling Approach

This Appendix describes the models used in this study to analyze the economic effects of the electric generation air emission policies. As shown in Figure A-1, after defining the specific policies to be compared, Lexecon relied on a simulation of the electric generation industry performed by ICF's IPM model to generate forecasts of wholesale gas and electricity prices, as well as other output and cost measures of the electric generation sector under each policy considered. Model input assumptions were developed and/or approved by Cinergy. The wholesale electric and gas data from this model are then used to develop the resulting electricity and gas prices faced by end-use, retail customers. Finally, these retail prices are processed via REMI, a regional macro-economic model, in order to calculate the economic impacts that changing energy prices imply for the nation's economy. These three modeling steps are discussed further below.

Figure A-1 – Model Schematic



A. Integrated Planning Model (IPM)

Lexecon has relied on modeling of the North American electric generation sector done with ICF's IPM model and provided to Lexecon by Cinergy Corp. The IPM model is a widely used planning tool whose integrated approach captures complex interactions between key electric generation and power market parameters. The IPM model uses a linear optimization approach to develop a least-cost solution for meeting the nation's electric energy requirements given a particular set of physical and policy constraints. The model output includes forecasts for wholesale electric and natural gas prices, energy generated, fuel use, emissions quantity and emissions allowance prices, capital investment (to retrofit existing and/or build new generation facilities), and installed generation. This output is provided for 24 regions across the US. These 24 IPM regions were then mapped to the 14 regions used in this study.[44] (See Figure 2.)

[44] Lexecon has actually used the data available for a 15th region (Alaska and Hawaii) in order to calculate national figures; however, this last region is not reported separately due to the extremely

B. Retail Pricing Model

The outputs of the IPM model are used by Lexecon to calculate the level of retail prices driven by planning decisions and forecasted outcomes in the wholesale electric generation markets. In particular, Lexecon's retail pricing calculations use regional wholesale energy prices and capital expenditure forecasts to develop future retail natural gas and electricity prices for residential, commercial, and industrial customers in each of the 14 regions studied in this analysis.

Natural Gas

The reference case gas prices used in the IPM model were based on information from ICF's NANGAS model. The IPM model provides a forecast of wholesale natural gas prices at Henry Hub, Louisiana based on the changes in natural gas demand emanating from the electric generation sector under the policy options studied. To those prices, Lexecon added the regional basis differentials provided by ICF's gas price forecasting models to account for regional differences in "city-gate" prices from the Henry Hub base price. Each of the three retail sectors studied, residential, commercial, and industrial, is assumed to have the same "city-gate" commodity prices; however, the cost of distribution from the "citygate" to the end user varies greatly by class due to the differences between the sector in the size, variability, and seasonality of the natural gas loads. To evaluate the actual cost of distribution, Lexecon relies on historical data available from the US Energy Information Agency which details state-level average costs of natural gas at the "citygate" and also as delivered to the end user. The differences in these costs are used as a proxy for the cost of distribution as well as taxes, fees, and other regulatory surcharges for each state. These state level data were then combined to create distribution cost adders for each of the 14 regions studied.

Electricity

The IPM model provides a forecast of wholesale electricity prices in each of the modeled regions. These wholesale prices reflect firm market-clearing prices of energy, including the marginal cost of production of available generation as well as an additional uplift, if necessary, to provide capacity payments need to adequately compensate owners of generation for their investments. The IPM model also details the costs incurred by the electric generation sector in each of the regions modeled. These costs include fuel, O&M, emissions allowances and/or offsets, and capital investment. Mercury control requirements under the CAPA were modeled at the unit level.

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limited impacts that the studied policies would have in these areas as well as the limited electricity and natural gas market connections between this "region" and the rest of the United States.

To determine retail electricity prices, the 14 regions modeled are divided into 2 categories: competitive and non-competitive. (See Figure A-2) These designations reflect the extent to which the electricity sector has been restructured in each of these regions. In general, the competitive regions have largely provided a vertical separation between the ownership of generation and the ownership of the electric distribution system. In these areas, the cost of electric energy is determined by supply and demand forces that provide market-clearing prices on a continuous basis. The actual retail prices paid by end users in the competitive regions are calculated by summing an annual firm, around-the-clock regional wholesale market energy price from the IPM model and a regional transmission and distribution (T&D) charge. This T&D charge is calculated for each customer class using historical data available from US EIA. These regional T&D charges are assumed to be fixed over the modeling time horizon and are also fixed for each of the policy scenarios studied.

Figure A-2 – Retail Electric Modeling Regions

"Competitive Regions"	*"Non-Competitive Regions"*
Northern New England, Southern New England, New York, Mid-Atlantic, Texas, and California[45]	Mid-West, Southeast, Florida, Plains States, Gulf Coast, Rockies, Southwest, and Pacific Northwest

In the non-competitive regions, Lexecon has assumed a much more traditional model of utility price-setting based on the actual costs of providing these services. In these cases, rather than looking to the market-clearing price, Lexecon estimates the generation portion of retail prices by dividing the regional generation-based cost of service by total regional generation. Regional cost of service is modeled as the sum of a capital burden (depreciation plus a return on rate base), fixed and variable operation and maintenance costs (O&M), fuel costs, and emission costs (or benefits). The capital burden combines new unit construction expenditures and retrofit environmental control costs as determined by the IPM model. Final retail prices are determined in each non-competitive region by summing this generation charge with other cost-of-service charges (e.g., T&D) for each customer class. These cost-of-service charges are

[45] California is treated slightly differently from other competitive regions due to the fact that although the state has significantly restructured its wholesale electric energy markets, a key determinant of California's energy costs through 2011 will be the long-term contracts for electric power signed by the California Department of Water Resources in the first half of 2001. From 2005 to 2011, Lexecon has relied on estimates of fully bundled retail prices as produced by the California Energy Commission.

calculated using historical data available from US EIA and are assumed to be fixed over the modeling time horizon and are also fixed for each of the policy scenarios studied.

Finally, Lexecon estimated changes in regional employment in the natural gas and coal extraction industries based on the changes in the electric generator demand for these fuels, including the types of coal used, as determined by the IPM model, the location of developable resources, changes in industry productivity, and the relationships between changes in production and sector employment.

C. Macroeconomic Impact Model

The gas and electric retail price changes for each customer class, the new generation and retrofit capital expenditures, and the upstream gas and coal industry employment effects are fed into the REMI model to capture the final regional macroeconomic effects.[46] REMI is a widely used regional forecasting and policy analysis model which uses econometrically determined factor relationships to provide estimates of the macroeconomic impacts and long-run equilibrium conditions created by various policy or economic condition "levers". In response to changed energy costs at the regional retail level, as studied here, the REMI model estimates: "substitution among factors of production in response to changes in relative factor costs; migration responses to changes in expected income; labor participation rate responses to changes in real wage and employment conditions; wage rate responses to labor market changes; consumer consumption responses to changes in real disposable income and commodity prices; and local, regional, and market shares responses to changes in regional production costs and agglomeration economics."[47]

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[46] It is necessary to estimate and add in these labor effects since, as an output-focused model, REMI does not capture the policy-specific, demand-driven increases for employment from "input" industries such as gas and coal.

[47] REMI home page, www.remi.com, accessed on October 5, 2003.

Senator INHOFE. Thank you.
Senator Murkowski.

OPENING STATEMENT OF HON. LISA MURKOWSKI, U.S. SENATOR FROM THE STATE OF ALASKA

Senator MURKOWSKI. Thank you, Mr. Chairman. I appreciate your calling this hearing this morning and really putting the focus on the natural gas supply in this country and the environmental impacts of this supply.

I am glad that I am following Senator Voinovich on this. I think you have very aptly summed up the impact to this country, and the fact that it is a crisis in this country, and we certainly are not doing enough at this point to avert the crisis. To say that the sustained high prices of natural gas are a problem, truly underestimates the situation that we are currently facing. In your State, with the manufacturers, the petrochemical industry, and the fertilizer production, you know it all too well.

We have a Federal policy that is encouraging the consumption but is not doing anything or have not sufficient activity on the domestic production. I appreciate your statement again, Senator Voinovich, that we are going in the same direction that we currently are with our oil. When we are 57 percent or 58 percent dependent on foreign sources of oil, a resource that we recognize, we have to have, if not for our vehicles, certainly for those other consumer products, whether they are Band-aids, or CDs, or cosmetics, we rely on petroleum products.

To go into this with eyes wide open saying we will allow ourselves to be again dependent on foreign sources for natural gas is not a place that I think that this country needs to go. We need access to a new supply, but we need to encourage the domestic access.

It is probably not going to be any surprise to you, Mr. Chairman, or to the members of the committee, but I want to talk about the availability of Alaska's natural gas supply. We have 35-trillion cubic feet of known proven reserves and of the unknown but expected reserves, we are looking at massive quantities of natural gas.

In the energy bill which we recognize is still stuck, and not moving, we have provided for regulatory and judicial streamlining, as well as financial incentives, for the Alaska Natural Pipeline. We anticipate that we will be able to bring up to 4.5-billion cubic feet per day of desperately needed natural gas to the markets in the lower 48.

We recognize that this is a huge project, and for a project of this size we cannot snap our fingers and get the gas to market today. It does take years to bring on-line, but what we will be able to do is stabilize the volatile natural gas market by the anticipation of the vast new supplies coming down. Alaska will be able to supplement the supply from the declining basins in the lower 48 and Western Canada, as well as the expected imports of LNG from the foreign sources.

The Energy Information Administration predicts that the United States will import over 4-trillion cubic feet of gas in 2004. By the year 2025, without Alaskan natural gas coming on-line, imports

could total nearly 11-trillion cubic feet. This worsens our energy and our national security, as well as the balance of payments deficit.

EIA also predicts that by 2025 without natural gas from Alaska, the wellhead price in the lower 48 States will be 20 cents higher, costing the economy approximately $6.14 billion. So not only will the Alaska Natural Gas Pipeline bring needed natural gas out of America to meet the domestic demand, the project itself will create thousands of jobs throughout the United States.

So again, Mr. Chairman, I appreciate your focus here this morning. I look forward to the testimony from our witnesses as we pursue this issue, and hopefully are able to work together to craft a positive direction for this country when it comes to our natural gas consumption.

Thank you.

Senator INHOFE. Thank you, Senator Murkowski. That is an excellent statement.

We have a cloture vote at 11:30, which means that we probably would have to leave here at around 11:45 to do it. It would be my intention, if we have not started the third panel at that time, to recess until 2 o'clock and have the third panel at 2 o'clock. I do not know how else we can arrange this. Is there objection to that in the event that we are not further along at that time?

With that, I would recognize Senator Chafee to introduce our guest. The first panel is Governor Carcieri. We will have only one round of questioning after he completes his remarks.

Senator Chafee.

Senator CHAFEE. Thank you, Mr. Chairman. It is a pleasure to introduce the Governor of Rhode Island, Governor Donald Carcieri. The Governor is exceptionally qualified to be here today.

Prior to his election in 2002, the Governor was a highly successful businessman. In 1983, he joined Cookson America, rising through the ranks to the position of chief executive officer and joint managing director of Cookson Group Worldwide. He was instrumental in developing the company into a major manufacturer, employing over 12,000 people worldwide. The company grew from an organization doing $30 million in sales to over $3 billion at the time he retired from his position.

I am proud to have the Governor here to testify before the committee. I know we will all benefit from his testimony.

Welcome, Governor.

STATEMENT OF HON. DONALD L. CARCIERI, GOVERNOR, STATE OF RHODE ISLAND

Governor CARCIERI. Thank you, Senator.

Mr. Chairman, and Ranking Member Jeffords, distinguished members of the committee, especially Senator Chafee from my home town, I want to thank you for having me here today to testify about the energy needs of my State, my region, and our Nation. In my judgment, there is no more important domestic economic issue today than this issue.

I would like to speak today about the problem my State is facing with respect to the tightening supply and resulting high cost of natural gas. As Governor of a Northeastern State, I understand the

importance of plentiful, accessible energy supplies. New England, as you know, has no natural resources of fossil fuel. As a result, all of our energy supply must come from some other region or nation. Meanwhile our cold winters, elderly population, and highly concentrated urban centers produce a large and growing demand for energy resources.

Before the people of Rhode Island elected me Governor, I spent almost two decades, as the Senator indicated, working in the private manufacturing sector. As CEO of Cookson America, I managed the energy needs of a thriving manufacturing business. In fact, I remember, Senator Carper, meeting your wife when she was at DuPont. If I recall, she worked at DuPont.

Senator CARPER. Mr. Chairman, I can tell you my wife works at DuPont. She has been there 27 years. Over the years, I have had thousands of guys say to me, "I know your wife." I have had it.

[Laughter.]

Governor CARCIERI. I will only say in reference to a possible business deal.

Senator CARPER. I am glad you got that on the record.

Governor CARCIERI. In any case, that experience taught me that our needs will only increase in the coming years. As Governor of a New England State, and a former CEO, I have a good understanding of both the energy needs of the Northeast region generally, and the particular needs that a competitive manufacturing base puts on a reliable, cost-efficient, energy supply.

Federal and State policy, as has been noted, has encouraged the use of natural gas because it is clean burning and there is an abundance of known supply. Consequently, it has become the work horse of the energy sector and is expected to provide 35 percent of the fuel supply for electric generation in New England this year alone. According to the Federal Energy Regulatory Commission, in the next 4 years 50 percent of all electricity will be generated in New England by natural gas.

Unfortunately, natural gas supply has not kept up with this burgeoning demand. In fact, New England was recently on the verge of an energy supply crisis. Key-Span, the largest local distribution company in the Northeast, had record-breaking send-outs during that cold spell that some of you may have noticed, and at one point were forced to shut off service to a number of customers in order to preserve the remaining base. Had temperatures remained that cold for another few days, we would have had a real crisis.

One would think that this combination of high demand and intermittent supply shortages would create an outcry for more natural gas production. It does not seem to have. Unfortunately, it may take a disaster before someone in our Nation gets serious about this problem. As Federal Reserve Chairman Alan Greenspan pointed out in testimony before a Senate committee last summer, "We have embraced the benefits of natural gas, but at the same time have restricted the ability to get more supply." He pointed to the inconsistency of our policy.

Soon the Northeast may no longer be able to offer industry a competitive venue unless the rising cost of energy is addressed. As Senator Voinovich pointed out, what is happening in Ohio now, we had faced this actually probably years ago in the Northeast, but

the trend is accelerating. While the costs remain relatively stable through the mid-1980's at around $2 in million BTUs, prices have recently spiked at times to upwards of $10 per million BTUs. These dollar amounts are often much higher in Rhode Island because we sit at the end of two pipelines and consumers must pay the costs associated with transporting gas such long distances.

In my judgment, this is the hidden jobs issue today, beyond labor-intensive issues that you hear so much about. This is a little bit of an aside, with all of the jobs that are going to China and the Asia Pacific of a high-labor content. The hidden issue today in the jobs is the energy costs issue. I hear it time-and-time again. These are what is driving business today in jobs overseas.

Some of Rhode Island's largest employers and oldest companies are already grappling with the consequences of this looming energy crisis. Considerations of layoffs and job relocation are beginning to manifest themselves. Electric Bolt, which is the producer of the hulls for our Navy's submarines, switched to natural gas for heating several years ago. Now the price is skyrocketing, and since the region's electric generation is increasingly fueled by natural gas, EB can expect a further rise in their electric bill. This company employs more than 2,000 people in Rhode Island and many more in Connecticut.

The story is the same with a company called Arkwright located in Coventry, RI. Their 300 employees coat and covert paper and films for specialty imaging devices. Arkwright's natural gas bills have nearly doubled in the past year, jeopardizing their profitability and competitiveness. As the company struggles with this issue, it has lost bids for contracts. They were already forced to lay off some employees, and cut out bonuses last year.

Another example is a company called Cranston Print Works, an old company in the textile business with facilities in Rhode Island and Massachusetts. The per unit price they pay for natural gas has already increased 40 percent this year. Electric costs another 19 percent, and oil another 6 percent. They will spend several hundred thousand more this year than last year to keep their plants operating without any increase in overall energy usage.

Similarly, their neighbor in North Kingstown, a Japanese company, TORAY plastics, extrudes plastic film for food wrapping, saw energy costs rise more than $1.6 million last year. They employ approximately 700 people in our little State and are absolutely panicked about what they are going to do with the energy costs and the impact it is having on their business. It is an energy-intensive business. It is an extrusion business, which I know many of you are familiar with. It runs 24 hours a day, 7 days a week. It is critical that they be able to manufacture products competitively, and they are having a struggle.

This story can be told over and again with many of the other manufacturing companies in our little State that employ tens of thousands of workers and contribute so much to the quality of life in our State.

Senator INHOFE. Governor, I would like to ask you to wrap it up. Your entire statement will be made a part of the record.

Governor CARCIERI. I would just add to that, Senator, that with the same issues, the costs today, the competitive impact, the effect

it is having on jobs—which I think is the major idea—LNG is significant for us. That is an issue that I think needs to be dealt with. We are dealing with the fact that we need more of that.

I think from my perspective, as I said earlier, just to sum it up, this, I believe, is the issue today for the domestic economy. I would encourage the State that we need a coherent policy that is consistent and that deals with an energy supply. I am talking mostly energy production in terms of electric generation capacity, separating that from automobile. That is the impact that you see today on businesses.

I want to thank you for allowing me to testify. I will answer any questions you may have. I would ask that my full statement be placed in the record in its entirety.

Senator INHOFE. Without objection, so ordered.

We appreciate very much your being here. We will now have one round of questioning for the Governor, not to exceed 5 minutes. We do have two other panels to get to.

Governor, you spoke about the need for additional supply. But your State, and the Northeast region in general, also have inadequate infrastructure. You mentioned Key-Span. I guess Key-Span is a distributing operation.

Governor CARCIERI. That is right.

Senator INHOFE. They had sufficient gas but not sufficient infrastructure to deliver; is that the problem?

Governor CARCIERI. Yes, it is both. Key-Span right now is the midst of a proposal for an expansion of LNG capacity. Yes, the most recent problem was an infracture issue and the sufficiency of the gas line itself. They had reserves in the form of LNG that could have been fed in.

Senator INHOFE. Would a very large percentage of your gas be LNG?

Governor CARCIERI. It is growing. I do not have that with me today. I cannot remember, but it is growing dramatically. There is a large LNG facility in Everett, MA, outside of Boston. We have what is called a peak breaking facility in Providence, RI, that is looking at actually becoming a principal source.

Senator INHOFE. It is expanding nationwide. As Senator Voinovich pointed out, this is coming from Trinidad/Tobago, Qatar, and Algeria.

Last week there was a lead editorial in one of your newspapers, the "Providence Journal":

> "The region urgently needs a supply of clean fuel in Fall River, as well as Providence and Somerset, are well suited for terminals to store it in the form of LNG. These terminals would be economic boons for southeastern New England in particular, and the whole six-State region in general."

Do you agree with the Journal's assessment? What do you say to those who oppose expanding the LNG terminal capacity in Southeastern New England?

Governor CARCIERI. Yes, I do agree with the Journal's assessment on that, Senator. Thirty-five percent of the energy on cold days is LNG. I do agree with that, Senator. I think the issue right now is with homeland security. People are concerned about safety. I think that is the biggest issue that I hear being discussed time-

and-time again with it regarding LNG tankers. It is a question of safety and their movement in and out of our ports.

I have met with the Key-Span people. I have told them that I am supportive of this. It is critical to our economy in terms of the immediacy. It is a supply that we can increase.

Senator INHOFE. Governor, you are a very persuasive person. You have credibility. I know in your State there are many people who will form groups and come to you and say that this is not a problem. What do you say to the groups that are really creating a problem for you in terms of expanding your capacity?

Governor CARCIERI. Well, I think in the short time that I have been in this business, Senator, I think we put ourselves into the situation of false choices. We postulate things against one another. I believe that the environmental concerns can be handled entirely consistent, and we can develop energy sources and energy supplies. They somehow are postulated as opposites and are unable to be integrated. I do not believe that for a moment. They can be. We have done it successfully. I have all the confidence we can do it going forward.

The issue for me, as I talk with these people is a pragmatic one. We build roads and bridges. We build airports. We build all these things. Yet we do not have an energy supply that is consistent, accessible, and reasonable in terms of price. We do not have a policy to generate that. Without that, everything else is for naught.

My logic, if you will, is this is not a problem that is going away. It has to be dealt with. I believe it can be dealt with in the context of assuring those people that are concerned about the environment. We call it the Ocean State, Rhode Island. I am very, very environmentally orientated. I think it is an artificial juxtaposition, if you will, in pitting these things against each other.

Senator INHOFE. Thank you, Governor.

Senator Jeffords.

Senator JEFFORDS. Governor, that was excellent testimony. You mentioned a study by the Federal Energy Regulatory Commission in your testimony. It is my understanding that the Pipeline Safety Improvement Act of 2002 required FERC and the Department of Energy to evaluate the ability of New England's natural gas infrastructure to meet the demands of the electric power generation. FERC's report, released in December 2003, concluded that there was adequate natural gas infrastructure to meet natural gas demand in New England through 2005, but that additional infrastructure would likely be needed to meet the region's demand through 2010.

The development of some of that infrastructure is in progress. Several entities have announced proposals to construct new marine import facilities. Included are Key-Span in Providence whose storage facility now receives liquefied gas by truck from Everett, MA.

What is the status of these proposals? Will they include additional storage?

Governor CARCIERI. I can only speak to the Key-Span project in Providence, Senator. Whenever I see a policy statement that says we are OK through 2005, when we are in 2004, I say we have a big problem. The idea that if we do some things we will be OK in

2010, to me is a kind of shortsightedness that is inexcusable on an issue that is critical.

Senator JEFFORDS. I agree with you.

Governor CARCIERI. This needs to be a policy, if you will, for the balance of the century, or at least half of that century.

The Key-Span project is moving. It is moving ahead. As Senator Inhofe said, there is support for it. There is concern about the safety of LNG tankers. I believe these can be dealt with. They are being dealt with currently, but that is an education issue. People are fearful, particularly in the aftermath of 9/11. You know that in terms of anything like this. We need to be practical and deal with that and try to assure the public that this can be handled.

That facility would become, instead of a peaking facility, actually a principal supply storage facility. The other projects I cannot speak to in the Northeast.

Senator JEFFORDS. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Chafee.

Senator CHAFEE. Thank you, Mr. Chairman. Once again, Governor, very well said. As we all know, we want to keep our citizens employed. We all know the difficulties facing the employers, whether it is health care or labor costs, and now it is, of course, energy costs. I do believe we are going to hear later in the testimony that the worldwide resources are still robust of natural gas. We, of course, all want to have our own domestic supply for security reasons, but the practical facts of the matter are we have to depend on the world for these. Even if we are going to get natural gas from Alaska, it has to come through Canada. It is always going to be working with our international partners as we address the shortage of natural gas here, particularly in the Northeast.

You mentioned the LNG issue. Of course, the delivery of natural gas is either by pipeline or by truck or by liquefying it, and then by tanker. A tremendous amount can be delivered by tanker once it is liquefied and then deliquified to get to the consumer. That is what we are wrestling with, of course. Mr. Chairman, you mentioned the editorial and using Narangansett Bay as a depot in the delivery system for the entire six-State Northeastern area.

Governor, as you deal with Key-Span, which is the company, what are the hurdles there as we look at this, if we are going to look at liquefied natural gas as part of the solution? What are the hurdles to go forward to get through the permitting process?

Governor CARCIERI. I think as I see it right now, Senator, I think frankly the economic case is compelling. The need for these kinds of facilities is compelling, particularly in our region. Right now we have the facility in Boston that is the principal source of LNG for the region. I think the case is pretty compelling. I think the issue for us, as I said earlier, is the fear right now in the public's mind about LNG and large tankers. Most people are not aware that we have tanker trucks going to that facility daily that are replenishing it now. But somehow a truck or two or three or four is different than a large tanker. We need help. I met with the Coast Guard. They assure me that there are protocols in place that will assure the safety of these. As you all know, the record of LNG tankers in terms of safety is good as well.

Frankly, I think the biggest issue right now is the public perception, a fear that somehow we are endangering the public and we are creating an unnecessary hazard. I think that can be dealt with. It needs to be dealt with because frankly somebody has to bring this energy supply in.

The other thing I would comment on is this. As you know, in the Northeast, we have a get-together with the Eastern Canadian premiers once a year. We have a good relationship there. Our last meeting was last summer. This is a big issue for them. They know that they have reserves and they are anxious to get those developed and supply us. For those of us in the Northeast, that can be an important source. We have the summer meeting coming up this summer in Newfoundland where they tell me they are convinced they have large reserves. There is the Sable Island Pipeline to be completed.

I think there is a natural affinity between ourselves and our Canadian neighbors, obviously as well as Alaska. I listened to your Dad at the NGA talking about the opportunities there, Senator. I had a number of conversations with him. I think with Alaska at one end and the Eastern Canadian provinces at the other, we could probably be in pretty good shape, from a natural gas standpoint, let alone what we have domestically.

Senator JEFFORDS. Thank you, Governor. We are both strong environmentalists. We come from a strong environmentally conscious State. Of course, the environmental population does want this because of the clean air issues and as we look at the siting, as you mentioned earlier, it does not necessarily have to be tension and conflict trying to provide energy sources and doing what is environmentally sound.

Again, I congratulate you on your testimony.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Chafee.

Senator Thomas.

Senator THOMAS. Thank you. Welcome, Governor. We are glad to have you here.

Governor CARCIERI. Thank you, Senator.

Senator THOMAS. The purpose of this oversight hearing is to examine the environmental impacts on the U.S. gas supply. What do you think they are?

Governor CARCIERI. Well, again I am new to this business. I came out of the private sector. I remember back in the 1970's when the pipeline was being developed in Alaska. There was much concern at the time about the environmental impact that that pipeline would have. I have not been back to Fairbanks since the mid-1970's, but I think we would conclude that we have successfully tapped an enormous source of energy for us. We have done it in a fashion that has not had an enormous negative impact on the environment.

I think sometimes, as I said earlier, these things get juxtaposed unnecessarily. I believe we can do this from the technologies, as I understand the technologies available today, to drill and source, they are improved light years from the 1970's. I am confident that those, including myself, that are concerned about the environment,

will be comforted, if you will, that this can be done. I think we just need to get on with it.

As I said earlier, I think we are on the verge of an enormous problem as a Nation when we are watching our manufacturing industry decline.

Senator THOMAS. Well, we have to deal with this. There is quite a little bit of difference in view, apparently, from States like yours that are not in the production business from States like mine which are. That is part of the problem. If we had a policy that talked about alternative sources, that talked about conservation, that talked about more efficiency, and that talked about more research on using clean coal and domestic production, do you think people from the Northeast would support that kind of a policy?

Governor CARCIERI. I cannot speak for all the people in the Northeast.

Senator THOMAS. We do not have the support. It sounds like you were now complaining.

Governor CARCIERI. That is a very sensible approach. You will not hear me complaining about that approach. I think just as you say you do all of those things. I believe this can be dealt with. I was at the Department of Energy 2 weeks ago. We are the recipient, unfortunately, of some bad air quality that is coming from old coal-fired plants in the Midwest. We are doing our part in our plants, but we are inheriting atmosphere from the Midwest.

One of the things I said to the Department of Energy was that we ought to be looking at some way to assist the financing for these power companies. Right now they are fragile themselves. I think there is possibly a role for the Federal Government to play here in the assisting and in the financing. They are not opposed to upgrading those plants. I am sure it is a question of the capital and the cost of the capital and how they get a return.

Again, we build roads, we build bridges, and we build airports. It would seem to me that there is an appropriate role for the Federal Government here to assist somehow in the financing of these things. It is in our national interest to do so.

I am supportive of a whole series of things, Senator. I cannot speak to others, but I will try my best to convince them.

Senator THOMAS. I understand. But my point is, and I think you will understand that, is that there is somewhat of a different view between the production areas and the consumption areas. We are going to have to get a little more clear understanding of how those two things fit together and be able to move forward.

Thank you, sir.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Thomas.

Senator Voinovich.

Senator VOINOVICH. Governor, often the Northeast and the Midwest seem to be on opposite sides of this whole environmental issue. You just talked about the air moving into your area. However, your testimony today expresses many of the concerns that I stated in my opening statement.

Recently, Lexicon, a Harvard research company, conducted a study on competing multi-emission proposals.

Mr. Chairman, I would ask that the Lexicon study that was done at Harvard University be inserted in the record.

Senator INHOFE. Without objection, that will be entered into the record.

Senator VOINOVICH. I do not know if you are familiar with them or not, but for the last couple of years, we have been talking multi-emission proposals. Senator Carper has one, Senator Jeffords had one. I have the President's plan on Clear Skies. We looked at President Bush's Clear Skies Act in 2003, and Senator Carper's, and the study found that Senator Carper's bill would cause natural gas prices to be between 5 percent and 6 percent higher on average from 2005 to 2010, or about $117 billion more than our Clear Skies proposal.

The reason I bring this up is that part of the reason why the demand is exacerbated is that utilities companies in my part of the country is this. For example, the former president of AEP, Lynn Draper, said, "I am not going to build another coal-fired facility. It is going to be gas." So all of the new facilities have been gas powered. That just drives up the demand for it.

We have two problems. One of them is to try to lessen the demand by using other energy sources to get the job done, and at the same time, increase the supply. The feasibility of increasing the supply in the next couple of years is going to be pretty difficult. So we have a real problem.

They are lucky to have you as a Governor because you have a good perspective on things. I would ask you if you could get with Raysha Pock and with the Governors Association and really get into this whole issue of where we are going on a pollution-control bill that will limit the amount of NO_x and SO_x and mercury. We have a debate over carbon. This would allow us to come up with some numbers where we can continue to use clean-coal technology to burn coal, and at the same time, do a much better job of eliminating your problem of the stuff coming to your State, but at the same time also help you in the other direction and that is to not increase the demand for natural gas as we try to figure out how we can get more natural gas out on the street.

You have both sides of this. I would be interested in your comments.

Governor CARCIERI. Well, I think you have articulated the issue extraordinary well, Senator. If I were the head of a power generating facility today in your State or anywhere that was coal-fired, and I am under all kinds of pressure for the emissions, I would be thrilled to clean it up faster. It is a question of the capital and the investment. This is where I was going with Senator Thomas.

I think from your perspective, or from an energy policy standpoint, from the Nation's perspective, there needs to be help there. As we have deregulated the power utilities, we have actually made them more fragile, if you stand back and look at what has happened. We have squeezed a lot out in the process, but we have created a system that is very fragile from a capital standpoint and a financing capability.

I think we need to think about how to assist those. If you or I were the CEO of one of those plants, we do not want all of that

aggravation and all of those problems. We would be happy to do it. It is a question of what we have to spend to do it.

Senator VOINOVICH. That is a very good point. AEP has plants in Ohio and they have them in West Virginia. We deregulated electricity in Ohio and West Virginia has not. So where is AEP going to be putting on the pollution control devices in the State of West Virginia. They can capture their costs for doing that in Ohio because of the situation that makes it more difficult. So you have these plants trying to figure out how we are going to get the job done. At what stage is it economically feasible for us to do this or to tear them down and build something new.

Governor CARCIERI. I know we are talking about natural gas right now. We have the same problem with transmission capacity. Last summer we had the black out in the Northeast. The New England Governors had a whole session on this in the summer. I did not realize that we have significant weaknesses, particularly in the area of western-southern Connecticut in the transmission lines. They are old lines. We have not upgraded the capacity there.

Here again, we created a whole grid structure and it depends on these transmission lines. Again, it is who is going to spend the money and how can they afford to spend the money. What you said is absolutely true. They could recover that cost in the rate structure in the old model. Much of that is gone.

I think there is a real financing issue here that needs to be looked at as well. I think it would moderate, if you will, the kind of problem that those of us on the East Coast are worried about which is the emissions coming our way.

In addition, I think all of these things are good things to do, but they are a stopgap. They are not the solution for an energy policy for our Nation for the next 50 years. We cannot survive that way. I think that this is a multi-headed, and needs to be dealt with.

Senator VOINOVICH. I am out of my time, but I would say this to you, Governor. I would really urge you to sit down with your colleagues in the Governors Association. We have not been able to reconcile our differences here at this table. You are the ones that are suffering in terms of your loss of jobs and the high cost of energy for your low income and elderly people. Perhaps maybe your going to the table could help us get direction so we can get on with this problem because there is an urgency to it.

Governor CARCIERI. I will take up the charge.

Senator VOINOVICH. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Voinovich.

Governor, when you mentioned the Alaskan pipeline, I can recall when they were developing that idea that some of the alarmists were saying that it would destroy the caribou in that region. You go up there in the summer time, the only shade that is available for the caribou is the Alaskan pipeline. They are all gravitating to that.

With that, I will introduce the Senator from Alaska.

Senator Murkowski.

Senator MURKOWSKI. Thank you for that nice lead-in, Mr. Chairman.

I would just like to followup a little bit where Senator Thomas left off. I appreciate your comments, Governor. We recognize, cer-

tainly in Alaska, that technology changes and the technology advances when it comes to energy exploration and drilling in Alaska. A natural gas pipeline is going to look very much like what our 800-mile oil pipeline looks like now. We figured out 30 years ago how to move this pipe through 800 miles of massive mountain ranges and permafrost and earthquake zones. We did a pretty good job, given what we had at that time.

Thirty years later I am extremely confident that that technology is even further advanced, but even more so than just the line. It is the technology for the drilling and for the extraction of this resource. What we have at Prudhoe that we built 30 years ago is a much larger footprint than we are finding in our new fields today. With the directional drilling that we have, we can extract oil and truly have minimal impact to the environment and to the surrounding areas. We know that we can do the same with the natural gas.

It goes back to some of the fears or some of the myths that may surround energy production in this country. Much of it goes back to the way it used to be. We have some serious issues with coal, but with the clean coal technology that we now have, we are able to do it better. We are able to do it in a more clean manner. We are able to utilize that technology.

But what we are dealing with is still some of the hangover, the fear factor. It is important as we recognize that we will continue to be dependent, to a certain extent, on our fossilized fuel, that we figure out the way that we utilize it so that we cause no harm and that the environment is protected to the fullest extent possible.

But part of it is an education effort, educating people that the technology is changed, that we can do it better, we will do it better, and we will be responsible for it. This is more of a statement than a question to you, Governor.

We fight the education issue every day in Alaska. We are coming up on the anniversary of the *Exxon-Valdez*. It was a terrible tragedy, an accident, in our State. That single accident that was caused by an individual that should not have been in control of a tanker, has literally set back oil development in my State for years as a consequence of that. So we fight the education issue all the time. Anything that you can do in your State, so far away from Alaska, to educate your consumers about how we can provide and how we can meet our energy needs and still provide for the care of the environment would be most appreciated.

Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Murkowski.

We appreciate very much your being here, Governor. We are going to rush things along here because of the voting schedule. Thank you so much for your leadership. I join Senator Voinovich in saying that we are depending upon you to help us out here in this problem.

Governor CARCIERI. It has been my pleasure. Thank you.

Senator INHOFE. I would ask the second panel to come up as quickly as possible. As you are being seated, I would make the comment that Senator Murkowski makes a good point. I was around there during the *Exxon-Valdez* incident. It should never

have had any impact on exploration or production because that was a transportation problem and not an exploration problem.

Senator MURKOWSKI. That is right.

Senator INHOFE. Senator Jeffords.

Senator JEFFORDS. Mr. Chairman, I would like to ask unanimous consent to place two items in the record today. The first is the Center on Global Climate Change, the summary of MIT's analysis of the Lieberman-McCain Climate Storage Proposal. The second item is the MIT analysis itself.

Senator INHOFE. Without objection, so ordered.

We are going to limit your opening remarks to 3 minutes. It will be particularly difficult for Mr. Drake from Oklahoma, but he will just have to live with it, like everyone else. Your entire statements will be made a part of the record.

We appreciate all of you being here today. It is our intention to get one line of questioning before we have to go for that vote. Then we will come back at 2 o'clock for the third panel. I recognize my dear old friend, who one day 5 years ago gave me the tie I am wearing today.

Mr. Drake.

STATEMENT OF BOB DRAKE, VICE PRESIDENT, OKLAHOMA FARM BUREAU, CHAIRMAN, NATIONAL GRAZING LANDS COUNCIL

Mr. DRAKE. Thank you, Mr. Chairman. I can hardly say hello in 3 minutes.

My name is Bob Drake. I raise Angus cattle in Oklahoma. I am currently vice president of the Oklahoma Farm Bureau and serve as chairman of the National Grazing Lands Conservation Initiative. I am also past president of the National Cattlemen's Beef Association. On behalf of the American Farm Bureau Federation and the Oklahoma Farm Bureau, thank you for allowing us to be here.

First, let me say that today's agriculture is more energy efficient than ever before, producing more economic benefit with less energy. For example, on corn fields across this Nation, farmers are producing 30 percent more crop using 30 percent less energy-related inputs, including fertilizer, than we did a generation ago. Even though energy efficiencies have been realized in agriculture, no one should expect a growing U.S. economy and population to need less energy security in the future.

Natural gas is one of the most important energy feedstocks to production agriculture and associated manufacturing industries. In the last year, the United States has experienced prolonged natural gas price volatility, along with an overall elevation in price.

One of the industries that has been mentioned already by the Senator, is the fertilizer industry. Natural gas is the primary feedstock for this product. According to The Fertilizer Institute, the 2000 planting season saw ammonia fertilizer at a cost of around $100 per ton. Last year, when you could get it, it was $350 a ton. Our domestic fertilizer production, as was already stated by the Senator, capacity has experienced a permanent loss of 25 percent over the past 4 years, and an additional 20 percent is currently shut down due to high natural gas prices.

The current price volatility threatens the existence of what remains of our domestic fertilizer industry, and will exacerbate America's dependence on foreign sources of energy and fertilizer. I sat down last week with a group of producers that reported that the cost of running their natural gas-powered irrigation pumps increased more than 70 percent in 2003.

The current natural gas crisis is a prime example of the need for a clear and consistent energy policy. On one hand, the Federal Government has encourage expanding the use of natural gas as an environmentally friendly alternative for electrical generation, home heating, and manufacturing. At the same time, the Federal Government has increased the regulatory burden on domestic natural gas exploration, drilling and production, and placed moratoriums on many energy-rich areas such as the Outer Continental Shelf, the Gulf of Mexico, and Federal lands.

Similar restrictions have been and continue to be experienced on other traditional energy resources such as oil, coal, and nuclear. In Oklahoma, oil and gas exploration on private lands has been severely hampered by the U.S. Fish and Wildlife Service's habitat rules for the burying beetles. We have a lot of those little fellows.

The Service has delayed drilling, gathering, and other activities of oil and gas producers. If left unaddressed, U.S. energy policy as a whole will certainly result in the loss of even more of our energy independence tomorrow.

The natural gas instability being experienced today should not be allowed to grow into a more serious energy crisis in the future. Nor does America need to become as dependent on foreign sources of natural gas as we now do with crude oil, one terrorist away from no telling what is going to happen.

Energy-rich repositories now off limits must be reconsidered for environmentally safe oil and gas drilling. Advancements in these technologies have resulted in the most environmentally sound and responsible capturing of energy stocks ever conducted.

My time is up. I thank you for inviting me here today. I would ask that my full statement be placed in the record in its entirety.

Senator INHOFE. Without objection, so ordered.

Wow. Thank you, Mr. Drake.

[Applause.]

Senator INHOFE. Ms. West.

STATEMENT OF MARJORIE WEST, WESTERN ORGANIZATION OF RESOURCE COUNCILS

Ms. WEST. Mr. Chairman, and members of the committee, my name is Marjorie West. Thank you for the opportunity to address you regarding the environmental impacts of natural gas production.

My husband and I own a ranch on Spotted Horse Creek in the Power River Basin of Wyoming where we grow dry land wheat and raise cattle. We have lived on this land for 50 years. The ranch was homesteaded by my husband's father, and expanded by the family over the generations.

As a landowner, farmer, and rancher, I want to share with you what is happening on the ground in Wyoming and in other parts

of the West, and to talk about what it will take for the oil and gas industry to develop natural gas responsibly.

Mr. Chairman, I want you to know that the organizations I represent here today and landowners support responsible natural gas development. But our ability to protect the environment, be good stewards of the land, and earn a living, is threatened by irresponsible gas development practices.

For several years now, we have been asking industry, State, and Federal agencies, and Congress, to develop natural gas responsibly. I wish we could say they are listening. The experiences my husband and I have had with coal-bed development are not isolated. There are many landowners who have lost water wells or have had companies come on their land without an agreement, building roads and well pads or discharging water that has killed soil and vegetation. These problems are becoming widespread.

The last 5 years have been the most difficult and destructive years my husband and I have ever experienced. We have been through droughts, grasshopper invasions, and bad wheat and cattle prices, but nothing holds a candle to irresponsible coal-bed methane gas development.

We have suffered the deceit of over a dozen land-men. Each one was able to look us in the eye, shake our hand, and lie like a trooper. We believed them, but now I realize that we were naive. Out of six companies, Devon, Marathon-Penaco, Yates, Williams, CMS, Lance and Redstone, not one has lived up to their word. The so-called regulators have not only allowed the damages to occur, but they continue to permit activities that are in violation of their own regulation.

My husband, Bill, now takes high blood pressure medication, and I take a prescription medication for severe headaches. Because of CBM development, we have lost all three of our artisan wells and our domestic water well due to groundwater dewatering. This is presently, and will continue to be, a long-term problem for us. For now we are using some of the coal-bed methane water that is being pumped out to water our livestock. But that will be gone in a few years. And then what? Where will we get our water, and at what expense?

The company, Marathon-Penaco, has told us outright that they do not intend to leave us with an operating livestock well when they are finished developing the gas. We had to haul our household water for 6 or 7 months. The coal-bed methane company finally drilled us a 1,400-foot domestic well. We could not drink this water without getting diarrhea, and I could not wash clothes without having them turn orange.

Senator INHOFE. Ms. West, we will have to stop you here. Your time has expired, but you will have an opportunity to respond to questions.

Ms. WEST. Thank you, Mr. Chairman. I would ask that my full statement be placed in the record in its entirety.

Senator INHOFE. Without objection, so ordered.

Mr. Bluestein.

STATEMENT OF JOEL BLUESTEIN, PRESIDENT, ENERGY AND ENVIRONMENTAL ANALYSIS, INC.

Mr. BLUESTEIN. Thank you, Mr. Chairman, and members of the committee for the opportunity to testify today. My name is Joel Bluestein. I am the president of Energy and Environmental Analysis, Incorporated, in Arlington, VA, where we have been providing energy and environmental consulting services since 1974.

My very quick testimony today will address two areas. First, our outlook of natural gas prices, and, second, the effects of current prices and trends related to gas prices in industrial and power generation markets.

Our quarterly 20-year forecast of North American natural gas prices currently shows an outlook for gas prices at the Henry Hub of about $5.75 per million BTU for this year, a little higher at about $6 per million BTU for 2005, and then moderating somewhat in the $4.50 to $5 per million BTU range in the medium to longer term.

Delivered gas prices will be higher in areas of local gas delivery restraints, like New England. Extreme weather will also cause temporary price spikes. We do not expect to see future gas prices returning to pre-2000 levels.

This outlook assumes significant development of new LNG import terminals in the United States and eventual gas imports from Arctic Canada and Alaska. It does not assume any changes in policies regarding where gas can be produced in the United States Overall, we believe that the market will function and find ways to bring new gas to the market. If that does not occur, we would expect gas prices to be roughly 50 percent more than this forecast.

Regardless of any changes in policy, there is widespread agreement that it will take a significant amount of time to get new gas supplies in place and in the interim, the most readily available option to stabilize gas prices is increased efficiency and natural gas consumption. This was one of the primary conclusions of the recent National Petroleum Council's study which stated that, "Greater energy efficiency and conservation are vital near-term and long-term mechanisms for moderating natural gas price levels and reducing volatility."

Last year a study by the American Council for an Energy Efficient Economy looked at the effects on gas prices of aggressive application of energy efficiency and renewables. To summarize quickly, they found a range of 1 to 5 percent reduction possible in the next 1 to 5 years.

More importantly, in our analysis of these changes, we found 20 percent reductions in gas price resulting from these changes in demand. This nonlinear result occurs because we are in a very steep part of the gas supply curve where changes in demand can result in large changes in price, either up or down.

I would also like to refer to the February 17th article that Senator Voinovich referenced earlier about the response of the U.S industry in increasing efficiency. That article talks about the efforts of the Owens-Corning Company in which they were able to reduce gas consumption at one of their facilities by 18 percent last year, saving $1 million per year in gas costs which they plan to replicate at 12 other North American facilities.

Finally, there has been concern about the increase in gas-fired generation in the United States. It is important to point out that our share of gas generation today is lower than it was in 1970. Coal still accounts for 70 percent of generation, and is expected to maintain approximately that level. Moreover, many of the new gas plans are in areas of the country that are already heavily gas dependent. These new, more efficient gas plants, are largely replacing older less-efficient gas plants. So the net result is that the construction of these new gas plants is actually reducing gas consumptions in some of the most gas-intensive markets.

Thank you, Mr. Chairman. I would ask that my full statement be placed in the record in its entirety.

Senator INHOFE. Without objection, so ordered.

Thank you, Mr. Bluestein.

Mr. Bailey.

STATEMENT OF DENNIS BAILEY, DIRECTOR OF ENERGY PURCHASING, PPG INDUSTRIES

Mr. BAILEY. Thank you, Mr. Chairman. Good morning. I am Dennis Bailey, director of Energy Purchasing for PPG Industries. PPG began operations more than 120 years ago in Pennsylvania, and has been in Senator Voinovich's home State of Ohio for 105 years.

In all, about 10 percent of PPG's corporate sales is generated from products made in Ohio. The high cost of natural gas is clearly affecting PPG's operations in Ohio and across the Nation. For example, at our Circleville, OH plant, which makes resins needed in paint manufacturing, natural gas costs have increased 70 percent over the past several years.

From 2002 until 2003, natural gas costs at our Cleveland automotive paint plant doubled, and at our Barberton, OH, chemicals plant increased by 50 percent. High natural gas costs at our Crestline, OH, automotive glass plant may result in elimination of more than 10 percent of that site's workforce.

PPG has a well-earned reputation for controlling costs. But in spite of this, if natural gas prices increase, our businesses may have to make reductions elsewhere.

On a global scale, if the price of natural gas increases to $7, and remains there, PPG's chlor-alkali chemicals business would have additional problems competing in global markets. The workforce at our Lake Charles, LA, chemical facility is shrinking by 8 to 10 jobs per month through attrition, and we do not expect to be rehiring. We believe that other Gulf Coast producers are similarly affected.

The U.S. chemicals industry is no longer competitive globally because of the disparity of natural gas prices, as shown in the exhibit that I have entered into the record. The U.S. industry has evolved into a net importer of product and exporter of jobs.

My company strongly believes solutions to the natural gas crisis are within our country's grasp. In the short-term, energy conservation must be a major part of the solution. Education is necessary, as well as increased economic incentives. For example, if all new residential windows sold in the United States were energy-efficient, it would eliminate the need for 20 additional power plants over the next decade and up to 60 power plants over the next 20 years.

Consumers need an incentive to use energy-efficient glass, positioning high-performance glass as the construction material of choice for saving energy. As a start, the Senate needs to pass the Energy Conference Report which provides consumers an incentive to use energy-efficient glass. But consumer conservation alone will not fix the problem.

There is an urgent need for increased access to domestic supplies, including resources in the Outer Continental Shelf, the Rocky Mountain region, and Alaska. We feel that all of these opportunities can and should be accomplished in an environmentally responsible way.

Construction of an adequate delivery infrastructure, including for the import of liquefied natural gas, must be part of the solution. In addition, we need to encourage energy production from all sources, including coal, oil, nuclear, wind energy, and other alternatives. PPG strongly supports wind energy because, among other things, we make fiberglass that goes into the turbines. Unfortunately, the bill is stalled in Congress.

On a final note, PPG does not support government intervention for price controls. Competition and free market forces should continue to drive prices.

Thanks. I would ask that my full statement be placed in the record in its entirety.

Senator INHOFE. Without objection, so ordered.

Thank you very much, Mr. Bailey. You will find agreement up here. We need energy from all of the above sources.

There will be 4-minute series of questioning. Mr. Drake, you heard my opening statement, talking about my experience this morning with Larry Craig from Idaho and the cost of fertilizer. Your testimony showed it was consistent with that. This ultimately increases cost. Who ultimately pays this additional cost?

Mr. DRAKE. I would like to say that the consumer would pay the additional cost, but it does not always happen that way because we cannot pass through all of our costs to the consumer as agricultural producers. But the consumer will pay an additional cost. When I said $350, that is when you can get it in certain places.

Senator INHOFE. That is $350 up from $100?

Mr. DRAKE. From $100 in 2000 to $350 in 2003, when you could get it. In certain areas, it was very difficult, if not impossible to get. Now this is in hydrous ammonia.

Senator INHOFE. Mr. Drake, you have lived on your land for a long time. What kind of stewards are you folks out there in Oklahoma? You heard Ms. West testify that some of the things that are allegedly going on in Wyoming. Tell us about Oklahoma.

Mr. DRAKE. Well in Oklahoma we have always had concerns when someone comes in and drills on our land. We have land that has been drilled on. We work those concerns out, though, before we let them on the place. We have certain agreements. Granted, there are people who will take advantage of those agreements.

However, when they have taken advantage of the agreements that I have made, I have taxed them pretty heavily. There is nothing I would rather have than someone to come in and mess up my land because I am going to make them pay for it. Now, we are the environmental stewards of the world. We have the best environ-

mental stewardship on our land of any other Nation in the world. All we have to do is have the APA and the environmental laws that we can do those things.

We want to do it proper. We will do it proper when we have the opportunity.

Senator INHOFE. All right. I appreciate that very much. That has been my experience also in working with you folks.

Since we are rushed, is there anything in your opening statement you did not get to that you would like to use the remainder of my time in order to get to it?

Mr. DRAKE. The American Farm Bureau and the Oklahoma Farm Bureau strongly believe that the current comprehensive energy legislation will lead to a diversified energy portfolio with increased emphasis on renewable sources while at the same time increase our domestic energy supply from traditional sources, such as natural gas, oil, and coal in a safe and affordable manner. We urge that Congress complete this important legislation this session.

Senator INHOFE. I am certainly hoping that that will be the case.

Senator Jeffords.

Senator JEFFORDS. Mr. Bluestein, reflecting on the analysis that you have done, and their reasons, other than environmental regulations, would a company prefer to build a natural gas-fired power plant rather than a coal-fired plant?

Mr. BLUESTEIN. Sure. Particularly over the last few years, what we have seen is a wave of new gas-fired power plant production. The capital cost of the gas-fired power plant is one-third to one-half of a coal plant. The footprint is smaller and requires less land, uses less water, which obviously is a very important issue in many places. It has a lower visual profile. Of course, the plants that have been built in the recent years are the cleanest and most efficient power plants that have ever been built anywhere in the world, which I think most people would see as a good thing.

Finally, it just takes less time to build a gas-fired power plant because of the way that they are built and so on. Particularly in the last few years, that has been a significant advantage to be able to get the plant on the ground and running quickly. So there are a whole variety of reasons that were behind the wave of gas-fired power plant construction in the last 5 or so years.

Senator JEFFORDS. Ms. West, do you support current proposals to repeal the Clean Water Act and the Safe Drinking Water Act requirements for coal-bed methane production?

Ms. WEST. I think the Clean Water Act is fine. However, I think it needs to address the SAR of the water. The water that has been pumped down, let down the troughs, up above Spotted Horse Creek, and has flowed onto our hay meadows and ruined 80 percent of our meadows. This is because it causes the soil to congeal. It changes the molecular structure of the soil. Last year we did not raise any hay crop on this 80 acres, but we had a wonderful crop of fireweed, which cattle will not eat.

I hear people testifying how responsible the industry is. That has not been the case in my experience. They have come on to us with no surface agreement. They have discharged water on us when our lawyer had already told them that this would be considered trespassing. These are not little fly-by-night companies. These are com-

panies like Devon, Marathon-Penaco, and Yates. The thing is we finally got a surface agreement with Devon who discharged the water that flowed onto our hay meadows. They were supposed to have rehabilitated our land 2 years ago. They still have done nothing.

So what good is a surface agreement? The only way we can get this agreement enforced is to take them to court. My husband told them, "I guess we will have to take you to court." They said, "Go right ahead. We have all the money and time in the world."

Senator JEFFORDS. Thank you. That was very helpful.

Thank you, Mr. Chairman.

Senator INHOFE. Your time has expired.

Senator Chafee.

Senator CHAFEE. Thank you once again, Mr. Chairman.

Mr. Bluestein, in your prepared testimony you said that you predict gas prices will stabilize at $4.50 to $5.00. How do you come to that analysis and prediction?

Mr. BLUESTEIN. Well, we have quite a large staff that does gas price forecasting, and a variety of supply modeling and analysis, as well as demand and end-use modeling. It is a pretty big effort. It takes into account many different factors, again all the way from the supply and certain assumptions on economic growth, LNG development, and so on. It is a simple answer.

Senator CHAFEE. With all the dire predictions of increased demand that you have predicted, to know that the opposite might be true that the price will stabilize, how so?

Mr. BLUESTEIN. Well, there are predictions on both sides. We do see a growing demand in certain sectors. Certainly power generation is going to be a growing sector.

The industrial sector, we do not see much growth in gas demand, not that there will not be economic growth, but it turns out that many of the portions of industry that have been responsible for most of our economic growth in recent years are not the most gas-intensive ones. Clearly, there are some that are gas-intensive, but the real drivers for economic growth in recent years have not been very gas-intensive. So we see limited growth on the industrial side.

Again, this forecast is predicated on a certain amount of new supply which we see much coming from LNG, as well as eventually some from Canada and Alaska. I think there is an amazing amount of agreement here that we need a multifaceted approach, including greater efficiency, a diversity of energy sources, and some sources of new supply.

When we take all of that into the mix, that is where we come out.

Senator CHAFEE. I see. In your analysis, do you have any factoring in of increased coal use, increased technology, and how we deal with the emissions issues on coal?

Mr. BLUESTEIN. We do see coal consumption in power generation continuing to increase, as has been historically. That is without any major assumptions on new clean coal technology. Again, I believe there is an amazing amount of agreement here that we can do much with technology. I agree that coal is a very important resource. It is a key part of our power generation today. I would ex-

pect that to increase, and to the extent that we can improve the technology, I think that will go even better.

Senator CHAFEE. You are predicting increased coal use even without any necessary new technology coming on?

Mr. BLUESTEIN. That is right. I think almost all the forecasts that you look at, see coal continuing to be a growing part of the power generation sector.

Senator CHAFEE. Does that take into consideration any of the Clean Air bills that have been talked about, whether it is the Jeffords bill or the Carper bill?

Mr. BLUESTEIN. It does not take into account any legislation that has not passed, but the existing legislation; that is right.

Senator CHAFEE. I have a few seconds left. If either of those two bills—and let us say for the sake of argument, the Carper bill—would that change your predictions on coal use?

Mr. BLUESTEIN. We have not analyzed that. I can look at some other comparisons that have been done. I think an interesting point to be made is that one reason that companies are reluctant to build coal-fired power plants today is the regulatory uncertainty, and in the discussions we have had with large established coal-based utilities, they have said that that is a big impediment to invest in new coal plants, and in particular, the lack of certainty about CO_{-2}. So in some realm, resolving that issue would allow more coal construction to go forward.

Senator CHAFEE. Thank you, Mr. Chairman.

Senator INHOFE. The time of the gentleman has expired.

Senator Thomas.

Senator THOMAS. Thank you, Mr. Chairman.

Welcome, Ms. West. I have not had a chance to talk with you. I did not know you were coming until very recently. We have had problems, and continue to have problems, of course, in the coal bed methane over time. We have been working on it, and we will continue to do that. Much of it has to do with the split estate where the Government owns the minerals and the private owner owns the surface. Those are the ones that are troublesome. I presume that you do not own the minerals?

Ms. WEST. It is correct that we do not own all of the minerals underlying our land but we do own a percentage. Whether or not you own the minerals you still experience problems as a landowner either directly affected by development on your land or by upstream development when the impacts come onto your land.

Senator THOMAS. We have monitoring that is required. The Wyoming Department of Environmental Quality monitors. BLM monitors. The State engineer monitor. The Wyoming Oil and Gas Conservation Commission monitors. Have they been helpful to you? Have you called upon them?

Ms. WEST. We have called upon them. No, they have not been helpful.

Senator THOMAS. Do you have a surface agreement?

Ms. WEST. We have a surface agreement with Devon.

Senator THOMAS. And Yates?

Ms. WEST. We have a surface agreement with Yates. Marathon-Penaco came onto some of our land with no surface agreement.

Senator THOMAS. Do you have a lawyer?

Ms. WEST. Yes, we do.

Senator THOMAS. Do you have hydrologists?

Ms. WEST. And a hydrologist. If I were to sit down and add it up, all our lawyer and hydrologist costs, I would have a heart attack.

Senator THOMAS. One of your neighbors really had an agreement and has settled for $800,000. So perhaps you have an opportunity to do something.

Ms. WEST. Well, you know, we may be forced to do that.

Senator THOMAS. What I am saying is that there is an arrangement. We are working at it. I sympathize with your issue because there are a number of people in that category. But we have the Farm Bureau and the Stock Growers on the one hand working with the producers on the other hand, to come up with an arrangement to work with split estates so the owner has a certain period of time to negotiate and to work out an agreement. Of course, the minerals are a property so the owner of the minerals has a right there.

Ms. WEST. Right. He does have a right.

Senator THOMAS. But you have a right.

Ms. WEST. However, in Wyoming the landowner has the least amount of rights of any State in the Nation.

Senator THOMAS. Well, we want to work with you. I appreciate your being here to do that. I think it is fair to say that not everybody shares your view on this.

Ms. WEST. Oh, absolutely not. A lot of people are getting a lot of money off this industry.

Senator THOMAS. We do have now a process, which we should have, for landowners to have an opportunity to deal with this before it happens and make it work out. We appreciate your being here. It is a problem. But I have to tell you that it is much better than it was when we first started. We are aware of some of the problems that are there and will continue to work on that. Surface owners should be entitled to not be damaged.

Ms. WEST. Exactly.

Senator THOMAS. Thank you.

Thank you, Mr. Chairman.

Senator INHOFE. Senator Voinovich.

Senator VOINOVICH. Mr. Bailey, first of all, I really appreciate the presence of PPG in our State. When I was Governor we worked with you. When I was Mayor we worked with you on your facility over on the west side.

In my opening statement I said that Charles Halliday, who is chairman and chief executive officer of DuPont told investors in December that "High energy costs will prompt the company to shift its center of gravity overseas." The question I have for you is: Have these natural gas prices, as you are sitting down with your crystal ball and looking down the road, caused you to reevaluate your facilities and what you have to do in order to stay in business and compete?

Mr. BAILEY. In the United States or globally?

Senator VOINOVICH. I know you are global, but the fact is that you have the United States. You are looking down the road and you are saying, "Here are our costs." You have to figure out: "Can we compete in the environment that we are in?"

Mr. BAILEY. Our most energy-intensive businesses are our chemical business where we use natural gas for generating electricity, largely. Then we also have our glass and fiberglass businesses where we are using it to heat the furnaces. Those businesses are largely based in the United States with some export. So we really do not have within the company, for those businesses, the ability without large capital investments elsewhere to produce elsewhere in the world. We are based here. This is where the capital is. So, we do not have as much of an opportunity, as some other companies, to move offshore. That is not really a big alternative.

Senator VOINOVICH. The option is not there to move?

Mr. BAILEY. That is correct.

Senator VOINOVICH. Have you calculated, if we do not deal with this problem, what effect it will have on your competitive position in the global market?

Mr. BAILEY. I am not aware of whether or not we have gone through that process within the company.

Senator VOINOVICH. Would you say that the energy costs that your company is experiencing right now are more significant than say, labor costs?

Mr. BAILEY. Yes, for chemicals, they are. More volatile and they are higher.

Senator VOINOVICH. Thank you.

Mr. Bluestein, you were talking about some predictions. Have you analyzed the effect different environmental policies will have on your assumptions? You have made some assumptions. For example, one of the things that I think you mentioned in your testimony that you anticipate that we are going to have more liquefied gas operations. You make some assumptions about the fact that it is going to be available.

Have you taken into consideration the problems that we might have in citing facilities to take in that liquefied gas? If that does not happen, what impact will that have on costs?

Mr. BLUESTEIN. Yes, as I said in my testimony, regardless of whether it is LNG or some other constraint on the supply assumptions that we have looked at, we see something like a 50 percent higher gas price in our forecast. Obviously it depends on which specific one, but in that range is the kind of sensitivity that we have looked at.

Senator VOINOVICH. That is 50 percent, anticipating something is going to happen?

Mr. BLUESTEIN. Right; something negative as far as supply.

Senator VOINOVICH. Have you done any analysis on what impact that would have on the economy?

Mr. BLUESTEIN. No.

Senator VOINOVICH. Have you studied any of the bills that we have been dealing with here in terms of what we call the emission bills or the pollution bills in terms of utilities? Have you looked at those?

Mr. BLUESTEIN. Yes.

Senator VOINOVICH. Do you think there is any area of compromise so we can move on with some certainty? Right now, I will tell you, our utilities do not know where they are going. We have a controversy over new source review. We have more than 126 peti-

tions that are being filed. We are having the new ambient air standards for particulate and ozone coming on board. States are being asked in the next couple of years to come up with new State SIPS. Next week the EPA is going to announce all areas that are not meeting the current ambient air standards.

There is so much uncertainty out there. It would be very nice if we could get some input from you on these bills that we have pending and perhaps see if we can work something out.

Senator INHOFE. Senator Voinovich, I apologize. The vote is in progress now, but we do have time for Senator Allard's questions for 4 minutes.

Senator ALLARD. Thank you, Mr. Chairman. Very briefly. I am sorry I was late. I was chairing another committee.

I do have a full statement I would like to make a part of the record.

Senator INHOFE. Without objection, so ordered.

Senator ALLARD. Mr. Drake, you mentioned earlier how much the price of fertilizers increased. How long do you think that you and other producers like you can sustain that cost? I realize there are other factors like costs of grains. But maybe perhaps you can give us some idea.

Mr. DRAKE. At the present time, we cannot sustain this kind of cost. We will use a lot less. We will try to make do with what we can use. We will put the figure that we are normally spending on fertilizer and that is what we will go up to. We cannot continue to pay these kinds of costs and stay in business. We cannot pass it on through. We have no guarantees for pass-through.

The time is not definite at all. I can tell you that this season will be very difficult. We are coming into the planting season.

Senator ALLARD. I am from Colorado and as you can see from this chart we are right in the middle of the 125-trillion cubic feet of natural gas. It is one of the big areas that we rely on here in the country to meet our natural gas needs. I have always been an advocate that we need to have multiple sources of energy. Right now we have come to rely very heavily on natural gas.

One of the problems that we have in my State of Colorado is that we have 69-trillion cubic feet. Twenty-nine percent of that in the Rocky Mountain area is tied up. You cannot have access to it because of various designations that have been made on the public lands that are on the surface of that. Some of these public lands have sage brush. This whole western part of Colorado where we see so much of the natural gas. This map perhaps does not reflect that, but particularly in the western part is where we have sage brush.

Then the other part of it is that we have a lot of rules and regulations. That has been of some interest because of environmental concerns. But we are trying to reach a balance in my State between renewable energy and natural gas and coal, and how is it that we meet these demands. We also have surface owner concerns in our State. Mr. Drake, I caught part of your concerns here. Basically it is a State issue. I hope we can keep that way and not become a Federal issue. This is a perplexing problem for all of us.

Do any of you have a suggestion on how we can work through this? It seems to me ridiculous that we tie up 125-trillion cubic feet when we have every area being so adversely impacted. What is the

answer? Is it nuclear energy? Is it maybe releasing some more of these public lands for natural gas? Do any of you have a suggestion on how we solve our problem? Look at what happened to the cost of gas in the last 2 years. It is just phenomenal. I do not see how we can continue to afford it, frankly. Does anyone want to comment?

Ms. WEST. Senator, I would like to respond. I think we need to focus on renewable energy. This natural gas is going to be gone. Once it is used up, then what do we do? We are going to be back in the same old boat again. We have to focus on renewable energy.

Senator ALLARD. I see my time has expired.

Senator INHOFE. It has. Before you came, we announced that we are going to reconvene at 2 o'clock for the third panel. We would invite any of you to come back for that. I appreciate very much your being here.

We only have 1 minute left on a rollcall vote. We are going to have to run on down there and do that. Thank you very much for coming.

We are in recess.

[Whereupon, at 11:50 a.m., the committee was recessed, to reconvene at 2 p.m.]

Senator INHOFE. We will call our meeting back to order. Again, I apologize to the three of you, as I have done individually, for the inconvenience that we have caused you by having to come back. We deal with uncertainty in this place on a daily basis, but not too well. We had votes. Again, I appreciate your coming back.

I have been told that Senator Jeffords is en route. His staff has said it is all right to go ahead. We will get a handle. Let us start with your opening statements. Just as a reward for you coming back, we are going to give you 6 minutes? How is that?

Mr. Caskey.

STATEMENT OF MIKE CASKEY, EXECUTIVE VICE PRESIDENT AND CHIEF OPERATING OFFICER, FIDELITY EXPLORATION AND PRODUCTION COMPANY

Mr. CASKEY. Thank you, Mr. Chairman, and members of the committee. My name is Mike Caskey. I am executive vice president and chief operating officer of Fidelity Exploration and Production Company, headquartered in Denver, CO.

Fidelity is a subsidiary of MDU Resources Group, which is a Bismark company. We are an independent oil and natural gas company, focused on natural gas production, engaged in acquisition, exploration, and production activities, primarily in the Rocky Mountain region and in the Gulf of Mexico.

Fidelity produces coal bed natural gas in Wyoming, and we are currently the only producer of this energy resource in Montana. I am here to discuss the obstacles we have faced in our efforts to produce this clean-burning natural gas on private and public lands. Today in the Rocky Mountains there is a well-funded coordinated effort underway to obstruct and delay the development of domestic oil and natural gas.

This effort, orchestrated by aggressive special interest groups, is employing whatever means necessary, and the consequences of their activity are significant. The success of these special interest

groups in delaying natural gas production has contributed to the higher costs that homeowners and employers have been experiencing for the past 2 years. These costs have had a negative impact on our economy and have led to the loss of jobs in our industrial heartland.

Unfortunately the future does not look like it will improve. The Department of Energy estimates that by 2025 we will need 40 percent more natural gas to meet our Nation's demand. Some of this demand is related to our need to improve the air we breathe.

Senator INHOFE. Give me that date again. By when will we need 40 percent?

Mr. CASKEY. 2025.

Senator INHOFE. All right. Go ahead.

Mr. CASKEY. Today 98 percent of our domestic consumption of clean natural gas comes from North America. With known domestic natural reserves either in decline or off-limits, we must look to other areas to meet our needs. The Rocky Mountain region possesses an estimated 137-trillion cubic feet of natural gas which is recoverable. This represents enough natural gas to provide approximately 6 years of total current domestic energy needs without any other natural gas supply. That means supplying every American home, running every factory, supplying every plant that uses natural gas as a feed stock, producing all electrical power, and heating every American school with natural gas from only the Rocky Mountain region for 6 years.

Unfortunately, the abuse of our legal system and a novel use of the National Environmental Policy Act process, have led to delays and the loss of production in this area. A report done by Mr. Bluestein's company, EEA, found that if the BLM can just increase its current drilling permit approval rate from 1,000 permits per year to 3,000 permits per year, that action alone would have the effect of saving $88 billion over the next 10 years for the consumers of natural gas. That is a savings of roughly 53 cents per thousand cubic feet of natural gas consumed. That would come directly off the price of gas for the consumer.

Here are some examples that highlight the type of activism that has caused these delays. In 2000, after nearly 3 years of wrangling over an environmental assessment on coal bed natural gas production in Montana, the Government recognized the need for a full environmental impact statement. In addition to the nearly 3 years already consumed by the environmental analysis process, the new EIS was expected to take an additional 18 to 20 months to complete. Instead of 18 to 20 months, the EIS took 29 months to complete. In Wyoming a similar study was initiated at about the same time. This one took a total of 35 months to complete. Literally hours after the records of decision on the EIS documents in Montana and Wyoming were released, the special interest community filed no fewer than four lawsuits.

My company, is the only current coal-bed natural gas producer in Montana, has been sued repeatedly or has to join regulatory agencies in defense of lawsuits against the environmental analysis process. In total, we currently face 12 separate lawsuits challenging our ability to produce this resource.

Defending our company against these lawsuits has certainly cost us significant time and money. But this unprecedented amount of lawsuits has also cost the Federal Government untold dollars in addition to diverting human resources from more important tasks.

The Bureau of Land Management offices in Wyoming and Montana are charged with protecting habitats for threatened and endangered species, reducing the risk of forest fires, and controlling noxious weeds, along with many other responsibilities. As you know, energy regulation is only a small part of their work load. Yet if they are required to expend huge financial and human resources in response to each and every anti-development lawsuit, as frivolous as they may seem.

One interesting point aside, the Northern Plains Resource Council recently purchased a new headquarters building in Billings, MT. In a local news story they complained about the high cost of natural gas to heat the building as well as the expense of alternate, non-fossil fuel-based heating technology. I find it somewhat ironic that they failed to recognize that their actions have a direct and constant impact relationship on these costs that they are complaining about.

Members of the committee, my company is held accountable by a set of State and Federal regulations designed to allow energy production to proceed while protecting against environmental degradation. The regulations have been effective, and our Nation is a shining example to the rest of the world on the success of environmental regulation. We have the cleanest air of any Nation on earth.

However, the same systems that protect our ability to produce energy, while protecting the environment, are being misused by aggressive special interest groups. The overriding process of this protection is defined in the National Environmental Policy Act. Take NEPA back to its roots of providing this protection while allowing energy development to proceed. Do not let special interest groups misuse the process at the expense of the American public and our energy independence.

Members of the committee, thank you for the opportunity to present this testimony. If there are any questions, I will be happy to share any answers I may have. I would ask that my full statement be placed in the record in its entirety.

Senator INHOFE. Without objection, so ordered.

Thank you, Mr. Caskey.

Mr. Bloch.

STATEMENT OF STEPHEN BLOCH, STAFF ATTORNEY, SOUTHERN UTAH WILDERNESS ALLIANCE

Mr. BLOCH. Thank you for your time this afternoon, Senators. I am Stephen Bloch, a staff attorney with the Southern Utah Wilderness Alliance, SUWA, in Salt Lake City, UT. SUWA is a founding member of the Utah Wilderness Coalition, a group of 240 national, regional, and local conservation organizations that advocate for the passage of America's Redrock Wilderness Act, S. 639, and H.R. 1796. That calls for the designation of approximately 9 million acres of Utah's stunning canyon lands as wilderness.

SUWA's mission focuses solely on the preservation of the public lands in Utah; therefore, my testimony is only addressing natural gas issues on Utah's public lands and, in particular, the lands that are managed by the BLM.

There are two points I would like to leave you with. First of all, the development of Utah's stunning canyon lands is not going to solve our Nation's crisis in natural gas. Second, SUWA and other conservation organizations advocate a balanced approach of the protection of our wild places as well as allowing natural gas extraction activities to proceed.

First and foremost, an analysis of information from the Department of Energy, from USGS, and from the State of Utah shows, as you can see here in Figure No. 3 on the easel, that in Utah there are seven hot spots in our State. That is where 95 percent of the production of natural gas occurs. Importantly, none of those lands are proposed for wilderness designation in America's Redrock Wilderness Act.

The lands highlighted in blue are the lands that are producing natural gas, and the lands that are crosshatched are the lands that are proposed for wilderness. An analysis from USGS shows that the technically recoverable undiscovered resources in the lands that are crosshatched is less than 4 weeks of natural gas at our current national consumption levels. Thus, it seems clear that by sacrificing America's Redrock Wilderness, there is not going to be any alleviation of the natural gas crisis.

Second, far from advocating a broad no-lease or no-drill policy, SUWA and other members of the conservation community are extremely selective about filing administrative or legal challenges to natural gas exploration or development projects in Utah and throughout the Intermountain West.

For example, in Utah from January 2000 through March 2004 there were more than 3,200 drill permits approved. Conservationists challenged five of those. That is less than one-half of 1 percent. Likewise, in Utah there were 10 seismic exploration projects proposed from that same time period, from 2000 to 2004. Conservationists challenged four of those, and those were only ones that crossed into lands that are proposed for wilderness. Thus, it is not the legal challenges that are an impediment to natural gas production and development. There is, however, little question that natural gas exploration and development leaves significant and lasting scars on our landscape including the fragmentation of wildlife habitat, long-term damage to fragile soils, the loss of wilderness values, and damage to cultural resources.

You can see the type of damage I am talking about here. These are Exhibit No. 3 and Exhibit No. 4 from my written testimony Exhibit No. 3 is a sludge pit from the Long Canyon Well outside Moab, UT. Exhibit No. 4 on the bottom is a seismic truck that is operating outside of Arches National Park.

Stunning places like Utah's Fisher Towers and the cultural resources such as those found in Utah's Nine Mile Canyon are at risk now from natural gas exploration and development. These are the resources that have now been placed needlessly in the cross-hairs of development and production. It is clear that these are not the places to find natural gas.

I appreciate this opportunity today. I look forward to answering any of your questions. I would ask that my full statement be placed in the record in its entirety.

Thank you, Mr. Chairman.

Senator INHOFE. Without objection, so ordered.

Thank you, Mr. Bloch.

Mr. Handley.

STATEMENT OF GEORGE HANDLEY, ECLIPSE EXPLORATION CORPORATION

Mr. HANDLEY. Thank you, Mr. Chairman. My name is George Handley. I am the president and only employee of Eclipse Exploration in Denver, CO. I appreciate the opportunity to speak to you today. I am glad to see the committee's interest in natural gas supply in America and the environmental policies affecting its development.

Policies that either limit or encourage energy development of natural gas resources have very real consequences. Policies that promote the use of a particular energy source, yet fail to provide for the necessary and orderly development of that same resource are predisposed to failure.

I have been the victim of Federal land management policies that allow groups that are not party to any contract with the BLM or State to effectively stop a project through protests, appeals, and litigation. I have been victimized by the uncertainty that is created by abuses to public involvement statutes. Even when I follow the laws and regulations and have the approval of land managers, I found that I was still subject to the reach of obstructionist groups that sought to halt my natural gas exploration project and cripple my company.

Legal challenges severely limit oil and natural gas development on Federal lands. At every stage of development, obstructionist groups challenge agency decisions and seek to stop development. For example, in the State of Utah, 57 percent of all lease parcels offered by the BLM between 2001 and 2003, were protested by groups opposed to development. I experienced one of these legal challenges first hand in Grand County, UT, on a seismic project over a Federal mineral lease. This lease is located in the Thompson mining district, a former uranium mining area characterized by dry, sparsely vegetated land. It is not within view of Arches National Park. It is not wilderness. These leases were leased during 1997 during the Clinton administration with the expressed intent and responsibility to explore for oil and natural gas.

Seismic technology has greatly increased our ability to map the subsurface geology, thereby allowing exploratory drilling in the most efficient manner. I have 30 years experience working on seismic projects and developing petroleum exploration plays around the world. I have a masters degree in geophysics from the Colorado School of Mines.

In order to accurately map the subsurface geology of this prospect, I designed the specific seismic program. Any deviation from this program would have resulted in useless data. WesternGeco was hired to conduct the seismic activities on my lease. One of the employees of WesternGeco, Stuart Wright, is one of the foremost

experts on seismic exploration and helped me design this program to ensure an accurate map of the subsurface.

An environmental analysis was prepared following the guidelines of the BLM. The BLM informed WesternGeco and myself what was needed to comply with the law. We did what the Government asked. After the permit was issued, WesternGeco began operations. More than halfway through the project, a judge in Washington, DC issued a ruling that stopped the project based on a challenge by the Southern Utah Wilderness Alliance.

My company is small and cannot afford to fight well-funded nonprofit groups in courts. The State of Utah and WesternGeco helped, but in the end, the SUWA won the court battle and has all but stopped my project.

Abuse of the process delays the delivery of natural gas to consumers and destroys the livelihood of businessmen like myself. The more legal challenges, the more delays. The more delays, the more consumers are affected. The more consumers are affected, the more the economy suffers.

I am not here to debate the factual or legal merits of my case. I use this example to lay blame on a process that allows nonprofit groups to continually halt mineral development on public lands. The SUWA may show you pictures and tell you stories of horrific damage done by the incomplete seismic project. It is misleading. There is no long-term damage to the area. It would be hard for anyone to see the path of this project today.

The State of Utah, the BLM, and the Grand County Council fully support my project. Grand County is anxious for a wildcat well to be drilled here, and for the seismic program to be completed, as it will mean a lot to their economy. The Intermountain West is blessed with abundant resources of natural gas, a substantial portion of which is owned by the Federal Government. These resources cannot be developed when small businesses like mine face insurmountable litigation.

Abuse of the legal process puts Americans out of work and sends energy development outside our borders. It costs the Government, in terms of litigation costs and the potential to pay the attorneys fees of the groups who bring the suit. I did what I was told by the Government, but still lost and I have no recourse. The American public bears the burden of this litigation against the Government either way.

Thank you for allowing me to testify. I would ask that my full statement be placed in the record in its entirety.

Senator INHOFE. Without objection, so ordered.

Thank you, Mr. Handley.

We will go ahead and have 5-minute questions.

Mr. Handley, we always hear from some of these groups about the giants who have been stopped. Are you a giant?

Mr. HANDLEY. You are talking with the whole company.

Senator INHOFE. Are you multinational?

Mr. HANDLEY. No, no. Senator, I do a lot of consulting for different companies. The last time I did anything for them was a few years ago for Quintana in Argentina, but I was just running a seismic crew. I do not do exploration internationally anymore.

Senator INHOFE. Could you describe just very, very briefly the damage that you sustained as a result of the challenges?

Mr. HANDLEY. Well, I have provided some displays. I laid out the seismic program with two specific purposes. We knew that there was a basement fault feature that sets up an exploration play that looks a lot like Lisbon Field. I have enough information to define that fault. I should have had more, but I was shut down. We also knew that there is a structural closure over this basement feature. I did not get enough information to define the structural closure. So I have been seriously hurt in terms of delay costs, in terms of anticipated costs for going out there and completing the seismic program. It has hurt my ability to market this prospect because all the acres have not been defined.

Senator INHOFE. Mr. Bloch, your website refers to our state of affairs as "the fabricated energy crisis." What do you mean by "fabricated energy crisis." Do you think it is not real.

Mr. BLOCH. No, Senator; I think SUWA and the conservation community is as concerned as everyone you have heard from already at this hearing. I think our concern is the use of the so-called "crisis" to lift some of the important environmental protections afforded by statutes, such as NEPA, to lift the protections of those statutes and to allow for an expedited process, starting from the leasing stage all the way to production. That is going to cause significant environmental damage as a result. So I think that is our concern.

Senator INHOFE. Do you believe there is an energy crisis?

Mr. BLOCH. I think I would agree with the other statements made today that there seems to be shortages of natural gas in some of the places where it is needed most.

Senator INHOFE. So there is an energy crisis? Yes or no?

Mr. BLOCH. It certainly appears that way from what we have heard.

Senator INHOFE. Why would you characterize it as a "fabricated energy crisis" then?

Mr. BLOCH. Well, as I said, Senator, our concern is how the shortages are being used by certain folks to lift, as I said before, some of the restrictions.

Senator INHOFE. Mr. Caskey, is there an energy crisis?

Mr. CASKEY. Yes, sir.

Senator INHOFE. Do you think it is fabricated?

Mr. CASKEY. No, sir.

Senator INHOFE. Of all of the obstacles that you have that you have described in your testimony, special interest groups, the delays in any number of projects, the relative uncertainty related to all the delays. What does this do to your production capability? Are you impaired? I am thinking about the manufacturer worker in Ohio and maybe the little lady in Rhode Island trying to heat her home. What do these delays mean in terms of costs? Have you figured any way to quantify that?

Mr. CASKEY. I have not quantified it on a large-scale basis, but I can give you an example of what one instance can cost and what that one instance would do for the lady trying to heat her home in Rhode Island, for instance.

We have been issued 87 permits to drill wells by the BLM in Montana. We had drilled those wells. One of the special interest groups decided to protest the drilling of those wells and the appropriateness of the BML of giving us those permits. They asked for a State director review of those permits. The State director decided that he would put a moratorium on until he could get through the review. Before he could even make a statement on whether or not the review, or what to do with the permits, BLM was sued by that group. He later came out and said, "We need to send it back. Remand it back to the field office." The new ratification, basically, of those permits came out and we are back drilling.

The problem with that is that it took 3 months for that process to happen. Those were 87 wells that were prevented from producing. The money was already spent on them. They were drilled to the zone and we were unable to produce. A quick estimate would show that that probably cost in the realm of anywhere from $3 million to $8 million for that 90 days for those 87 wells, which if you want to translate it down to royalty for the Nation, that is roughly $400,000 in Federal royalties alone, half of which goes back to the poorest counties in one of the poorest States in the Nation.

So, it is a dramatic impact, not just for the company, but for the governments and the people who live and thrive in the areas that we are trying to produce the resource from.

Senator INHOFE. Thank you.

Senator Jeffords.

Senator JEFFORDS. Mr. Bloch, there has been conflicting testimony on the number of leases in Utah challenged by the environmental community. Can you provide additional detail for the committee on the number of challenges that took the form of litigation? In how many cases were violations of Federal environmental law cited?

Mr. BLOCH. Senator, there have been two lawsuits. The first was filed in the winter of 2001 and that was later dismissed by SUWA. The second is a lawsuit that we filed in November 2003. It is for the issuance of the sale of 21 leases in the State of Utah. There are a series of NEPA violations that SUWA has alleged, as well as other statutes. These are sales of leases on lands that the BLM itself acknowledges are wilderness-quality lands.

Senator JEFFORDS. Also, Mr. Bloch, to what extent has changing the Administration's guidance on NEPA fueled litigation in an effort to clarify the requirements regarding the content of environmental impact assessments?

Mr. BLOCH. I think there has been a substantial change in this Administration. It seems to be flaunting the very purpose of the act to think first and then act. Instead of seeing a through assessment or an analysis of the environmental impacts of leasing through production, instead there is a hurried process that simply results in a checklist instead of a through analysis. That is the crux of some of our concerns; that in the hurry to sell these leases, for example, that the wilderness quality lands of Utah are being leased away and scarified, as I said earlier, with very little result in natural gas production.

Senator JEFFORDS. Mr. Caskey, in one of the attachments to your written testimony, you provide a chart detailing challenges to envi-

ronmental documents made by a variety of environmental conservation and landowner groups. Not all of these challenges appear to be actual NEPA legislation.

Can you provide an updated version of this chart for the committee that describes the nature of these challenges and under which Federal law these leases were challenged?

Mr. CASKEY. Yes, sir; I will do that.

Senator JEFFORDS. I would appreciate that.

Senator INHOFE. Without objection, so ordered.

Senator JEFFORDS. Mr. Caskey, in your written testimony you state that it is this NEPA process of evaluating land use in development plans, and not the law itself, which has become the principal tool used by obstructionists to delay or halt natural gas development. As the law requires the development of environmental impact statements, can you explain in more detail the distinction that you are drawing between the law and the EIS process? Are you saying that a change in NEPA law is not needed to remedy the problems you have experienced, and just a change in the implementation of the law?

Mr. CASKEY. I think the law itself is reasonably sound. I think there are always definitional issues when you start applying the law that can be streamlined. I do feel very strongly that the process, the time guidelines within the NEPA process, are the crux of the issue for the abuse of the law, as well as the process.

The law allows for designated timing of input from the public from special interests groups, and from all citizens of the United States. That timing is designated in the law. The abuse comes where special interest groups sue to slow down that process which, as I testified to earlier, delays the issuance of the necessary documentation which delays realization of the investment made. That is the primary issue here.

Senator JEFFORDS. Thank you.

Mr. Handley, in your testimony you say that 57 percent of all lease parcels offered by the Bureau of Land Management between 2001 and 2003 in the State of Utah were protested by groups opposed to development. What was the nature of these protests? Did they all involve allegations that Federal environmental law had been violated?

Mr. HANDLEY. Senator, I do not know. It was just a statistic that was given to me. I do not know what the nature of what the protests were.

Senator JEFFORDS. Were these protests all in the form of lawsuits?

Mr. HANDLEY. I do not know that either.

Senator JEFFORDS. Thank you.

Thank you, Mr. Chairman. That is all I have.

Senator INHOFE. Senator Voinovich.

Senator VOINOVICH. I had the same concern. On your website you mentioned "fabricated energy crisis." Were you here this morning for the testimony?

Mr. BLOCH. Yes, I was, Senator.

Senator VOINOVICH. After hearing that testimony, would you say that there really is an energy crisis?

Mr. BLOCH. As I stated earlier, I would agree that all the speakers indicated that there is a crisis.

Senator VOINOVICH. The question I have is: How are we going to deal with the crisis?

Mr. BLOCH. I am not sure about the answer to that, Senator, but I do know the answer is not to sell new leases and allow activities, such as wildcat wells in areas that are not predicted by the Federal Government and its figures and its agencies to produce any meaningful amount of natural gas, and that there needs to be a balance from production and preservation of lands.

Senator VOINOVICH. Do you have any feelings about nuclear energy or coal-fired power plants? What does your company feel about nuclear power?

Mr. BLOCH. We do not have, to my knowledge, an official position on either of those, Senator.

Senator VOINOVICH. How about burning coal?

Mr. BLOCH. Well, I think there are several coal-burning plants in Utah. I think our primary concern is the expansion of the plants. If you have spent any time in Salt Lake City, or in the Salt Lake Valley, I think it is among the worst 10 airsheds in the country. So our concern is the effect on the air.

Senator VOINOVICH. There seems to be a real problem, then, does it not, with dealing with this energy crisis that we have, the natural gas crisis, but also an energy crisis in the country?

Mr. BLOCH. Senator, on the first map that I showed before, speaking only about the State of Utah, I do not think that there is this type of a crisis. There are identified locations for coal-bed methane for natural gas. As I indicated, 95 percent of the production now and the other proven and inferred reserves are in these seven hot spots. There is not a conflict between the extraction in those areas and the preservation of some of our wild lands.

Instead, though, the focus we are seeing from this Administration is to target those lands that are not predicted to have any type of meaningful natural gas for leasing and for extraction.

Senator VOINOVICH. I would like to have Mr. Caskey and Mr. Handley's response to that. Do you feel that the Administration and their policy of opening up some of these areas is irresponsible and making available areas that ought not to be drilled?

Mr. HANDLEY. The area where I am doing my exploration is not a wilderness. It is in Grand County, UT. Grand Country really has only one economy right now. It is tourism. It is basically out of the town of Moab and Arches National Park. There are a couple of parks south of there.

I have been to the area. It is fairly desolate. It was an old mining district. The town desperately wants my program to go through. I have been out there to speak with the town and the management. I have spoken with the Grand County council. This would be a perfect use for this land. This land is not pristine. It is an old mining district. It would be a perfect place to explore and drill for oil and natural gas. It would mean much to their economy.

Senator VOINOVICH. Mr. Caskey. The allegation is that the Administration has opened up a number of areas that ought not to have been opened up. It is my understanding that the reason they

did it is because we have a crisis. They feel that you can drill in those areas and it is environmental responsible.

Mr. CASKEY. I think if it is done according to the law as it stands now, it is absolutely environmental responsible. I think it can be managed very well. We have proven we can do that. I also find it very interesting that the obstructionist community feels that 6 days, or 2 weeks, or 3 months, or 6 years of lack of natural gas is not consequential.

I would like to ask that same community which communities, Los Angeles, the whole country, is going to do without gas for 3 months? That is a difficult question to answer. I think that is the one that we have to look at.

Like some of the testimony this morning, I feel that the fellow who was talking about the agricultural use of natural gas as a basic stock for fertilizer, again what are we going to do? I am not so much worried about price. What are we going to do when we cannot get it at any price? That is the question we have?

Senator VOINOVICH. Have you looked at the energy bill?

Mr. CASKEY. Parts of it. I have not read the whole bill through.

Senator VOINOVICH. Have you read the parts that impact on you?

Mr. CASKEY. Absolutely.

Senator VOINOVICH. In your opinion, are they going to help?

Mr. CASKEY. I think they will help. I think it needs to get done in a hurry to help because I think the hole is getting deeper and deeper. The supply is declining. The demand is increasing. The catchup is going to take longer, regardless of what the legislation does.

Senator VOINOVICH. Would it do anything about the lawsuits that Mr. Bloch's group can file or anybody else's?

Mr. CASKEY. Actually, fortunately, Mr. Bloch's group has not filed any lawsuits against my company. The lawsuits are going to be there. That seems to be a pattern that the groups are taking these days to obstruct the development of natural gas and oil.

Senator VOINOVICH. Mr. Handley, have you looked at the energy bill?

Mr. HANDLEY. Yes, I have. But just in parts. You have to remember that I am a very small piece of the picture. I am an independent. I have looked at the energy bill. I do not think it goes far enough to try to attempt to solve the problem that we are having in the United States.

Senator VOINOVICH. But the fact is that there is more of an opportunity to open up areas, but it does not do anything about the remedies that are out there that you are contending with right now. So I guess the argument I would make, Mr. Bloch, is that even if these things are opened up, the same avenues are available to organizations to come in and file lawsuits and take advantage of the NEPA law and so forth?

Mr. BLOCH. Well, Senator, I guess that's right. Those avenues are still going to be available. I think there are certainly some efforts that are being made to curtail the process. I think it is important to come back to some of the numbers right now, as things stand.

The Assistant Secretary of the Interior testified in front of the House in 2003, and she talked about how in the Rocky Mountain

West a full 88 percent of the lands are available for natural gas exploration and for leasing. It is not a situation where there are too many lands that are off limits. I think it is important to have some of those facts out there and to make sure that that is front and center. It is not a situation that there are too many lands that are off limits. In fact, it is only the special places that are off limits. There needs to be that type of a balance, quite frankly.

Senator VOINOVICH. I guess the problem that we have today is: Where do you strike the balance? From my perspective, we have been striking it in a way that we have been neglecting the reality of some of our policies. I am very interested in protecting the environment, but at the same time, we have to balance that with where this country is going. We have some real severe problems.

I have looked at the energy bill. It helps, but it does not get at it. We are going to have this around for awhile and until we get the liquid gas coming here, if they are going to make that possible, and then hopefully we will open up and get that natural gas coming out of Alaska. We are in for a rough road right now. I think that everyone has to be aware of that situation and take that into consideration when you are developing the balance that you are trying to reach.

Mr. Bloch, from my perspective of being here for 5 years, and I used to testify before this committee when I was Governor of Ohio, it just seems that too often when we are doing our environmental policies, we just ignore the impact that it has on the economy and our energy supplies in this Nation. I do not think we can keep doing that for too much longer. If we do, I think you are going to see a real diminishment of our overall quality of life, and in terms of quality of life for people who live in my cities. My county probably has more people than your State has.

The point I am making is that there are a lot of people that live in our inner cities and what we might refer to as ghettos, that are really up against it. When they are paying 100 percent for their natural gas costs, it is the difference between buying food or having clothes or maybe paying their rent. We just keep talking about, "Well, it is the environmental issues." I sometimes think that probably some of your members do not know those people are there.

Mr. BLOCH. Senator, I am a native from your own home State. I grew up on the southeast side of your home city. I am from Chagrin Falls, OH. I think that there can be that kind of a balance. I think that some of the lands in Utah, my home State now, can be protected and that there is still an opportunity to increase the production of natural gas. The concern that I am here to tell you about is that the wild places that Ohioans come to visit are at risk from the energy policy of this Administration that is targeting these lands. It is not for their natural gas values.

Senator VOINOVICH. But the point I am making is that even if I agree that is what it was, and I cannot believe it was a willy nilly thing, to just forget about it and open the gates regardless. The same remedies are still available to everyone in the event that if they move in the areas, you can still do your thing, right? We have not taken anything away from you; have we?

Mr. BLOCH. Not yet, sir.

Senator VOINOVICH. Thank you, Mr. Chairman.

Senator INHOFE. Thank you, Senator Voinovich.

In my opening statement I quoted from the Clinton administration document praising the gas producing industry for their stewardship, for what they have done. Specifically they said it is important to tell this remarkable story of environmental progress and of the greater awareness of the industry's achievements in environmental protection will provide the context for an effective policy.

I sense from some of the groups that I hear, perhaps yours and others, that you do not agree with the previous Administration, the Clinton administration, as to the stewardship that is provided by the gas-producing industry; would that be correct?

Mr. BLOCH. Senator, speaking again from the perspective of Utah, I think it still comes to this question of balance. When there are projects taking place in some of these seven hot spots, those are not places where you are seeing any of the legal fights. As far as I can tell, the stewardship that is being provided by industry in those places seems to be meeting environmental standards. If it is not, I am sure that it will be challenged by somebody else. But the areas that we are concerned first and foremost about, are these other wildlands that do not have the resource and yet are still in the cross-hairs.

Senator INHOFE. Several times you have used the term that the government has determined that there is not adequate capability or production to justify it. Each time you said that I thought: Is this really the role of government? Is this not a supply and demand thing? These people who go in, and they want to explore, it is a tremendous investment. They do so based upon the best knowledge that they have. They are not going to go into some place unless they feel that there is an opportunity to get the results; is that not correct?

Mr. BLOCH. I think that is correct for an individual such as a wildcatter, but I think that there needs to be a balancing in between the hopes of a single individual and the profit that he is going to make, and the protection it places by the BLM in a public trust for all Americans.

Senator INHOFE. Well, how about all Americans who cannot heat their homes and who cannot have jobs because manufacturers are moving overseas?

Mr. BLOCH. That is not where the natural gas is coming from, Senator. That is not what the figures from the Government show.

Senator INHOFE. Let me ask you a question. You are concerned mostly with Utah?

Mr. BLOCH. That is correct.

Senator INHOFE. I think we have determined that we all know that there is a crisis right now. You heard the testimony this morning. The price of fertilizer has doubled in the last 6 months. That is a crisis; is it not? Who pays the price for that crisis? It is the public; is it not? They are the ones that are trying to buy, that is passed on?

Mr. BLOCH. I think that is correct.

Senator INHOFE. The cost of heat, the little old ladies that we talked about up in Rhode Island that the Governor is concerned about. I hope we are all concerned about that. So I think the crisis is here.

I think Senator Voinovich brings up a valid point. I was anxious. I hope I heard you right when he said there are other forums of producing electricity. There are fossil fuels. There is burning coal. Do you have a problem with that?

Mr. BLOCH. Senator, my organization, to the best of my knowledge, at this point is not taking a position on a number of proposed expansions in Utah. I can think of three off the top of my head. There are expansions of existing coal-burning plants or new plants.

Senator INHOFE. Well, I think that your organization is concerned, obviously, about having adequate electricity and the generating capability. Let us just say that in southern Utah where there is a plentiful supply of sun and wind, would you support construction of wind turbines and solar panels in southern Utah?

Mr. BLOCH. I think we are supporting those. Of course, it is our hope that they would be environmentally sensitive where they are being sited. But there are some that are being proposed in northeastern Utah close to the Wyoming border. I think we are fully on board with that, Senator.

Senator INHOFE. Oh, you are? There are some groups, I know, that are now opposing some forms of renewables, wind specifically. I am glad to know that that is your policy. We will remember that. I have a feeling this may come to surface in the future. It is nice to know that we have an ally.

Mr. BLOCH. Let me be sure that I have explained it correctly. There are some proposed wind turbines in northeastern Utah that are close to the Wyoming border that we are in agreement with. As far as additional ones in Utah's west desert, or in southern Utah, I think we have to look at it on a case-by-case basis.

We are concerned about the siting of the turbines, but as far as in principle, it is something that we are in agreement with.

Senator INHOFE. Mr. Handley, Mr. Caskey, and Mr. Bloch, you have come a long way. We are not under the pressure that we were prior to when we had to recess. Is there anything that you feel that you should share with this committee that you have not had a chance to do up to now?

Let us start with you, Mr. Handley.

Mr. HANDLEY. No, I will just give you a short summation. I am an independent. I took these leases from the Federal Government and from the State of Utah with the expressed intent that I was going to evaluate it for its petroleum potential. I had the responsibility to do that. When the Government gives you a hydrocarbon mineral lease, you are expected to perform on that lease.

I went out there and I did everything the Government asked me to do. It was an arduous process dealing with the BLM. They were very strict. After I had my permit, I was shut down in Washington, DC after a judge issued a decision based on an appeal by SUWA. I had basically no recourse. I did everything I was supposed to do. It took me by great shock. This is not a wilderness area. This is in a county that desperately wants this exploration program to go forward.

Senator INHOFE. Mr. Bloch, I was just handed a note that you have to catch a plane and that you have to leave in just a matter of minutes. Is there anything that you would like to say prior to that, and then, of course, you can be excused?

Mr. BLOCH. Thank you, Senator. In response to something from Senator Voinovich, I think, Senator, you are exactly right. How do we draw the line for balance? How do we arrive at that balance? I think that the position of my organization and of the conservation community that focuses on Utah, our view is that this Administration is out of balance in how it is targeting the lands that by all estimates are not predicted or known to contain natural gas and are, nevertheless, in the cross-hairs of development.

Senator VOINOVICH. I would just comment that logic would tell me that if what you say is true, who is going to go in there? Why would you bother going into an area where you say there is nothing there? If I am a businessman, and I have to borrow money to go ahead and do this, I would have to be insane to go into an area like that and spend money when the result of my work would not be productive.

Mr. BLOCH. Again, Senator, the answer is, this is not the major companies. It is either the mid-majors, or the independents, or wildcatters who are going in for the profit of a few individuals, again at the price of the loss of a national landscape.

Senator VOINOVICH. Thank you.

Senator INHOFE. Mr. Caskey.

Mr. CASKEY. Thank you, Senator. I am one of those independents. I represent one of those small middle-sized companies. We have 100 people in our company. We produce about 200-million cubic feet of gas per day. That is not a big producer. That is a medium-size producer. We are being stymied with respectively large investments. We are being stymied by the process, like I testified to earlier. This needs to somehow change. Otherwise, we are not going to have the supply that everybody is so worried about. And the "crisis," if that is what we have agreed on, is what is occurring right now, will perpetuate itself. This is not going to get easier.

The legislation that I have reviewed, or the pieces that I have reviewed, does not answer all of the questions and does not put us on the road to recovery. It will help, but as long as the process is being abused, we are going to stay in this turmoil and we are going to have the disparities between the time we can produce the gas and the time it is needed. I hope that does not happen when it is 40 degrees below zero in the Northeast. Thank you.

Senator INHOFE. All right. Let me thank all three of you for coming back and having to be delayed in your testimony. We appreciate it. You have been very helpful. We thank you for coming.

We are adjourned.

[Whereupon, at 3 p.m., the committee was adjourned, to reconvene at the call of the chair.]

[Additional statements submitted for the record follow:]

STATEMENT OF HON. WAYNE ALLARD, U.S. SENATOR FROM THE STATE OF COLORADO

Mr. Chairman, I want to express my appreciation to you for holding this hearing. As I think we are all aware, increasing amounts of natural gas are being used strictly by power plants for energy production. It is also heavily utilized for home heating throughout the country. Demand for natural gas has increased sharply, this has put quite a strain on natural gas supplies.

There are any number of reasons that natural gas demand has increased so dramatically. New guidelines were placed on power production facilities by amendments made to the Clean Air Act in 1990. This has resulted in the fact that virtually every power production facility built since passage of these amendments oper-

ates by burning natural gas for power production. This is one of the major contributors to the increase in demand for natural gas and consuming otherwise available gas supplies.

During the same time period, natural gas development levels have remained basically flat which has driven the wholesale cost of that commodity up. As a natural result of increased demand and a level supply, we are seeing some of the highest natural gas prices in recent memory. Endless lawsuits, onerous "red tape" and regulations have greatly hindered new development and have made it very difficult for private companies to develop resources on public land—where most supplies that have been currently documented are located.

These lawsuits and regulations have also made it very difficult to add transmission capabilities. There is a severe shortage of transmission throughout the country, but any attempts to site new pipelines are met with more resistance and additional lawsuits. The lack of transmission capability restricts the ability to move supplies even if they can be developed.

I find it very interesting that the same special interest groups that encourage gas fired generation of electricity, oppose granting leases and permits to enable facilities to bring more natural gas on-line. Those who mast strongly argue the need for gas fired generation are very often those that file the lawsuits that hold up new production and transmission. We simply can't have it both ways.

The vast majority of gas supplies in the west lie under Federal land. It is important that we make these supplies available for production. Government owned, public lands were always intended to be available for multiple uses. Certainly there are places where one couldn't imagine production taking place. But land should not be arbitrarily made unavailable for development. These areas should be throughly assessed and, if they indeed qualify as areas in which development would severely impact the land, development can be restricted accordingly.

While increased development will mean more natural gas on the market, gas production requires skilled workers, so it will also mean more jobs are available. Developers also pay local and State taxes on the gas that they extract. This is very helpful to residents in rural areas that often have low tax bases.

We must have more production from domestic energy sources including oil, natural gas, clean coal, nuclear, and renewable resources. The future of our energy supply must be a diverse one, and natural gas clearly must be a part of that makeup.

For all of these reasons I am grateful that the Committee is holding this hearing and I look forward to the testimony that we will receive here today. Thank you, Mr. Chairman.

STATEMENT OF MARTIN KELLY, PRESIDENT AND CEO, MORAINE MOLDED PLASTICS INC.

My name is Martin Kelly, President and CEO of Moraine Molded Plastics Inc., located in the northern suburbs of Cincinnati, Ohio. I submit this statement for the record to assist the Committee in proceeding with concrete actions to address the Nation's natural gas problem. Many of these same concerns have been expressed by Alan Greenspan to Congress (see Appendix 1). He believes as I do that solving the natural gas problem is critical to the short term viability and long term growth of the domestic manufacturing economy.

Plastics is a critical U.S. industry, providing products that make modern life possible. The industry also is a critical slice of the U.S. economy, providing $310 billion in annual shipments and employing 1.4 million workers nationwide. In 2002, more than 112,000 of those jobs were in my home State of Ohio, which created more than $21 billion in shipments, ranking it second in the Nation for plastics jobs and third for plastics shipments (see Appendix 2 for the plant and employment data on the states represented by the EPW members).

My company is a plastics injection molder that employs about 50 workers that mold plastic parts for manufacturers of office equipment, industrial products, and liquid dispensers. We operate in a very fragmented market place, with about 4500 competitors worldwide. Moraine Products focuses on a small market segment that emphasizes product quality, high volumes, and engineering support in trying to differentiate our products. Yet, with many competitors offering similar product attributes and customer support, the bottom line for most of our customers is price: am I able to provide the products that they want at the lowest cost to them?

In answering that basic question, surging natural gas costs over the past few years, with unprecedented volatility in prices, is really hurting my company and the entire plastics industry in two basic ways, and is removing my ability to be the low

cost provider, a provider of good jobs and a provider of benefits to my employees and retirees.

• *First,* we use a lot of basic resins such as polypropylene, polystyrene, and polyethylene, all derived from petrochemicals. Even the more advanced raw material resins that we use have the same origin from petrochemicals. As the price of natural gas has exploded to almost 2.5 to 3 times in price over the past 2–3 years, the costs of my resin, my basic raw material, have increased proportionately. The resin manufacturers—my suppliers—have to pass on some of the natural gas costs to me in order for them to remain competitive in their U.S. operations. As a matter of fact, over the past 5 months since December 1, 2003, I have received resin price increases every month—a total increase in my resin costs of about 36 percent! These increased costs to me are directly from energy costs imposed on my resin supplier.

• *Second,* when these resins are molded into plastic parts, the molding machines can require temperatures of up to 600 degrees Fahrenheit, and pressures of up to 4000 pounds per square inch. The molding machines that do this are significant consumers of energy. It turns out that the electricity for many plastics processors, particularly in the southwest and southeast, are supplied by gas-fired utilities. Thus, as natural gas prices have escalated, local utility companies—after the regulatory rate-paying authorities approve the "pass through" fuel cost increases to all local consumers—send utility bills, that continue to increase, to the processors. Consequently, many in the industry have electricity bills that have almost doubled over the past few years, and with the resin price increases, we have to try and pass these costs downstream to our customers in order to stay in business. With my competition abroad having ample and much lower priced natural gas, this problem of passing our increasing raw material and energy costs—driven by natural gas—to my downstream customers, is becoming much more problematic.

I should note that, while my equipment suppliers have made major increases in energy efficiency of my manufacturing machines over the past several years that helps lower the amount of electricity used per product produced, these improvements cannot overcome the almost doubled electricity costs for the energy required to run these machines. The market signals have been clear: energy efficiency improvements are here to stay.

I do not want my company to become one of the manufacturing casualties reflected in recent Bureau of Labor statistics. As BLS data reflect, the U.S. has lost over 2.2 million manufacturing jobs since 1998. In fact, the BLS data reflect that since 1999 Ohio has lost 173,100 manufacturing jobs (see Appendix 3). Specifically for plastics, data from The Society of Plastics Industry, Inc. (SPI), the trade association that represents the U.S. plastics industry, including my company, indicates that plastics employment declined more than 9 percent from 2001 to 2002, and shipments declined nearly 7 percent in that same time period. Energy policy—or the lack thereof—is a significant reason for this decline.

Some folks are calling much of this loss of manufacturing "outsourcing" when it really should be called "offshoring." My company is not a multi-national company. I don't have the option of moving production to another facility in another country. I'm a typical, small plastics manufacturer, of which many such companies are (and were) located throughout the Midwest, including a major presence in Ohio.

The simple truth is that the combination of high energy and feedstock costs, rising health care costs, increased costs from Federal/State regulations, and major increases in insurance/litigation costs are driving many of our companies out of business. You just can't compete if these domestically imposed costs are increasing at a time when our global competition has significantly lower operating costs that enable them (and not us) to establish a price level to customers that many of us cannot meet.

This loss of manufacturing in the U.S. and in Ohio, and the adverse impact on my small company in Cincinnati, are primarily the result of a natural gas imbalance in the United States. We need help NOW to lower my resin feedstock and electricity costs, both of which are increasing because of demand exceeding the supply of natural gas. Today, as most analysts have concluded, the United States has the highest priced natural gas of any country with a supply. How can I compete against companies making plastic parts using resins and electricity based on natural gas costs that are in the range of 40–60 percent lower than mine? As the *Washington Post* article in the Finance section on March 17, 2004 reported, "In the past 5 years, U.S. natural gas prices have roughly doubled as more and more electrical plants consume the clean-burning fuel but supplies stay stagnant. Other parts of the world—including Western Europe—pay far less." For the record, the entire *Washington Post* article is at Appendix 4.

RECOMMENDATIONS OF THE NATIONAL PETROLEUM COUNCIL

What can we do? What are the solutions? To help this Committee respond to these questions, I refer to the National Petroleum Council Report, "Balancing National Gas Policy" dated September 25, 2003, and offer the following, selected findings and recommendations from that report. This report is significant because it included a broad-based demand panel.

• First, gas consumption will continue to grow, but such growth will be moderated as the most price-sensitive industries become less competitive, causing some industries and associated jobs to relocate outside North America.

The relocation of industries and jobs is happening now. Homeowners, utilities, commercial users such as local transportation agencies using natural gas (e.g., natural gas buses), and the industrial sector are all feeling the pinch. However, the industrial sector, such as the plastics industry, is the only one that has to meet a globally imposed ceiling on costs from natural gas, and the only one that is "mobile" in the sense of going out of business or relocating abroad. This is called "demand destruction" and helps explain why job losses are occurring. This also explains why gas consumption growth in the outyears will be moderated—gas will be freed from companies going out of business, and that gas will then be available for the other consuming sectors to use. The report also makes clear that the U.S. is a net importer of natural gas and we will never again be self sufficient in gas supply.

• Second, a balanced fuel portfolio is essential. This includes renewables (e.g., wind, solar, fuel cells), oil/distillate, coal, hydroelectric and nuclear.

A balanced portfolio of energy resources is critical. By maintaining/expanding nuclear, by increasing the investment in and use of advanced coal technologies, by emphasizing renewables where reasonable and economical, we can help alleviate some of the nation's ever increasing demand on scarce natural gas. If we can provide more industrial users access to natural gas then we will have a better chance of maintaining operations in the U.S. and helping stabilize and perhaps grow the number of manufacturing employees in this country.

• Third, gas-fired electricity generation buildup has reshaped natural gas demand.

This is by far the major driver in this country's increased demand for natural gas. From about 780 gigawatts of electricity demand in 1995, to about 900 gigawatts in 2004, increasing to about 1400 gigawatts in 2025 in order to meet increasing population growth and needs in the U.S., most of this growth is planned from new, natural gas-fired utilities. But, where is the growth in natural gas to come from? Unless this specific driver of demand is ameloriated, the "demand destruction" referenced above will be one of the supply sources to help meet this demand. We should not let this happen. We cannot let this happen. We must assure that U.S. use of coal grows in the future.

• Fourth, increased access to U.S. resources (excluding designated wilderness areas and national parks) could save consumers $300 billion in natural gas costs over the next 20 years.

The U.S. is the only developed Nation in the world that is not developing all of its domestic natural gas energy resources. Instead, we continue to drill for natural gas in the same old areas that are not "off limits." As the NPC study indicates, traditional North American producing areas will provide 75 percent of long-term gas needs, but will be UNABLE to meet projected demand. The supplies by pipeline from Canada will decline as they face the same problems with declining production from mature fields as the U.S. Mexico will continue to be a net importer of gas from the U.S. Future supplies must come from traditional as well as new sources (including new drilling areas, liquefied natural gas, and gas from Alaska). From 21–22-trillion cubic feet of natural gas demand annually in 1990, the demand is gradually, at an increasing rate primarily from the utility generation sector, growing to 33-trillion cubic feet by 2025. This is a 50-percent increase in demand over this period, in the face of only a slightly increasing supply of natural gas. We need to seriously consider our natural resources of gas in the Rockies, off the Pacific and Atlantic Coasts, as well as in the Gulf of Mexico. In the Rockies and Deepwater Gulf of Mexico, our production absolutely needs to grow now.

• Fifth, increased access and reduced permitting impediments to development of lower-48 natural gas resources.

According to the NPC report, increased access could reduce natural gas costs by up to $0.50 per million BTU in 2002 dollars. Further, as mentioned above, current areas that are restricted have enough natural gas to meet our shortfalls now and in the future. The NPC report shows that, while the number of natural gas drilling rigs has more than doubled over the past several years, the supply of gas from the

same old wells is basically constant. Thus, the best that can be said is that production response from increased drilling has been modest at best.

• Sixth, LNG imports can lower costs to consumers.

While important, we cannot alleviate our natural gas problem with just LNG imports. But, as the NPC report states, both Arctic gas and LNG imports are available and could meet 20–25 percent of natural gas demand by 2025. But, both are higher-cost, both have longer lead times, and both face major barriers to development. In fact, as I'm sure the Committee is aware, just in the past few weeks a planned LNG terminal in the State of Maine was rejected by the local populace, based on (unfounded) fears of safety and security.

• Seventh, Arctic Pipeline projects can deliver important new supplies.

My company, as well as our industry association SPI, favors legislation that expedites an Alaskan gas pipeline. We need to access the natural gas reserves in both the Alaskan North Slope as well as in other productive regions. But, again, this is long term and will not help me or others with the natural gas problem in the near to medium term.

CONCLUSION

In summary, as a small plastics manufacturer in Ohio, I know that solving the natural gas crisis is not an easy task, for this Committee as well as others in the Congress. But, I do know that my business survival is dependent on doing just that. I also know from individuals on fixed incomes that the increased costs of utility bills, just like mine, are forcing hardships. Retirees on fixed incomes have to choose between air conditioning or pharmaceuticals for health. Single parents on welfare have to choose a balance between food for the children on the table or at school, or heat for the home. All are difficult situations.

We can make great strides forward, in my view, by doing the following:

(1) *Ensuring a robust energy policy for this nation.* We need a good balance between clean coal, nuclear, hydro, natural gas, oil, and renewables for our energy sources. We should not, for example, follow extremist views that argue for no growth at all in coal, but rather declines. *Coal is our biggest and most available domestic energy resource. We need to use it.*

(2) *Reducing demand for natural gas in two basic ways.* First, a program of conservation now across all consuming sectors can yield our best way in the short-term to avoid further job losses and to free up natural gas for the industrial sector. Second, we need to look at ways that the utility sector can use more clean-coal instead of natural gas as the energy source to meet the rapidly increasing demand for electricity in this country. *We must avoid any proposal that blocks the growth of coal for electricity.*

(3) *Rapidly approving and siting LNG terminals in the coastal areas, including the Pacific, Northeastern Atlantic, and Gulf areas.* While longer-term, this will go a long way toward helping stabilize natural gas prices and dampening volatility in prices, since the markets would then be connected on a global basis, rather than the current regional or local basis.

(4) *Opening up the resources available in Alaska, and passing Federal legislation that would enable a pipeline to the lower-48.* This is a longer-term supplement, but will be needed with all the other sources to meet the nation's demand through 2025 and beyond.

(5) *Finally, and probably the most contentious, is to open up the very large natural gas resources in this country that are currently "off limits."* It is my considered opinion that most of the objections to these areas are based on ignorance. It just doesn't make any sense for the U.S. to be the only developed Nation in the world that refuses to develop its natural resources like this. No sense at all.

In summary, I thank the Committee for allowing my statement to be inserted in the record at this Hearing. I am just a small company trying to survive the increased costs wrought by the natural gas crisis, and do hope that my views have provided some insight as to how the Nation's leaders must proceed to resolve it.

I will be pleased to respond to any questions the Committee might submit in writing.

APPENDIX 1

TESTIMONY OF CHAIRMAN ALAN GREENSPAN

[Excerpts—emphasis and notes added]

NATURAL GAS SUPPLY AND DEMAND ISSUES

. . . **Canada, our major source of imported natural gas, has had little room to expand shipments to the United States,**

. . . and our limited capacity to import liquefied natural gas (LNG) effectively restricts our access to the world's abundant supplies of gas.

Our inability to increase imports to close a modest gap between North American demand and production (a gap we can almost always close in oil) is largely responsible for the marked rise in natural gas prices over the past year. Such price pressures are not evident elsewhere.

In the United States, rising demand for natural gas, especially as a clean-burning source of electric power, is pressing against a supply essentially restricted to North American production.

Given the current infrastructure, the U.S. market for natural gas is mainly regional, is characterized by relatively longer term contracts, and is still regulated, but less so than in the past. As a result, residential and commercial prices of natural gas respond sluggishly to movements in the spot price. **Thus, to the extent that natural gas consumption must adjust to limited supplies, most of the reduction must come from the industrial sector and, to a lesser extent, utilities.**

Yesterday the price of gas for delivery in July closed at $6.31 per million Btu. That contract sold for as low as $2.55 in July 2000 and for $3.65 a year ago.

Futures markets project further price increases through the summer cooling season to the peak of the heating season next January. Indeed, market expectations reflected in option prices imply a 25 percent probability that the peak price will exceed $7.50 per million Btu.

Today's tight natural gas markets have been a long time in coming, and futures prices suggest that we are not apt to return to earlier periods of relative abundance and low prices anytime soon.

Since 1985, natural gas has gradually increased its share of total energy use and is projected by the Energy Information Administration to gain share over the next quarter century, owing to its status as a clean-burning fuel.

Moreover, improving technologies have also increased the depletion rate of newly discovered gas reservoirs, placing a strain on supply that has required increasingly larger gross additions from drilling to maintain any given level of dry gas production. **Depletion rates are estimated to have reached 27 percent last year, compared with 21 percent as recently as 5 years ago.**

Canada, which has recently supplied a sixth of our consumption, has little capacity to significantly expand its exports, in part because of the role that Canadian gas plays in supporting growing oil production from tar sands. [*Does not mention impact of ratification of Kyoto Protocol . . . Canadian gas must also be used to displace current coal use and for electricity growth*]

The updrift and volatility of the spot price for gas have put significant segments of the North American gas-using industry in a weakened competitive position. Unless this competitive weakness is addressed, new investment in these technologies will flag.

Increased marginal supplies from abroad, while likely to notably damp the levels and volatility of American natural gas prices, would expose us to possibly insecure sources of foreign supply, as it has for oil.

But natural gas reserves are somewhat more widely dispersed than those of oil, for which three-fifths of proved world reserves reside in the Middle East. Nearly two-fifths of world natural gas reserves are in Russia and its former satellites, and one-third are in the Middle East.

Creating a price-pressure safety valve through larger import capacity of LNG need not unduly expose us to potentially unstable sources of imports. **There are still numerous unexploited sources of gas production in the United States.** We have been struggling to reach an agreeable tradeoff between environmental and energy concerns for decades. I do not doubt we will continue to fine-tune our areas of consensus.

But it is essential that our policies be consistent. For example, we cannot, on the one hand, encourage the use of environmentally desirable natural gas in this country while being conflicted on larger imports of LNG. Such contradictions are resolved only by debilitating spikes in price.

In summary, the long-term equilibrium price for natural gas in the United States has risen persistently during the past 6 years from approximately $2 per million Btu to more than $4.50. The perceived tightening of long-term demand-supply balances is beginning to price some industrial demand out of the market. It is not clear whether these losses are temporary, pending a fall in price, or permanent.

If North American natural gas markets are to function with the flexibility exhibited by oil, unlimited access to the vast world reserves of gas is required. Markets need to be able to effectively adjust to unexpected shortfalls in domestic supply. Access to world natural gas supplies will require a major expansion of LNG terminal import capacity. Without the flexibility such facilities will impart, imbalances in supply and demand must inevitably engender price volatility.

APPENDIX 2

Plastics Industry: Facilities and Jobs (Environment & Public Works States)

State	Total Companies/Facilities	Total Jobs (Thousand)
OK	172	10,500
VA	219	25,300
MO	389	27,600
OH	1327	112,100
ID	64	2,100
RI	130	8,500
TX	1334	94,900
AK	12	15,800
WY	10	500
CO	298	10,700
MT	25	800
NV	139	5,400
FL	870	29,400
CA	2359	137,800
CT	306	15,800
OR	266	11,100
DE	60	4,600
NY	944	52,800
VT	46	3,000

APPENDIX 3

• Higher natural gas prices in particular severely diminish the competitiveness of industries using natural gas as an input for fuel and power and as a raw material. This occurs because natural gas markets are generally national (or regional) in nature. As a result, exporting industries in this Nation face higher costs vis-á-vis competing nations, as the latter do not incur these costs. The same holds true for the agricultural sector because they consume fertilizers, which are natural gas-intensive.

• Diminished competitiveness results in a severe drop in the output of energy-intensive sectors such as cement, aluminum, steel and chemicals. This results in job losses or jobs created elsewhere overseas.

The following table illustrates the loss of manufacturing jobs by State between 1999 and 2003 as compiled by the Bureau of Labor Statistics.

Employment in Manufacturing

[Thousands]

	1999	2000	2001	2002	2003	Change 1999–2003
Alabama	357.5	351.4	325.5	307.3	296.2	−61.3
Alaska	11.8	11.8	11.7	11.2	11.1	−0.7
Arizona	207.4	209.9	201.7	183.9	175.4	−32.1
Arkansas	240.7	240.3	226.9	214.4	208.3	−32.4
California	1,829.9	1,857.5	1,785.6	1,641.2	1,584.2	−245.7

Employment in Manufacturing—Continued

[Thousands]

	1999	2000	2001	2002	2003	Change 1999–2003
Colorado	160.7	191.3	181.9	166.3	154.6	−36.1
Connecticut	240.2	235.6	226.7	213.0	203.5	−36.7
Delaware	44.0	41.5	39.4	36.8	34.2	−9.8
District of Columbia	3.8	3.7	3.4	3.0	2.8	−1.0
Florida	455.5	455.0	432.3	407.8	392.9	−62.7
Georgia	542.6	530.5	498.3	471.8	452.2	−90.5
Hawaii	15.9	16.4	16.4	15.2	15.0	−0.9
Idaho	68.9	69.9	68.3	64.7	61.5	−7.4
Illinois	882.1	870.5	815.4	756.2	733.0	−149.1
Indiana	664.7	663.5	615.4	589.1	577.5	−87.2
Iowa	252.7	251.4	240.2	227.5	222.1	−30.6
Kansas	204.0	200.2	194.3	182.8	177.6	−26.4
Kentucky	309.0	310.4	291.8	275.7	269.6	−39.4
Louisiana	181.4	177.4	171.8	160.9	156.9	−24.5
Maine	80.5	79.5	74.6	68.0	63.9	−16.6
Maryland	173.6	173.9	168.2	157.2	153.1	−20.5
Massachusetts	405.2	407.9	387.7	347.6	333.0	−72.2
Michigan	898.1	896.7	819.6	759.1	733.8	−164.3
Minnesota	395.4	396.5	378.5	355.6	346.4	−49.0
Mississippi	232.9	222.5	200.8	188.7	179.9	−53.0
Missouri	371.8	361.8	342.2	322.2	314.2	−57.6
Montana	22.5	22.5	21.4	19.8	18.8	−3.8
Nebraska	113.4	114.3	110.8	106.2	104.5	−8.9
Nevada	41.0	42.7	44.0	42.6	43.0	2.0
New Hampshire	101.2	102.5	97.4	85.2	81.7	−19.5
New Jersey	422.4	421.5	401.2	368.8	356.9	−65.5
New Mexico	41.2	41.7	40.9	38.5	36.9	−4.4
New York	772.8	750.8	708.2	651.9	618.4	−154.4
North Carolina	776.5	757.9	704.0	642.2	609.5	−167.0
North Dakota	22.8	23.9	24.0	23.7	23.4	0.6
Ohio	1,027.6	1,021.0	953.0	885.1	854.5	−173.1
Oklahoma	177.3	177.5	169.8	152.0	148.1	−29.2
Oregon	224.7	225.0	215.7	201.8	196.4	−28.3
Pennsylvania	863.4	862.3	820.6	762.0	727.5	−136.0
Rhode Island	72.1	71.1	67.8	62.4	60.1	−12.0
South Carolina	336.1	336.2	313.6	291.7	276.6	−59.5
South Dakota	44.2	43.8	40.9	38.4	37.4	−6.8
Tennessee	494.7	488.0	454.2	426.6	414.9	−79.8
Texas	1,063.3	1,068.0	1,026.2	951.2	916.0	−147.3
Utah	126.0	125.5	122.0	113.7	111.3	−14.7
Vermont	45.3	46.3	45.6	40.6	38.5	−6.8
Virginia	366.8	363.5	341.2	320.3	308.6	−58.2
Washington	343.4	331.8	316.1	285.7	266.5	−76.9
West Virginia	76.9	75.9	72.2	68.8	65.7	−11.2
Wisconsin	594.8	594.1	560.3	528.7	515.3	−79.5
Wyoming	10.2	10.4	10.0	9.5	9.2	−1.0

Source: US Bureau of Labor Statistics

APPENDIX 4.—CHEMICAL INDUSTRY IN CRISIS

[From the Washington Post, March 17, 2004]

NATURAL GAS PRICES ARE UP, FACTORIES ARE CLOSING, AND JOBS ARE VANISHING

(By Greg Schneider, Staff Writer)

NITRO, W.VA.—Soon after the Flexsys chemical plant celebrates its 75th "Nothing over three inches high is going to be left here," plant manager Jon McKinney said.

The former explosives factory gave the town its name, and its demise will eliminate 205 jobs and yet another piece of the once-powerful U.S. chemical industry.

Chemicals are an unglamorous part of the manufacturing world, with products that have unpronounceable names and often hazardous qualities. But they are es-

sential to a host of industries, from automaking to textiles to agriculture. Hardeners make tires more durable. Polymers put the spring in athletic shoes, and nitrogen fertilizers increase crop yields. As the nation's manufacturing base seems to shrink daily from factories closing or relocating overseas, the health of the chemical sector is a crucial measure of how deep the problem goes. And chemicals are in crisis, squeezed not only by cheap foreign competition but also by soaring energy costs.

Across the country, 1 in every 10 chemical-related jobs has vanished in the past 5 years—nearly 100,000 workers—and that number would be worse if not for a surge in one segment, pharmaceuticals.

The chemical industry's eight-decade run as a major exporter has ended, with a $19 billion trade surplus in 1997 becoming a $9.6 billion deficit last year, according to the American Chemistry Council.

Governors and chemical executives have appealed to the White House and Congress for help. They argue that the chemical problem is making the nation's broader manufacturing meltdown even worse, pushing factories to relocate offshore not only for cheap labor but to be near chemical suppliers.

"It's a very trying time in the nation's manufacturing base," said Mark Zandi, chief economist for Economy.com Inc. "Ultimately, little can be done to stop the drain of jobs as companies cut costs and use technology to improve productivity," he said. "Workers in the chemical industry are really getting hit hard, much harder than the companies themselves," Zandi said.

The Flexsys plant in Nitro is closing because a sister plant in Belgium costs less to operate. In nearby South Charleston, Union Carbide Corp. has cut its workforce in half, to about 1,200 people, in the past 3 years. Bayer AG is shutting one of its two Charleston-area plants.

It's the same story in other chemical-heavy regions of the country, such as the Gulf Coast. "Right now we've got big operations just shutting down because they cannot compete on the world market," Louisiana Gov. Kathleen Babineaux Blanco (D) said in a telephone interview. "We've had shutdowns before but they've always been temporary. We've not seen anything like this before."

Troubles began over a decade ago with the fall of communism, when countries of the former Soviet Union—as well as China—discovered they could compete in the world market for chemical products. Cheap labor and a freewheeling attitude toward safety and the environment helped them keep prices low.

As the global economy slowed, industries that consume chemical products came to depend on those lower prices to offset declining sales and profits. U.S. chemical makers struggled to cut costs and keep up. Then, around 2000, an unexpected problem hit: Natural gas prices went up.

Chemical plants are especially sensitive to natural gas prices because they use it both as a fuel and as a "feedstock" or ingredient in making plastics, resins, fertilizers and more. In the past 5 years, U.S. natural gas prices have roughly doubled as more and more electrical plants consume the clean-burning fuel but supplies stay stagnant. Other parts of the world—including Western Europe—pay far less.

"We have the highest natural gas prices in the industrialized world," said R. William Jewell, vice president for energy for Dow Chemical Co. in Houston. In the past 2 years, Dow has closed four major chemical factories in North America—one in Louisiana, two in Texas and one in Alberta, Canada—and replaced them with production from Germany, the Netherlands, Kuwait, Malaysia and Argentina, he said.

"These jobs didn't leave the U.S. because of labor costs, they left the U.S. because of uncompetitive energy costs," Jewell said. "It's very hard to have vitality in manufacturing and it's very hard to have strong growth in jobs if you don't have a competitive infrastructure anymore. . . . You can't just wish these jobs back."

Chemical jobs tend to be so well-paying—in the $50,000 to $70,000 range—that they're virtually impossible to replace in the communities that lose them, said David E. Dismukes of the Center for Energy Studies at Louisiana State University. Every time a factory cuts back or shuts down, the impact ripples out through the suppliers, restaurants and car dealerships that surround it. "For a small State like Louisiana that is so dependent on those facilities, this really is a tough one for us," Dismukes said. "When they go away it has a devastating impact on small rural communities up and down the river where many of these are located."

The problem is similar to the death of steel mill towns in the Midwest and Pennsylvania in the 1970's and 1980's, said Michael Hicks of the Center for Business and Economic Research at Marshall University in Huntington, W.Va. In 24 months, from January 2001 to December 2002, West Virginia's chemical workforce declined nearly 17 percent, to 12,000 people, Hicks said.

"It's a story that West Virginia has continued to feel for well over two decades now, with the decline in coal mining and steel production now followed by these challenges to the chemical industry," he said.

Even plants that stay in operation are providing fewer jobs.

For example, Bayer Polymers LLC operates a plant on an island in the Kanawha River in South Charleston. Barges bring long cylindrical tanks of liquid propylene oxide to a pumping station on the north shore. The material flows under the river to a maze of pipes, valves and vats on the island—nearly a mile long—where it goes through chemical reactions to become a polymer used in foam cushions for car seats, mattresses or athletic shoes.

The entire facility is operated by two people sitting in a control room watching computer monitors, aided by a team of eight technicians that handles repairs and maintenance. In less than 4 years Bayer has increased the plant's output by 20 percent without adding any employees. The plant also has cut energy consumption by 9 percent since last year. Nonetheless, its costs are up 25 percent over the past 5 years, said site manager Glenn Kraynie.

It's a dangerous cycle. Rising costs cut into profit and make it harder to continue investing in improvements, which in turn makes it harder to compete with ever more efficient overseas rivals, said Attila Molnar, president and chief executive of Bayer Corp., the German company's U.S. arm.

"It is a very, very serious issue," Molnar said. "You shift manufacturing or production [to] where you produce the cheapest. . . . Production in the U.S. is in danger today." "There are at least two basic solutions," Molnar said. Do something about energy prices, such as burning more coal or drilling for more natural gas, and use technology to continue to make chemical factories more efficient. That means producing more with fewer employees.

"There's nothing there that says the jobs you have today will be the same jobs we have 10 years from now. That cannot be," he said. "Be prepared for change. That's the only way we can survive, the only way I can see we will be successful in the future."

That's a hard prescription for towns like Nitro, population 6,824, which stands to lose a chemical plant that once employed 900 people. The 202-acre riverfront facility started as a World War I explosives plant for making nitrocellulose, and the town was built to support it. Monsanto Co. bought the site in 1929 and has been making rubber additives ever since, today in a joint venture with Akzo Nobel NV called Flexsys. But with worldwide prices for its products down 42 percent, the company decided last fall to shut Nitro's factory down at the end of this month.

"I'm 45 years old and I've lived in this Kanawha Valley my whole life," said Dave Hardy, a lawyer and Kanawha County commissioner representing both Nitro and Charleston. "This valley was built on the chemical industry, and now in my adult lifetime . . . the chemical industry is contracting literally year by year. There is nothing that is filling the void."

Instead, the State is promoting tourism and gambling, he said. But West Virginia hasn't given up on the industry. Its statewide Chemical Industry Committee, a trade association, has been working to attract companies by touting the state's long embrace of an industry scorned in some places as environmentally undesirable.

It doesn't help the cause, though, that the committee's chairman is McKinney, the Flexsys manager, whose own company couldn't afford to stay in business there.

STATEMENT OF HON. DONALD L. CARCIERI, GOVERNOR, STATE OF RHODE ISLAND

Chairman Inhofe, Ranking Member Jeffords, and distinguished members of the committee, thank you for having me here today to testify about the energy needs of my State, my region and our Nation.

I would like to speak today about the problem my State is facing with respect to the tightening supply and resulting high costs of natural gas.

As Governor of a northeastern State, I understand the importance of plentiful, accessible energy supplies. New England has no natural resources of fossil fuel. As a result, all of our energy supply must come from some other region or nation. Meanwhile, our cold winters, elderly population, and highly concentrated urban centers produce a large and growing demand for energy resources.

Before the people of Rhode Island elected me Governor, I spent almost two decades working in the private manufacturing sector. As CEO of Cookson America, I managed the energy needs of a thriving manufacturing business. That experience taught me that our needs will only increase in the coming years. As Governor of a New England State and a former CEO, I have a good understanding both of the energy needs of the Northeast region generally, and the particular demands that a competitive manufacturing base puts on a reliable, cost-efficient energy supply.

Federal and State policy has encouraged the use of natural gas, because it's clean-burning and there is an abundance of known supply. Consequently, it has become

the workhorse of the energy sector, and is expected to provide 35 percent of the fuel supply for electric generation in New England this year alone. According to the Federal Energy Regulatory Commission (FERC), in the next 4 years 50 percent of all electricity will be generated by natural gas.

Unfortunately, natural gas supply hasn't kept up with this burgeoning demand. In fact, New England was recently on the verge of an energy supply crisis. KeySpan, the largest local distribution company in the Northeast, had record breaking send-outs during the recent cold spell, and at one point they were forced to shut off service to approximately 250 customers in order to preserve the remaining customers. Had temperatures remained that cold for another few days we would have had a real crisis.

One would think that this combination of high demand and intermittent supply shortages would create an outcry for more natural gas production. It hasn't. Unfortunately it may take a disaster before some in our Nation get serious about this problem. As Federal Reserve Board Chairman Alan Greenspan pointed out in testimony before a Senate committee last summer, we have embraced the benefits of natural gas, but at the same time have restricted the ability to get more supply.

Soon, the Northeast may no longer be able to offer industry a competitive venue unless the rising cost of energy is addressed. For example, while the cost has remained relatively steady since the mid-1980's at around $2 per million BTUs, prices have recently spiked at times to upwards of $10 per million BTUs. These dollar amounts are often much higher in Rhode Island, because we sit at the end of two pipelines and consumers must pay the costs associated with transporting gas such long distances.

Some of Rhode Island's largest employers and oldest companies are already grappling with the consequences of this looming energy crisis. Considerations of layoffs and job relocation are beginning to manifest. Electric Boat, the producers of the hulls for our Navy's submarines, switched to natural gas for heating several years ago. Now the price is skyrocketing, and since the region's electric generation is increasingly fueled by natural gas, EB can expect a further rise in their electric bill. This company employs more than 2,000 people in Rhode Island and many more in Connecticut.

The story is the same with Arkwright Incorporated, located in Coventry, RI. Their 300 employees coat and convert paper and films for specialty imaging devices. Arkwright's natural gas bills have nearly doubled in the past year, jeopardizing their profitability and competitiveness. As the company struggles with this issue, it has lost bids for contracts. They were already forced to lay off some employees, and cut out bonuses last year.

Another example is Cranston Print Works, a textile company with facilities in Rhode Island and Massachusetts. The per unit price they pay for natural gas has already increased 40 percent this year, electric costs another 19 percent and oil costs another 6 percent. They will spend $200,000 more this year than last year to keep their plants operating, without any increase in overall energy usage.

Similarly, their neighbor in North Kingstown, Rhode Island, TORAY Plastics, saw energy costs rise by more than $1.6 million last year. TORAY employs approximately 700 people in our little State. It's an energy-intensive business with huge production runs 24 hours a day. It is critical that they be able to manufacture products competitively.

The same story can be told over and again with many of the other manufacturing companies in Rhode Island that employ tens-of-thousands of workers and contribute so much to the quality of life in our State. The high cost of natural gas is taking a toll on our economy across New England and the Nation. In today's competitive world manufacturers cannot raise prices to compensate for rising energy costs.

Liquefied natural gas (LNG) offers a short-term answer for Rhode Island. But until we are able to site and build LNG receiving terminals or realize significant new sources of gas, gas prices will likely remain high and volatile.

The only long-term solution is to increase supply. We must develop reasonable policies on both State and Federal levels that allow natural gas to be produced and delivered to homes and businesses across the country.

The alternative is a Northeast without sufficient energy supplies and stable prices a Northeast that cannot keep the heat on in thousands of homes, cannot provide for the industrial capacity of manufacturing businesses, and cannot remain competitive at home or abroad.

As Governor of Rhode Island, I cannot let that happen, but I fear that it will unless we take the needed steps now to address this energy supply crisis.

Thank you for allowing me to testify before you today. I look forward to answering your questions.

STATEMENT OF BOB DRAKE, VICE PRESIDENT, OKLAHOMA FARM BUREAU AND CHAIRMAN, NATIONAL GRAZING LANDS COUNCIL

Mr. Chairman and members of the committee, my name is Bob Drake. I farm and raise Angus cattle in Davis, Oklahoma. Like many Oklahomans, I have been active in the oil and gas industry as well as farming and ranching for most of my life. I am currently vice-president of the Oklahoma Farm Bureau and I serve as chairman of the National Grazing Lands Conservation Initiative. I have also served as President of the National Cattlemen's Beef Association. This issue concerns me both as an agricultural consumer and as a producer in the oil and gas industry. On behalf of the American Farm Bureau Federation and the Oklahoma Farm Bureau, thank you for the opportunity to express how energy supply, and energy prices, are adversely impacting American agriculture.

First, let me say that today's agriculture is more energy efficient than ever before, producing more economic benefit with less energy. For example, on corn fields across this Nation, farmers are producing 30 percent more crop using 30 percent less energy-related inputs, including fertilizer, than we did only a generation ago. Even though energy efficiencies have been realized in agriculture, no one should expect a growing U.S. economy and population to need less energy security in the future.

Natural gas is one of the most important energy feedstocks to production agriculture and associated manufacturing industries. In the last year, the United States has experienced prolonged natural gas price volatility, along with an overall elevation in price.

One of the industries highly dependent on natural gas that is critical to American agriculture is the fertilizer industry. Natural gas is the primary feedstock in the production of virtually all commercial nitrogen fertilizers in the United States, accounting for 90 percent of the farmer's total cost of anhydrous fertilizer. According to The Fertilizer Institute, the 2000 planting season saw ammonia fertilizer at a cost of around $100 per ton. During the 2003 growing season, farmers faced ammonia prices of $350 or more per ton. The U.S. Department of Agriculture estimates that it cost U.S. farmers and ranchers an extra $2.6 billion to produce the same amount of food and fiber in 2003 when compared to the 2002 growing season. Our domestic fertilizer production capacity already has experienced a permanent loss of 25 percent over the past 4 years and an additional 20 percent is currently shut down due to high natural gas prices. The current price volatility threatens the existence of what remains of our domestic fertilizer industry and will exacerbate America's dependence on foreign sources of energy and fertilizer.

Last week, I sat down with a group of producers in the Oklahoma panhandle to discuss this issue. They reported that the cost of running their natural gas powered irrigation pumps increased more than 70 percent in 2003. One producer, in Beaver County, Oklahoma, stated that these costs alone resulted in a $26,000 drop in his net income.

The current natural gas crisis is a prime example of the need for a clear and consistent energy policy. On one hand, the Federal Government has encouraged expanding the use of natural gas as an environmentally friendly alternative for electrical generation, home heating and manufacturing. At the same time, the Federal Government has increased the regulatory burden on domestic natural gas exploration, drilling and production and placed moratoriums on many energy-rich areas such as the Outer Continental Shelf (OCS), the Gulf of Mexico and Federal lands. Similar restrictions have been and continue to be experienced on other traditional energy resources such as oil, coal and nuclear, due primarily to environmental concerns, but adding to the demand pressure on natural gas as a clean alternative. In Oklahoma, oil and gas exploration on *private lands* has been severely hampered by the U.S. Fish and Wildlife Service's habitat rules for the burying beetle. The service has delayed drilling, gathering and other activities of oil and gas producers. If left unaddressed, U.S. energy policy as a whole will certainly result in the loss of even more of our energy independence tomorrow.

In addition to higher operating costs due to natural gas, farmers and ranchers have experienced diesel fuel price increases 40 percent above historical averages. With thin margins already being experienced in agriculture and the prospect of high energy prices in the foreseeable future, this added expense, which cannot be passed on in the price of agricultural commodities, will erode the financial positions of many farm and ranch families.

The energy price instabilities being experienced today should not be allowed to grow into a more serious energy crisis in the future. Nor does America need to become as dependent on foreign sources of natural gas as we now are with crude oil. Energy rich repositories now off limits must be reconsidered for environmentally

safe oil and gas exploration and production immediately. Advancements in oil and gas-drilling technology have resulted in the most environmentally sound and responsible capturing of energy stocks ever conducted, and will continue to improve. Earlier this year, American Farm Bureau Federation president Bob Stallman was on hand in support of Secretary of Interior Gale Norton's announcement of royalty relief for deep natural gas drilling in the shallow waters of the western Gulf of Mexico. These innovative approaches show promise toward future energy supplies, but much more can be done.

AFBF and the Oklahoma Farm Bureau strongly believe that the current comprehensive energy legislation will lead to a diversified energy portfolio with increased emphasis on renewable sources, while at the same time increase our domestic energy supply from traditional sources such as natural gas, oil and coal in a safe and affordable manner. We urge that Congress complete this important legislation this session. Thank you for the opportunity to appear before you and for your consideration of our views.

STATEMENT OF MARJORIE WEST, WESTERN ORGANIZATION OF RESOURCE COUNCILS

Mr. Chairman and members of the committee, my name is Marjorie West. Thank you for the opportunity to address this committee regarding the environmental impacts of natural gas production. My husband and I own a ranch on Spotted Horse Creek in the Powder River Basin of Wyoming, where we grow dry land wheat and raise cattle. We have lived on this land for 50 years. The ranch was homesteaded by my husband's father and expanded by the family over the generations. As a landowner, farmer and rancher, I want to share with you what is happening on the ground in Wyoming and in other parts of the West, and talk about what it will take for the oil and gas industry to develop natural gas responsibly or as we say, "Do It Right."

I am here today representing two non-profit organizations that have fought for responsible energy development in the West for more than 30 years the Powder River Basin Resource Council (PRBRC) and the Western Organization of Resource Councils (WORC). PRBRC is a grassroots organization dedicated to good stewardship of Wyoming's natural resources, and the preservation of the State's agricultural heritage. WORC is a network of grassroots organizations from seven western States that include 8,250 members and 48 local community groups. About a third of WORC's members are family farmers and ranchers, many of whom are directly impacted by natural gas development.

Mr. Chairman, I want you to know that the organizations I represent here today support responsible natural gas development. But our ability to be good stewards of the land and earn a living is threatened by irresponsible gas development practices. For several years now, we have been asking industry, State and Federal agencies and Congress to develop natural gas responsibly and "Do It Right." I wish I could say they are listening.

The sheer magnitude of the natural gas development being planned for the West is unprecedented. Over 60,000 new coalbed methane wells are planned for the Powder River Basin in Montana and Wyoming alone (compared with approximately 16,000 current wells), with tens of thousands of additional gas and coalbed methane wells planned for Colorado, North Dakota, New Mexico and other parts of the West.

My first-hand experience with coalbed methane, and accounts I have heard from other westerners indicate that the current pace and direction of natural gas development in this country is resulting in serious damage to land and water resources and private property rights.

The last 5 years have been the most difficult and destructive years we've ever experienced. We've been through droughts, grasshopper invasions and bad wheat and cattle prices on the ranch but nothing holds a candle to the stress and the damages brought upon us by irresponsible coalbed methane gas development. Over the last 5 years we have lost all three of our artesian wells and our domestic water well due to groundwater dewatering. This is presently and will continue to be a long term problem for us. For now, we are using some of the coalbed methane water that is being pumped out to water our livestock, but that will be gone in a few years and then what? The company has told us outright that they do not intend to leave us with an operating livestock well when they are finished developing the gas.

After 6 or 7 months of hauling our household water, the coalbed methane company finally drilled us a 1300-foot household water well. We could not drink this water without getting diarrhea, and I could not wash clothes without having them turn orange from the high iron content. This is not the good water we had before coalbed methane drilling destroyed our well. We now have two water treatment sys-

tems: Reverse osmosis for drinking water, and an iron treatment system for the rest of our household needs. Our electricity costs for pumping the deep well have doubled, and the first time we had the treatment system serviced we were charged three hundred dollars. We should not have to bear these additional costs.

For the past 4 years, another company has been discharging coalbed methane water upstream of us into Spotted Horse Creek, which is an ephemeral creek that formerly ran only during spring melt or heavy summer rain events. This CBM water has a high "sodium adsorption ratio" (a ratio of sodium to calcium and magnesium) which over time will destroy soils, crops and native vegetation. This water flooded Spotted Horse Creek the entire winter of 2000/2001, icing over and flowing out on either side of our hay meadow, and destroying all the native vegetation in our creek. So much salt was deposited on the soil and leached out of the clay soils that nothing but weeds will grow. This past year we had an impressive crop of fireweed which is very salt tolerant, but cattle will not eat it.

The worst tragedy for us was that it drowned and killed over two hundred of our beautiful hundred-year-old cottonwood trees that lined that creek. These were our best hay meadows. Now they grow only weeds. This stretch of Spotted Horse Creek looks nothing like it did 5 years ago. The discharge of CBM water into ephemeral creeks all over the Powder River Basin is destroying soil and vegetation and changing these streams, probably forever.

We've spent thousands of dollars on legal fees trying to get the problems addressed. We've made agreements with these companies only to have the companies fail to live up to their agreements, thus forcing us to spend more money and time on lawyers. Out of six companies, not one has lived up to its word or its agreement. These are not just small operators, several are large well established oil and gas companies. They are Devon, Marathon-Pennaco, Yates, Williams, CMS, Lance and Redstone.

The so-called "regulators" have not only allowed the damages to occur without intervention or penalty, but they continue to permit activities that are in violation of their own regulations. Industry has been given license to destroy our property, our soil, our grass, our land, our creek, our solitude.

Our experiences are not isolated and they are becoming more widespread. There are many other landowners that have lost water wells, have had companies come on their land without an agreement and cause numerous damages by building roads and well pads or discharging water that has killed soil and vegetation. Landowners also experience reduced property values, lost income, seepage of methane into drinking water wells and under homes, introduction and spread of noxious weeds, the death of livestock and noise from compressor stations, generators, traffic and drilling.

While we may be luckier than some landowners because we do own a percentage of our minerals, our lives have been turned upside down and our health has deteriorated. My husband, Bill, now takes high blood pressure medication and I take a prescription medication for severe headaches. I cannot prove that the methane industry has caused these conditions, but it certainly has not helped. We spend our days fighting with companies to develop coalbed methane in a responsible manner. Although one company has a successful reinjectionsite for CBM water on our ranch, another company has come on our land without an agreement for development, after making many false promises. We no longer have time for the ranching and farming that we love.

I am here to ask you not to further weaken environmental laws, nor to further assist industry in rushing carelessly forward to develop natural gas on our lands. I am asking you to take some decisive leadership and require oil and gas companies to develop this gas responsibly.

The energy bill that failed to pass the U.S. Senate in December, and the new version of that bill that was introduced by Senator Domenici in February (S. 2095) both take us in the wrong direction by failing to provide desperately needed new protections and weakening current environmental and procedural safeguards. For example, S. 2095:

- Threatens clean water by: (1) exempting hydraulic fracturing from Federal safe drinking water standards, potentially resulting contamination of drinking water supplies by diesel fuel and other hazardous chemicals, and (2) exempting oil and gas construction activities from the Clean Water Act's pollution controls, resulting in unregulated discharges of chemicals into rivers, streams and other water bodies.
- Requires the U.S. Bureau of Land Management to approve gas drilling permits within a matter of days, leaving impacted landowners and communities with limited opportunities to review applications and offer the benefit of their considerable knowledge and experience and attempt to protect their property, health and economic well being.

Congress can and should do better. Natural gas development is important to the Nation, and in appropriate places and under the right conditions can and should be developed for the benefit of the country. But it has to be balanced with protections for other resources especially water and other uses of the land involved. We need laws that require companies to negotiate agreements with landowners; and then they must be required to live up to those agreements. Instead of tax credits to speed development, we need increased bonding to ensure that our land will not be left a scarred battlefield. Citizens and taxpayers should not be left with the burden of cleaning up after oil and gas companies. But at the rate we're going I can assure you that is the direction we are headed.

PRBRC and WORC have endorsed a responsible "doing it right" approach that contains six platforms:

(1) Effective monitoring of coalbed methane or deep gas development, and active enforcement of existing laws to protect private property rights and natural resources.

(2) Surface owner consent, and surface use agreements that help landowners better protect their property rights.

(3) Use of aquifer recharge, clustered development, mufflers for compressor stations and other low-impact, best available technologies to minimize impacts on undergroundwater, rivers, streams and surface resources.

(4) Collection of thorough fish, wildlife and plant inventories before development proceeds to protect habitat, followed by phased-in development to diffuse impacts over time.

(5) Meaningful public involvement in the decisionmaking process.

(6) Complete reclamation of all disturbed areas, and bonding that protects landowners and taxpayers from all cleanup liability costs.

In the House of Representatives, Representatives Mark Udall and Tom Udall have introduced a bill (H.R. 3698) that would assure that our precious water resources are safeguarded during the course of oil and gas development, reduce potential conflicts between oil and gas operators and surface owners, and provide for appropriate reclamation of affected lands. This bill provides a necessary balance to the gas permitting and production rush that is underway, and I am submitting a copy for the record.

In closing, I invite each and every one of you to visit my ranch and see for yourselves the damages that have occurred. We are willing to make the sacrifice of living with responsible coalbed methane development in order for this country to have natural gas. However, we are not willing to make a complete and total sacrifice of our land, our water, our property rights, and our children's future. Nor should we have to. These companies are making very good profits; they can well afford to be environmentally responsible.

I never thought this kind of damage could be brought upon citizens of this country by this government and this industry. I was naive. My only hope is that lawmakers such as yourselves, the honorable members of this committee, will realize what is happening to us at the hands of the powerful oil and gas industry, and change it, to make the system just, fair and equitable. We require our coal mining industry in Wyoming and this country to live up to very high standards for permitting, bonding, landowner consent, water well replacement and many other things we should expect nothing less of the oil and gas industry. They must be required to "Do it Right." Thank you very much for your time and concern.

108TH CONGRESS
1ST SESSION

H. R. 3698

To assure that development of certain Federal oil and gas resources will occur in ways that protect water resources and surface owner rights, and for other purposes.

IN THE HOUSE OF REPRESENTATIVES

DECEMBER 8, 2003

Mr. UDALL of Colorado (for himself and Mr. UDALL of New Mexico) introduced the following bill; which was referred to the Committee on Resources, and in addition to the Committee on Transportation and Infrastructure, for a period to be subsequently determined by the Speaker, in each case for consideration of such provisions as fall within the jurisdiction of the committee concerned

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A BILL

To assure that development of certain Federal oil and gas resources will occur in ways that protect water resources and surface owner rights, and for other purposes.

Be it enacted by the Senate and House of Representatives of the United States of America in Congress assembled,

SECTION 1. SHORT TITLE; FINDINGS; PURPOSE.

(a) SHORT TITLE.—This Act may be cited as the "Western Waters and Surface Owners Protection Act".

(b) FINDINGS.—The Congress finds the following:

1 (1) Domestic oil and gas resources, including
2 coalbed methane, are an important part of the Na-
3 tion's energy supply portfolio and their development
4 in appropriate locations and in appropriate ways can
5 help reduce dependence on imported energy supplies.
6 (2) In many areas of the Western United
7 States, federally owned minerals, including oil and
8 gas, are in lands where the surface estate belongs to
9 non-Federal parties whose interests can be adversely
10 affected if the development of the minerals is not
11 done in an appropriate manner.
12 (3) Development of oil and gas—and especially
13 coalbed methane—often involves removal of a sig-
14 nificant volume of groundwater.
15 (4) Some of the water extracted in connection
16 with this development is reinjected into the ground,
17 while some is retained in surface holding ponds or
18 released on the surface and allowed to flow into
19 streams or other waterbodies, including ditches used
20 for irrigation.
21 (5) The quality of these extracted waters varies
22 from one location to another. Some of these waters
23 are of good quality, but they often contain dissolved
24 minerals (such as sodium, magnesium, arsenic, or
25 selenium) that can contaminate other waters as a re-

1 sult of leaks or leaching from holding ponds or dis-
2 charge of extracted waters. In addition, extracted
3 waters often have other characteristics, such as high
4 acidity and temperature, that can adversely affect
5 agricultural uses of land or the quality of the envi-
6 ronment.

7 (6) Clearer requirements for proper disposal of
8 these extracted waters is necessary in order to avoid
9 adverse effects on the quality of ground and surface
10 waters as well as the productivity of surrounding ag-
11 ricultural lands.

12 (7) To reduce the chance of potential harm to
13 water supplies, agricultural production, and the envi-
14 ronment that otherwise could result from disposal of
15 water extracted in connection with coalbed methane
16 development or the development of other oil or gas
17 resources, the Congress should act to ensure that
18 such disposal is subject to regulation under the Fed-
19 eral Water Pollution Control Act (33 U.S.C. 1251 et
20 seq.) and the Mineral Leasing Act (30 U.S.C. 181
21 et seq.).

22 (8) Under the Stock-Raising Homestead Act
23 (43 U.S.C. 291 et seq.) and other laws, the Federal
24 Government has transferred to other parties the sur-
25 face estate in millions of acres in Western States

1 where ownership of coal, oil, gas, and other minerals
2 has been retained by the Federal Government.
3 (9) Under current Federal law, the leasing of
4 federally owned coal on lands where the surface es-
5 tate is not owned by the United States is subject to
6 the consent of the surface estate owners, but neither
7 this consent requirement nor the operating and
8 bonding requirements applicable to development of
9 federally owned locatable minerals applies to the
10 leasing or development of oil or gas in similar split-
11 estate situations.
12 (10) To better balance the need for develop-
13 ment of oil and gas resources (including coalbed
14 methane) with the rights and interests of the owners
15 of the surface estate of affected lands, current law
16 should be revised so as to increase the involvement
17 of the surface estate owners in developing and imple-
18 menting plans for such development and to provide
19 clearer and more adequate standards for such devel-
20 opment.
21 (c) PURPOSE.—The purpose of this Act is to provide
22 for the protection of water resources and surface estate
23 owners in the development of oil and gas resources, includ-
24 ing coalbed methane.

TITLE I—PROTECTION OF WATER RESOURCES

SEC. 101. MINERAL LEASING ACT REQUIREMENTS.

Section 17 of the Mineral Leasing Act (30 U.S.C. 226) is amended by adding at the end the following:

"(p) WATER REQUIREMENTS.—

"(1) An operator producing oil or gas (including coalbed methane) under a lease issued under this Act shall—

"(A) replace the water supply of a water user who obtains all or part of such user's supply of water for domestic, agricultural, or other purposes from an underground or surface source that has been affected by contamination, diminution, or interruption proximately resulting from drilling operations for such production;

"(B) assure that any reinjection of water produced by drilling in connection with operations under the lease will return the water into the same aquifer from which it was extracted or an aquifer of no better water quality; and

"(C) comply with all applicable requirements of Federal and State law for discharge of

1 any water produced under the lease that is not
2 reinjected.
3 "(2) An application for a lease under this sub-
4 section shall be accompanied by a proposed water
5 management plan including provisions to—
6 "(A) protect the quantity and quality of
7 surface and ground water systems, both on-site
8 and off-site, from adverse effects of the explo-
9 ration, development, and reclamation processes
10 or to provide alternative sources of water if
11 such protection cannot be assured;
12 "(B) protect the rights of present users of
13 water that would be affected by operations
14 under the lease, including the discharge of any
15 water produced in connection with such oper-
16 ations that is not reinjected; and
17 "(C) identify any agreements with other
18 parties for the beneficial use of produced waters
19 and the steps that will be taken to comply with
20 state and Federal laws related to such use.".
21 **SEC. 102. CLEAN WATER ACT REQUIREMENTS.**
22 Section 402(b) of the Federal Water Pollution Con-
23 trol Act (33 U.S.C. 1342) is amended by adding at the
24 end the following:

"(10) To issue permits that comply with subsection (a) and any other relevant requirements of this Act, and to ensure that waters extracted from a subsurface formation in connection with development of oil or gas, including coalbed methane, will be subject to appropriate requirements to minimize adverse effects on any lands or waters that would be affected by disposal or other uses of such extracted waters.".

SEC. 103. RELATION TO STATE LAW.

Nothing in this Act or any amendment made by this Act shall—

(1) be construed as impairing or in any manner affecting any right or jurisdiction of any State with respect to the waters of such State; or

(2) be construed as limiting, altering, modifying, or amending any of the interstate compacts or equitable apportionment decrees that apportion water among and between States.

TITLE II—SURFACE OWNER PROTECTION

SEC. 201. DEFINITIONS.

As used in this title—

(1) the term "Secretary" means the Secretary of the Interior;

1 (2) the term "lease" means a lease issued by
2 the Secretary under the Mineral Leasing Act (30
3 U.S.C. 181 et seq.) or any other law, providing for
4 development of oil and gas resources (including coal-
5 bed methane) owned by the United States;
6 (3) the term "lessee" means the holder of a
7 lease; and
8 (4) the term "operator" means any person that
9 is responsible under the terms and conditions of a
10 lease for the operations conducted on leased lands or
11 any portion thereof.

12 **SEC. 202. POST-LEASE SURFACE USE AGREEMENT.**

13 (a) IN GENERAL.—Except as provided in section 203,
14 the Secretary may not authorize any operator to conduct
15 exploration and drilling operations on lands with respect
16 to which title to oil and gas resources is held by the United
17 States but title to the surface estate is not held by the
18 United States, until the operator has filed with the Sec-
19 retary a document, signed by the operator and the surface
20 owner or owners, showing that the operator has secured
21 a written surface use agreement between the operator and
22 the surface owner or owners that meets the requirements
23 of subsection (b).
24 (b) CONTENTS.—The surface use agreement shall
25 provide for—

1 (1) the use of only such portion of the surface
2 estate as is reasonably necessary for exploration and
3 drilling operations based on site-specific conditions;
4 (2) the accommodation of the surface estate
5 owner to the maximum extent practicable, including
6 the location, use, timing, and type of exploration and
7 drilling operations, consistent with the operator's
8 right to develop the oil and gas estate;
9 (3) the reclamation of the site to a condition ca-
10 pable of supporting the uses which such lands were
11 capable of supporting prior to exploration and drill-
12 ing operations; and
13 (4) compensation for damages as a result of ex-
14 ploration and drilling operations, including but not
15 limited to—
16 (A) loss of income and increased costs in-
17 curred;
18 (B) damage to or destruction of personal
19 property, including crops, forage, and livestock;
20 and
21 (C) failure to reclaim the site in accord-
22 ance with this paragraph (3).
23 (c) PROCEDURE.—(1) An operator shall notify the
24 surface estate owner or owners of the operator's desire to
25 conclude an agreement under this section. If the surface

1 estate owner and the operator do not reach an agreement
2 within 90 days after the operator has provided such notice,
3 the matter shall be referred to third party arbitration for
4 resolution within a period of 90 days. The cost of such
5 arbitration shall be the responsibility of the operator.

6 (2) The Secretary shall identify persons with experi-
7 ence in conducting arbitrations and shall make this infor-
8 mation available to operators.

9 (3) Referral of a matter for arbitration by a person
10 identified by the Secretary pursuant to paragraph (2)
11 shall be sufficient to constitute compliance with paragraph
12 (1).

13 (d) ATTORNEYS FEES.—If action is taken to enforce
14 or interpret any of the terms and conditions contained in
15 a surface use agreement, the prevailing party shall be re-
16 imbursed by the other party for reasonable attorneys fees
17 and actual costs incurred, in addition to any other relief
18 which a court or arbitration panel may grant.

19 **SEC. 203. AUTHORIZED EXPLORATION AND DRILLING OP-**
20 **ERATIONS.**

21 (a) AUTHORIZATION WITHOUT SURFACE USE
22 AGREEMENT.—The Secretary may authorize an operator
23 to conduct exploration and drilling operations on lands
24 covered by section 202 in the absence of an agreement
25 with the surface estate owner or owners, if—

1 (1) the Secretary makes a determination in
2 writing that the operator made a good faith attempt
3 to conclude such an agreement, including referral of
4 the matter to arbitration pursuant to section 202(c),
5 but that no agreement was concluded within 90 days
6 after the referral to arbitration;
7 (2) the operator submits a plan of operations
8 that provides for the matters specified in section
9 202(b) and for compliance with all other applicable
10 requirements of Federal and State law; and
11 (3) the operator posts a bond or other financial
12 assurance in an amount the Secretary determines to
13 be adequate to ensure compensation to the surface
14 estate owner for any damages to the site, in the
15 form of a surety bond, trust fund, letter of credit,
16 government security, certificate of deposit, cash, or
17 equivalent.
18 (b) SURFACE OWNER PARTICIPATION.—The Sec-
19 retary shall provide surface estate owners with an oppor-
20 tunity to—
21 (1) comment on plans of operations in advance
22 of a determination of compliance with this title;
23 (2) participate in bond level determinations and
24 bond release proceedings under this section;

1 (3) attend an on-site inspection during such de-
2 terminations and proceedings;
3 (4) file written objections to a proposed bond
4 release; and
5 (5) request and participate in an on-site inspec-
6 tion when they have reason to believe there is a vio-
7 lation of the terms and conditions of a plan of oper-
8 ations.
9 (c) PAYMENT OF FINANCIAL GUARANTEE.—A sur-
10 face estate owner with respect to any land subject to a
11 lease may petition the Secretary for payment of all or any
12 portion of a bond or other financial assurance required
13 under this section as compensation for any damages as
14 a result of exploration and drilling operations. Pursuant
15 to such a petition, the Secretary may use such bond or
16 other guarantee to provide compensation to the surface
17 estate owner for such damages.
18 (d) BOND RELEASE.—Upon request and after inspec-
19 tion and opportunity for surface estate owner review, the
20 Secretary may release the financial assurance required
21 under this section if the Secretary determines that explo-
22 ration and drilling operations are ended and all damages
23 have been fully compensated.
24 **SEC. 204. SURFACE OWNER NOTIFICATION.**
25 The Secretary shall—

(1) notify surface estate owners in writing at least 45 days in advance of lease sales;

(2) within ten working days after a lease is issued, notify surface estate owners of regarding the identity of the lessee;

(3) notify surface estate owners in writing concerning any subsequent decisions regarding a lease, such as modifying or waiving stipulations and approving rights of way; and

(4) notify surface estate owners within five business days after issuance of a drilling permit under a lease.

TITLE III—RECLAMATION AND BONDING

SEC. 301. RECLAMATION STANDARD AND BOND.

Section 17 of the Mineral Leasing Act (30 U.S.C. 226) is amended by adding at the end the following:

"(p) RECLAMATION REQUIREMENTS.—An operator producing oil or gas (including coalbed methane) under a lease issued pursuant to this Act shall—

"(1) at a minimum restore the land affected to a condition capable of supporting the uses that it was capable of supporting prior to any drilling, or higher or better uses of which there is reasonable likelihood, so long as such use or uses do not present

1 any actual or probable hazard to public health or
2 safety or pose any actual or probable threat of water
3 diminution or pollution, and the permit applicants'
4 declared proposed land use following reclamation is
5 not impractical or unreasonable, inconsistent with
6 applicable land use policies and plans, or involve un-
7 reasonable delay in implementation, or is violative of
8 Federal, State, or local law;
9 "(2) ensure that all reclamation efforts proceed
10 in an environmentally sound manner and as contem-
11 poraneously as practicable with the oil and gas drill-
12 ing operations; and
13 "(3) submit with the plan of operations a rec-
14 lamation plan that describes in detail the methods
15 and practices that will be used to ensure complete
16 and timely restoration of all lands affected by oil
17 and gas operations.
18 "(q) RECLAMATION BOND.—An operator producing
19 oil or gas (including coalbed methane) under a lease issued
20 under this Act shall post a bond that covers that area of
21 land within the permit area upon which the operator will
22 initiate and conduct oil and gas drilling and reclamation
23 operations within the initial term of the permit. As suc-
24 ceeding increments of oil and gas drilling and reclamation
25 operations are to be initiated and conducted within the

1 permit area, the lessee shall file with the regulatory au-
2 thority an additional bond or bonds to cover such incre-
3 ments in accordance with this section. The amount of the
4 bond required for each bonded area shall depend upon the
5 reclamation requirements of the approved permit; shall re-
6 flect the probable difficulty of reclamation giving consider-
7 ation to such factors as topography, geology of the site,
8 hydrology, and revegetation potential; and shall be deter-
9 mined by the Secretary. The amount of the bond shall be
10 sufficient to assure the completion of the reclamation plan
11 if the work had to be performed by the Secretary in the
12 event of forfeiture.

13 "(r) REGULATIONS.—No later than one year after
14 the date of the enactment of this subsection, the Secretary
15 shall promulgate regulations to implement the require-
16 ments of subsections (p) and (q).

17 "(s) STUDY BY THE GENERAL ACCOUNTING OF-
18 FICE.—(1) The Comptroller General shall conduct a re-
19 view to assess the adequacy of the regulations issued by
20 the Secretary pursuant to subsection (r) to ensure that
21 operators will meet the requirements of subsection (p).

22 "(2) A report of the results of the review required
23 by paragraph (1) shall be transmitted to the Committee
24 on Resources of the House of Representatives and the
25 Committee on Energy and Natural Resources of the Sen-

1 ate no later than 180 days after the date on which the
2 Secretary promulgates regulations pursuant to subsection
3 (r).

4 "(3) The report required by paragraph (2) shall in-
5 clude findings and conclusions by the Comptroller General
6 of the United States, and any recommendations the Comp-
7 troller General may make with respect to any legislation
8 or administrative actions the Comptroller General deter-
9 mines would be appropriate to ensure compliance with the
10 requirements of subsection (p).".

11 TITLE IV—ABANDONED WELLS

12 **SEC. 401. DEFINITION.**

13 As used in this title, the term "abandoned well"
14 means any well drilled for the purpose of exploring for
15 or developing oil or gas resources (including coalbed meth-
16 ane) that—

17 (1) has not been in operation for a period of 12
18 continuous months, unless the owner or operator has
19 notified the Secretary of the Interior (for wells
20 drilled to explore for or develop minerals owned by
21 the United States) or the relevant State regulatory
22 agency (for wells drilled to explore for or develop
23 minerals not owned by the United States) that the
24 well has been temporarily shut down; or

1 (2) has not been operative for more than 60
2 continuous months after the owner or operator has
3 notified the Secretary of the Interior (for wells
4 drilled to explore for or develop minerals owned by
5 the United States) or the relevant State regulatory
6 agency (for wells drilled to explore for or develop
7 minerals not owned by the United States) that the
8 well has been temporarily shut down.

9 **SEC. 402. FEDERAL REMEDIATION PROGRAM.**

10 (a) ESTABLISHMENT OF PROGRAM.—(1) The Sec-
11 retary of the Interior, in cooperation with the Secretary
12 of Agriculture, shall establish a program to ensure to the
13 maximum extent feasible the remediation, reclamation,
14 and closure of abandoned wells that—

15 (A) are located on lands administered by an
16 agency of the Department of the Interior or the For-
17 est Service; or

18 (B) were drilled to explore for or develop min-
19 erals owned by the United States located on lands
20 with respect to which the surface estate is not owned
21 by the United States.

22 (2) In implementing the program, the Secretary of
23 the Interior—

24 (A) shall cooperate with the Secretary of
25 Agriculture and the States with respect to the

1 Federal lands covered by the program are lo-
2 cated; and
3 (B) shall consult with the Secretary of En-
4 ergy and the Interstate Oil and Gas Compact
5 Commission.
6 (3) The Secretary of the Interior shall establish the
7 program by no later than 3 years after the date of enact-
8 ment of this section.
9 (b) PROGRAM ELEMENTS.—The program established
10 under subsection (a) shall—
11 (1) provide for identification of abandoned wells
12 to be covered by the program;
13 (2) establish a means of ranking critical sites
14 for priority in remediation based on potential envi-
15 ronmental harm, other land use priorities, and pub-
16 lic health and safety; and
17 (3) provide as far as possible for identifying any
18 lessees or other persons responsible for abandoned
19 wells, and for recovering the costs of remediation to
20 the maximum extent feasible.
21 (c) PLAN.—Within 6 months after the date of enact-
22 ment of this section, the Secretary of the Interior, in co-
23 operation with the Secretary of Agriculture, shall prepare
24 a plan for implementing the program established under
25 subsection (a). A copy of the plan shall be transmitted

1 to the Committee on Resources of the House of Represent-
2 atives and the Committee on Energy and Natural Re-
3 sources of the Senate.

4 (d) REVIEW AND REPORT.—(1) No later than 3 years
5 after the date of enactment of this section, the Secretary
6 of the Interior, in consultation with the Secretary of Agri-
7 culture, shall complete a review of the status of remedi-
8 ation, reclamation, and closure actions under the program.

9 (2) Upon completion of the review required by para-
10 graph (1), the Secretary of the Interior shall provide to
11 the Committee on Resources of the House of Representa-
12 tives and the Committee on Energy and Natural Re-
13 sources of the Senate—

14 (A) a report on the results of the review;

15 (B) information regarding any wells on lands
16 covered by the program that have been abandoned
17 since the date of enactment of this section; and

18 (C) any recommendations the Secretary may
19 choose to make regarding legislative or administra-
20 tion steps to further the purposes for which the pro-
21 gram was established.

22 (e) AUTHORIZATION OF APPROPRIATIONS.—There
23 are authorized to be appropriated to the Secretary of the
24 Interior $5,000,000 for each of fiscal years 2005 through
25 2006 to carry out this section.

1 **SEC. 403. ASSISTANCE TO STATES AND TRIBES.**

2 (a) STATE PROGRAM.—The Secretary of the Interior,
3 in consultation with the Secretary of Energy, shall estab-
4 lish a program to provide technical assistance to facilitate
5 State efforts to develop and implement practical and eco-
6 nomical remedies for environmental problems caused by
7 abandoned wells on lands that are not owned by the
8 United States. The Secretary shall work with the States,
9 through the Interstate Oil and Gas Compact Commission,
10 to assist the States in quantifying and mitigating environ-
11 mental risks of onshore abandoned wells on State and pri-
12 vate lands.

13 (b) TRIBAL PROGRAM.—The Secretary of the Inte-
14 rior, in consultation with the Secretary of Energy, shall
15 establish a program to provide technical assistance to fa-
16 cilitate efforts by Indian Tribes to develop and implement
17 practical and economical remedies for environmental prob-
18 lems caused by abandoned wells on Indian lands, including
19 lands held in trust by the United States.

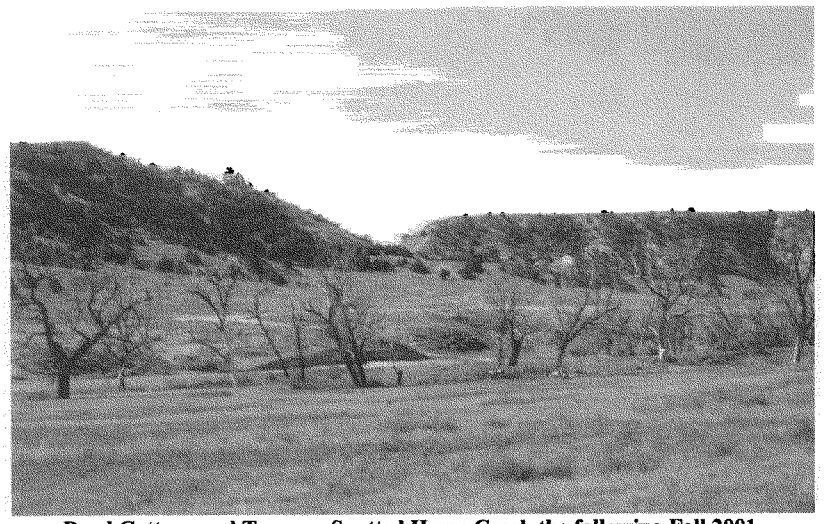
20 (c) PROGRAM ELEMENTS.—So far as possible, the
21 programs established under this section shall include—

22 (1) mechanisms to facilitate identification of re-
23 sponsible parties;

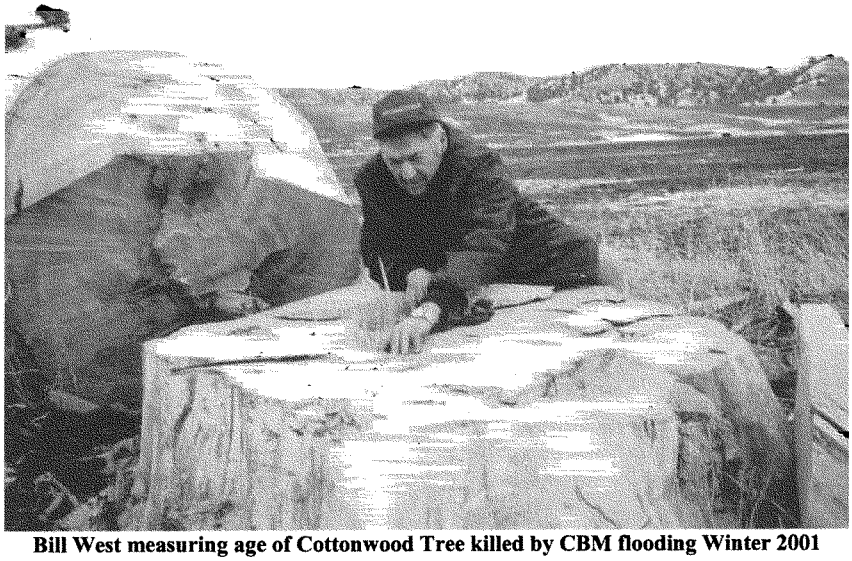
24 (2) criteria for ranking critical sites based on
25 factors such as other land use priorities, potential
26 environmental harm and public visibility; and

1 (3) information and training programs regard-
2 ing best practices for remediation of different types
3 of sites.
4 (d) AUTHORIZATION OF APPROPRIATIONS.—There is
5 authorized to be appropriated to the Secretary of the Inte-
6 rior for activities under this section $5,000,000 for each
7 of fiscal years 2005 through 2007.

○

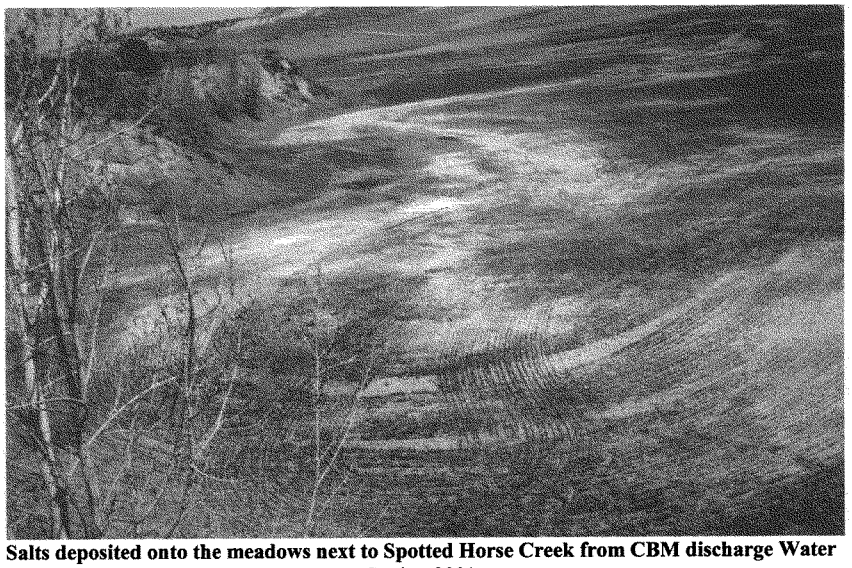


Dead Cottonwood Trees on Spotted Horse Creek the following Fall 2001

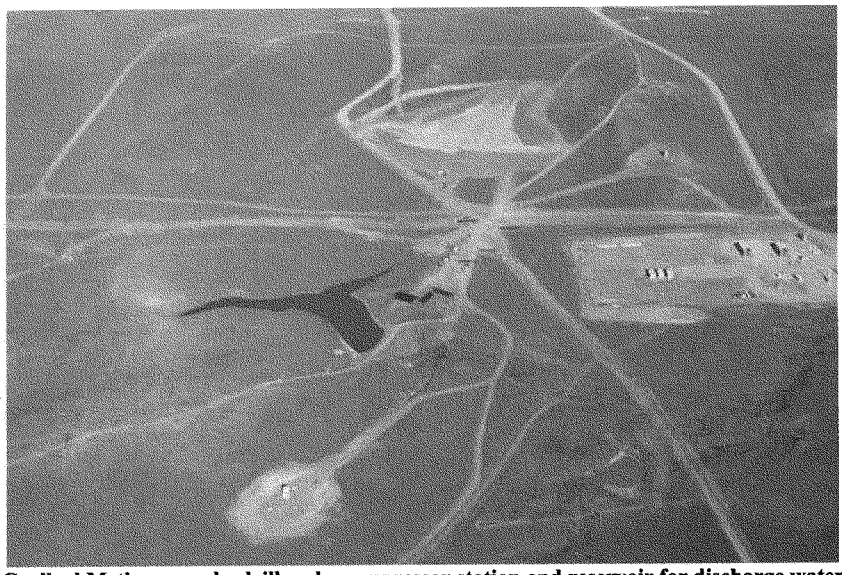


Bill West measuring age of Cottonwood Tree killed by CBM flooding Winter 2001

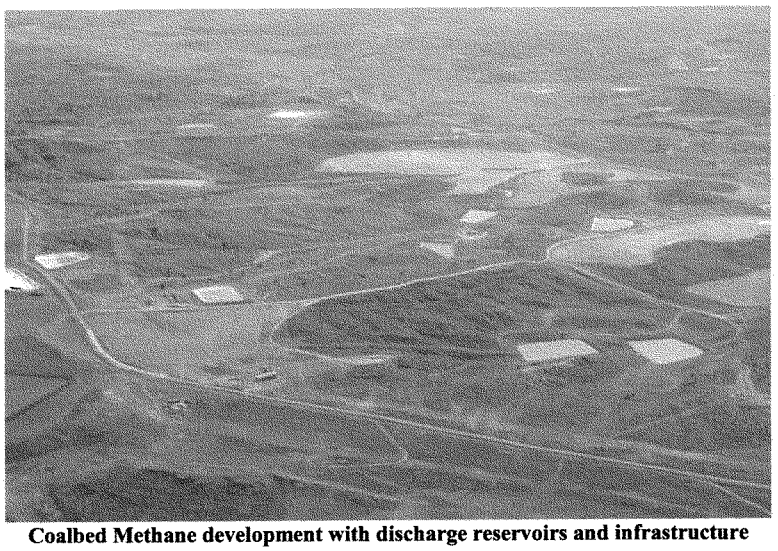
Coalbed Methane discharge water flooding Spotted Horse Creek Winter 2000/2001



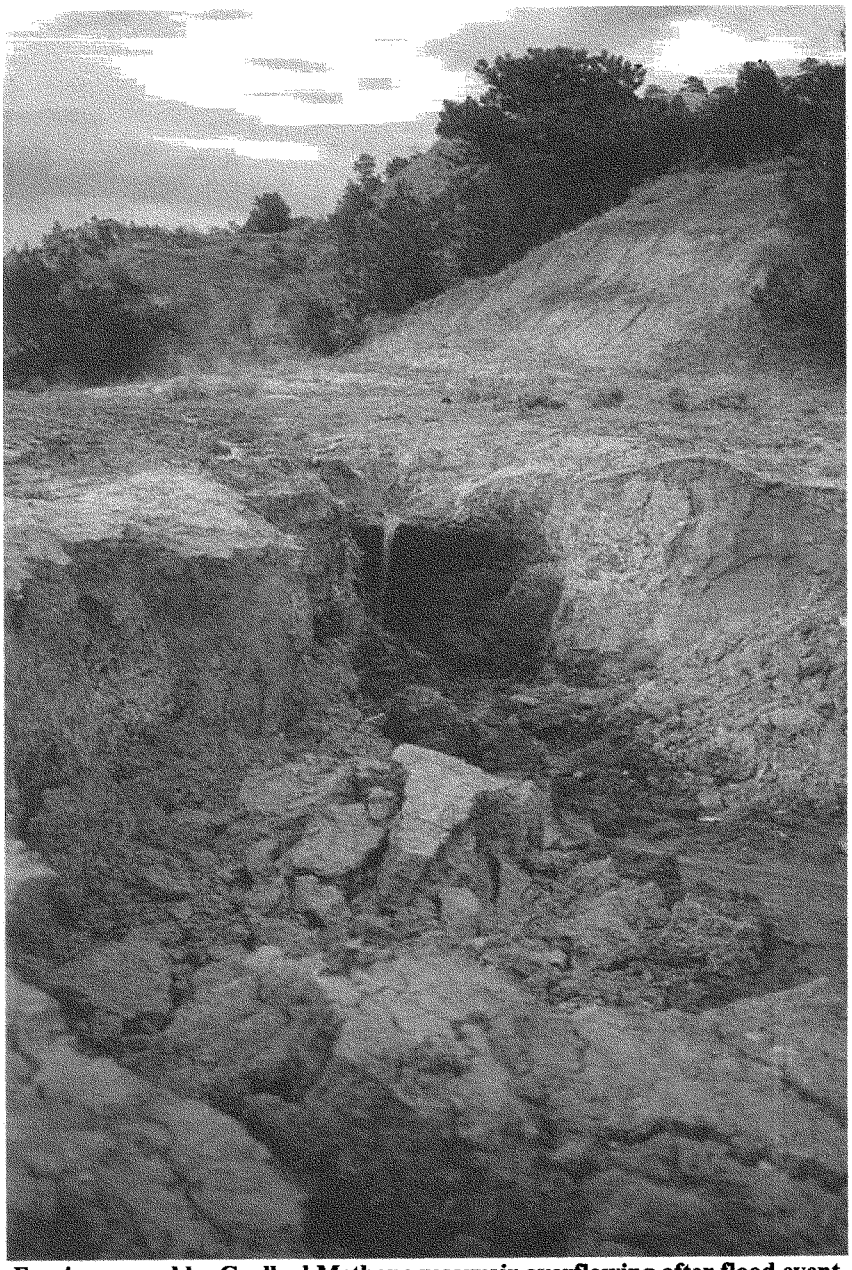
Salts deposited onto the meadows next to Spotted Horse Creek from CBM discharge Water Spring 2001



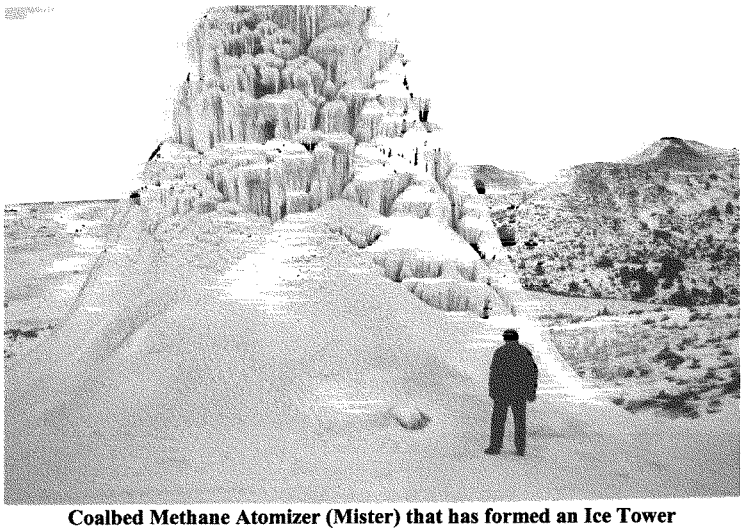
Coalbed Methane roads, drill pads, compressor station and reservoir for discharge water



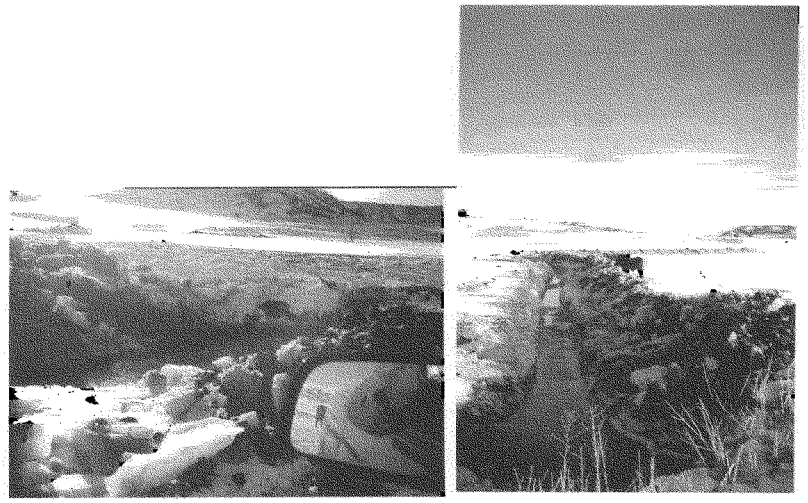
Coalbed Methane development with discharge reservoirs and infrastructure



Erosion caused by Coalbed Methane reservoir overflowing after flood event



Coalbed Methane Atomizer (Mister) that has formed an Ice Tower



Ice formed by CBM discharge water which is being removed from Spotted Horse Creek 2004

STATEMENT OF JOEL BLUESTEIN, PRESIDENT, ENERGY AND ENVIRONMENTAL ANALYSIS, INC.

Thank you Mr. Chairman and members of the committee for the opportunity to testify today. My name is Joel Bluestein and I am the President of Energy and Environmental Analysis, Inc. EEA is located in Arlington, Virginia and has been providing energy and environmental consulting services since 1974. Our major areas of expertise include:

- Analyzing and forecasting the supply, demand and price of natural gas; and
- Analyzing the impacts of energy and regulatory policy on energy markets.

We have done this work for natural gas producers, pipelines, local distribution companies, power generators, technology developers, the U.S. Department of Energy, the U.S. Environmental Protection Agency and other public, private and institutional clients. I have been at EEA for 15 years and have over 20 years of experience in the energy and environmental field.

My testimony today addresses two areas: our outlook on natural gas prices and current effects and trends related to gas prices in industrial and power generation markets.

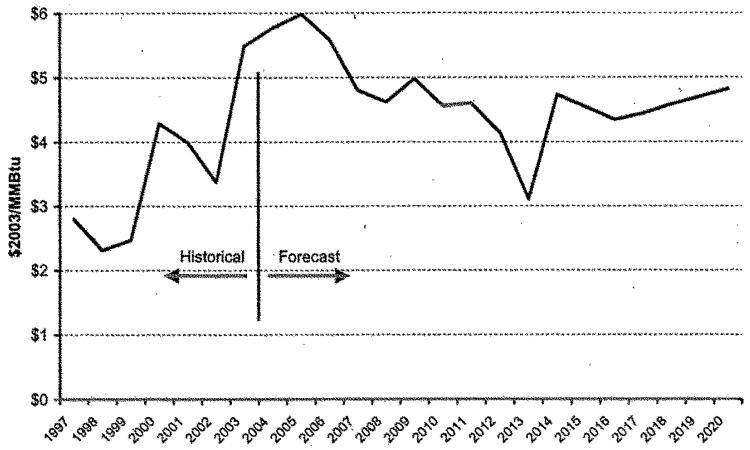
GAS PRICE OUTLOOK

EEA quarterly prepares a 20 year month-by-month forecast of North American natural gas supply, demand and price that we call our *Gas Market Compass.* Figure 1 summarizes our current view of the price for natural gas over that period. Our current outlook for gas prices (in constant 2003 dollars) at the Henry Hub in South Louisiana is about $5.75/MMBtu for this year, a little higher at about $6.00/MMBtu for 2005, then moderating somewhat to $4.50 to $5.00/MMBtu in the medium to longer term. We do not expect to see future gas prices returning to pre-2000 levels.

This outlook assumes significant development of new LNG import terminals in the U.S. and eventual gas imports from Arctic Canada and Alaska. It does not assume any changes in policies regarding where gas can be produced. Delivered gas prices will be higher in areas with local gas delivery constraints. Extreme weather also can cause temporary price spikes. Overall, however, we believe that the market will function and find ways to bring new gas to market. If that does not occur, we would expect gas prices to be roughly 50 percent higher than this forecast.

Figure 1

EEA Forecast of Natural Gas Price at Henry Hub



EFFECT OF CURRENT PRICES AND TRENDS IN END USE MARKETS

Regardless of any changes in policy, there is widespread agreement that it will take a significant amount of time to get new gas supplies in place. In the interim, the most readily available option to stabilize gas prices is increased efficiency in direct gas consumption and indirectly through increased efficiency in electricity consumption. This was one of the primary conclusions of the recent National Petroleum

Council study[1] on natural gas, which stated that: "Greater energy efficiency and conservation are vital near-term and long-term mechanisms for moderating [natural gas] price levels and reducing volatility."

Other studies have found similar results. A December 2003 study[2] by the American Council for an Energy Efficient Economy (ACEEE) looked at the effects on gas prices of an aggressive application of energy efficiency and renewables. The study estimated that efficiency and renewables could achieve a 1.1 percent reduction in gas consumption within 1 year and a 5.5 percent reduction within 5 years. More importantly, EEA projected in this study that this level of demand reduction would result in a 20 percent reduction in gas prices. This non-linear result occurs because we are in a very steep part of the gas supply curve where small changes in demand can result in large changes in price. This can happen in a negative way during extreme weather or in a positive way when efficiency reduces demand.

EEA performed another study[3] last year that looked at the effect of increased use of combined heat and power (CHP) to reduce gas demand. CHP, also known as cogeneration, is one of the most readily available and widely applicable sources of increased efficiency for generation of electricity and thermal energy for process heat applications. The study found that widespread application of CHP in regions of the U.S. that are heavily dependent on natural gas for power generation could achieve 4 to 9 percent reductions in gas consumption through increased efficiency. This study did not separately assess the effects on gas price, but based on studies such as the ACEEE study, this level of demand reduction could result in significant gas price reductions.

While one can forecast that increased efficiency would be beneficial, one might question whether these types of efficiency improvements are practically achievable after 30 years of industrial efficiency improvements, starting with the energy price shocks of the early 1970's. Support for this expectation was described in a February 17 article in the Wall Street Journal[4].

The article describes the efforts of the Owens-Corning company to respond to high gas prices related to its production of glass and mineral fibers. While the company is exploring increased imports of materials as one response, it is also increasing the efficiency of its operation in the U.S. The article describes Owens-Corning's efforts at an insulation factory in Waxahachie, Texas, that was burning as much as $4 million to $5 million of natural gas a year. The company was able to make operational changes at incinerators and melters that cut gas consumption without sacrificing product quality. With these adjustments, natural-gas use in the third quarter of 2003 was 18 percent below the year before, even though production increased. The plant is reported to be approaching $1 million in annual energy savings and the company plans to replicate the changes in 10 other North American insulation factories and two composite-fiber factories by the end of this year.

While not every facility will be able to achieve such startling results, this example suggests that there is still a significant amount of low-cost efficiency improvement to be achieved. We have also heard reports of companies reinstating or increasing their ability to switch gas-fired equipment to alternative fuels, primarily oil. The ability to switch to alternative fuels for short periods of time, while it does not result in significant reduction in overall gas consumption, can serve as an important safety valve to reduce gas price volatility during periods of extreme weather or local supply constraints. Chemical producers are also emphasizing production from facilities that rely on petroleum rather than natural gas feedstocks. These examples illustrate that industry is actively and creatively adjusting to changes in the U.S. energy markets.

POWER GENERATION TRENDS

Much of the concern over gas prices has focused on the recent wave of construction of gas-fired power plants. Despite this growth, gas-fired generation in the U.S. in 2002 accounted for a lower share of total generation (18 percent) than in 1970 (24 percent). Coal-fired generation in 2002 was 51 percent of total generation and almost 70 percent of fossil generation. Energy forecasts show coal-based generation continuing to increase.

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[1] "Balancing Natural Gas Policy: Fueling the Demands of a Growing Economy", National Petroleum Council, September 2003.

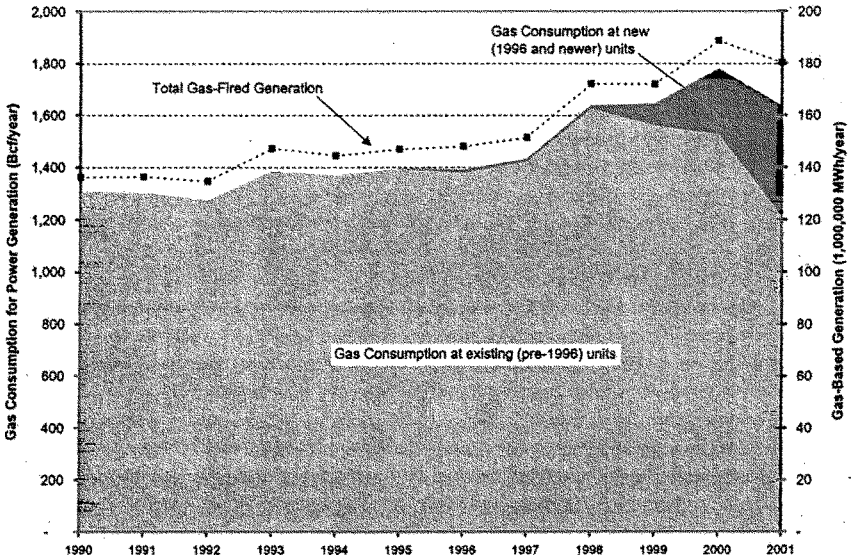
[2] "Natural Gas Price Effects of Energy Efficiency and Renewable Energy Practices and Policies", ACEEE, December 2003.

[3] "Natural Gas Impacts of Increased CHP", U.S. Combined Heat and Power Association, October 2003.

[4] "Natural Gas Costs Hurt U.S. Firms", Wall Street Journal, February 17, 2004.

Moreover, the effects of new gas power plant construction are more complicated than they may seem. Of 152 GW of new gas-fired generating capacity installed in the U.S. between 1999 and 2002, approximately one third consists of peaking plants that seldom run and use little fuel. In addition, much of the construction has been in the west and southwest where the new gas plants are competing with less efficient older gas plants. Because of the higher efficiency, the new plants have displaced the older plants and caused them to run less or be mothballed. The displacement of older gas plants with new gas plants results in more efficient use of gas. While gas consumption has increased due to increasing electricity demand, the effect of the more efficient new plants has been to reduce the amount of gas that would otherwise have been consumed. In these areas, the construction of new gas plants is actually reducing gas consumption. Figure 2 shows this effect in Texas.

Figure 2
Displacement of Older Gas Generation by New Gas Power Plants in Texas



The increase in gas prices has also spurred increased interest in the use of renewables, biomass and waste fuels, including agricultural biogases. While some of these fuels are already in use, others are only starting commercial application and the recent higher gas prices have made their use more competitive. We have seen reports of increased interest in use of wind energy, small hydro, landfill and digester gas. There is also great interest in using agricultural biogas that can be produced by improved handling and treatment of waste from very large livestock and poultry operations. This is an area in which we expect to see quite a bit of growth in the near future.

CONCLUSIONS

Natural gas prices have reached a new price level that is significantly higher than during the last 20 years. We do not expect to see a return to those historical lower levels. However, we also do not expect to see natural gas prices increasing to the extreme levels predicted by some analysts. Over the last two and a half years, U.S. gas markets have responded by initiating new LNG import and other supply projects. With an increase in LNG imports and future imports from Canada and Alaska, we see a mid-to long-term moderation to Henry Hub gas prices in the $4.50 to $5.00/MMBtu range (in constant dollars). If new supply options are not available, the prices could be 50 percent higher.

On the demand side, gas users are turning to energy efficiency, fuel-switching and alternative feedstocks to address higher gas prices. We are also seeing increased interest in renewables, waste and byproduct fuels. These market responses have

helped to stabilize gas prices in the near-term. However, new sources of gas supply will be needed to meet future growth in gas demand without creating further upward pressure on gas prices.

RESPONSES BY JOEL BLUESTEIN TO ADDITIONAL QUESTIONS FROM SENATOR INHOFE

Question 1. Are you aware that in late 2003, your company also used the same model you described in making your demand repression argument to show that a relatively small increase in supply (increasing production in the Powder River Basin from 1,000 to 3,000 wells) would save $88 billion to the economy over a 10-year period? Is it your testimony that incremental increases in supply don't moderate gas prices?

Response. I am familiar with this study and it is consistent with my testimony that the current tight supply/demand situation means that relatively small changes in either supply or demand can have a significant effect on prices. My testimony specifically states that a lack of new supply, for example delays in LNG development, will result in sharply higher prices than in our current forecast.

Question 2. What does fuel switching by industrials back to oil do to our reliance on oil imports and the quality of our air?

Response. Most fuel switching today is very short term to avoid peak gas price periods. It can be very important to control of gas price volatility but amounts to relatively small amounts of gas consumption. A move to more permanent switching to oil as an alternative to gas consumption certainly could increase U.S. reliance on oil imports. While oil combustion could have higher potential air emissions than gas, I assume that any such switching will be done within current air quality protection requirements.

Question 3. Mr. Bluestein, in your opinion, do you agree with September 2003 NPC report's findings that new domestic sources of natural gas are critical to meet our nation's energy needs?

Response. I agree with the NPC conclusion that the U.S. needs a balanced mix of energy efficiency, new domestic supply and LNG imports.

Question 4. In your company's November 13, 2003 document, "The Gas Price Roller Coaster. The Ride Continues," dated November 13, 2003, you project that gas supply from new frontiers will account for one-third of total supply in 2010, vs. only 13 percent today. Do you think we'll meet your projected target?

The NPC report identified policies that increase demand for natural gas on the one hand, while restricting access to development on the other. What regulatory constraints or challenges frustrate exploration and production and must be overcome in order to meet your firm's projected target identified in "The Gas Price Roller Coaster; The Ride Continues?"

Response. The NPC report identifies new policies that could expand production in a variety of North American producing areas. EEA's forecast is based only on existing U.S. policies regarding gas production.

Our forecast indicates that the frontier resources identified will be economically viable under the forecast price scenario. Whether they will actually be developed and which specific resources will be developed over time is difficult for us to say. In aggregate, gas supply needs to increase over time to keep gas prices within the range of our current forecast. We have not seen any significant gas production increases in the last year and some new projects have been delayed, which is one reason that near-term efficiency improvements are important.

RESPONSES BY JOEL BLUESTEIN TO ADDITIONAL QUESTIONS FROM SENATOR JEFFORDS

Question 1. In your testimony, you have highlighted that additional supply and efficiency will assist lowering natural gas prices. Are there other factors, such as the deployment of renewable generation through State renewable portfolio standards programs, that will also contribute to a decrease in price in the absence of new Federal policies?

Response. Increased use of renewable generation through RPS programs is another way to reduce gas demand and ease gas prices. My testimony cited a 2003 study we performed with ACEEE that highlighted the potential gas price-reducing effect of aggressive development of renewables.

Question 2. You mentioned that extreme weather can cause temporary price spikes. It seems to me that although stringent new clean air or greenhouse controls at coal-fired utilities may lead to some gas switching, it is also true that unabated

or abrupt climate changes could also have impacts on natural gas supply and pricing. Are you aware of whether anyone has done such an analysis?

Response. I'm not aware of any such studies.

Question 3. Have you examined the effect that the pending Senate Energy bill will have on natural gas prices if it is enacted into law?

Response. I have not examined the implications of the Senate Energy bill on gas prices.

Question 4. Are there other reasons, other than the price of natural gas, that fertilizer prices have increased?

Response. According to the attached briefing from The Fertilizer Institute (TFI), domestic ammonia produced at $5.50—$6.00/MMBtu gas prices should cost about $200/ton. Current ammonia prices are about $300/ton. According to TFI, this higher price is the result of increased international ammonia demand and a tight world market for ammonia. The implication is that domestic ammonia production is profitable at today's prices.

The Fertilizer Institute

Nourish, Replenish, Grow

Demand Destruction for Natural Gas in the U.S. Nitrogen Industry

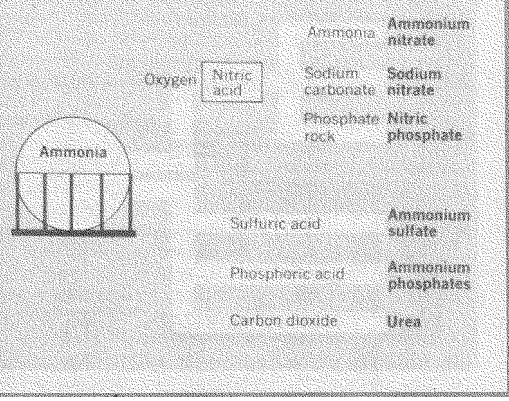
Harry Vroomen
Vice President, Economic Services

The Fertilizer Institute

Nourish. Replenish. Grow

FIGURE 2

"Downstream" nitrogen fertilizers from anhydrous ammonia.



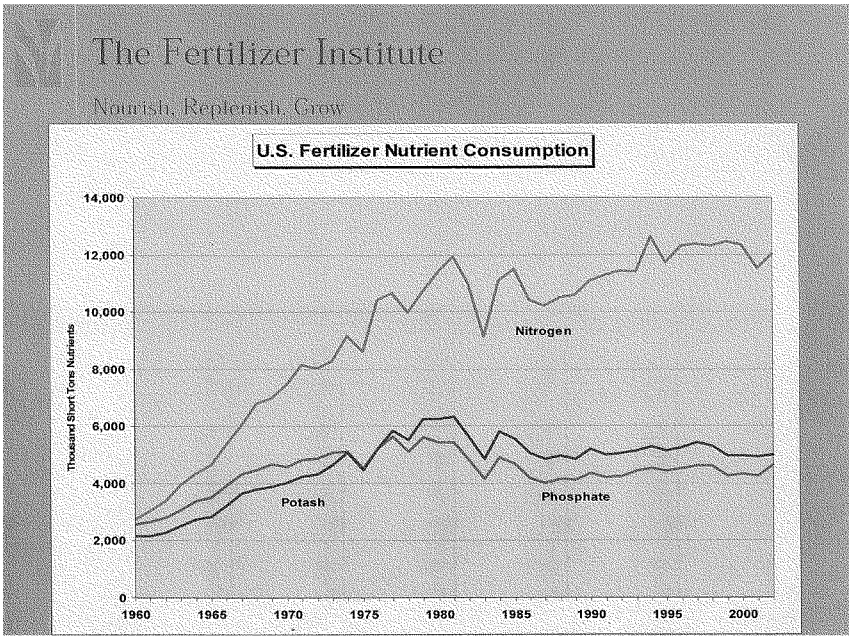
The Fertilizer Institute

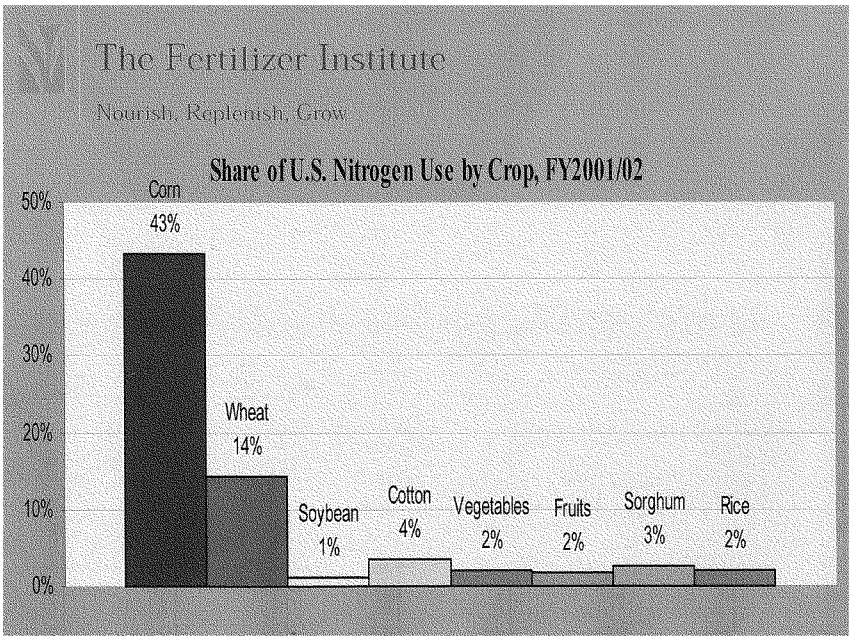
Nourish. Replenish. Grow

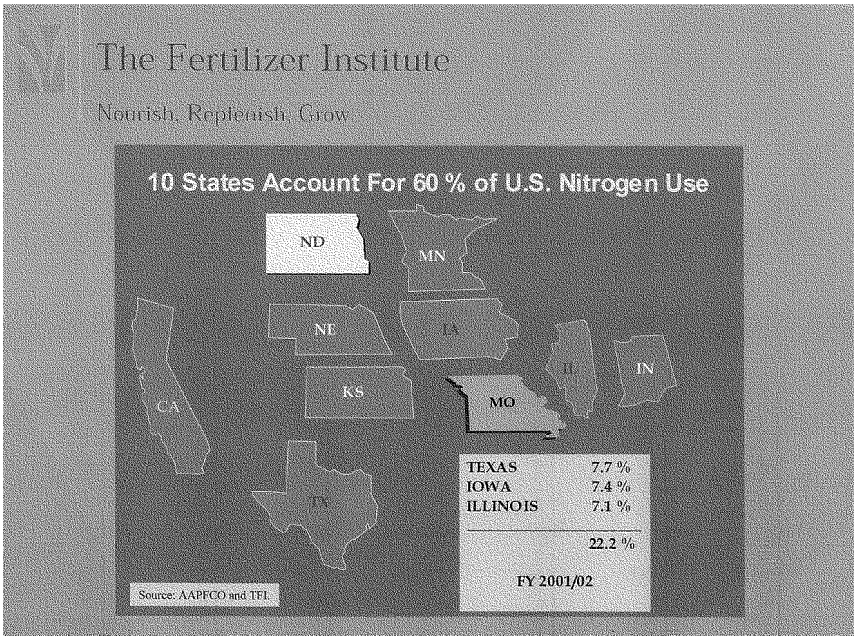
U.S. Status in World Nitrogen Market - 2002

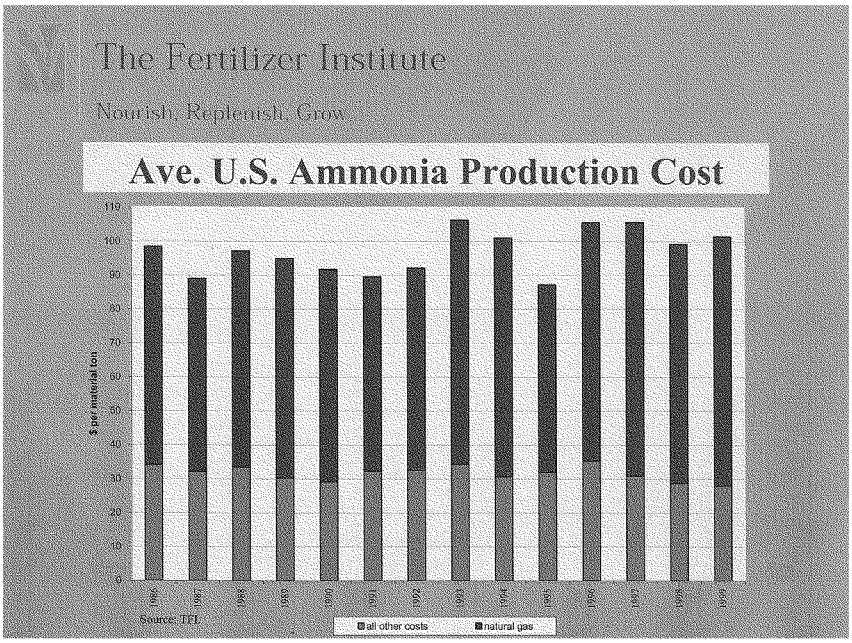
	Rank	Share	Country
Ammonia:			
Production	2	10.0 %	1 - China
Imports	1	34.8 %	
Urea:			
Production	3	6.5 %	1 – China; 2 - India
Imports	1	15.5 %	
Ammonium Nitrate:			
Production	2	20.1 %	1 - Russia
Imports	2	9.5 %	1 - China
Ammonium sulfate:			
Production	1	15.1 %	
Exports	3	12.0 %	1 – Belgium; 2 – Russia
N Consumption	3	12.8 %	1 – China; 2 – India

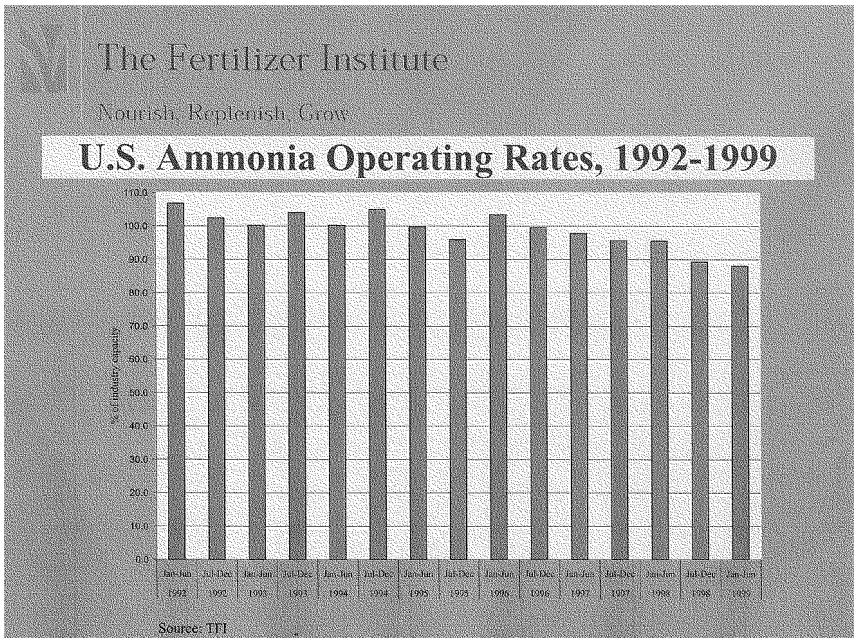
Computed from IFA data.

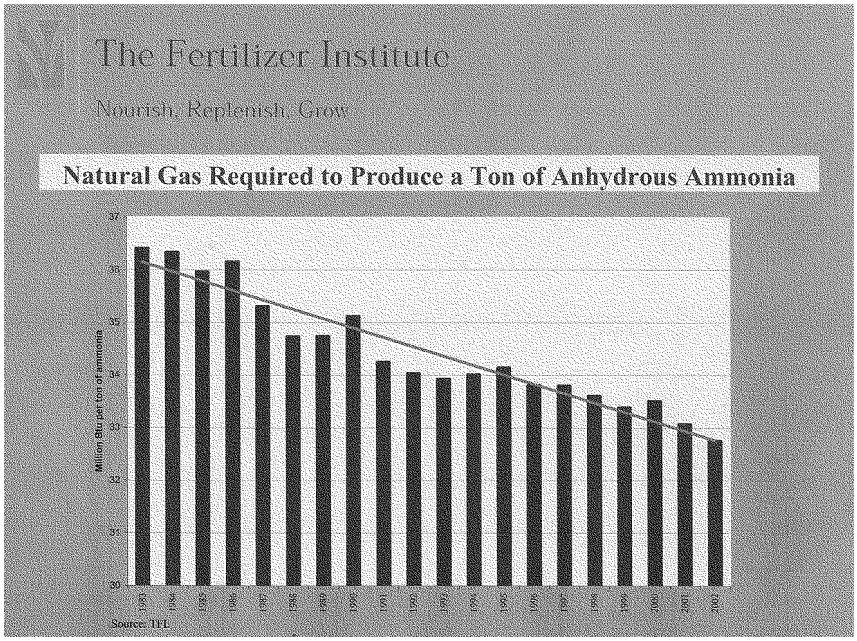

The Fertilizer Institute
Nourish, Replenish, Grow
U.S. Fertilizer Nutrient Consumption
Thousand Short Tons Nutrients
14,000
12,000
10,000
8,000
6,000
4,000
2,000
0
1960
1965
1970
1975
1980
1985
1990
1995
2000
Nitrogen
Potash
Phosphate

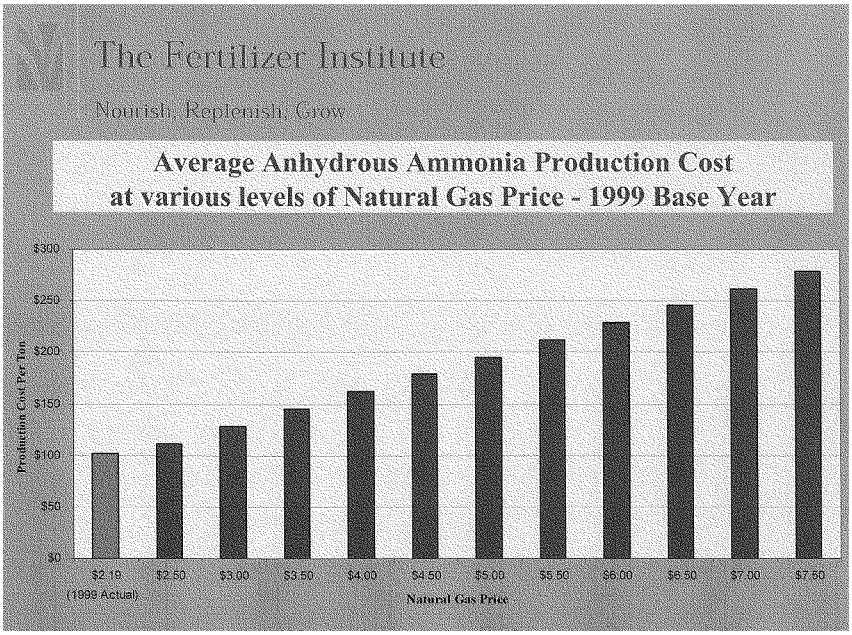

The Fertilizer Institute
Nourish, Replenish, Grow
Share of U.S. Nitrogen Use by Crop, FY2001/02
50%
40%
30%
20%
10%
0%
Corn 43%
Wheat 14%
Soybean 1%
Cotton 4%
Vegetables 2%
Fruits 2%
Sorghum 3%
Rice 2%

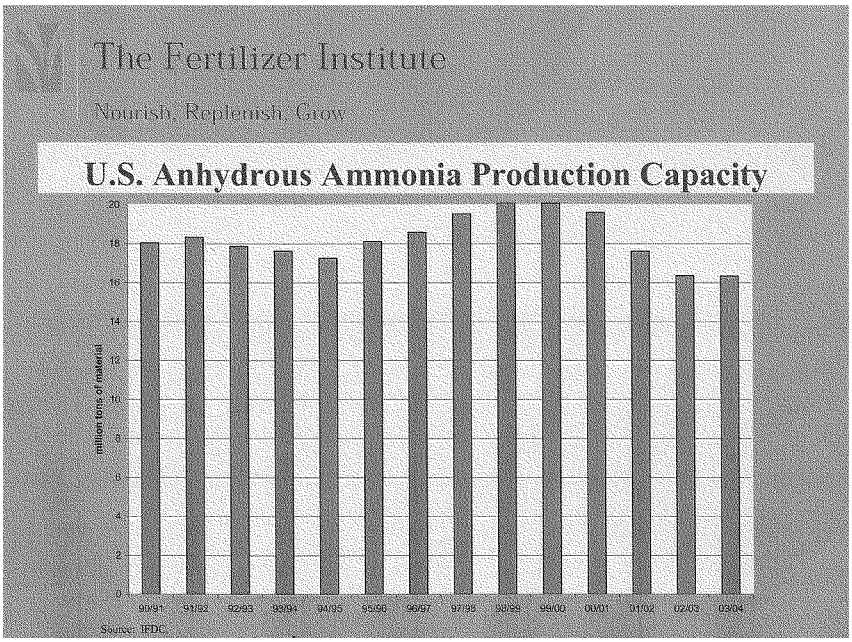

The Fertilizer Institute
Nourish. Replenish. Grow.
10 States Account For 60 % of U.S. Nitrogen Use
ND
MN
NE
IA
KS
MO
IL
IN
CA
TX
TEXAS 7.7 %
IOWA 7.4 %
ILLINOIS 7.1 %
22.2 %
FY 2001/02
Source: AAPFCO and TFI.

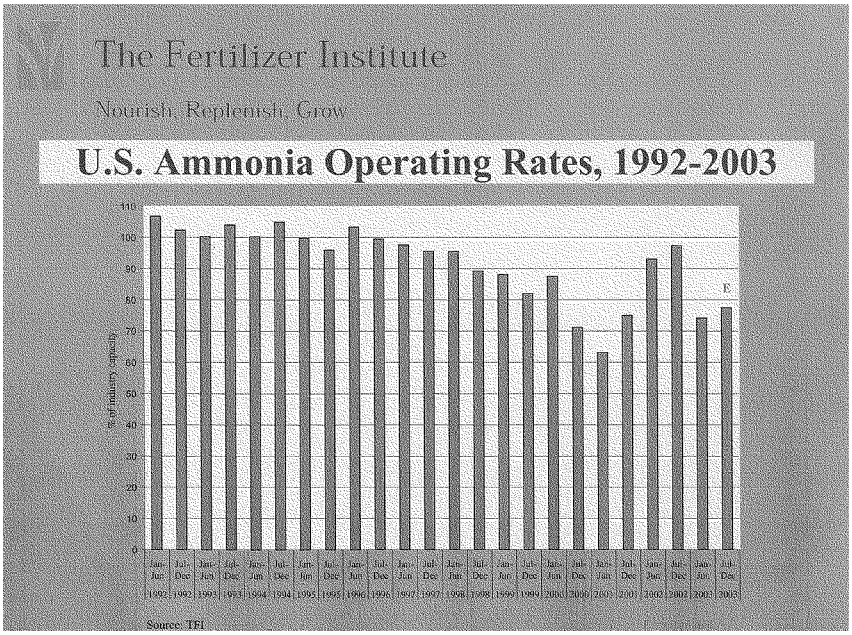

The Fertilizer Institute
Nourish. Replenish. Grow.
Ave. U.S. Ammonia Production Cost
$ per metric ton
0
10
20
30
40
50
60
70
80
90
100
110
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
Source: TFI.
all other costs
natural gas

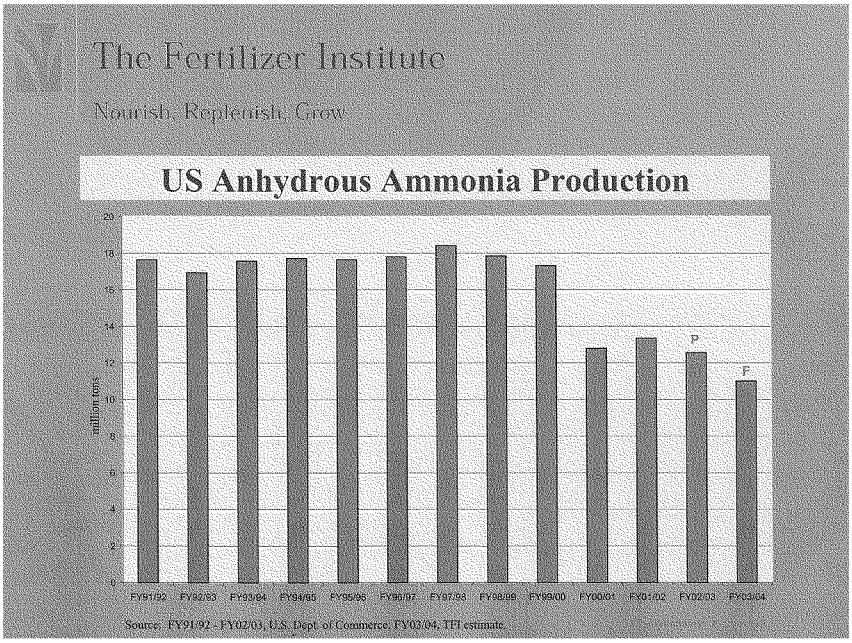

The Fertilizer Institute
Nourish, Replenish, Grow
U.S. Ammonia Operating Rates, 1992-1999
% of industry capacity
110.0
100.0
90.0
80.0
70.0
60.0
50.0
40.0
30.0
20.0
10.0
0.0
Jan-Jun 1992
Jul-Dec 1992
Jan-Jun 1993
Jul-Dec 1993
Jan-Jun 1994
Jul-Dec 1994
Jan-Jun 1995
Jul-Dec 1995
Jan-Jun 1996
Jul-Dec 1996
Jan-Jun 1997
Jul-Dec 1997
Jan-Jun 1998
Jul-Dec 1998
Jan-Jun 1999
Source: TFI

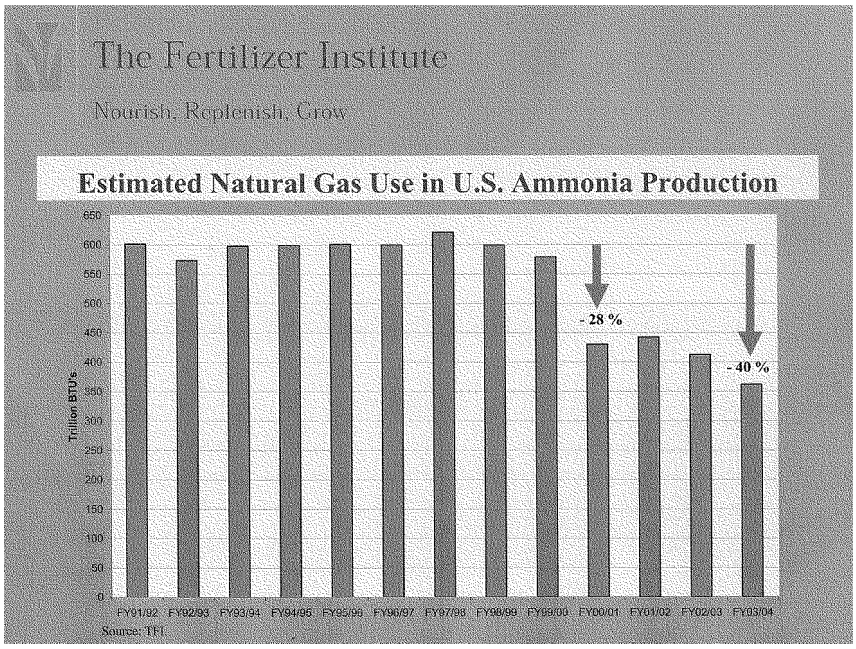

The Fertilizer Institute
Nourish, Replenish, Grow
Natural Gas Required to Produce a Ton of Anhydrous Ammonia
Million Btu per ton of ammonia
37
36
35
34
33
32
31
30
1981
1982
1983
1984
1985
1986
1987
1988
1989
1990
1991
1992
1993
1994
1995
1996
1997
1998
1999
2000
2001
2002
Source: TFI

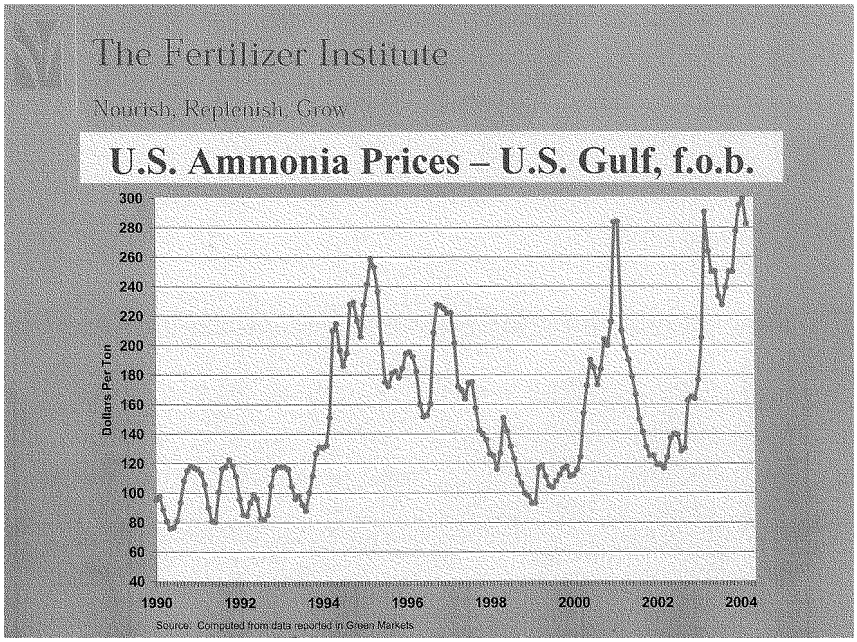

The Fertilizer Institute
Nourish, Replenish, Grow
Average Anhydrous Ammonia Production Cost
at various levels of Natural Gas Price - 1999 Base Year
Production Cost Per Ton
$300
$250
$200
$150
$100
$50
$0
$2.19
(1999 Actual)
$2.50
$3.00
$3.50
$4.00
$4.50
$5.00
$5.50
$6.00
$6.50
$7.00
$7.50
Natural Gas Price

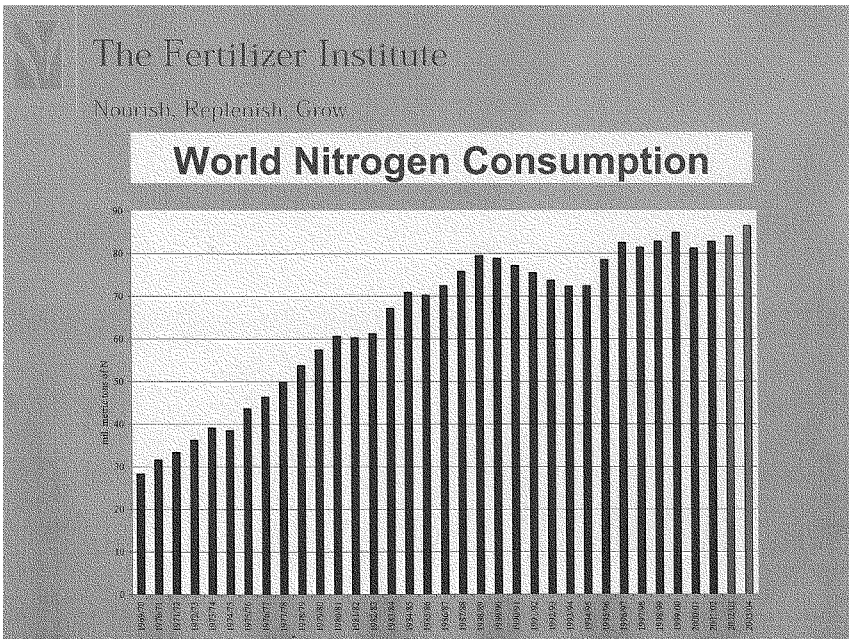

The Fertilizer Institute
Nourish, Replenish, Grow
U.S. Anhydrous Ammonia Production Capacity
million tons of material
20
18
16
14
12
10
8
6
4
2
0
90/91
91/92
92/93
93/94
94/95
95/96
96/97
97/98
98/99
99/00
00/01
01/02
02/03
03/04
Source: IFDC.


The Fertilizer Institute
Nourish, Replenish, Grow
U.S. Ammonia Operating Rates, 1992-2003
% of industry capacity
110
100
90
80
70
60
50
40
30
20
10
0
E
Jan-Jun 1992
Jul-Dec 1992
Jan-Jun 1993
Jul-Dec 1993
Jan-Jun 1994
Jul-Dec 1994
Jan-Jun 1995
Jul-Dec 1995
Jan-Jun 1996
Jul-Dec 1996
Jan-Jun 1997
Jul-Dec 1997
Jan-Jun 1998
Jul-Dec 1998
Jan-Jun 1999
Jul-Dec 1999
Jan-Jun 2000
Jul-Dec 2000
Jan-Jun 2001
Jul-Dec 2001
Jan-Jun 2002
Jul-Dec 2002
Jan-Jun 2003
Jul-Dec 2003
Source: TFI


The Fertilizer Institute
Nourish, Replenish, Grow
US Anhydrous Ammonia Production
million tons
20
18
16
14
12
10
8
6
4
2
0
P
F
FY91/92
FY92/93
FY93/94
FY94/95
FY95/96
FY96/97
FY97/98
FY98/99
FY99/00
FY00/01
FY01/02
FY02/03
FY03/04
Source: FY91/92 - FY02/03, U.S. Dept. of Commerce; FY03/04, TFI estimate.


The Fertilizer Institute
Nourish, Replenish, Grow
Estimated Natural Gas Use in U.S. Ammonia Production
Trillion BTUs
650
600
550
500
450
400
350
300
250
200
150
100
50
0
- 28 %
- 40 %
FY91/92
FY92/93
FY93/94
FY94/95
FY95/96
FY96/97
FY97/98
FY98/99
FY99/00
FY00/01
FY01/02
FY02/03
FY03/04
Source: TFI


The Fertilizer Institute
Nourish, Replenish, Grow
U.S. Ammonia Prices – U.S. Gulf, f.o.b.
Dollars Per Ton
300
280
260
240
220
200
180
160
140
120
100
80
60
40
1990
1992
1994
1996
1998
2000
2002
2004
Source: Computed from data reported in Green Markets



STATEMENT OF DENNIS M. BAILEY, DIRECTOR OF ENERGY PURCHASING, PPG INDUSTRIES

I am Dennis Bailey, director of energy purchasing for PPG Industries. Thank you for inviting us to provide testimony on this very important topic.

PPG is a $9-billion global supplier of paint, glass, fiber glass and chemicals, with manufacturing assets in 23 States and 22 countries.

We have about 20,000 employees and 14,000 retirees in the United States and 33,000 employees worldwide.

Affordable energy has played an important role in PPG becoming the leading global manufacturer that it is today.

PPG began operations more than 120 years ago in Pennsylvania. And has been in Senator Voinovich's home State of Ohio for 105 years.

In all, about 10 percent of PPG's corporate sales is generated from products made in Ohio.

The high cost of natural gas is clearly affecting PPG's operations in Ohio and across the Nation. For example:

- At our Circleville, Ohio, plant—which makes resins needed in paint manufacturing—natural gas costs have increased 70 percent over the past several years.
- From 2002 to 2003, natural gas costs at our Cleveland automotive paint plant doubled, and at our Barberton, Ohio, chemicals plant increased by 50-percent.
- High natural gas costs at our Crestline, Ohio, automotive glass plant may result in elimination of more than 10-percent of that site's workforce.

PPG has a well-earned reputation for controlling costs. But in spite of this, if natural prices increase, our businesses may have to make reductions elsewhere.

The average market price during the past 15 months has been about $5.50—25 percent higher than any year since 1976 and double that of the 1990's.

On a global scale, if the price of natural gas increases to $7—and remains there—PPG's chlor-alkali chemicals business would have additional problems competing in global markets.

The workforce at our Lake Charles, Louisiana, Chemicals facility is shrinking by 8 to 10 jobs per month through attrition. And we don't expect to be rehiring.

And we believe other Gulf Coast producers are similarly affected.

The U.S. chemicals industry is no longer competitive globally because of the disparity of natural gas prices—as shown in the exhibit I've entered into the record.

The U.S. industry has evolved into a net *importer* of product and *exporter* of jobs.

My company strongly believes solutions to the natural gas crisis are within our country's grasp.

In the *short term*, energy conservation must be a major part of the solution. Education is necessary, as well as increased economic incentives.

For example, if all new residential windows sold in the United States were energy-efficient, it would eliminate the need for 20 additional power plants over the next decade and up to 60 power plants over the next 20 years.

Consumers need an incentive to use energy-efficient glass, positioning high-performance glass as the construction material of choice for saving energy in homes and commercial buildings.

As a start, the Senate needs to pass the Energy Conference Report which provides consumers an incentive to use energy-efficient glass.

But consumer conservation alone will *not* fix the problem.

There is an urgent need for increased access to domestic supplies, including resources in the outer continental shelf, the Rocky Mountain region and Alaska.

We feel that all of these opportunities can and should be accomplished in an environmentally responsible way.

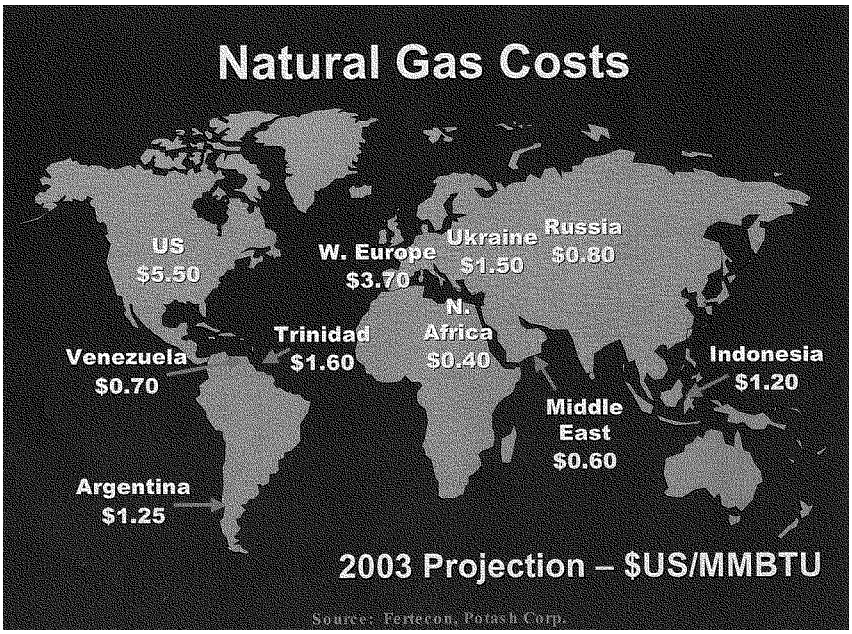
Construction of an adequate delivery infrastructure, including for the import of liquefied natural gas, must be part of the solution.

In addition, government should encourage increased energy production from all sources, including coal, oil, nuclear, wind energy and other alternatives.

As makers of fiber glass used in wind-powered electricity generators, we believe tax credits to develop wind energy is a step in the right direction. Unfortunately, the bill is stalled in Congress.

On a final note, PPG does not support government intervention for price controls. *Competition and free market forces should continue to drive prices.*

Thank you for your leadership in developing solutions to resolve this growing natural gas crisis that threatens businesses, jobs and our nation's economy.



RESPONSE BY DENNIS M. BAILEY TO ADDITIONAL QUESTION FROM SENATOR JEFFORDS

Question 1. Your testimony highlighted the need for conservation in the short term to reduce natural gas prices, and you described several economy wide proposals to achieve that objective, such as increased incentives for the use of energy

efficient windows. Has PPG been able to reduce its natural gas use and improve efficiency in the face of high prices, and how have you done so?

Response. 2002 is the most recent year for which PPG has compiled a summary of natural gas consumption at our U.S. manufacturing sites.

Our consumption in 2002 increased by 12% over that for 2001. The majority of this increase can be attributed to the normal start-up costs and inefficiencies associated with a new combined heat and power (CHP) generation facility. RS Cogen, a joint venture combined heat and power generation facility justified by PPG's management to improve energy efficiency in light of rising energy prices, became operational in late 2002 and makes PPG's Lake Charles, Louisiana chemicals plant completely self-sufficient in terms of electric power generation. CHP, also known as cogeneration, reduces the amount of energy consumed per unit of output. Heat that would be wasted in a conventional utility plant is captured for use in the form of steam. CHP can be twice as fuel efficient as conventional power plants.

As to energy efficiency (measured in terms of MMBtus of natural gas per ton of product produced), PPG's efficiency in the U.S. declined approximately 1% in 2002 when compared to 2001. The decline can be attributed to the RS Cogen start-up noted above, as well as natural gas associated with sales of electricity (which are not considered "product produced"). Without consideration of the natural gas associated with the sale of electricity, the efficiency actually improved almost 2%.

As to the start-up of RS Cogen, it is known that the natural gas efficiency of the Lake Charles, Louisiana chemicals plant improved over 15% in 2003 largely as a result of the joint venture. With the Lake Charles plant representing over 60% of PPG's annual U.S. consumption, we feel safe in projecting that our energy efficiency for our U.S. manufacturing operations will be much improved in 2003.

STATEMENT OF MICHAEL C. CASKEY, EXECUTIVE VICE PRESIDENT AND CHIEF OPERATING OFFICER OF FIDELITY EXPLORATION & PRODUCTION COMPANY

Mr. Chairman and members of the Committee, my name is Mike Caskey. I am the Executive Vice President and Chief Operating Officer of Fidelity Exploration & Production Company (Fidelity) headquartered in Denver, Colorado. I would like to thank the Senate Environment and Public Works Committee for the opportunity to testify at this hearing.

Fidelity is a wholly-owned indirect subsidiary of MDU Resources Group, Inc. We are an independent oil and natural gas producer engaged in acquisition, exploration and production activities. Our efforts are primarily focused in the Rocky Mountain region of the United States and in the Gulf of Mexico. Fidelity produces coalbed natural gas (CBNG) in Wyoming and Montana. We are currently the only producer of CBNG in Montana. I am here today to discuss the prospects for finding and producing clean natural gas in North America and the obstacles Federal, State and local governments and producing companies face.

You are well aware of our nation's growing demand for clean-burning natural gas to meet current and future residential, commercial, industrial and electrical generation needs. Energy Information Agency (EIA) projections show that natural gas will play an increasingly important role in meeting our nation's energy needs. The EIA in its "*Annual Energy Outlook 2004 with Projections to 2025*" forecasts that natural gas used in the industrial sector alone will increase by 41 percent from 2002 to 2025 (Chart 1). The Department of Energy (DOE) has made similar projections. Current consumption levels of just under 23-trillion cubic feet (tcf) of natural gas per year are expected to grow to approximately 32 tcf/year by 2025. Presently 98 percent of our domestic consumption is supplied by North American production. Traditional natural gas basins located in Texas and Oklahoma, and in the Gulf of Mexico are showing dramatic declines in production and reserves. The only major gas province with increased reserves is the Rocky Mountain Region (Map 1). Therefore, in order to meet increasing supply needs, natural gas development in the Rocky Mountain region must be allowed to progress in an effective, timely manner.

OUR STAKEHOLDERS

As an exploration and production company we are committed to do our part to discover, develop and produce this valuable, clean-burning resource. While doing so, Fidelity conducts its operations dedicated to sound environmental stewardship so as to ensure that our development protects the environment and ongoing sustainable agricultural operations. That is the core of our corporate business model. Our business process includes three principal stakeholders—landowners, governments (local, State and Federal) and shareholders. In order for Fidelity to operate in a balanced, stable and functional manner, we must meet the needs of all three groups. Today,

special interest activism, obstructionism and litigation are threatening the stability of these three stakeholder groups and the natural gas industry's ability to provide reliable, affordable supplies of natural gas for our country's needs. I will relate some examples of our experience in the Powder River Basin of Montana and Wyoming as I discuss our concerns.

Perhaps the most important stakeholder in our business is the landowner, the person who owns the surface of the land on which we operate. That person may or may not own the mineral rights. Because natural gas production requires a long-term commitment to be on the land, it is imperative that we develop a "good neighbor relationship" with each landowner. We work with these landowners to ensure that our development activities minimize disruption of the use and enjoyment of the landowners' property, thereby protecting their ability to maintain and enhance the profitability of their agricultural operations. It is important to understand that the time of maximum disturbance occurs during the initial drilling and construction phase of operations. Because of that, most landowners we deal with prefer a "get in—get out—get back to normal" approach to development. Special interest litigation and obstruction, which delay or stop timely development, especially during the initial development phase, have a detrimental effect on landowners who have agreed to allow development of the Federal resources beneath their land.

Governments (local, State and Federal) are the second stakeholder in our operations. In addition to meeting the needs of our landowners, we must also comply with the laws and regulations in place at the local, State and Federal levels. Exploration and development of Federal lands is subject to many laws; however, the key laws that impact exploration and development are the National Environmental Policy Act (NEPA) for which you are the authorizing committee, and the Federal Land Policy and Management Act (FLPMA).

FLPMA is the law which Federal land managers use to balance the diverse interests of the multiple uses of Federal lands. NEPA is the tool by which the managers analyze the effects of their decisions. NEPA documents—Environmental Impact Statements (EISs) and Environmental Assessments (EAs)—are the foundation of all decisions involving the use of Federal lands. It is this NEPA process of evaluating land use and development plans, not the law itself, which has become the principal tool used by obstructionists to delay or halt natural gas development.

Unfortunately, the plethora of litigation and the likelihood of additional litigation surrounding natural gas development have forced governmental agencies to make choices on the use of limited budgets. Like producers, regulatory agencies' resources are being consumed by defending frivolous, wasteful lawsuits. These lawsuits impact government at all levels. Typically, the lawsuits are against the Bureau of Land Management (BLM) or other land use agencies that manage the use of Federal land for multiple activities. The government must divert resources, which are forever lost, from important environmental programs such as noxious weed control, habitat rehabilitation and fire prevention to defend frivolous lawsuits.

In addition to affecting allocation of limited resources, delays or restriction of production from Federal leases impacts the revenue received by the government. Royalties from Federal minerals fall behind only personal and corporate income taxes as a source of Federal revenue. The states also have a stake in the revenue generated from Federal minerals, receiving 50 percent of Federal bonuses, rents and royalties generated within their boundaries. These states use this much needed source of revenue for school funding, law enforcement, infrastructure improvement and other local uses. From 1998 through the first 5 months of 2003, bonus revenue from leasing in Wyoming was over $147 million and in Montana for that same period the amount was over $9 million. These are funds paid by energy companies just for the right to explore for natural gas and oil on Federal leases.

The third stakeholder in this development is our shareholder. As a subsidiary of a Fortune 1000 corporation we are looking for investment opportunities that will stimulate corporate growth and provide an attractive and acceptable return to our shareholders. We constantly pursue new technologies that can accomplish our mission and improve the environment where we operate and live. The litigation from heavily funded, special interest groups that has been so prevalent in the Powder River Basin's CBNG development, impairs our return to shareholders in several ways. First, there is the significant direct legal cost of participating in and defending against the litigation. In addition, there is an indirect cost associated with dedication of corporate resources to litigation that could otherwise be invested in productive, value-building activities. And finally, there is the cost of delay—not being able to fully employ our significant investments in a timely manner. Imagine the owner of any other business, who obtains all the permits necessary to conduct business, sets up an office, invests in hiring workers and makes a commitment to buy equipment, supplies and startup needs and isn't allowed to conduct business because of

frivolous litigation that targets the well-established licensing process. As our corporation, or any other, is impacted by these impediments to shareholder return, we must begin to look for more attractive, more predictable opportunities with less capital risk. The net result is a chilling effect on energy production in the United States.

I will describe for you some examples of the litigation that has impacted our operations in Montana and Wyoming thereby impairing our ability to produce energy from our lease positions. While these examples are specific to Fidelity's operations, other energy companies could relate similar examples from their experience.

NEPA LITIGATION

Prior to any surface disturbing activity, oil and gas leasing must take place. Most of the current Federal leasehold within Montana and Wyoming was leased during the period from 1997 through 2001. In mid–2000, the BLM commenced the preparation of the Wyoming "*Powder River Basin Oil and Gas Environmental Impact Statement*" and the "*Montana Statewide Oil and Gas Environmental Impact Statement*."

When Fidelity acquired its oil and gas leases and began planning development of CBNG in the CX Field area of Big Horn County, Montana in 1997, we approached the Bureau of Land Management (BLM) to request that it prepare an environmental assessment of a 325-well pilot project. As the agency began that analysis, Fidelity drilled wells on private lands and initiated limited production testing of those wells in late 1998. Commercial production from 125 initial wells began in October 1999. Five months later, in March of 2000, the Northern Plains Resource Council (NPRC) filed its first CBNG lawsuit, suing the Montana Board of Oil & Gas Conservation (MBOGC), claiming it failed to conduct adequate environmental analysis before approving Fidelity's drilling applications. Montana has a State law—the Montana Environmental Policy Act (MEPA)—a law that is essentially identical to NEPA that requires an environmental evaluation of the effects of decisions made by State regulatory agencies. MBOGC settled the case by agreeing to either prepare a supplement to its 1989 Oil & Gas Environmental Impact Statement (EIS) or to cooperate with other agencies in preparation of a programmatic EIS for CBNG development in the Montana portion of the Powder River Basin. The agreement allowed Fidelity to continue with its CX Field pilot project, including the development of up to 250 producing wells, but placed a statewide moratorium on all other CBNG development.

In December of 2000, the BLM, the MBOGC and the Montana Department of Environmental Quality (MDEQ) initiated a programmatic EIS (the Montana Statewide Oil and Gas EIS) to amend the Billings and Powder River Resource Management Plans for CBNG development in the Montana portion of the Powder River Basin. This combined document was prepared to address both MEPA and NEPA issues associated with CBNG development. Prior to that time, in June of 2000, the Wyoming BLM decided to amend the Buffalo and Platte River Resource Management plans for CBNG development in the Wyoming portion of the Powder River Basin by preparing the Powder River Basin Oil and Gas EIS. The NEPA process for these EISs, originally estimated to take 18–24 months to complete, was finally completed on April 30, 2003 (29 months for the Montana Statewide Oil and Gas EIS, 35 months for the Powder River Basin Oil and Gas EIS) with the signing of the Records of Decision (RODs). Within 1 day of the issuance of the RODs, lawsuits were filed in Montana challenging the validity of both Montana's and Wyoming's EISs. In total, four different lawsuits were filed against the RODs.

In June of 2001, NPRC filed another lawsuit against the BLM and Federal oil and gas lease owners in the Powder River Basin of Montana, claiming the BLM should not have issued leases that had the potential to be developed for CBNG. NPRC claimed that the 1994 Miles City District Oil and Gas EIS/Plan Amendment to the Billings, Powder River and South Dakota Resource Management Plans had not analyzed the effects of full scale CBNG development. The 1994 Plan Amendment did allow for the drilling of CBNG test wells and initial small-scale development. It also stated that for full-field development to occur on Federal oil and gas leases, an additional environmental document would be required. This lawsuit was filed despite the fact that the Montana Statewide Oil and Gas EIS was underway and the BLM had allowed no production to occur from Federal exploratory wells that had been drilled for CBNG. NPRC lost this case on summary judgment but has appealed the case to the Ninth Circuit Court of Appeals.

In accordance with the Montana Statewide Oil and Gas EIS, Fidelity submitted its Badger Hills Plan of Development (POD) covering 178 wells. This POD contains a Surface Use Plan, a Noxious Weed Plan, a Water Management Plan, and a Wildlife Monitoring and Protection Plan as required by the EIS. The BLM spent about

90 days conducting the site-specific environmental review to complete the EA. However, the NPRC, the Northern Cheyenne Tribe, Native Action, the American Lands Alliance, George Wuerthner and the Biodiversity Conservation Alliance protested the EA of the Badger Hills POD to the Montana BLM State Director. NPRC went so far as to file a lawsuit against the BLM before the State Director could even make a decision as to the adequacy of the first EA. The State Director remanded the EA back to the Miles City Field Office for further analysis. When the revised EA was issued and Fidelity was allowed to resume its operations, the NPRC lawsuit was amended to include a laundry list of NEPA objections. Additionally, the Northern Cheyenne Tribe filed suit against the BLM alleging non-compliance with the National Historical Preservation Act. This was done despite the cultural resource inventory that Fidelity submitted with its Badger Hills POD application.

Fidelity is not the only operator being affected by these appeals and lawsuits. Similar lawsuits and endless appeals and protests (Exhibit 1) are delaying production throughout the Rocky Mountain Region. Unfortunately, these lawsuits are also straining the BLM's human resources. Fidelity has been advised that the resource specialists essential to reviewing and processing Plans of Development are now working on litigation, preventing the BLM from committing to a timeline for completing environmental reviews and issuing permits. You can be assured that oil and gas permitting is not the only resource management activity that will suffer from allocation of resources to litigation. Programs ranging from fire management to habitat enhancement will be impacted. This needless special interest litigation deviates from the honorable goal of protecting the environment to obstructing responsible resource management by challenging the completeness of a well-established and time-tested process.

OTHER LAWSUITS

Montana law allows discharge of unaltered groundwater without a permit if the discharge does not result in a violation of water quality standards or cause degradation of water quality. Nevertheless, Fidelity applied to the MDEQ for a Montana Pollution Discharge Elimination System (MPDES) permit to allow discharge of water produced in conjunction with CBNG in January 1999. The permit was issued on June 16, 2000. On June 23, 2000 Fidelity initiated outreach to the NPRC by hosting NPRC representatives on a field trip of our CX Field. Fidelity granted NPRC the right to tour every aspect of our operations. At the same time this field tour was in progress, NPRC's attorneys were filing a lawsuit in Montana Federal District Court against Fidelity for violating the Clean Water Act by allegedly discharging without a permit. And 10 months later, in April of 2001, NPRC and the Tongue River Water Users Association sued the MDEQ in State court for issuing the permit in June of 2000. You can see the complexity of the problem here—We were sued for not having a permit even though State law did not require one, and the agency that issued the permit was also sued. It is important to note that the water quality data shows that Fidelity's discharge has not degraded the receiving water quality.

NPRC next sued Fidelity in August of 2001 in Federal court under Section 404 of the Clean Water Act, alleging that Fidelity failed to obtain 404 permits for discharge of fill material and for construction of pipelines and roads in waters of the United States. The lawsuit was filed despite the fact that the U.S. Army Corps of Engineers had advised the NPRC that the work they had reviewed in the field was either covered by nationwide permits or was not located in jurisdictional waters of the U.S. That case was settled in December 2003.

The attached newspaper articles (Exhibits 2 and 3) describe a pipeline proposal in June 2003 to ship natural gas from Wyoming to Chicago and the subsequent decision by the pipeline company to delay the project due to the unwillingness of producers to commit to the project. The producers' reluctance is due to "uncertainty on when they're going to receive permits, how rapidly they are going to receive them, and where they can go once they receive them." The BLM reportedly said that the slow permitting was the result of the numerous still-unsettled lawsuits filed against the Wyoming BLM over the Environmental Impact Statement.

The attached Exhibit 4 shows all of the active lawsuits and their current status related to Fidelity's CBNG development program in Wyoming and Montana. In total, we have been involved in 13 separate lawsuits brought by environmental obstructionists in connection with CBNG development in the Powder River Basin. Twelve of these lawsuits are still active. These lawsuits cover every aspect of resource development, from lawsuits on Resource Management Plan Amendments, lawsuits on individual CBNG projects and lawsuits on water discharge permits. These numerous lawsuits are limiting the ability of natural gas producers to effec-

tively and efficiently produce energy for the nation, and one can only conclude that there is an agenda by these obstructionists to stop natural gas development in the U.S.

ACTION

As we look to the future of energy development in the United States, trends indicate that demand has and will continue to outstrip supply. To resolve this imbalance, we need to ensure accountability of all parties. The energy industry is held accountable by Federal and State regulation. Those special interest litigants are not being held to the same standard of accountability.

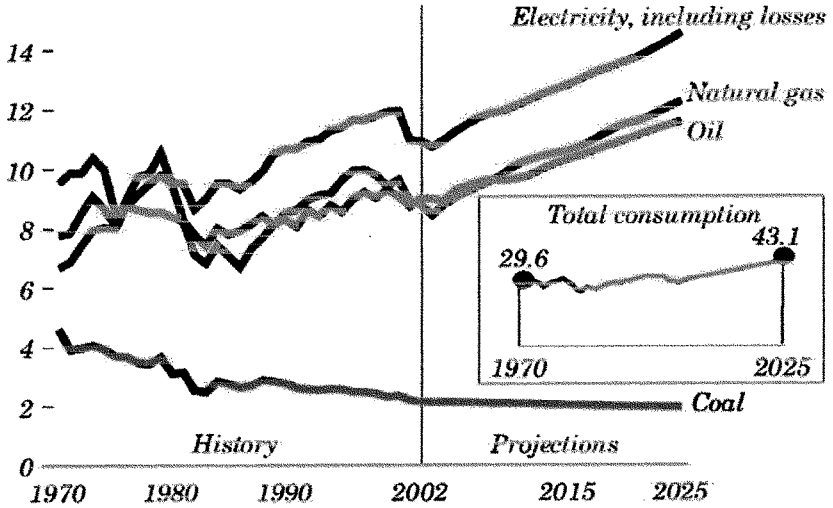
Take NEPA back to its original roots. Special interest groups are misusing the NEPA process to obstruct development. The scales of Justice have to be balanced and not tip to the benefit of one.

Yes, this is America and the obstructionists have every right to due process—but they need to be accountable to the American people for their actions just like my company is held accountable. There is no substitute for honesty and action based upon verifiable science. Without a greater level of accountability being applied to the obstructionist community, the United States' ability to be less dependent upon other energy producing countries and to keep many of the jobs that are currently going overseas in our homeland will be impossible.

I wish to again thank the committee for this opportunity and if there are any questions I will be happy to share any answers I may have.

Chart 1

Industrial primary energy consumption by fuel, 1970-2025 (quadrillion Btu)



source: Energy Information Administration

Map 1

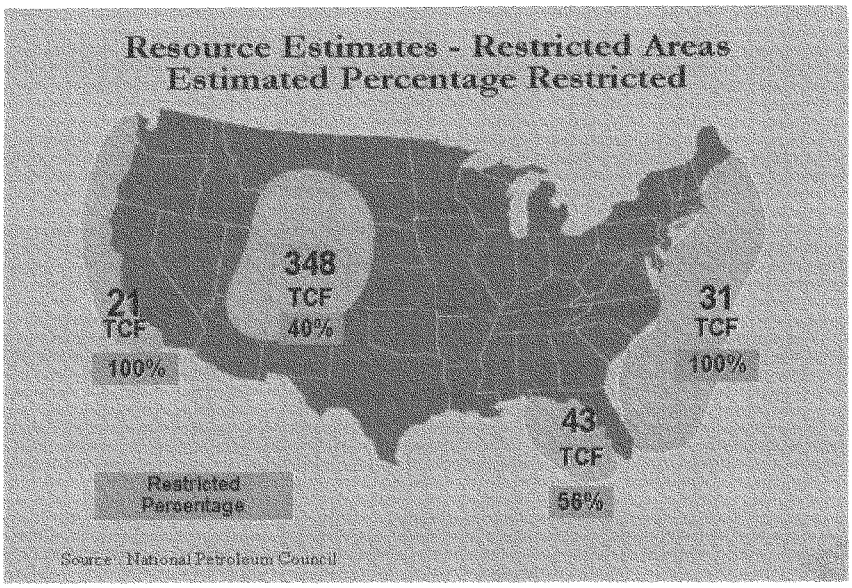


EXHIBIT 1

FRIVOLOUS ENVIRONMENTAL LITIGATION

AN OBSTACLE TO PRODUCTION OF CLEAN NATURAL GAS

In the past several years, the Nation has seen production of natural gas decline in most of the traditional producing provinces—shallow waters of the central and western Gulf of Mexico; on-shore private lands in Texas, Oklahoma, Kansas and Louisiana. Industry has seen significant restrictions placed on natural gas production in the Eastern Gulf of Mexico, off the California Coast and off the Eastern Coast of the U.S.

There remain large supplies of natural gas to meet our nation's needs for clean burning fuels. Much of it can be found in Wyoming, Utah, Colorado, Montana and New Mexico. Future supplies of this vital fuel that heats our homes, operates factories and is the feedstock for many industrial and commercial products are increasingly found on public (BLM and Forest Service), non-park lands in the west.

The ability of energy companies to extract this clean fuel from national, non-park Federal lands has become harder because of aggressive, frivolous litigation from so-called "special interest" groups. Legal challenges have caused delays at every step of the permitting process—Resource Management Plan Revisions, oil and gas leasing, Environmental Impact Statements, Environmental Assessments, Records of Decision, Applications for Permit to Drill, regulatory permits (i.e. water discharge permits), and many more. The cost in time to the Federal and State bureaucracies to prepare administrative records for protests, appeals, and legal challenges is staggering. Agency budgets are now spent defending these challenges versus performing their regulatory duties such as conducting environmental audits, processing permits, and conducting enforcement responsibilities in Wyoming and Montana. The cost to energy companies is equally debilitating.

The following chart represents examples of current actions taken by special interest groups. Should this trend continue, further delays will continue to reduce supplies of natural gas, increase costs and affect employment in a number of industries.

Request for State Director Reviews or Environmental Document Challenged	Who challenged	Year	Field Office
Fidelity's Badger Hills POD	Northern Cheyenne Tribe	2004	Montana—Miles City Field Office United States District Court
Epsilon POD EA	Powder River Basin Resource Council (PRBRC).	2004	Wyoming—Buffalo Field Office State Director Review (SDR)
Delta POD EA	PRBRC	2004	Wyoming—Buffalo Field Office (SDR)
Fogarty Creek Wells #3133 & #3233	Defender of Wildlife and Wyoming Outdoor Council (WOC).	2004	Wyoming—Pinedale Field Office (SDR)
Lower Prairie Dog POD EA	PRBRC	2004	Wyoming—Buffalo Field Office (SDR)
Copper Ridge Shallow Gas Unit	Biodiversity Conservation Alliance (BCA).	2004	Wyoming—Rock Springs Field Office (SDR)
1Anadarko's Beta II Plan of Development (POD).	Powder River Basin Resource Council.	2004	Wyoming—Buffalo Field Office (SDR)
Fidelity's Badger Hills POD	Northern Plains Resource Council, Inc. (NPRC).	2003	Montana—Miles City Field Office United States District Court
Fidelity Tongue River—Badger Hills POD.	NPRC, Northern Cheyenne Indian Tribe, Native Action, Western Environmental Law Center.	2003	Montana—Montana Miles City Field Office (SDR)
Brown Cow POD EA	National Wildlife Federation, et al	2003	Wyoming—Rawlins Field Office (SDR)
Beta II Additions POD EA	PRBRC	2003	Wyoming—Buffalo Field Office (SDR)
Questar Winter Long Drilling Exception.	BCA, Wyoming Outdoor Council (WOC), Greater Yellowstone Coalition (GYC), Jackson Hole Conservation Alliance, Wilderness Society.	2003	Wyoming—Pinedale Field Office (SDR)
N SA Creek POD EA	PRBRC	2003	Wyoming—Buffalo Field Office (SDR)

Request for State Director Reviews or Environmental Document Challenged	Who challenged	Year	Field Office
LX Bar Creek POD EA	PRBRC	2003	Wyoming—Buffalo Field Office (SDR)
NP II POD EA	PRBRC, Tom and Helen Jones, Mr. & Mrs. Barlow.	2003	Wyoming—Buffalo Field Office (SDR)
Horse Creek POD EA	PRBRC, Tom and Helen Jones, Mr. & Mrs. Barlow.	2003	Wyoming—Buffalo Field Office (SDR)
Vermillion Basin	Biodiversity Conservation Alliance	2003	Wyoming—Rock Springs Field Office (SDR)
Lower Bush Creek II	Biodiversity Conservation Alliance	2003	Wyoming—Rock Springs Field Office (SDR)
Lower Bush Creek	Biodiversity Conservation Alliance	2003	Wyoming—Rock Springs Field Office (SDR)
Williams' Pleasantville POD EA	PRBRC	2003	Wyoming—Buffalo Field Office (SDR)
Pennaco's (Marathon) Horse Creek 10 POD EA.	PRBRC	2003	Wyoming—Buffalo Field Office (SDR)
Powder River Basin Oil and Gas Project Environmental Impact Statement (EIS), Record of Decision (ROD) and Resource Management Plan (RMP) amendments*. Montana Statewide Oil and Gas EIS, ROD and RMP for the Billings and Powder River Resources Areas.	* American Lands Alliance, BCA, George Wuerthner. * Western Organization of Resource Councils, Jeanie Alderson, Wally McRae, Wyoming Outdoor Council (WOC), Natural Resources Defense Council (NRDC), PRBRC.	2003	Wyoming—Buffalo; Montana—Billings and Miles City Field Office
Montana Statewide Oil and Gas EIS, ROD and RMP for the Billings and Powder River Resources Areas.	NPRC, Northern Cheyenne Tribe and Native Action.	2003	Montana—Billings and Miles City Field Office
Montana Statewide Oil & Gas EIS & ROD.	NPRC, Montana Environmental Information Center, Inc., Tongue and Yellowstone Irrigation District.	2003	Montana Environmental Policy Act & Constitutional Litigation against Montana Board of Oil & Gas Conservation & Montana Department of Environmental Quality
Application for Permit to Drill (APD) Environmental Assessment (EA) for the Questar Stewart Point Wells**.	WOC, Greater Yellowstone Coalition (GYC), Defenders of Wildlife, Wilderness Society.	2003	Wyoming—Pinedale Field Office (SDR)
Hanna Draw Coalbed Methane Exploration Project EA, Decision Record and Finding of No Significant Impact (FONSI).	WOC, BCA, Sierra Club, NRDC, Earthjustice.	2003	Wyoming—Rawlins Field Office
Questar Winter Long Drilling Exception.	WOC	2002	Wyoming—Pinedale Field Office Federal District Court
Haystacks Geophysical EA, Decision Record and FONSI.	BCA, GYC, Center for Native Ecosystems, Wildlands Center for Preventing Roads.	2002	Wyoming—Rock Springs Field Office (SDR)
Big Piney 2-D Geophysical Project EA, Decision Record and FONSI.	Sierra Club, BCA, GYC, Center for Native Ecosystems, Wildlands, Center for Preventing Roads.	2002	Wyoming—Pinedale Field Office (SDR)
West Pinedale 3-D Geophysical Project EA, Decision Record (DR) and FONSI.	GYC, Sierra Club, WOC	2002	Wyoming—Pinedale Field Office (SDR)
Merna 3-D Geophysical Project EA, DR, and FONSI.	GYC, Sierra Club, WOC, NRDC	2002	Wyoming—Pinedale Field Office (SDR)
Blue Sky POD EA, DR and FONSI	National Wildlife Federation (NWF), BCA, WOC. Wyoming Wildlife Federation (WWF)	2002	Wyoming—Rawlins Field Office (SDR)
Cow Creek Pod EA, DR and FONSI	NWF, BCA, WOC, WWF	2002	Wyoming—Rawlins Field Office (SDR)

Request for State Director Reviews or Environmental Document Challenged	Who challenged	Year	Field Office
Leasing under 1994 oil and gas leasing EIS, ROD, Resource Management Plan Amendment in Billings and Powder River RMA.	NPRC	2001	Montana—Miles City Field Office
Lower Prairie Dog Creek CBM Project EA, DR and FONSI	WOC, PRBRC, Mike Foate	2000	Wyoming—Buffalo Field Office IBLA Appeal
Lower Prairie Dog Creek CBM POD EA, DR, and FONSI	WOC, PRBRC, Mike Foate	2000	Wyoming—Buffalo Field Office IBLA Appeal

*Powder River Basin Oil and Gas EIS
Pg. S–1 ''within the US the largest number of responses were from California, New York, and Florida''
14,283 comments from member organizations
4/30/03 Record of Decision signed, 5/1/03 three lawsuits filed by Earthjustice in Denver as lead council, Western Environmental Law Center of Boise, and NPRC of Denver. A fourth suit was filed 5/8/03 by the firm of Ziontz, Chestnut, Varnell, Berley & Slonim of Seattle as lead counsel. Suits filed in Montana District Court in Billings, Mt.

WATER ISSUES

Environmental Document Challenged	Who challenged	Year	Field Office
General Permit for off-channel pit Coal Bed Natural Gas	PRBRC	2002	Wyoming
National Pollution Discharge Elimination System (NPDES) permits.	WOC; PRBRC	Continuously	Wyoming
Corps of Engineers (COE) General Permit 98–08.	WOC, PRBRC	2002	Wyoming
MPDES discharge permit issued by Montana DEQ	Tongue River Water Users' Association, NPRC, Montana Environmental Information Center.	2001	Montana
Construction of roads, impoundments, outfall structures and pipelines without Corp of Engineers 404 Permit (COE advised permit not necessary).	NPRC	2001	Montana
Montana Water Quality Act, discharge of unaltered groundwater without permit.	NPRC	2000	Montana

FEDERAL OIL AND GAS LEASE SALES

In Wyoming, 23 of 24 lease sales have been protested and/or appealed by special interest groups since February 2000 to present. The outcomes of those protests present significant delay in industries' ability to produce natural gas and do not necessarily conclude with a better environmental outcome. The following examples are provided:

Wyoming BLM February 2000 Lease Sale

• The February 2000 lease sale was protested to the BLM State Director by special interest groups where 49 lease parcels were offered in the sale that were located within the Buffalo Field Office Management Area.

• The State Director Review dismissed the protest and special interest groups then appealed that decision to the Interior Board of Land Appeals (IBLA).

• IBLA dismissed 46 of the 49 parcels for lack of standing and granted the special interest groups standing on 3 parcels of which a stay was granted.

• IBLA ruled on April 2002 remanding the 3 parcels back to the BLM for further review. IBLA determined that BLM did not take a "hard look" at the unique characteristics of coal bed natural gas development prior to leasing, particularly water and air quality, and therefore the leases were issued illegally.

• BLM then placed a moratorium on further leasing in the Buffalo Field Office Management Area where leases were thought to be utilized for coal bed natural gas development.

• Several parties appealed this decision to Federal District Court in Wyoming and on May 30, 2003 the Federal judge overturned IBLA's decision and defended BLM's original State Director Review in that the agency did take a "hard look" at the impacts of coal bed natural gas prior to leasing.

• The reinstatement of these three leases took place some 3 years after industry invested in developing the Federal mineral estate.

• Special interest groups are now appealing the Federal District Court decision to the 10th Circuit Court of Appeals. This hearing has yet to be scheduled.

Wyoming BLM April 2000 Lease Sale

• The April 2000 lease sale was protested to the BLM State Director by special interest groups where 122 lease parcels were offered in the sale that were located within Bighorn, Campbell, Carbon, Converse, Johnson, Natrona, Sheridan, Sweetwater, and Uinta Counties in Wyoming.

• The State Director Review dismissed the protest and special interest groups then appealed that decision to IBLA.

• IBLA initially dismissed 119 parcels for lack of standing and eventually reconsidered 5 of those parcels that were dismissed; therefore granting standing on a total of 8 parcels. A stay was granted on those 8 parcels limited to coal bed natural gas development only.

• The special interest groups charged that the applicable environmental documents of which the State Director relied in its review completely failed to mention coal bed natural gas development or inadequately addressed the unique and significant impacts associated with that development.

• In April of 2003, IBLA affirmed the State Director's Review in part and reversed and remanded the Review in part. That decision was never appealed to Federal District Court.

Wyoming BLM June 2000 Lease Sale

• The June 2000 lease sale was protested to the BLM State Director by special interest groups where 132 lease parcels were offered in the sale that were located within Bighorn, Campbell, Carbon, Converse, Johnson, Natrona, Sheridan, Sweetwater, and Uinta Counties in Wyoming.

• The State Director Review dismissed the protest and special interest groups then appealed that decision to the IBLA.

• IBLA dismissed 127 parcels for lack of standing and granted the special interest groups standing on 5 parcels but limited the stay to only coal bed natural gas activities.

• IBLA then granted the special interest groups motion for partial voluntary dismissal of the appeal as to 3 of the 5 parcels for which it had established standing leaving only 2 parcels in the appeal.

• The special interest groups charged that the applicable environmental documents of which the State Director relied on his its review completely failed to mention coal bed natural gas development or inadequately addressed the unique and significant impacts associated with that development.

• In February of 2004, IBLA affirmed the State Director's decision on review stating that the BLM supplemented its review with the submission of supporting information and provided the hard look at the environmental consequences of leasing including impacts from coal bed natural gas development.

• It has not been decided if this decision will be appealed to Federal District Court.

CONCLUSION

It has become apparent that through the public process NEPA has become a "tool" that is used as the primary impediment to oil and gas development on Federal lands. Industry supports without qualification the Act's provisions for public comment, identification of alternatives to the proposed action, and consideration of impacts and mitigation measures to be used. However, these same provisions are being used by some groups as opportunities to stop proposed projects without regard for cost and delay of impacts on land management agencies, the US taxpayer, or multiple users of the public lands.

The cost of "NEPA abuse" is high. All of these delays put a tremendous burden on industry's ability to economically develop the resource for the benefit of the country. It is safe to say that the cumulative impacts, due to frivolous environmental litigation, is strangling industry's ability to develop energy resources on Federal lands and to supply much needed energy to the citizens of this country.

EXHIBIT 2

[From the News Record, June 25, 2003]

CANADIAN FIRM PLANS PIPELINE TO CHICAGO

(By the Staff and Wire Reports)

A Canadian firm has announced plans to build a high-volume natural gas pipeline from northeastern Wyoming to Chicago.

Calgary, Alberta-based Enbridge, Inc., said Tuesday the plans include a design that would export up to 1-billion cubic feet of gas per day from the Powder River Basin.

Industry and government officials say a pipeline with that much volume would bolster wholesale prices and bring Wyoming closer to becoming the nation's top natural gas supplier.

"Here we have a time when the whole country is screaming for natural gas and we have the supply. Clearly this huge for the state," said Mark Doelger, chairman of the Wyoming Pipeline Authority.

"We've been talking with Enbridge since February but didn't expect a decision this early," Doelger told The News-Record.

"If ongoing market studies and other reviews are favorable, Enbridge believes this pipeline could be constructed and in service within 4 years," said Ron Brintnell, director of the company's Gas Pipeline Development Division.

The proposal was announced at a meeting of the Wyoming Natural Gas Pipeline Authority in Casper.

Brintnell said Enbridge has been working with the agency to contact local gas producers and to find out if it can make a deal to ship royalty-in-kind gas, or gas that is given to the Federal Government in lieu of conventional royalty payments.

If the government is able to negotiate better pipeline deals for moving gas, it can earn more money that it would from cash payments. Wyoming was the first State to make in-kind payments.

The company is looking for producer support and plans to open an office in Wyoming but "the location and timing has yet to be determined," Brintnell told The News-Record.

Enbridge and its subsidiaries operate more than 20,000 miles of natural gas and oil pipelines in Canada and the United States, including the Vector natural gas pipeline from the Chicago Hub to Dawn, Ontario.

Enbridge has been working on a $900 million deal to sell half its interest in the 1,857-mile Alliance Pipeline, which moves natural gas from western Canada to the Chicago hub, and all its interest in a Saskatchewan pipeline system.

According to an Enbridge press release issued Monday, the deal would net the company about $210 million, which it would use to pay down debt and invest in "strategic growth opportunities."

The deals could close at the end of the month.

Last year the State and several gas producers paid PACE Global Energy Services to study what Wyoming's gas industry needs to become more competitive nationwide. The answer was a high-volume, single-route "bullet" pipeline from northeast Wyoming to the Chicago market.

Enbridge was not among the firms that helped fund the PACE study but State officials involved in the process said it doesn't matter who wants to build it.

Earlier this year, the Legislature followed recommendations from the now-idled Wyoming Energy Commission and from Gov. Dave Freudenthal to revive the Wyoming Natural Gas Pipeline Authority and charge it with bolstering interest in expanding Wyoming's pipeline connections to high-volume markets.

One of the problems noted in the PACE study was how many of the companies which typically build interstate gas pipelines have suffered from credit problems related to the recent problems in the energy trading business.

Brintnell said Enbridge never got into the energy trading business and its credit is strong enough to finance a project like a Wyoming-to-Chicago pipeline.

He said the next step will be for the company to discuss with producers and end-users to see how much interest there is in the project.

EXHIBIT 3

[From the *News Record*, January 28, 2003]

PIPELINE PROJECT IS PUT ON HOLD

(By Charlie Homans)

WYOMING.—The Canadian pipeline company Enbridge Inc. has put its Beacon Pipeline project on the back burner, an Enbridge official told The News-Record today.

"For the time being, we've stopped further development on it," said Ron Brintnell, Enbridge's director for gas pipeline development. "We didn't see the kind of response from the producing community that we hoped for."

But Brintnell says the company is optimistic about the future of the pipeline, which is slated to eventually carry 2-billion cubic feet per day of coal-bed methane and conventional natural gas from Cheyenne to Chicago.

"Right now we're waiting to see what transpires with producers over the next year or so," he said. "If we see the kind of growth that we expect, then we will continue."

Both Brintnell and Wyoming Natural Gas Pipeline Authority officials pointed to slow coal-bed methane well permitting by the U.S. Bureau of Land Management's Wyoming field offices as a large part of the problem.

According to BLM Buffalo field office manager Dennis Stenger, the Buffalo office—where most of the criticism has been targeted—has permitted 525 wells since April, when the landmark Powder River Basin Oil & Gas Project environmental impact statement was issued.

Last week Secretary of the Interior Gale Norton said she wanted to see 3,000 permits issued each year by the BML in the Powder River Basin.

"Right now there's just a lack of market support for the project," Pipeline Authority Executive Director Bryan Hassler said of the Beacon Pipeline. "And most of that's due to producer uncertainty on when they're going to receive permits, how rapidly they're going to receive them, and where they can go once they do receive them."

BLM Buffalo assistant field manager Richard Zander acknowledged that slowed permitting has been a problem, pointing to the numerous still-unsettled lawsuits filed against the BLM over the environmental impact statement.

But he said that permitting was most likely not the only factor inhibit large projects like Beacon.

"Is there a certainty that (the permitting)'s affecting it? I don't thinks so," Zander said.

Brintnell said that while the scale of the Beacon project could offer significant economic payoffs to Wyoming, particularly if natural gas prices in the Midwest remain high, it also made getting the pipeline off the ground a trickier proposition.

"Given that it is a bigger project economics prevail," Brintnell said. "We need more commitments to make it work, so it's just a different set of challenges." State Oil & Gas Conservation Commission Supervisor Don Likwartz said that the commitment problems Beacon faces are characteristic of the Wyoming pipeline market in general.

"What has happened is that a lot of operators . . . are having even more difficulty forecasting production for their companies and their boards and Wall Street, and they're also getting more reluctant to commit to pipelines," Likwartz said.

EXHIBIT 4

Case	Cause Number	Court	Complaint Allegations
NPRC v. *FIDELITY*	CV–00–105-BLG-SEH No. 02—35836	US District Court for the District of Montana, Billings Division. Ninth Circuit Court of Appeals	Citizen suit challenging regulated discharges.
NPRC v. *BLM, FIDELITY, ET AL.*	CV–01–96-BLG-RWA No. 04—35002	US District Court for the District of Montana, Billings Division. Ninth Circuit Court of Appeals	Lawsuit challenging BLM's compliance with NEPA process.
TRWUA, NPRC, AND MEIC v. *MT DEQ AND FIDELITY.*	CDV–2001–258 *CONSOLIDATED WITH* BDV 2001–258.	Montana First Judicial District Court, Lewis and Clark County.	Lawsuit claiming that regulated discharges violate environmental standards.
NPRC v. *FIDELITY*	CV 01–137-BLG-RWA	US District Court for the District of Montana, Billings Division.	Citizen suit challenging pond construction.
NPRC v. *BLM*, Gale Norton, Kathleen Clarke, and Martin Ott (Defendants), *AND FIDELITY, ET AL.* (Intervenors).	CV–03–069-BLG-RWA *CONSOLIDATED WITH* CV–03–078-BLG-RWA.	US District Court for the District of Montana, Billings Division.	Lawsuit challenging BLM's compliance with NEPA process.

Case	Cause Number	Court	Complaint Allegations
WORC, Jeanie Alderson, Wally McRae, WOC, NRDC, and PRBRC v. *Kathleen Clarke, BLM, Gale Norton, and DOI* (Defendants), *and Fidelity, et al.* (Intervenors).	CV–03–70-BLG-RWA (Montana). 04-CV–0018-J (Wyoming)	US District Court for the District of Montana, Billings Division. US District Court for the District of Wyoming.	Lawsuit challenging BLM's compliance with NEPA process.
ALA, BCA, and George Wuerthner v. *BLM and Gale Norton* (Defendants), *and Fidelity, et al.* (Intervenors).	CV–03–71-BLG-RWA (Montana). 04-CV–0019-J (Wyoming)	US District Court for the District of Montana, Billings Division. US District Court for the District of Wyoming.	Lawsuit challenging BLM's compliance with NEPA process.
Northern Cheyenne Tribe and Native Action v. *Gale Norton, Kathleen Clarke, and Martin Ott* (Defendants), *and Fidelity, et al.* (Intervenors).	CV–03–78-BLG-RWA *consolidated with* CV–03–69-BLG-RWA.	US District Court for the District of Montana, Billings Division.	Lawsuit challenging BLM's compliance with NEPA process.
T & Y Irrigation District, NPRC, and MEIC v. *MT DEQ and MBOGC* (Defendants) *and Fidelity* (Intervenor).	BDV–2003–579	Montana First Judicial District Court.	Lawsuit claiming that agencies' actions violated State constitution and statutes.
NPRC v. *BLM and Martin Ott* (Defendants) *and Fidelity* (Intervenor).	CV–03–185-BLG-RWA	US District Court for the District of Montana, Billings Division.	Lawsuit challenging adequacy of environmental analysis for Fidelity's Badger Hills Project.
Northern Cheyenne Tribe v. *BLM, Martin C. Ott, and David M. McIlnay* (Defendants) *and Fidelity* (Intervenor).	CV–04–17-BLG-RWA	United States District Court of Montana, Billings Division.	Lawsuit challenging adequacy of environmental analysis for Fidelity's Badger Hills Project.

Statement of Steve H.M. Bloch, Staff Attorney, Southern Utah Wilderness Alliance

My name is Stephen Bloch and I am a staff attorney for the Southern Utah Wilderness Alliance (SUWA). SUWA is a non-profit organization with over 15,000 members in all 50 States. SUWA's mission is the preservation of the outstanding wilderness at the heart of the Colorado Plateau, and the management of these lands in their natural state for the benefit of all Americans. SUWA promotes local and national recognition of the region's unique character through research and public education; supports both administrative and legislative initiatives to permanently protect Utah's wild places within the National Wilderness Preservation System or by other protective designations where appropriate; builds support for such initiatives on both the local and national level; and provides leadership within the conservation movement through uncompromising advocacy for wilderness preservation.

SUWA is a founding member of the Utah Wilderness Coalition, a group of 240 national, regional, and local organizations that advocates for the passage of America's Redrock Wilderness Act (ARWA) (S. 639/H.R. 1796) and the designation of roughly 9 million acres of Utah's stunning Bureau of Land Management (BLM) lands as Wilderness.

I appreciate the opportunity to testify today regarding the environmental impacts of natural gas leasing, exploration, and development. Because SUWA's mission focuses solely on protecting and preserving public lands and resources in Utah, my testimony will address natural gas issues on Utah's public lands, and in particular the lands managed by the BLM.

A close review of the undiscovered natural gas resources on the BLM lands in Utah proposed for wilderness designation in America's Redrock Wilderness Act reveals that drilling these lands will have an absolutely insignificant impact on the price of natural gas. *A balanced approach of energy conservation, resource extraction, and public land protections, however, will ensure that our country has both the natural gas and intact wild places it needs for sustained growth, security, and sustainability*. This is precisely the approach advocated by SUWA and the conservation community.

DEVELOPING UTAH'S WILD PLACES WOULD PRODUCE ONLY INSIGNIFICANT AMOUNTS OF NATURAL GAS

According to the Department of Energy (DOE), over 13,500 wells have been drilled since oil and gas exploration and development first began in earnest in Utah in the 1940's, and as of October 2003 the total gas production had been 7.65 TCF (trillion cubic feet). *See* Mark Lemkin, *An Analysis of Utah Oil and Gas Production, Leasing, and Future Resources* (2003) (Lemkin), at 1 (citing Utah Geologic Survey and DOE sources). Put in a broader context, the total gas extracted in Utah since the 1940's would supply the country with natural gas for just over 4 months at current national consumption levels. Id.

A closer look at DOE figures on Utah's recent annual gas production a level which is consistent with production from the past several years indicates that the State produced 273 BCF (billion cubic feet) of natural gas. This is not even enough natural gas to supply the country for 5 days.

An analysis of information compiled by DOE, the United States Geological Survey (USGS), and the State of Utah's Division of Oil, Gas, and Mining (UDOGM) indicates that approximately 95 percent of gas and oil production in Utah both historically and more recently between 2001–03 has come from seven "hot spots." See Exhibits 1 and 2 (Lemkin, Figure 3, Location of principal areas of oil and gas production in Utah and Figure 5, Location of principal areas of oil and gas production in Utah: 2001 to present).[1] *None of these areas are proposed for wilderness designation in America's Redrock Wilderness Act. See id.* (illustrating areas of production and BLM lands proposed for wilderness).

According to DOE, the entire State of Utah has proven gas reserves of 4.6 TCF (or 2.5 percent of U.S. proven gas reserves). Using the USGS's own methods for predicting Utah's statewide inferred reserves (a figure that must be estimated because it is not publicly available), another 6.1 TCF of gas may be extracted from within or immediately adjacent to existing fields. Finally, according to USGS, Utah may have as much as 15,668 BCF of gas that is technically recoverable undiscovered resources.[2]

An analysis of the most current USGS data estimates that the technically recoverable undiscovered natural gas resources within America's Redrock Wilderness Act amounts to 1495 BCF, or less than 4 4 weeks of natural gas at current consumption levels. Lemkin, at 4.

If the more appropriate economically recoverable screen were applied, this 1495 BCF figure would no doubt be much less because of these lands' relatively remote location and lack of infrastructure, as well as non-market costs, including the loss of wildlife habitat, water quality, and wilderness values.[3]

In sum, even if we sacrifice one of America's crown jewels—Utah's redrock wilderness—we cannot meaningfully reduce the price of natural gas. Instead, a sound national energy policy that emphasizes conservation and renewable energy sources, hand-in-hand with environmentally sensitive natural gas exploration, is a better approach to stabilizing natural gas prices. *See* Natural Resources Defense Council,

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[1] *See* Lemkin, at 2–3 (noting that wells drilled outside these seven areas are "six times more likely to be dry, and have an expected production level less than one-tenth that of wells drilled inside" of the seven hot spots).

[2] The use of "technically recoverable" versus "economically recoverable" undiscovered resources has been heavily criticized because it ignores market (transportation, infrastructure, etc.) and non-market (wildlife, wilderness values, etc.) costs, and thus overemphasizes the amount of reserves. *See* The Wilderness Society, *Energy & Western Wildlands, A GIS Analysis of Economically Recoverable Oil and Gas* (2002). The USGS estimates that less than 20 percent of technically recoverable gas is economically recoverable in the intermountain west. *Id.* at 17.

[3] According to The Wilderness Society, the amount of economically recoverable undiscovered natural gas resources in Utah's Forest Service roadless lands is between 182–295 BCF, or between three to 5 days at current national consumption levels. The Wilderness Society, *Estimates of Economically Recoverable Gas and Oil on National Forest Roadless Areas in Utah on the USGS Low and High Price Scenarios.* This analysis, and an analysis of other western States roadless areas is available at The Wilderness Society's webpage: www.wilderness.org/standbylands/roadless/.

Managing America's Natural Gas "Crisis" (2004), available on-line at www.nrdc.org/air/energy/fnatgas.asp; Union of Concerned Scientists, *Renewable Energy Can Help Ease Natural Gas Crunch* (2004), available on-line at www.ucusa.org/clean—energy.

SUWA ADVOCATES A BALANCED APPROACH TO THE PROTECTION OF UTAH'S WILD PLACES AND GAS DEVELOPMENT

The sacrifice of Utah's BLM wilderness quality lands to industrial development will only provide the country with a few weeks of natural gas, estimated at 1495 BCF. There is little question, however, that exploration and development will leave lasting scars on this magnificent landscape, including: the fragmentation of wildlife habitat, long term damage fragile desert soils (estimated by USGS at between 50–300 years),[4] and the loss of wilderness values (*i.e.*, outstanding solitude, including things such as night skies and irreplaceable quiet). *See* Exhibits 3 and 4 (Exhibit 3—sludge pit at Long Canyon well outside Moab, Utah; Exhibit 4—seismic truck in Yellow Cat seismic project area near Arches National Park).[5] Quite simply, once these lands are gone, they are gone forever and thus future leasing and development of these should be prohibited.[6]

Far from advocating a broad "no lease/no drill" policy, SUWA and the conservation community are extremely selective about filing administrative or legal challenges to gas exploration or development projects in Utah, and throughout the intermountain west. An analysis by the Natural Resources Defense Council (NRDC) revealed that these figures are representative for the number of legal challenges to gas and oil related projects throughout the intermountain west. NRDC, *Managing America's Natural Gas "Crisis,"* at 3. For example, conservationists appealed or litigated only 0.2 percent of the APDs approved by the BLM between 2001–2002, and only 5 percent of the leases issued by BLM from the beginning of fiscal year 2001 to the end of fiscal year 2003. The conservation community will continue to closely monitor mineral leasing and development for full compliance with Federal environmental and preservation laws, and will continue to challenge BLM decisions that flaunt these laws, and thus put sensitive resources at risk.

In Utah, the vast majority of these legal challenges have been brought because the action threatened lands proposed for wilderness designation (either citizen proposed or existing WSAs). For example, between January 2000 and March 2004, there were over 3200 APDs approved in Utah; *conservationists challenged fewer than ½ of 1 percent of these drill projects*. Thus, legal challenges are clearly not an impediment to gas development and production.

Likewise, between 2000–2004, the BLM approved 10 seismic exploration projects proposed in eastern Utah. SUWA challenged four of the projects in Federal court and before the Interior Board of Land Appeals (IBLA) because they threatened to damage wilderness quality lands. See Map, *Seismic Exploration in the Heart of Redrock Country* (2004), attached as Exhibit 5. SUWA prevailed on one of these four challenges, and is appealing a second.[7]

The balanced approach advocated by SUWA and others of permitting gas exploration and development in less sensitive public lands, and in full compliance with Federal environmental laws, will secure both continued natural gas production and the protection of our country's irreplaceable national heritage.

THE BUSH ADMINISTRATION IS CREATING CONFLICT BY FLAUNTING ENVIRONMENTAL LAWS

Since 2001, this Administration has misled the American public by focusing the Nation's attention and imagination on drilling and developing natural gas and oil resources on the country's few remaining wild places as a means of achieving energy independence. To the contrary, the development of Utah's wilderness quality and roadless lands will not produce any meaningful amount of natural gas.

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[4] *See* Biological Soil Crusts: Ecology and Management, U.S. Department of the Interior, BLM Technical Reference 1730–2 (2001).

[5] *See* The Wilderness Society, *Fragmenting Out Lands: The Ecological Footprint from Oil and Gas Development* (2002).

[6] Existing leaseholders, of course, would be allowed to proceed with development, but only in the most environmentally sensitive manner.

[7] In *Southern Utah Wilderness Alliance* v. *Norton*, 237 F. Supp.2d 48, 52 (D.D.C. 2002), Federal district judge James Robertson admonished BLM for its hurried decision to approve a seismic exploration project on the doorstep of Arches National Park: "What does appear from this record is a sense that the agency (a) was in hurry to approve the Yellow Cat Swath [seismic] project and (b) considered the damage that would be done by the [seismic] trucks relatively insignificant." The BLM did not appeal this decision.

First, President Bush issued Executive Order 13212 in May 2001, which required Federal land management agencies to expedite their review of gas and exploration permits and thus accelerate completion of energy projects. Second, and at about the same time the Administration released the National Energy Plan (NEP), which required, among other things, the opening of more western public lands to gas and oil drilling. Neither of these policies provide for a thoughtful, measured approach to ensuring a continued supply of natural, while at the same time protecting and preserving our treasured wild places and resources.

In response to the NEP, the BLM identified 40 tasks to implement the NEPA, including establishment of a charter team to evaluate bottlenecks and to streamline methods to expedite the agency's processing of applications for permit to drill (APDs). See BLM Information Bulletin 2001–138, *Status of Bureau of Land Management's National Energy Policy Implementation Plan* (Aug. 15, 2001). After an on-site review from the BLM's Washington, DC. headquarters office in the summer of 2001, Utah BLM staff were told in no uncertain terms that gas and oil leasing and the issuance of new APDs were their "No. 1 priority," and that compliance with the National Environmental Policy Act (NEPA), 42 U.S.C. §§ 4321 *et seq*., and wilderness reviews were the primary reason for unacceptable delays:

> The purpose of the subject review is to improve the oil and gas program in Utah. The review team believes the oil and gas program should be a high priority program in Utah. Utah management should work with Washington to acquire whatever resources are necessary to reduce oil and gas leasing delays and drilling backlogs.
>
> The leasing delays and APD backlogs are created by the people responsible for performing the wilderness reviews and NEPA analysis. *Utah needs to ensure that existing staff understand that when an oil and gas lease parcel or when an APD comes in the door, that this work is their No. 1 priority.*

Information Bulletin UT 2002–008, *Oil and Gas Program Review Final Report* (January 4, 2002) (emphasis added).

In addition, the BLM has produced a series of agency Instruction Memoranda and Information Bulletins that have implemented the Administration's call for the easing of restrictions on leasing and development of the public lands. In July 2003, the BLM's Washington office issued an Instruction Memorandum which revealed that the agency was abandoning its congressionally mandated multiple use mission for the promotion of a single resource oil and gas. Instruction Memorandum 2003–233, *Integration of the Energy Policy and Conservation Act (EPCA) Results into the Land Use Planning* Process (July 28, 2003). This internal agency document made clear that the BLM would "eliminate" protective special lease stipulations (i.e., timing of operations stipulations designed to protect critical wildlife winter habitat) that were deemed "duplicative" *Id.* At the same time, the Instruction Memorandum directed agency staff to use unenforceable "lease notices," in lieu of protective special lease stipulations whenever possible and to use the "least restrictive" mitigation necessary to protect sensitive resources Id. at Attachment 3–3.

Most recently, in February 2004, the BLM's Washington, DC. office issued guidance making it even more difficult for State Directors to defer leasing the most sensitive public lands for gas development, even when the agency has been presented with significant new information never before considered by BLM about those very same lands. Instruction Memorandum 2004–110, *Fluid Mineral Leasing and Related Planning and National Environmental Policy Act (NEPA) Processes* (Feb. 23, 2004).

> It is Bureau policy that a decision not to implement oil and gas or geothermal leasing decisions, as contained in current [land use plans] must be made by the State Director with appropriate input from the affected Field Manager. The State Director must provide a letter to those who submitted the expression of interest for the tract, stating the reasons for not offering the parcel(s), the factors considered in reaching that decision, and approximate date when analysis of new information bearing on the leasing decision is anticipated to be completed and when a decision to lease (or amend the plan) is expected to be made.

Id. This guidance turns well established caselaw regarding the Interior Department's broad discretion whether to offer Federal oil and gas leases on its head, and places the burden on an already overextended agency to explain to industry why it is not offering lands for lease. *See Marathon Oil Co.* v. *Babbitt*, 966 F. Supp. 1024 (D. Colo. 1997), *aff'd* 166 F.3d 1221 (10th Cir. 1999). The Department has imposed no similar obligation or additional workload requirement regarding any other type of public resource such as wilderness, wildlife habitat, and water quality.

Finally, in April 2003, the Administration eased the way for the leasing and development of the country's wildest BLM lands when Secretary of the Interior Gale Norton settled a long moribund lawsuit with then Utah Governor Michael Leavitt

(now EPA Administrator), which asserted, among other things, the novel position that the BLM lacks the authority to establish new wilderness study areas (WSAs) after 1993. See *State of Utah* v. *Norton*, 2:97CV479, Stipulation and Joint Motion to Enter Order Approving Settlement and to Dismiss Third Amended and Supplemented Complaint (April 11, 2003).[8] In the wake of this settlement, the BLM has halted consideration of public lands with wilderness character from becoming WSAs and, tragically, has targeted these same wilderness quality lands for mineral leasing.[9] A coalition of 11 national and regional conservation organizations, including SUWA, have challenged the settlement order in Federal court.

As noted above, a review of where the natural gas resources lie in Utah confirms that the Administration's focus on easing restrictions to lease and develop the State's BLM wilderness quality lands is unsound. As USGS and DOE own figures confirm, a continued emphasis on leasing and producing from established areas of production and their inferred reserves will produce vastly more gas and oil than will the development of these wilderness quality lands. *Indeed, it is the Administration's persistent efforts to lease and develop these wild lands that has created much of the perceived and unnecessary "conflict" between resource extraction and preservation.*

For example, in November 2003 and February 2004, Utah BLM under the direct supervision of BLM's Washington, DC. office, *offered and sold 26 oil and gas leases in lands that the BLM itself recognizes as having wilderness character*. According to USGS and DOE data, these leases—if ever fully developed and brought on-line—would produce absolutely insignificant amount of natural gas. These wilderness quality lands, however, would be scarred with drill pads, access roads, pipelines, sludge pits, and other by-products that development brings with it.

Moreover, in its rush to lease Utah's wilderness quality lands, the BLM is flaunting NEPA's mandate that the agency "think first, then act," by refusing to fully analyze the impacts of leasing, exploration, development, and reclamation *before* it engages in an irretrievable commitment of resources the sale of an oil and gas lease. The BLM is also ignoring NEPA's requirement that the agency take a "hard look" at its own new information about the wilderness values of these lands—information that it has never before considered. SUWA, the Natural Resources Defense Council, and The Wilderness Society have challenged Utah BLM's sale of wilderness quality lands at its November 2003 lease sale.

Nevertheless, there is certainly no shortage of public lands throughout the west that have already been leased and thus are available for development. According to BLM, there are currently over 42,000,000 acres of onshore Federal lands under lease across the country. In addition, a 2003 report from BLM indicates that only 11,000,000 acres of Federal leases—less than one-third of the total acreage of leased lands—were actually in production in 2003. *See Public Rewards from Public Lands*, Bureau of Land Management (2003). *See also* Exhibit 6 (Lemkin, Figure 7, Current lease and production status [in Utah]). Finally, the Interior Department itself acknowledges that roughly 88 percent of Federal gas resources in the Rocky Mountain region are already available for leasing and development. See Statement of Rebecca Watson, Assistant Secretary for Lands and Minerals Management, Oversight Hearing on "The Energy Policy and Conservation Act Inventory," House Resources Subcommittee on Energy and Mineral Resources (June 24, 2003).

CONCLUSION

In sum, current high prices for natural gas cannot reasonably be attributed to "impediments and restrictions" to Federal natural gas resources as alleged by industry advocates and the Administration. Moreover, data shows that attempts to exploit the minimal gas resources beneath Utah's wilderness quality BLM lands will damage priceless wilderness treasures with little corresponding benefit to the public. Based on my experiences in Utah, I believe that enforcement of existing environmental laws and regulations have not posed serious impediment to gas development.

Thank you again for the opportunity to testify on these important issues.

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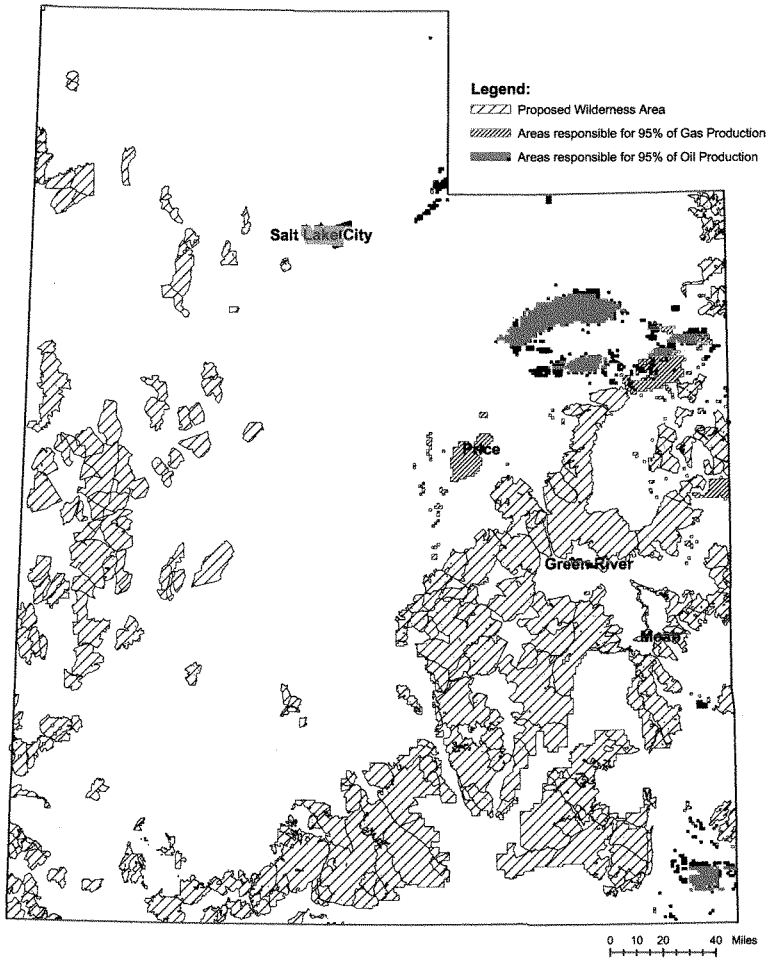
[8] In 1999, Utah BLM completed its wilderness "re-inventory" of over 3 million acres of public lands and concluded that over 2.6 million acres of those lands had wilderness character. See Utah Wilderness Inventory, Bureau of Land Management, at xiv-xv (1999). These lands, identified as "wilderness inventory areas" or "WIAs" were to have been studied in an environmental impact statement for designation as wilderness study areas. This analysis never took place.

[9] The Settlement Agreement also required that the BLM rescind its Wilderness Inventory Handbook (WIH) a vehicle for the public to bring new information about undesignated wilderness quality lands to the BLM's attention—and other guidance which explained that the BLM's work of protecting currently undesignated wilderness quality lands was not yet finished. See also Instruction Memorandum 2003–195, Rescission of National Level Policy Guidance on Wilderness Review and Land Use Planning (June 23, 2003).

Figure 3: Location of principal areas of oil and gas production in Utah

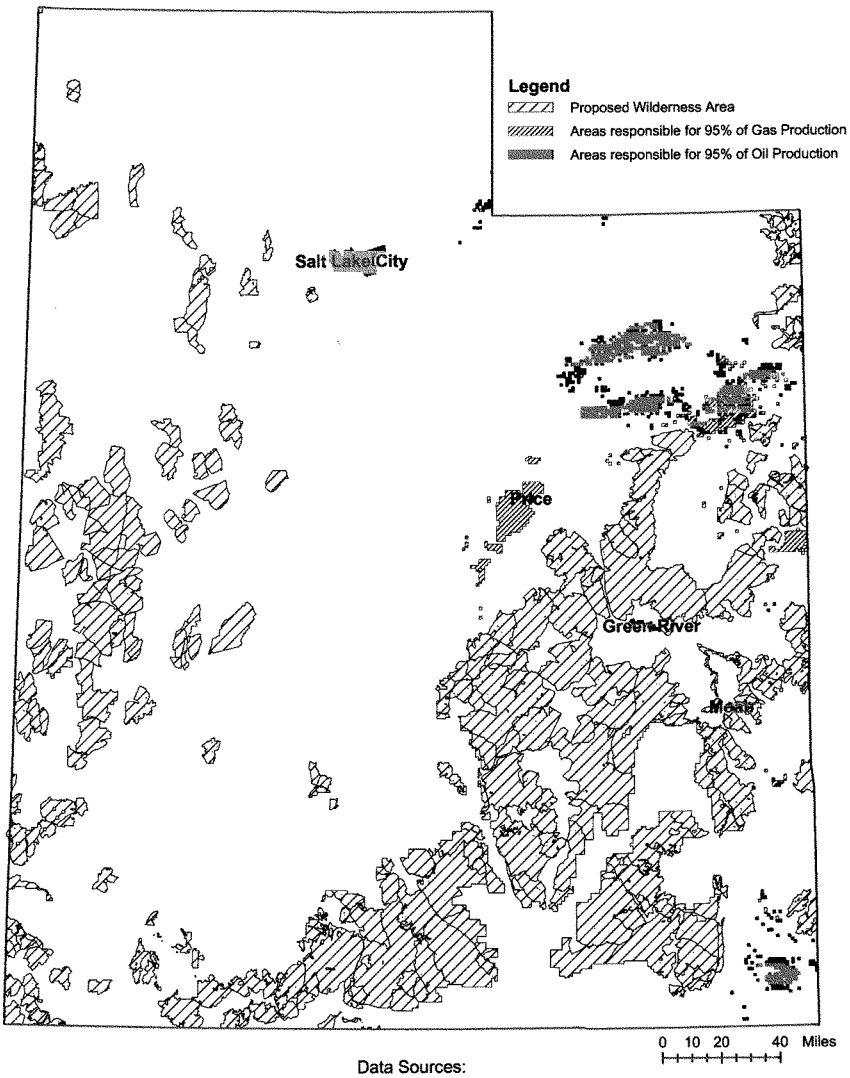
(Areas responsible for 95% of cumulative oil and gas production)



Data Sources:
Well production data from Utah Division of Oil, Gas and Mining database (10/03)
Proposed wilderness areas from Utah Wilderness Coalition's Citizens' BLM Wilderness Proposal (12/03)
PLSS section-level maps from Utah AGRC (1/01) and BLM's LSI System (10/03)

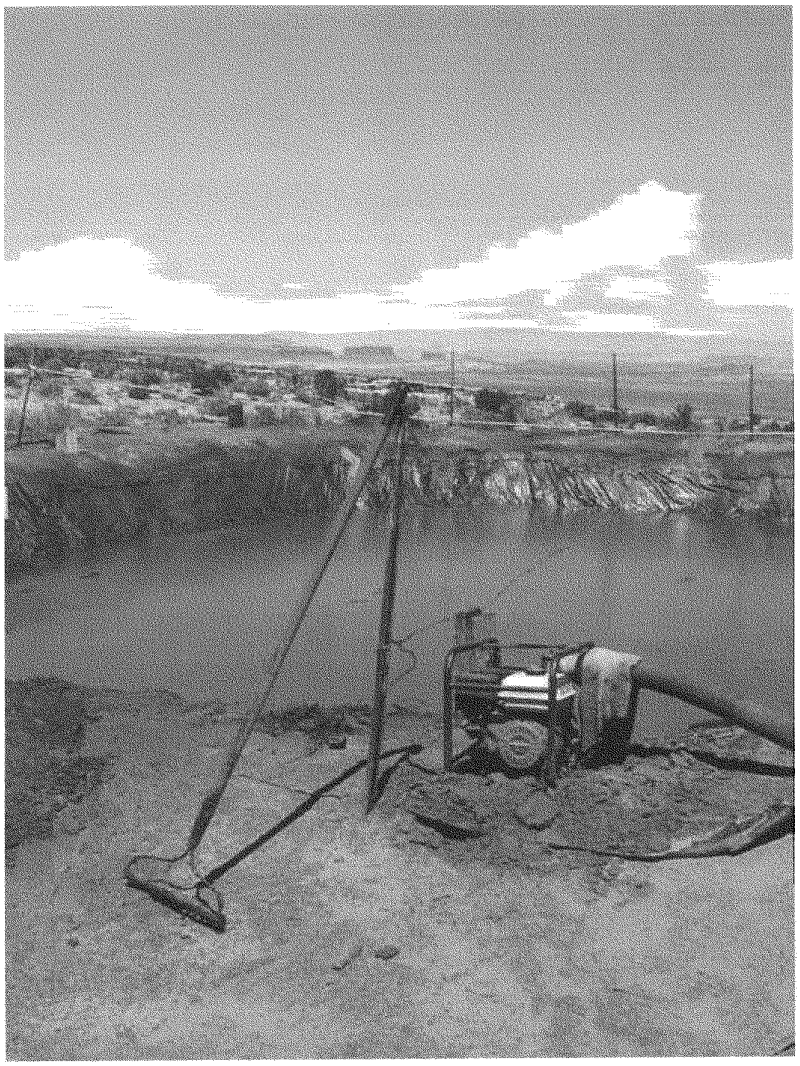
Figure 5: Location of principal areas of oil and gas production in Utah: 2001 to present

(Areas responsible for 95% of oil and gas production)



Data Sources:
Well production data from Utah Division of Oil, Gas and Mining database (10/03)
Proposed wilderness areas from Utah Wilderness Coalition's Citizens' BLM Wilderness Proposal (12/03)
PLSS section-level maps from Utah AGRC (1/01) and BLM's LSI System (10/03)

Sludge Pit at Long Canyon Well Outside Moab, Utah



Seismic Truck in Yellow Cat Seismic Project Area Near Arches National Park

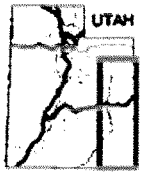
Oil and Gas Seismic Exploration In the Heart of Redrock Country

LEGEND

- Seismic Exploration Area (Completed or Proposed)
- Utah Wilderness Coalition's Citizen's Wilderness Proposal
- National Park Service
- Water
- City

Major roads

- Interstate
- State Highway



KEY

1 Yellow Cat 2-D (BLM environmental assessment revised and remanded)
2 Book Cliffs 2-D (Project underway and subject to ongoing federal court litigation)
3 South Book Cliffs 3-D (Completed, Fall 2002)
4 Big Indian 3-D (Completed Fall 2002)
5 Proposed Stone Cabin 3-D ("Nine Mile Canyon")
6 Proposed Hatch Point 3-D
7 Bull Canyon/Big Flat 3-D (Completed 10/01)
8 Lightening Draw 3-D (Completed 6/01)
9 Monument 3-D (Completed 6/01)
10 Uintah County 2-D Test (Completed 8/00)
11 NW Aneth 3-D Phase 1 (Completed 2000)
12 Wells Draw 2-D (Completed 2000)

20 0 20 40 Miles

Oil and gas data courtesy of the BLM
UWC Proposal data courtesy of the UWC
All land ownership, road, city, and water data courtesy of the Utah AGRC

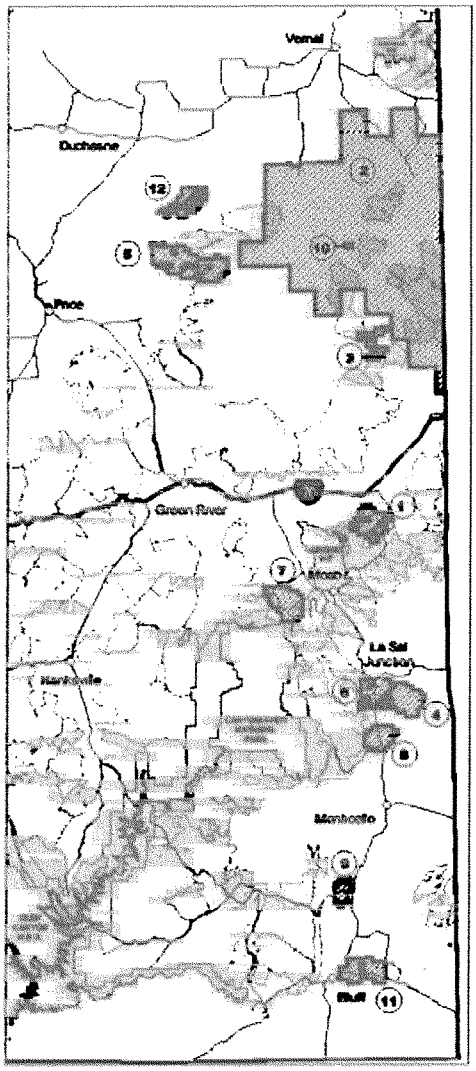
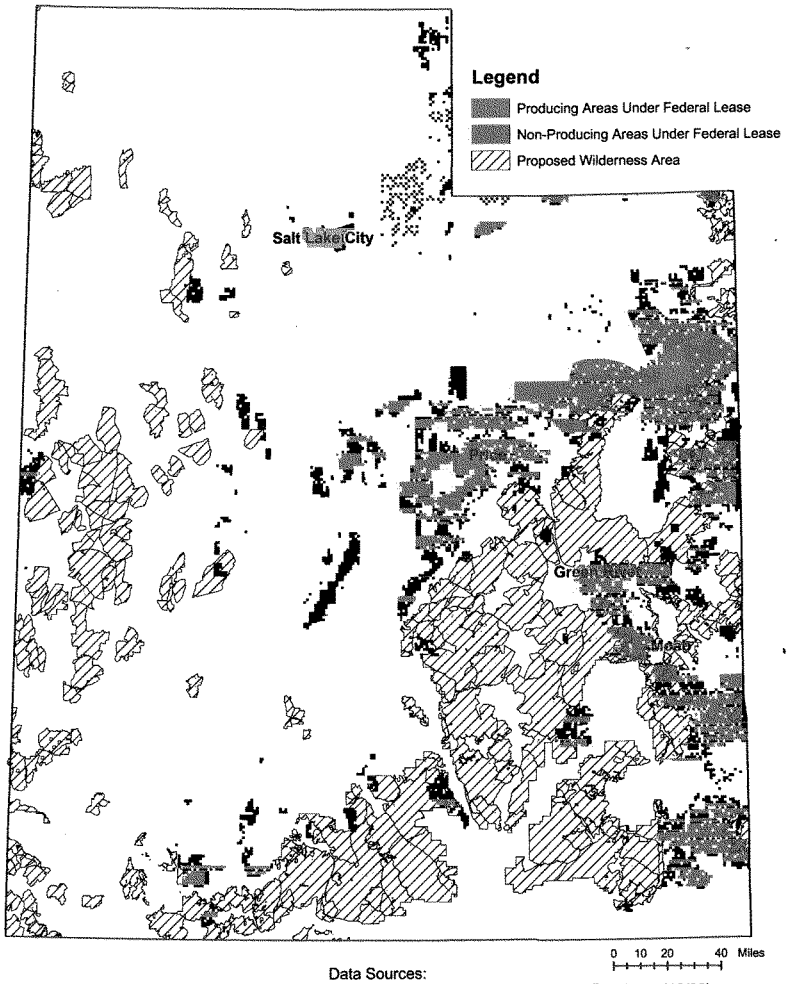


Figure 7: Current federal leases and production status



Data Sources:
Federal oil and gas lease data from the Bureau of Land Management's LR2000 Database (10/03)
Well production data from Utah Division of Oil, Gas and Mining database (10/03)
Proposed wilderness areas from Utah Wilderness Coalition's Citizens' BLM Wilderness Proposal (12/03)
PLSS section-level maps from Utah AGRC (1/01) and BLM's LSI System (10/03)

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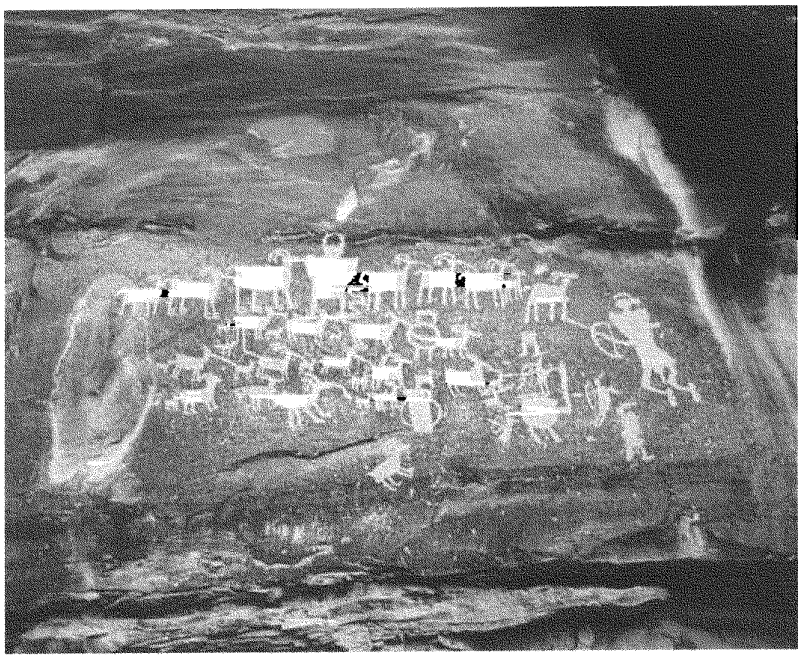
Fisher Towers

Hunting Panel Petroglyphs—Stone Carbin Seismic Project Area



RESPONSES BY STEPHEN BLOCH TO ADDITIONAL QUESTIONS FROM SENATOR INHOFE

Question 1. Your organization supports "Drilling for oil and gas in fields that are already developed." However, fields that are already developed are being depleted and insufficient to meet demand. Experts agree that we must find new sources to meet ever-increasing demand. How could drilling for oil in developed and depleting oil fields meet that certain demand?

Response. Senator, according to figures compiled by the Energy Information Administration, Department of Energy, the State of Utah has proven oil reserves of 271 million barrels (1.2% of U.S. proven oil reserves) and proven natural gas reserves of 4.6 TCF (2.5% of U.S. proven natural gas reserves). Utah's "inferred reserves" (extrapolated reserve estimates reflecting projected amounts of oil or gas quantities that will be eventually extracted within or abutting existing fields) are estimated to be 812 MMBO and 10.68 TCF. These inferred reserves—which are generally open to further development—will likely be tapped as technologies improve, different geologic strata are tested, and reserves become more defined.

Moreover, as I explained earlier, the public lands outside of Utah's seven "hot spots" (places where 95% of all oil and gas production is currently occurring and where it is predicted to occur in the future), have very little to offer in the way of meaningful oil and gas reserves. Drilling these lands, however, will have a definite cost—the loss of our few remaining wild lands and natural heritage.

Question 2. Your group also "supports federal policies that encourage energy efficiency and renewable power, which can meet much of [the] nation's need for electric power plants over the next 20 years." Right now, people are going out of work because of the cost of natural gas, but our environmental policies continue to spur more natural gas use. 24% of our nation's energy depends on natural gas and nearly half our manufacturers. Yet, our country gets only 1% of its power from renewables.

Gas producers go where the gas is abundant. Similarly, wind and solar power producers build where the wind are sun are plentiful. Southern Utah is sunny and windy, just as it may contain significant gas reserves.

Would you support construction of wind turbines and solar panels in that same area?

Response. Senator, the Southern Utah Wilderness Alliance (SUWA) support federal, state, and private efforts to increase energy efficiency and to spur the development and expansion of renewable power sources, such as wind power. In fact, SUWA purchases wind-generated power for its main Salt Lake City office through Utah Power's "Blue Sky" program.

Regarding the placement of either future wind turbines or solar panels in southern Utah, I believe that each project must be evaluated on a case-by-case basis to determine if there were other resource concerns such as wildlife habitat or proposed wilderness lands.

One point of clarification, as I indicated to you earlier, with the exception of the established fields at Aneth and Lisbon Valley, the majority of southern Utah's public lands have not been identified by the Department of Energy, U.S. Geological Survey, or the State of Utah's Division of Oil, Gas, and Mining as being predicted to contain meaningful quantities or either oil or gas.

STATEMENT OF GEORGE HANDLEY, PRESIDENT, ECLIPSE EXPLORATION CORPORATION

Thank you Mr. Chairman, my name is George Handley, I am the President and only employee of Eclipse Exploration Corporation based in Denver, Colorado. I appreciate the opportunity to speak with you today and I am glad to see the Committee's interest in natural gas supply in America and the environmental policies affecting its development.

Policies that either limit or encourage energy development of natural gas resources have very real consequences. Policies that promote the use of a particular energy source, yet fail to provide for the necessary and orderly development of that same resource are predisposed to failure.

I have been the victim of Federal land management policies that allow groups that are not party to any contract with the BLM or State to effectively stop a project through protests, appeals, and litigation. I have been victimized by the uncertainty that is created by abuses to public involvement statutes. Even when I followed all the laws and regulations, and had the approval of land managers, I found that I was still subject to the reach of obstructionist groups that sought to halt my natural gas exploration project and my cripple my company.

Legal challenges severely limit oil and natural gas development on Federal lands. At every stage of development obstructionist groups challenge agency decisions and

seek to stop development. For example, in the State of Utah alone, fifty-seven percent (57 percent) of all lease parcels offered by the Bureau of Land Management between 2001 and 2003 were protested by groups opposed to development.

I experienced one of these legal challenges first hand in Grand County, Utah on a seismic project over a Federal mineral lease. This lease is located in the Thompson Mining District, a former uranium mining area characterized by dry, sparsely vegetated land. It is not within Arches National Park. It is not within view of Arches National Park. It is not wilderness. It was leased to me by the Federal and State government with the expressed intent and responsibility to explore for oil and natural gas.

Seismic technology has greatly increased our ability to map the subsurface geology thereby allowing exploratory drilling in the most efficient manner. I have thirty years of experience working on seismic projects and developing petroleum exploration plays around the world. I have a Masters degree in geophysics from the Colorado School of Mines. In order to accurately map the subsurface geology of this prospect, I designed a specific seismic program. Any deviation from this program might result in useless data.

WesternGeco was hired to conduct the seismic activities on my lease. One of the employees of WesternGeco, Stuart Wright, is one of the foremost experts on seismic exploration and helped me design this program to ensure an accurate map of the subsurface. An Environmental Analysis was prepared following the guidelines of the BLM. The BLM informed WesternGeco and myself, what was needed to comply with the law. We did what the government asked. After the permit was issued, WesternGeco began operations. More than half-way through the project, a judge in Washington, DC. issued a ruling that stopped the project based on a challenge by the Southern Utah Wilderness Alliance (SUWA). My company is small and cannot afford to fight well-funded, non-profit groups in the courts. The State of Utah and WesternGeco helped, but in the end the SUWA won the court battle and has all but stopped my project.

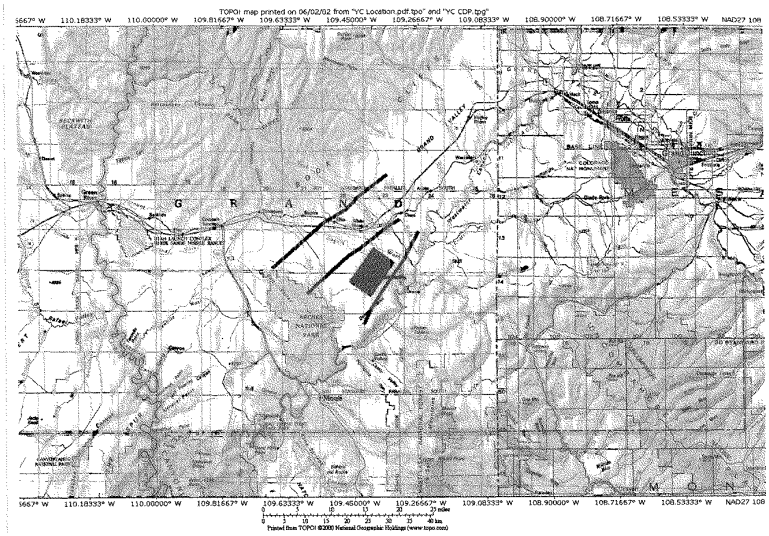
Abuse of the process delays the delivery of natural gas to consumers and destroys the livelihood of businessmen like myself. The more legal challenges, the more delays. The more delays, the more that consumers are affected. The more consumers are affected, the more the economy suffers.

I am not here to debate the factual or legal merits of my case. I use this example to lay blame on a process that allows non-profit groups to continually halt mineral development on public lands. SUWA may show you pictures and tell you stories of horrific damage done by the incomplete seismic project. It is misleading. There is no long term damage to the area and it would be hard for anyone to see the path of this project today. The State of Utah, the BLM and the Grand County Council fully support my project. Grand County is anxious for the wildcat well to be drilled and for the seismic program to be completed, as it will mean a lot to their economy.

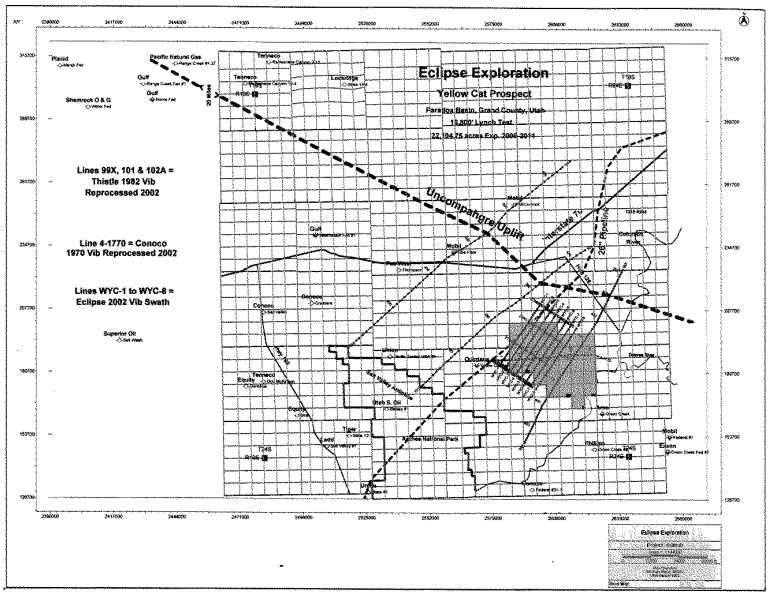
The Intermountain West is blessed with abundant resources of natural gas, a substantial portion of which is owned by the Federal Government. These resources cannot be developed when small businesses like mine face insurmountable litigation. Abusing the legal process puts Americans out of work and sends energy development outside our borders. It costs the government in terms of litigation costs and the potential to pay the attorney fees of the groups who bring the suit. In my case, I did what I was told by the government, but still lost and I have no recourse. Either way, the American public bears the burden of litigation against the government.

Thank you for allowing me to testify before you today.

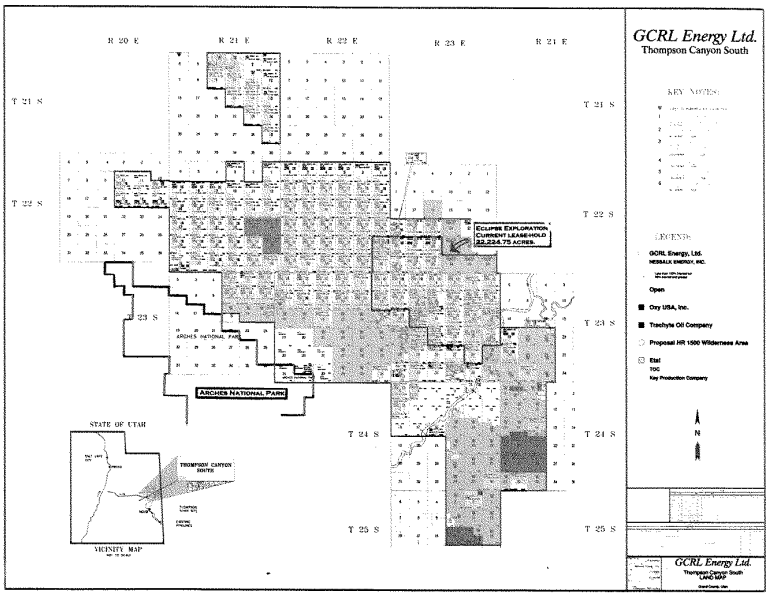
Display 1: This is a regional map showing the location of the seismic purchased and recorded for the Yellow Cat prospect. Note the location of Arches National Park.



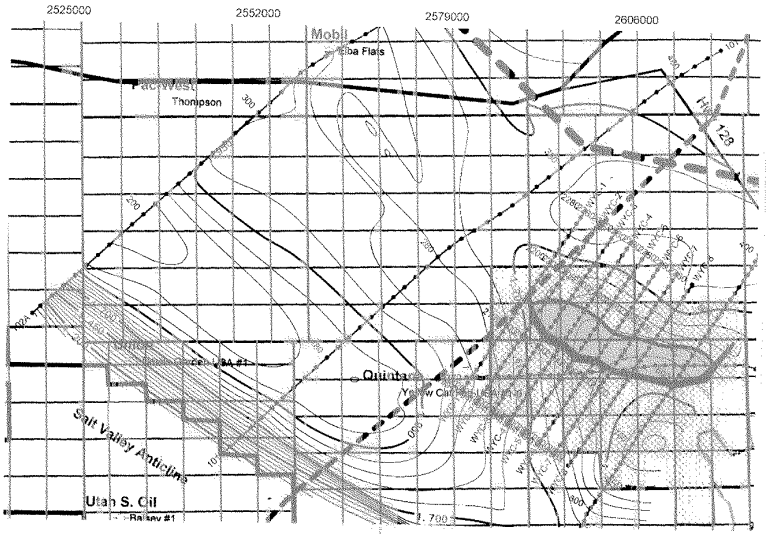
Display 2: This is a base map showing the location of the seismic and the acreage now held by Eclipse for the Yellow Cat Prospect.



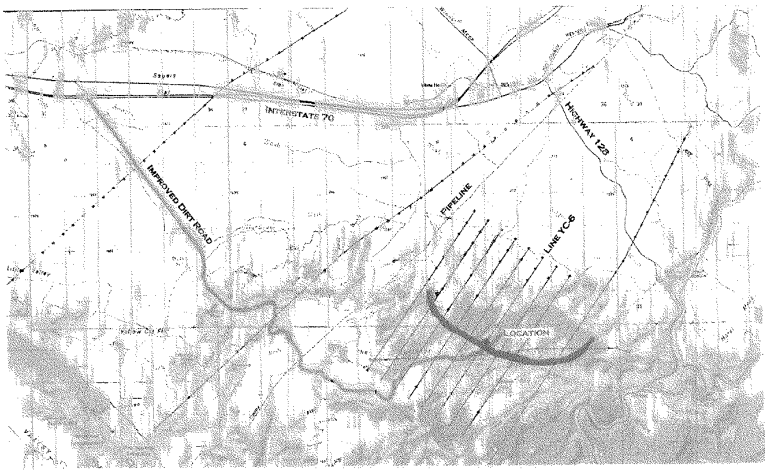
Display 3. On this land map the yellow represents all the acreage originally leased by Eclipse and Gulf Canada. Note the acreage now held for Yellow Cat and the location of Arches National Park.



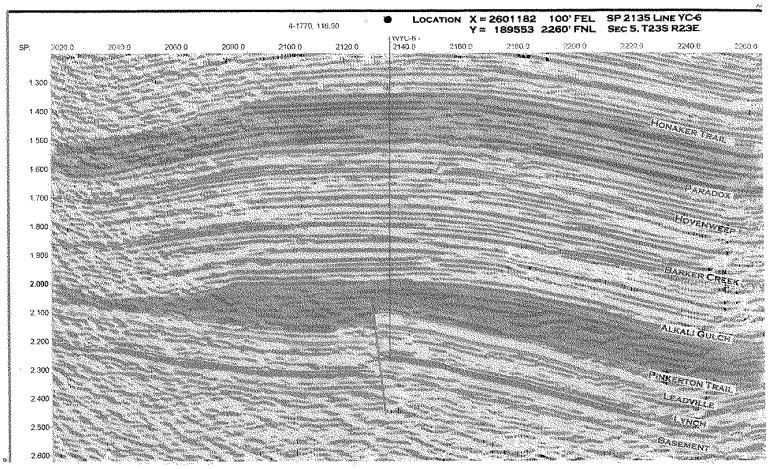
Display 4. Shows the Mississippian fault feature and the overlying Pennsylvanian Structure that is not adequately defined because the seismic program was halted.



Display 5. Shows the sparse vegetation in this old mining district, the Mississippian Fault Feature and the road access to the Initial wildcat location.



Display 6. Shows Seismic Line YC–6 and the location of the initial test well. This is only the bottom portion of this seismic line, from 1.2 seconds to 2.6 seconds. The Honaker Trail is the top of the Pennsylvanian section. The Leadville is the top of the Mississippian section. At the location the Honaker Trail will be at a depth of 8,400 feet. The Lynch is at a depth of 16,500 feet.



STATEMENT OF PAUL N. CICIO, EXECUTIVE DIRECTOR, INDUSTRIAL ENERGY CONSUMERS OF AMERICA

46-MONTH NATURAL GAS CRISIS HAS COST U.S. CONSUMERS OVER $130 BILLION

EXECUTIVE SUMMARY

The U.S. natural gas crisis began 46 months ago in June, 2000 and has had a staggering direct and indirect economic impact on all consumers, the U.S. economy and especially on manufacturing. Residential, commercial and industrial consumers have paid $130 billion dollars more for natural gas during the 46-month natural gas crisis when compared to the price paid for the previous 46 month period, an 86 percent increase. Unfortunately, there is no end in sight to these high and sustained natural gas prices that are the highest in the world.

The increased price of natural gas has cost industrial consumers $66 billion, residential consumers $39 billion and commercial consumers $25 billion. Every penny of the $130 billion could have been prevented and was totally unnecessary. The U.S. is blessed with enormous natural gas reserves yet we do not lift drilling moratoriums.

Drilling for more natural gas and the recent California forest fires are a perfect analogy. In the name of protecting forests, certain groups fought efforts to thin the trees out and to take a balanced approach to managing the forests. Now, everyone knows that balance is needed, that forests should be thinned and there is a price to pay for inaction.

In the case of the forest fires, the people of California became the victim. In the last 46 months, all consumers, including a lot of families with fixed income, became the victim of high natural gas prices. Manufacturing workers, who lost their jobs to overseas manufacturers with cheaper natural gas, also became the victim. The jobs lost may never return.

When prices of natural gas rose significantly in June of 2000, it began to impact manufacturing jobs immediately and still is today. Manufacturing employment has fallen for 43 consecutive months. Since July 2000, the number of factory jobs is down by over 2.8 million.

Every U.S. economic recession has been preceded by high-energy prices and the recent recession was no different. IECA believes the natural gas crisis started in June 2000. Government officials say the U.S. recession officially began in March 2001. In our view the US economy is unlikely to fully recover without globally competitive energy.

High sustained natural gas prices are a hidden tax on consumers, depressing disposable personal income and savings, and ultimately consumer spending which accounts for two-thirds of the economy. High natural gas prices are a tax on every person and company because natural gas is used as both a fuel and raw material for the production of everything from fertilizer to plastics for computers to heating homes and water. Sustained high natural gas prices impede economic growth and severely impacts competitiveness of industry.

THE REAL COST IS MUCH MORE

The real cost of the crisis is much more than $130 billion when one considers other direct and indirect impacts of sustained high prices on industrial and residential consumers.

The $130 billion cost estimate does not include:

- Consumption of natural gas by electric utilities and the ultimate impact high prices have caused by increasing the price of electricity.
- Lower demand for natural gas by manufacturing because of "demand destruction," caused by high prices.
- Reduction of operating rates in the manufacturing sector and the resultant loss of efficient capacity utilization caused by high natural gas prices.
- Impact to downstream customers. For example, farmers have reduced their consumption of high cost natural gas based fertilizers resulting in lower agricultural crop yields, which leads to higher food prices for all Americans.
- Loss of manufacturing jobs, plant shutdowns, corporate bankruptcies, loss of capitalization, loss of competitiveness and profitability.
- Impact to residential electricity bills, higher food cost and the difficult choices for fixed income families.
- Financial loss of corporate related tax income and higher heating and cooling bills on states, cities, county governments, school systems and financial pressure on human services.

THE IMPACT OF HIGH NATURAL GAS COSTS ON MANUFACTURING IS SIGNIFICANT

Manufacturing plays an important role in the economic health of our country and we must recognize that affordable energy, including natural gas, is essential. In the past, the affordability of U.S. energy was a key factor in manufacturing building their factories here. Now, the non-globally competitive price of natural gas and natural gas feedstock is forcing manufacturing companies to produce their products elsewhere.

According to the National Association of Manufacturers, manufacturing accounts for 22 percent of GDP growth, contributes one-third of the economy's productivity growth, creates more business activity and jobs in other sectors than any other industry, performs 62 percent of U.S. private sector R&D, pays the highest wages—18 percent higher than the national average and makes two-thirds of all U.S. exports.

NATIONAL ENERGY POLICY IMPLICATIONS

The blame for these high prices does not rest on the oil and gas companies, it rests mostly on Federal and State policymakers. Congress and states must work together to break the impasse between the environment and the need to increase supplies of natural gas.

Unfortunately, the end of the crisis is no-where in sight. It is the belief of the Industrial Energy Consumers of America (IECA) that the Energy Policy Act of 2003 will not by itself resolve this crisis. It will neither increase near-term production of natural gas nor increase the use of Clean Coal-based electricity generation. The legislation includes many provisions that will help but these will not be enough to turn this situation around. More is needed.

Resolving the crisis takes a combination of policies. We must increase production of natural gas and increase use of coal for base-load electricity generation. The high price of natural gas is due to the combination of relatively flat natural gas production despite increasing rig count and the significant increase in demand for natural gas by the electric utility industry.

Natural gas consumption by the electric utility industry is a major problem. From 1992 to 2002 natural gas demand by the electric utility industry increased 60.5 percent and accounted for 93.6 percent of the nations' increase in natural gas demand.

According to the Energy Information Administration (EIA), US natural gas consumption from 1992 to 2002 rose 2.227-billion cubic feet/day, an increase of 11 percent. In that same time period, natural gas consumption from the electric utility industry increased by 2.085-billion cubic feet/day or 60.5 percent. The increased electric utility demand for natural gas accounted for 93.6 percent of the entire US net increase. The EIA forecasts continued large annual increases in natural gas use for power generation. This is unacceptable.

This enormous increased demand without an equivalent increase in supply has increased the price of natural gas on all consumers. The electric utility industry has alternative energy sources to produce power while industrial consumers, farmers and homeowners do not. The current situation puts consumers in competition with the electric utilities for purchases of natural gas and consumers are losing- paying both higher natural gas and electricity prices as a result.

Increasing use of coal for power generation solves this problem. Use of clean coal technology allows use of coal for power generation in an environmentally acceptable manner. Coal has several hundred years of supply and power generation using coal is a low cost option. As a power generation fuel, coal is far more reliable than natural gas because several months of coal supply can be stored onsite, while natural gas is only reliable so long as the gas flows.

Increased demand for natural gas has largely been driven by government air quality regulations. Air quality issues are important and cannot be ignored and we acknowledge the EPA/utility rulemaking that is underway. The Interstate Air Quality Rule and the Utility Mercury Reduction Rule must be "natural-gas-neutral". This means the EPA action on this rule must not directly or indirectly increase the demand for natural gas.

There must be a way of accommodating progress in clean air quality while not putting additional pressure on natural gas demand that is costing Americans billions in higher natural gas and electricity prices.

For more information on this report or for information on the Industrial Energy Consumers of America and how you can help increase the affordability of natural gas, please contact us at 202–223–1661 or visit us on the web at *www.ieca-us.org.*

The Industrial Energy Consumers of America is a 501 (C) (6) nonprofit organization created to promote the interests of manufacturing companies for which the availability, use and cost of energy, power or feedstock play a significant role in

their ability to compete in domestic and world markets. IECA supports a diverse, robust and affordable supply of energy. IECA membership represents a diverse set of industries including: plastics, cement, paper, food processing, chemicals, fertilizer, insulation, steel, industrial gases, pharmaceutical, and brewing. IECA board members are senior energy procurement managers.

PRICE IMPACT CALCULATION METHODOLOGY

The $130 billion price impact calculation uses the monthly average of the daily published closing price of the Henry Hub spot index price, considered to be the most widely used cash price index in the United States. The 46-month average price from June 2000 to March 2004 was $4.44/MM Btu. The previous 46-month average price from January 1997 through May 2000 was $2.39/MM Btu. This means consumers paid $2.05/MM Btu more for natural gas during the natural gas crisis, an 86 percent increase.

REPORT DATA

Average Price Calculation

	Dollars/MM Btu
Average price of 46 months prior to June, 2000	$2.39
Average price of 46 months starting with June, 2000	$4.44
Price Difference	$2.05
Percent change	85.8%

Price Impact Calculation on Industrial Consumers

Year	Months	Annual Volume, TCF	46 Month Volume, TCF
2000	7	9.40*	5.483
2001	12	8.45*	8.45
2002	12	8.29*	8.29
2003	12	8.06**	8.06
2004	3	8.06**	2.015
Total Volume			32.30 TCF
Total MMBtu			32,298,333,333
Cost Impact			$66,269,002,592

Price Impact Calculation on Residential Consumers

Year	Months	Annual Volume, TCF	46 Month Volume, TCF
2000	7	4.99*	2.9111
2001	12	4.78*	4.78
2002	12	4.92*	4.92
2003	12	5.07**	5.07
2004	3	5.07**	1.2675
Total Volume			18.95 TCF
Total MMBtu			18,948,333,333
Total			$38,877,769,259

Price Impact Calculation on Commercial Consumers

Year	Months	Annual Volume, TCF	46 Month Volume, TCF
2000	7	3.22*	1.878
2001	12	3.04*	3.04
2002	12	3.12*	3.12
2003	12	3.15**	3.15
2004	3	3.15**	0.7875
Total Volume			11.98 TCF
Total MMBtu			11,975,833,333
Total			$22,571,748,703

Henry Hub Monthly Average of Daily Spot Natural Gas Price

	1996	1997	1998	1999	2000	2001	2002	2003	2004
Jan		$3.99	$2.25	$1.80	$2.36	$9.91	$2.61	$4.96	$6.15
Feb		$2.96	$2.04	$1.81	$2.61	$6.22	$2.03	$5.66	$5.77
Mar		$1.78	$2.26	$1.64	$2.61	$5.03	$2.39	$9.11	$5.00
Apr		$1.85	$2.32	$1.88	$2.89	$5.35	$3.40	$5.14	
May		$2.51	$2.27	$2.35	$3.08	$4.87	$3.36	$5.12	
Jun		$2.31	$2.03	$2.23	$4.37	$3.73	$3.37	$5.95	
Jul		$2.16	$2.37	$2.28	$4.36	$3.16	$3.26	$5.30	
Aug	$2.30	$2.19	$1.93	$2.62	$3.83	$3.19	$2.95	$4.69	
Sep	$1.83	$2.57	$1.63	$2.90	$4.62	$2.34	$3.27	$4.93	
Oct	$1.85	$3.16	$2.07	$2.55	$5.29	$1.86	$3.72	$4.44	
Nov	$2.72	$3.30	$2.00	$3.06	$4.50	$3.16	$4.13	$4.45	
Dec	$3.90	$2.55	$2.12	$2.14	$6.02	$2.28	$4.13	$4.86	

1 MCF = MM Btu
* Energy Information Agency
* Estimate
March, 2004 price is an estimate.

STATEMENT OF THE NATIONAL PETROCHEMICAL & REFINERS ASSOCIATION (NPRA)

OVERVIEW

NPRA, the National Petrochemical & Refiners Association is a national trade association with over 450 members, including those who own or operate virtually all U.S. refining capacity, as well as petrochemical manufacturers. NPRA members manufacture petroleum and petrochemical products that are essential to U.S. economic growth and maintenance of national security. These industries are dependent on adequate supplies of fuels, including natural gas and natural gas liquids, at predictable, affordable prices.

NPRA appreciates the interest of the Senate Environment & Public Works Committee in addressing the impact of environmental regulations and policies on natural gas supply and demand. We urge you to study and assess current policy thoroughly and openly. The Nation needs and deserves a frank and public debate on the future of its natural gas supplies.

Short natural gas supplies and accompanying high prices threaten the health of U.S. industries, their significant contributions to national, State and local economies and the continued existence of thousands of jobs. Government, industry, and private experts agree that natural gas demand is expected to rise by the year 2020 by as much as 60 percent over today's levels. It is certain that domestic gas production can not satisfy this new demand unless current policy is altered significantly.

In addition, the President's National Energy Policy Task Force projects that over 1,300 new electric generating plants must be constructed to fulfill anticipated electric energy needs during the next 20 years. DOE suggests that over 90 percent of these facilities will be fueled by natural gas. This increase in gas usage for electric generation may not be achievable.

The United States has an abundant supply of domestic gas, but flawed government policies and regulatory red tape prohibit its development in many areas. In the short term, efforts should be made to encourage energy efficiency and conservation while also encouraging the substitution of fuel oil, coal or nuclear power where possible. For the long term, we must develop policies that promote continued envi-

ronmental progress without reducing the supply of natural gas and other petroleum products.

FLAWED POLICES ENCOURAGE CONSUMPTION, DISCOURAGE SUPPLY

Our Nation currently faces daunting challenges as it strives to balance ever-increasing energy demands from all consuming sectors, largely due to contradictory and short-sighted policies that have limited supply while promoting additional natural gas consumption. Increasing demand for natural gas because of its environmental benefits has come up against a North American production base, which has been artificially restricted due to contradictory policy initiatives. Those policies promote the use of clean burning gas while at the same time failing to ensure adequate, affordable supplies of the fuel.

NPRA believes the current ill-advised national policy of limiting natural gas supply while encouraging gas use because of its environmental benefits—mostly in the generation of base and peak load electricity—has created and could exacerbate continuing higher gas prices and volatility. In fact, EIA reports that demand by electricity generators is expected to account for 30 percent of total natural gas consumption in 2025. This equates to a doubling of gas use by the utility sector over current demand. Under present policies, it is not clear that adequate supplies will be available to accommodate this demand figure unless current natural gas users in core industries are forced to switch fuels or close.

This is really not a resource problem. Flawed government policies have prohibited the development of gas in many areas. If changes are not made to existing policies, our predicament will not be short-lived. This means that policymakers and stakeholders must act or accept responsibility for the ultimate consequences of short supplies, lost U.S. jobs, a worsening trade balance and further loss of U.S. industrial leadership. The U.S. has an abundant supply of domestic gas.

In January 2004, the Department of the Interior issued a rule providing new incentives to boost domestic natural gas production in the hard-to-reach, deepwater areas of the Gulf of Mexico. The rule is expected to save consumers some $570 million a year and create as many as 26,000 jobs. NPRA believes that the rule is an excellent short-term step which will go a long way to help sustain a reliable supply of natural gas. But more is needed. The comprehensive energy legislation (H.R. 6) is a good start to address longer term needs, but it lacks adequate incentives to increase natural gas supply in the near term. NPRA will work with Congress in 2004 to enact separate legislation to encourage natural gas production.

PETROCHEMICAL AND REFINING INDUSTRIES SEVERELY DISADVANTAGED BY HIGH ENERGY COSTS

The domestic petrochemical industry, as well as others in the basic chemical sector, is primarily based upon natural gas and natural gas liquids. About 70 percent of U.S. petrochemical manufacturers use natural gas liquids as feedstocks. In contrast, about 70 percent of petrochemical producers in Western Europe and Asia use naphtha heavy oil as a feedstock. While oil is a global commodity whose price is set on the global market, natural gas liquids are generally more locally traded commodities. Thus, price increases in natural gas have had a larger impact on competitiveness in North American-produced petrochemicals.

The U.S. has generally maintained a reasonable-cost feedstock position relative to its competitors in Europe and Asia. However, that situation has been eroded as the price of natural gas has increased. North American natural gas and natural gas liquids prices have risen to unprecedented levels for a sustained period of time and placed a significant portion of the domestic petrochemical industry at a disadvantage to European and Asian producers. The trend toward increased siting of base petrochemical production and expansion projects in overseas locations is directly attributable to this growing disparity in fuel prices. Additional displacements will occur if the current and prospective gas price and supply situation is not addressed promptly.

High natural gas prices have created fundamental changes in the U.S chemical industry, with the petrochemical industry affected more than other segments of the industry. There have been a series of bankruptcies, plant closures, and reductions in production levels at many facilities because they can no longer compete at the current elevated gas prices.

On March 17th, *The Washington Post* published an article on the job losses in the chemical industry resulting from high natural gas prices. The *Post* reported that "Across the country, 1 in every 10 chemical-related jobs has vanished in the past 5 years—nearly 100,000 workers—and that number would be worse if not for a surge in one segment, pharmaceuticals." These chemical jobs tend to be well-paid

and "virtually impossible to replace in their communities." Louisiana Governor Kathleen Blanco said, "Right now we've got big operations just shutting down because they cannot compete on the world market. We've had shutdowns before but they have always been temporary. We've not seen anything like this before."

U.S. trade receipts from chemical companies have also been adversely impacted by high natural gas prices. Over 3 years of extraordinarily high natural gas prices (2001–2004) have resulted in a depressed chemical export market and a negative trade balance for the U.S. economy. The U.S. balance of payment for chemicals went from an $8 billion surplus in 1999 to an estimated $9 billion deficit for 2003. This negative trade balance allows foreign businesses to capture U.S. market share.

Natural gas prices also impact petroleum product prices because refineries are significant users of natural gas. Many facilities switched to natural gas use at the order of environmental authorities such as the EPA. The result is that natural gas supply and price have considerable impact on the output of the nation's petroleum products as well as on refining industry profitability. This is even more critical as refiners face a tight supply/demand balance for petroleum products and higher raw material costs for crude oil.

Over the next 6 years and well beyond, there appears to be no relief for residential consumers, refiners, and petrochemical manufacturers. In its "2004 Annual Outlook", the Energy Information Administration (EIA) concludes that high natural gas prices are likely to continue to increase until 2010. EIA predicts ". . . greater dependence on more costly alternative supplies of natural gas" from LNG imports and remote resources in Alaska and Canada. This is difficult news for petrochemical manufacturers, refiners, and consumers. Congress should act to maximize production from the significant U.S. reserve base. Without urgent action, the United States will continue to lose thousands of manufacturing jobs and suffer billions of dollars in economic harm due to inadequate gas supplies.

SHORT-TERM POLICY OPTIONS—CONSERVATION, EFFICIENCY & FUEL SWITCHING

In the immediate future, efforts should also be made to help mitigate the natural gas supply problems through voluntary conservation and efficiency efforts. NPRA urges both Congress and the Administration to act to improve energy efficiency and conservation in the use of natural gas and power, especially as the Nation enters the summer cooling season. This could be accomplished by offering appropriate incentives. Any adjustment in electricity consumption would reduce natural gas consumption by the power sector and have a positive impact on natural gas availability. This, in turn, could help to moderate natural gas supply and price concerns. Further, if and when natural gas supplies become extremely tight, the Federal and local government should allow electric utilities and other industrial facilities to switch to alternative fuels in order to conserve natural gas supplies. Pre-emptive efforts to encourage fuel switching would be even more helpful.

LONG-TERM OPTIONS MUST FOCUS ON SUPPLY

We must develop policies that promote continued environmental progress without reducing the supply of natural gas and other petroleum products needed for a healthy economy and the nation's security. We need to forge a diversified national energy policy that reduces our dependence on foreign energy sources while increasing our domestic production. These policies must include increased access and development opportunities to onshore public lands as well as those on the Outer Continental Shelf. We must also bring Alaskan natural gas to lower 48 markets as soon as possible. New and promising domestic areas for development must be open for exploration and production. In the meantime, NPRA would urge caution when Congress and the Administration consider any policies, environmental or other, that will accelerate the demand for natural gas when other policy options exist.

Environmental progress and energy supply need not be mutually exclusive. However, long-standing and recent environmental policies have significantly limited fuel and energy supply choices. They have promoted or even required fuel switching while at the same time discouraging expanded domestic production of natural gas. Anticipated environmental constraints could aggravate the current situation. This is a formula guaranteed to make an already bad situation worse.

Recent reports support the need for increased domestic production. As an example, last fall, the National Petroleum Council (NPC), at the request of the Secretary of Energy, released its recommendations and policy options on the long-term future of natural gas. The NPC warned that the U.S. will pay an additional $1 trillion in natural gas costs over the next 20 years unless current policy is altered and action is taken to increase domestic production.

RECOMMENDATIONS

NPRA urges Congress and the Administration to re-think and re-evaluate current and future policy initiatives. *We should focus on all energy options, including fuel choice mixture and flexibility; gas supply source diversification; faster permitting for modernization and expansion of infrastructure, including LNG facilities and pipelines; development of new technologies; and natural gas market transparency and efficiency. As a nation, we can not afford to inhibit any options that are beneficial to increasing supply.*

Finally, *NPRA believes that there is an urgent need to harmonize the nation's energy and environmental policies, and that any national energy plan must include traditional supply and market-oriented policies for all fossil fuels, including natural gas. The current energy legislation is deficient, so separate legislation must be developed and enacted.*

CONCLUSION

We urgently need a thorough review of natural gas-related policies to maintain and retain the U.S. petrochemical, refining, and other manufacturing industries in the context of a healthy and growing U.S. economy. It is clear that natural gas will play an increasingly important role in America's energy future; but we must analyze, clarify, and correct policies to maximize the available supply of this key resource. Therefore, we repeat that the principal focus of the gas policy discussion must be on the need for increased supply of this critical fuel.

For this reason, NPRA appreciates the Committee's efforts to investigate the issues surrounding and impacting the supply, demand, and price volatility of our nation's natural gas resources. We hope to work with all stakeholders to design a natural gas policy that provides adequate supply at reasonable and predictable prices while simultaneously continuing environmental progress.

STATEMENT OF THE AMERICAN GAS ASSOCIATION (AGA)

EXECUTIVE SUMMARY

The American Gas Association represents 192 local energy utility companies that deliver natural gas to more than 53 million homes, businesses and industries throughout the United States. Natural gas meets one-fourth of the United States' energy needs and is the fastest growing major energy source. As a result, adequate supplies of competitively priced natural gas are of critical importance to AGA and its member companies. Similarly, ample supplies of reasonably priced natural gas are of critical importance to the millions of consumers that AGA members serve. AGA speaks for those consumers as well as its member companies.

For the past 3 years, the natural gas industry has been at a critical crossroads. Natural gas prices were relatively low and very stable for most of the 1980's and 1990's. Wholesale natural gas prices during this period tended to fluctuate around $2 per million Btus (MMBtu). But the balance between supply and demand has been extremely tight since then, and even small changes in weather, economic activity or world energy trends have resulted in wholesale natural gas price fluctuations. Market conditions have changed significantly since the winter of 2000–2001. Supply and demand is now in precarious balance. Today our industry no longer enjoys prodigious supply; rather, it treads a supply tightrope, bringing with it unpleasant and undesirable economic and political consequences—most importantly high prices and higher price volatility. Both consequences harm natural gas customers—residential, commercial, and industrial.

Since the beginning of 2003, the circumstances in which our industry finds itself have become plainly evident through significantly higher natural gas prices. Natural gas prices have consistently hovered in the range of $5–6 per thousand cubic feet in most wellhead markets. In some areas where pipeline transportation constraints exist, prices have skyrocketed for short periods of time to $70 per thousand cubic feet. Futures prices for natural gas as far out as 2007 continue to reflect a wellhead price expectation of greater than $5, as they have done for more than a year. Simply put, natural gas prices are high, and the marketplace is predicting that they will stay high. At this point there is no debate among analysts as to this State of affairs.

Energy is the lifeblood of our economy. More than 50 million Americans rely upon natural gas to heat their homes, and high prices are a serious drain on their pocketbooks. High, volatile natural gas prices also put America at a competitive disadvantage, cause plant closings, and idle workers. Directly or indirectly, natural gas is critical to every American.

The consensus of forecasters is that natural gas demand will increase steadily over the next two decades. This growth will occur because natural gas is the most environmentally friendly fossil fuel and is an economic, reliable, and homegrown source of energy. It is in the national interest that natural gas be available to serve the demands of the market. The Federal Government must address these issues and take prompt and appropriate steps to ensure that the Nation has adequate supplies of natural gas at reasonable prices.

Many of the fields from which natural gas is currently being produced are mature. Over the last two decades, technological advances have greatly enhanced the ability to find natural gas as well as to produce the maximum amount possible from a field. While technology will undoubtedly continue to progress, technology alone will not be sufficient to maintain or increase our domestic production.

As Federal Reserve Chairman Greenspan noted before the House Energy and Commerce Committee, today's tight natural gas markets have been a long time in coming but there are still numerous unexploited sources of gas production in the United States. We are not running out of natural gas; we are not running out of places to look for natural gas; we are running out of places where we are *allowed* to look for gas. The truth that must be confronted now is that, as a matter of policy, this country has chosen not to develop much of its natural gas resource base.

Without prudent elimination of some current restrictions on U.S. natural gas production, producers will likely not be able to continue providing increased amounts of natural gas from the lower–48 states to customers for longer than 10 or 15 years. This would likely expose 65 million homes, businesses, industries and electric-power generation plants that use natural gas to unnecessary levels of price volatility—thus harming the U.S. economy and threatening Americans' standard of living.

If America's needs for energy are to be met, there is no choice other than for exploration and production activity to migrate into new, undeveloped areas. There is no question that the nation's natural gas resource base is rich and diverse. It is simply a matter of taking E&P activity to the many areas where we know natural gas exists. Regrettably, many of these areas—largely on Federal lands—are either totally closed to exploration and development or are subject to so many restrictions that timely and economic development is not possible. As we contemplate taking these steps, it is important that all understand that the E&P business is—again as a result of technological improvements—enormously more environmentally friendly today than it was 25 years ago. In short, restrictions on land access that have been in place for many years need to be reevaluated if we are to address the nation's current and future energy needs.

Both houses of Congress recognized these concerns last year in passing H.R. 6. This year, like last, the most important next step the entire Congress can take to address these pressing issues is to enact a comprehensive energy bill with provisions ensuring that lands where natural gas is believed to exist are available for environmentally sound exploration and development. Additionally, it is appropriate to create incentives to seek and produce this natural gas. These steps are necessary to help consumers and the economy.

RECOMMENDATIONS

To promote meeting consumer needs, economic vitality, and sound environmental stewardship, the American Gas Association urges Congress as follows:

- Current restrictions on access to new sources of natural gas supply must be reevaluated in light of technological improvements that have made natural gas exploration and production more environmentally sensitive.
- Federal and State officials must take the lead in overcoming the pervasive "not in my backyard" attitude toward energy infrastructure development, including gas production.
- Interagency activity directed specifically toward expediting environmental review and permitting of natural gas pipelines and drilling programs is necessary, and agencies must be held responsible for not meeting time stipulations on leases, lease review, and permitting procedures.
- Federal lands must continue to be leased for multi-purpose use, including oil and gas extraction and infrastructure construction.
- Both private and public entities should act to educate the public regarding energy matters, including energy efficiency and conservation. Federal and State agencies, with private sector support and involvement, should strive to educate the public on the relationship between energy, the environment, and the economy. That is, energy growth is necessary to support economic growth, and responsible energy growth is compatible with environmental protection.

- Economic viability must be considered along with environmental and technology standards in an effort to develop a "least impact" approach to exploration and development but not a "zero impact".
- Existing moratoria for onshore lands should be lifted.
- The geologic conditions for oil and gas discovery exist in the US mid-Atlantic area, the Pacific Offshore area, and the eastern portion of the Gulf of Mexico.
  - Although some prospects have been previously tested, new evaluations of Atlantic oil and gas potential should be completed using today's technology—in contrast to that of 20 to 30 years ago.
  - The Federal Government should facilitate this activity by lifting or modifying the current moratoria regarding drilling and other activities in the Atlantic Offshore, in the Pacific Offshore, and in the Gulf of Mexico to ensure that adequate geological and geophysical evaluations can be made and that exploratory drilling can proceed.
  - The Destin Dome (181 lease area) of the eastern Gulf of Mexico should immediately be offered for lease for oil and gas exploration.
  - The Federal Government must work with the States to assist—not impede—the process of moving natural gas supplies to nearby markets should gas resources be discovered in commercial quantities. Federal agencies and states must work together to ensure the quality of the environment, but they must also ensure that infrastructure (such as landing an offshore pipeline) is permitted and not held up by multi-jurisdictional roadblocks.
- The Federal Government should continue to permit royalty relief where appropriate to change the risk profile for companies trying to manage the technical and regulatory risks of operations in deepwater.
- Tax provisions such as percentage depletion, expensing geological and geophysical costs in the year incurred, Section 29 credits, and other credits encourage investment in drilling programs, and such provisions are often necessary, particularly in areas faced with increasing costs due to environmental and other stipulations.
- The Coastal Zone Management Act (CZMA) is being used to threaten or thwart offshore natural gas production and the pipeline infrastructure necessary to deliver natural gas to markets in ways not originally intended. Companies face this impediment even though leases to be developed may be 100 miles offshore. These impediments must be eliminated or at least managed within a context of making safe, secure delivery of natural gas to market a reality.
- The U.S. Government should work closely with Canadian and Mexican officials to address the challenges of supplying North America with competitively priced natural gas in an environmentally sound manner.
- Renewable forms of energy should play a greater role in meeting U.S. energy needs, but government officials and customers must realize that all forms of energy have environmental impacts.
- Construction of an Alaskan natural gas pipeline must begin as quickly as possible.
  - Construction of this pipeline is possible with acceptable levels of environmental impact.
  - The pipeline project would be the largest private sector investment in history, and it would pose a huge financial risk to project sponsors. Many believe the project may not be undertaken without some form of Federal support.
- The Federal Energy Regulatory Commission (FERC) announced in December of 2002 that it would not require LNG terminals to be "open access" (that is, common carriers) at the point where tankers offload LNG. This policy will spur LNG development because it reduces project uncertainty and risk.
  - Other Federal and State agencies should review any regulations that impede LNG projects and act similarly to reduce or eliminate these impediments.
  - Efforts should be made to encourage existing LNG terminals to commence operating at full capacity at the earliest opportunity.
  - The siting of LNG offloading terminals is generally the most time-consuming roadblock for new LNG projects. Federal agencies should take the lead in demonstrating the need for timely approval of proposed offloading terminals, and State officials must begin to view such projects as a means to satisfy supply and price concerns of residential, commercial and industrial customers.
  - Some new LNG facilities should be sited on Federal lands so that permitting processes can be expedited.
- Congress should increase LIHEAP funding. Low-income energy assistance is currently provided to roughly 4 million households, only 15 percent of those eligible. The financial burden on needy families will certainly increase this winter, and

LIHEAP appropriations should be increased to $3.4 billion—up from $2.0 billion of total assistance in 2003.

• Should gas supplies become extremely tight, the Federal Government and the States should consider easing environmental restrictions on a temporary basis so that electric generating facilities and industrial facilities can switch to alternative fuels.

• States should be encouraged to authorize local utilities to enter into fixed-price long-term contracts and/or natural gas hedging programs as a means of dampening the impact of natural gas price volatility upon consumers.

WRITTEN STATEMENT

AGA is grateful for the opportunity to share its views on the critical importance to the Nation of ensuring ample natural gas supplies at competitive prices. Doing so is necessary for the nation—both to protect consumers and to address the energy and economic situations we currently face.

The American Gas Association represents 192 local energy utility companies that deliver natural gas to more than 53 million homes, businesses and industries throughout the United States. Natural gas meets one-fourth of the United States' energy needs and is the fastest growing major energy source.

AGA members are charged with the responsibility, under local law or regulation, of acquiring natural gas for the majority of their customers and delivering it in a safe and reliable manner. Having an ample supply of natural gas at reasonable prices is a critical issue for AGA and its members. AGA members and the natural gas consumers they serve share both an interest and a perspective on this subject.

It is important to understand that the bread and butter business of AGA members is acquiring and delivering natural gas to residential, commercial, and, in some cases, industrial consumers across America. Our members remain economically viable by delivering natural gas to consumers at the lowest reasonable price, which we do by operating our systems—over a million miles of distribution lines—as efficiently as possible. Exploring for and producing natural gas is the business of our energy-industry colleagues in oil and gas exploration companies, whether they are super-major, major, independent, or "Mom and Pop" operators. We do not speak for them, but their continued success in providing natural gas to America's consumers is of the utmost importance to us as well. AGA and its members stand in the shoes of consumers who want reasonable heating bills and good jobs.

AGA has three objectives in this statement: first, to explain briefly why natural gas prices have jumped over the last 2 years year; second, to describe the magnitude of the natural gas supply challenge facing this country over the next two decades; and third, to recommend a number of steps that Congress can take to help bring natural gas prices down in the long term.

AGA remains encouraged that Congress is continuing to address this critical issue. Over the last year AGA has been privileged to testify before the Senate Energy and Natural Resources Committee, the House Energy and Commerce Committee, and the House Resources Committee with regard to the challenging issue of natural gas supply. AGA is also gratified that the House of Representatives and the Senate each passed a version of the Energy Policy Act of 2003. The House and Senate bills each contained a wide array of provisions designed to bring forth more of America's prodigious supply of natural gas to benefit consumers. These bills without question focused more on natural gas supply than the iterations under consideration in 2001 and 2002. Notwithstanding the inability for both houses in 2003 to agree upon a comprehensive energy bill, AGA remains encouraged that Congress will, in 2004, address the issues surrounding the nation's need for a secure supply of ample quantities of natural gas at reasonable prices.

Adequate natural gas supply is crucial to all of America for a number of reasons. It is imperative that the natural gas industry and the government work together to take significant action in the very near term to assure the continued economic growth, environmental protection, and national security of our nation. The tumultuous events in energy markets over the last several years serve to underscore the importance of adequate and reliable supplies of reasonably priced natural gas to consumers, to the economy, and to national security.

There has been a crescendo of public policy discussion with regard to natural gas supply since the "Perfect Storm" winter of 2000–2001, when tight supplies of natural gas collided with record-cold weather to yield record natural gas home-heating bills. Nevertheless, over the course of the last year the volume and the tenor of this discussion have increased dramatically. Simply put, this issue continues to become more critical with every passing day.

Over the course of the last year, natural gas has been trading in wellhead markets throughout the Nation at prices floating between $5 and $6 per thousand cubic feet. This has not been a "price spike" of the sort that has occurred in times past, lasting several days or weeks. Rather, it has been sustained over a period of more than a year. Moreover, there is no sign that it will abate in the near future. Indeed, quotes for futures prices on NYMEX over the next several years have been consistent with these levels.

Over the last year or more, business consumers of natural gas have been raising a cry of concern over natural gas prices. This concern has touched businesses of all stripes. Since natural gas prices began rising in 2000, an estimated 78,000 jobs have been lost in the U.S. chemical industry, which is the nation's largest industrial consumer of natural gas, both for generation of electricity at manufacturing plants and as a raw material for making medicine, plastics, fertilizer and other products used each day. Similarly, fertilizer plants, where natural gas can represent 80 percent of the cost structure, have closed one facility after another. Glass manufacturers, which also use large amounts of natural gas, have reported earnings falling by 50 percent as a result of natural gas prices. In our industrial and commercial sector, competitiveness in world markets and jobs at home are on the line.

This winter—like last winter—many families will pay hundreds of dollars more to heat their homes, which represents hundreds of dollars less they will have to spend on other things. Many families are forced to make difficult decisions between paying the gas bill, buying a new car, or saving for future college educations. There are, of course, State and Federal programs such as LIHEAP to assist the most needy. But LIHEAP only provides assistance to about one-quarter of those who are eligible, and it does not provide assistance to the average working family. These price increases have affected all families—those on fixed incomes, the working poor, lower-income groups, those living day to day, and those living comfortably.

America received its first wake-up call on natural gas supply in the winter of 2000–2001 when a confluence of events—a cold winter, a hot summer and a surging economy—created the so-called "perfect storm." This jump in demand sent natural gas prices soaring. Drilling boomed, supply grew (slightly), demand fell, and gas prices retreated—just what one would expect from a competitive, deregulated natural gas market. Falling natural gas prices predictably led to a slowdown in drilling. The industry drilled 30 percent fewer gas wells in 2002 than in 2001. This downturn in drilling in 2002 set the stage for another run-up in prices in the 2002–2004 timeframe.

This winter natural gas prices are at winter 2001 levels because demand is up and supply is down. Demand is up in part because we have had normal winters. (Consumers have been extremely fortunate that we have not had significantly colder-than-normal winters). Meanwhile, while demand is up, U.S. natural gas production has been trending downward. Indeed, U.S. natural gas production today is lower than it was 5 years ago—despite a big jump in drilling at times in the last several years.

These natural gas prices have caused considerable discomfort for the consumers (particularly residential) that have seen their natural gas bills increase dramatically. Fortunately, the public backlash has been more muted than many had feared. Both utilities and regulators learned from the public reaction to the prices of 2000–2001, and, over the past year, they undertook significant public-awareness campaigns. As a result, many consumers were not taken by surprise by their increased utility bills.

Because all energy prices are up, natural gas remains the best home-heating value this winter, according to the U.S. Energy Information Administration. Nonetheless, it is harmful to individual families and to the entire U.S. economy for natural gas price volatility to persist.

Unless we make the proper public policy choices—and quickly—we will be facing many more difficult years with regard to natural gas prices. The natural gas industry is presently at a critical crossroads. The question before this body today is: What will that crossroads look like? Will it look like a brand new interstate highway? Or will it look like a 100-car collision on a Los Angeles freeway? It is important to remember that at the heart of this intersection are America's consumers.

For the past 5 years, natural gas production has operated full-tilt to meet consumer demand. The "surplus deliverability " or "gas bubble" of the late 1980's and 1990's is simply gone. No longer is demand met while unneeded production facilities sit idle. No longer can new demand be met by simply opening the valve a few turns. The valves have been, and presently are, wide open.

The supply tightrope has brought with it several inexorable and unpleasant consequences—prices in wholesale markets have risen dramatically, and that market has become much more volatile. During the 2000–2001 heating season, for example,

gas prices moved from the $2 level to approximately $10 and back again to nearly $2. Such volatility hurts consumers, puts domestic industry at a competitive disadvantage, closes plants, and idles workers. The winter of 2000–2001 made it abundantly clear to natural gas utilities (and to legislators as well) that consumers dislike these price increases and the market volatility that has now become an everyday norm. Unless significant actions are taken on the supply side, gas markets will remain tumultuous, and 63 million gas customers will suffer the consequences. Today's recurrent $5 price levels appear to represent a regular, level of natural gas prices for the foreseeable future, although this prospect can be moderated somewhat with aggressive and enlightened public policy.

Gas utilities have in place a number of programs to insulate consumers, to some extent, from the full impact of wholesale price volatility. Nevertheless, consumers must ultimately pay the price that the market commands. There has been, and will be, considerable economic and political pushback from natural gas prices stabilizing at the current $5 level. That pushback can be expected to continue as the impacts of these price levels trickle through the economy. Energy prices are undoubtedly a factor in what some have called a "jobless" recovery from the last several years of economic malaise.

Some would suggest that current natural gas conditions are not the result of market fundamentals. Continued high and volatile natural gas prices have, for example, resulted in charges of market manipulation and calls for investigation. While AGA has not performed an independent evaluation regarding these assertions, others—including the CFTC, FERC and various analysts—have. These evaluations consistently identify supply and demand as the explanatory variables regarding natural gas prices. Certainly any substantiated market irregularities should be dealt with aggressively and with certainty. However, the burden of high and unpredictable natural gas prices on consumers will not be eased until we as a Nation address the supply/demand imbalance in the natural gas market. It would be ill advised to embrace the notion that that aggressive investigation and law enforcement will remedy the underlying, fundamental imbalance in supply and demand.

The role of supply and demand in natural gas markets has been plainly evident over the last 12 months. Very cold weather in January and February of 2003 resulted in gas consumption that was 18 percent higher than the previous year. This strong demand resulted in aggressive natural gas storage withdrawals, and storage inventories were 50 percent below the 5-year average at the end of the 2002–2003 winter. Despite concern that storage could not be refilled to adequate levels prior to the 2003–2004 winter, gas utilities injected gas at record levels in order to ensure winter reliability. In late December 2003, storage levels marginally exceeded the 5-year average, although much of this gas was purchased in periods of high prices and the need to refill storage contributed to market tightness. Natural gas prices fluctuated around $6 per thousand cubic feet for the first half of the year (with a spike over $9 during the February cold snap) declining to about $5 late in the year.

Mild weather in December 2003, and a return to comfortable storage levels produced hope for moderating prices, and prices did fall below $5 in the second half of the month. However, the first week in January 2004 was 8 percent colder than normal nationally, and 7 to 17 percent colder than normal in the gas heating-intensive upper Midwest, Middle Atlantic and New England states. Additionally, the demand for gas to fuel a rebounding industrial sector that started in late 2003 has continued in 2004. Further, with cold weather comes an increasing demand for electric heat and gas-fired electricity generators are now being pulled into the generating mix. The surge in early winter demand pushed natural gas prices back to $7 per thousand cubic feet in early January.

The primary reason for high and volatile natural gas prices is the tightness in the marketplace. While law enforcement agencies must continue to be alert for manipulative actions, Federal policy changes must lead the way in reducing this tightness. Not until we increase supply, reduce demand and streamline relevant energy regulations will 65 million gas consumers see more reasonably priced and more stable natural gas prices.

Moreover, the problem that we face today is not simply one of finding means to meet current demands in the market for natural gas. Rather, with a growing economy we are in a growing market, and the demand for natural gas in the U.S. is expected to increase steadily. Growth seems inevitable because natural gas is a clean, economic, and domestic source of available energy. It does not face the environmental hurdles of coal and nuclear energy, the economic and technological drawbacks of most renewable energy forms, or the national security problems associated with imported oil.

The U.S. natural gas market may grow by 1–2 percent per year over the next 20 years. Much of this growth in natural gas demand will occur in the electricity and

industrial markets. In fact, the U.S. now has several hundred thousand megawatts of new gas-fired power plants on line that did not exist in the summer of 1999—the equivalent of several scores of Diablo Canyon nuclear power plants.

If the market were to grow by 2 percent per year, gas supply would need to increase, in terms of average daily supply, from about 60-billion cubic feet per day today to about 95-billion cubic feet per day in 2025—a 35 billion-cubic-foot-per-day increase in deliverability. (To place this potential increase in perspective, current production from the entire Gulf of Mexico is only about 14-billion cubic feet per day, and imports from Canada are about 10-billion cubic feet per day.)

The challenge for both government and industry is quite straightforward: to ensure that both the current and future needs for natural gas are met at reasonable and economic prices. There can be no responsible question that facilitating this result is sound public policy. Natural gas is abundant domestically and is the environmentally friendly fuel of choice. Ensuring adequate natural gas supply will lead to reasonable prices for consumers, will dampen the unacceptable volatility of wholesale natural gas markets, will help keep the economy growing, and will help protect the environment.

America has a large and diverse natural gas resource; producing it, however, can be a challenge. Providing the natural gas that the economy requires will necessitate: (1) providing incentives to bring the plentiful reserves of North American natural gas to production and, hence, to market; (2) making available for exploration and production the lands—particularly Federal lands—where natural gas is already known to exist so gas can be produced on an economic and timely basis; (3) ensuring that the new infrastructure that will be needed to serve the market is in place in a timely and economic fashion.

Natural gas—our cleanest fossil fuel—is found in abundance throughout both North America and the world. It currently meets one-fourth of the United States' energy needs. Unlike oil, about 99 percent of the natural gas supplied to U.S. consumers originates in the United States or Canada.

The estimated natural gas resource base in the U.S. has actually increased over the last several decades. In fact, we now believe that we have *more* natural gas resources in the U.S. than we estimated 20 years ago, notwithstanding the production of approximately 300-trillion cubic feet of gas in the interim. This is true, in part, because new sources of gas, such as coalbed methane, have become an important part of the resource base. Nonetheless, having the natural gas resource is not the same as making natural gas available to consumers. That requires natural gas production.

Natural gas production is sustained and grows only by drilling in currently productive areas or by exploring in new areas. Over the past two decades a number of technological revolutions have swept across the industry. We are able today to drill for gas with dramatically greater success and with a significantly reduced environmental impact than we were able to do 20 years ago. We are also much more efficient in producing the maximum amount of natural gas from a given area of land. A host of technological advances allows producers to identify and extract natural gas deeper, smarter, and more efficiently. For example, the drilling success rate for wells deeper than 15,000 feet has improved from 53 percent in 1988 to over 82 percent today. In addition, gas trapped in coal seams, tight sands, or shale is no longer out of reach, and today it provides a major source of supply.

While further improvements in this regard can be expected, they will not be sufficient to meet growing demand unless they are coupled with other measures. Regrettably, technology alone cannot indefinitely extend the production life of mature producing areas. New areas and sources of gas will be necessary.

Notwithstanding the dramatic impact of innovation upon the natural gas business, the inevitable fact today is that we have reached a point of rapidly diminishing returns with many existing natural gas fields. This is almost entirely a product of the laws of petroleum geology. The first ten wells in a field may ultimately produce 60 percent of the gas in that field; yet it may take forty more wells to produce the balance. In many of the natural gas fields in America today, we are long past those first ten wells and are well into those forty wells in the field. In other words, the low-hanging fruit have already been picked in the orchards that are open for business.

Drilling activity in the U.S. has moved over time, from onshore Kansas, Oklahoma and Arkansas to offshore Texas and Louisiana, and then to the Rocky Mountains. Historically, we have been quite dependent on fields in the Gulf of Mexico. But recent production declines in the shallow waters of the Gulf of Mexico have necessitated migration of activity to deeper waters to offset this decline. These newer, more expensive, deepwater fields tend to have short lives and significantly more rapid rates of decline in production than onshore wells.

The sobering reality is that America's producers are drilling more wells today than they were 5 years ago. Nevertheless, supply is still down. U.S. gas producers are on an accelerating treadmill, running harder just trying to stay in place. For reasons that are partly due to technology, and partly due to the maturing of the *accessible* natural gas resource base, a typical well drilled today will decline at a faster rate than a typical well drilled a decade ago. Moreover, because up to half of this country's current natural gas supply is coming from wells that have been drilled in the past 5 years, this decline trend is likely to continue.

Before we can meet growing gas demand, we must first replace the perennial decline in production. The U.S. natural gas decline rate will be in the range of 26–28 percent this year. In practical terms, if all drilling stopped today, in 12 months U.S. natural gas production would be 26–28 percent lower than it is today. The accelerating decline rate helps explain why U.S. gas deliverability has been stuck in the 52–54-billion cubic feet per day range for the past 8 years, notwithstanding an increase in gas-directed drilling.

In short, America's natural gas fields are mature—in fact many are well into their golden years. There is no new technology on the horizon that will permit us to pull a rabbit out of a hat in these fields. These simple, and incontrovertible, facts explain why we are today walking a supply tightrope. High and volatile natural gas prices have become the norm and will become increasingly accentuated as the economy returns to its full vigor. There is no question that high and volatile natural gas prices are putting a brake on the economy, once again causing lost output, idle productive capacity, and lost jobs.

If we are to continue to meet the energy demands of America and its citizens and if we are to meet the demands that will they make upon us in the next two decades, we must change course. It will not be enough to make a slight adjustment or to wait three or four more years to make necessary policy changes. Rather, we must change course entirely, and we must do it in the very near future. Lead times are long in our business, and meeting demand years down the road requires that we begin work today.

We have several reasonable and practical options. It is clear that continuing to do what we have been doing is simply not enough. In the longer term we have a number of options:

First, and most importantly, we must increase natural gas production by looking to new frontiers within the United States. Further growth in production from this resource base is jeopardized by limitations currently placed on access to it. For example, most of the gas resource base off the East and West Coasts of the U.S. and the Eastern Gulf of Mexico is currently closed to any exploration and production activity. Moreover, access to large portions of the Rocky Mountains is severely restricted. The potential for increased production of natural gas is severely constrained so long as these restrictions remain in place.

To be direct, America is not running out of natural gas, and it is not running out of places to look for natural gas. America is running out of places where we are *allowed* to look for gas. The truth that must be confronted now is that, as a matter of policy, this country has chosen *not* to develop much of its natural gas resource base. We doubt that that many of the 63 million American households that depend on natural gas for heat are unaware that this choice has been made on their behalf.

In this vein, the Rocky Mountain region is expected to be a growing supplier of natural gas, but only if access to key prospects is not unduly impeded by stipulations and restrictions. Two separate studies by the National Petroleum Council and the U.S. Department of the Interior reached a similar conclusion that nearly 40 percent of the gas resource base in the Rockies is restricted from development, in some cases partially and in some cases totally. On this issue, the Department of the Interior noted that there are nearly 1,000 different stipulations that can impede resource development on Federal lands.

One of the most significant new gas discoveries in North America in the past 10 years is located just north of the US/Canada border in eastern Canadian coastal waters on the Scotian shelf. Natural gas discoveries have been made at Sable Island and Deep Panuke. Gas production from Sable Island already serves Canada's Maritimes Provinces and New England through an offshore and land-based pipeline system. This has been done with positive economic benefits to the region and without environmental degradation. This experience provides an important example for the United States, where we believe that the offshore Atlantic area has a similar geology.

In some areas we appear to be marching backward. The buy-back of Federal leases where discoveries had already been made in the Destin Dome area (offshore Florida) of the eastern Gulf of Mexico was a serious step back in terms of satisfying consumer gas demand. This action was contrary to what needs to be done to meet

America's energy needs. With Destin Dome we did not come full about, as we need to do; rather, we ran from the storm.

Geographic expansion of gas exploration and drilling activity has for the entirety of the last century been essential to sustaining growth in natural gas production. Future migration, to new frontiers and to new fields, in both the U.S. and Canada, will also be critical. Without production from geographic areas that are currently subject to access restrictions, it is not at all likely that producers will be able to continue to provide increased amounts of natural gas from the lower–48 states to customers for longer than 10 or 15 years. We believe that the same is true in Canada as well.

Quite simply, we do not believe that there is any way, other than exploring for natural gas in new geographic areas, to meet America's anticipated demand for natural gas unless we turn increasingly to sources located outside North America.

In the middle of the 20th century, when the postwar economy had begun its half-century climb and when natural gas became the fuel of choice in America, our colleagues in the producing business opened one new natural gas field after another in the mid-continent. In this era, it was not that difficult to produce a triple or a home run virtually every inning. As those fields developed, producers continued to hit a regular pattern of singles and doubles, with the occasional triple or home run in new discovery areas. This same pattern in the mid-continent was repeated in the Gulf of Mexico. Today, however, it is extremely difficult to find the new, open areas where the producing community can continue to hit the ball. As things are today, America has confined them to a playing field where only bunts are permitted. The Yankees did not get to the World Series playing that kind of game.

AGA does not advance this thesis lightly. Over the past several years both the American Gas Association and the American Gas Foundation have studied this important issue vigorously. We have believed for several years that it is necessary for policymakers to embrace this thesis so that natural gas can continue to be—as it has been for nearly a century—a safe and reliable form of energy that is America's best energy value and its most environmentally benign fossil fuel. We think that events in gas market in 2003–2004 underscore that our concerns have been on the mark.

When the first energy shock transpired in the early 1970's, the Nation learned, quite painfully, the price of dependence upon foreign sources of crude oil. We also learned, through long gasoline lines and shuttered factories, that energy is the lifeblood of our economy. Nevertheless, thirty years later we are even more dependent upon foreign oil than we were in 1970. Regrettably, the Nation has since failed to make the policy choices that would have brought us freedom from undue dependence on foreign-source energy supplies. We hope that the Nation can reflect upon that thirty-year experience and today make the correct policy choices with regard to its future natural gas supply. We can blame some of the past energy problems on a lack of foresight, understanding, and experience. We will not be permitted to do so again.

Meeting our nation's ever-increasing demand for energy has an impact on the environment, regardless of the energy source. The challenge, therefore, is to balance these competing policy objectives realistically. Even with dramatic improvements in the efficient use of energy, U.S. energy demand has increased more than 25 percent since 1973, and significant continued growth is almost certain. Satisfying this energy demand will continue to affect air, land, and water. A great American success story is that, with but 5 percent of the world's population, we produce nearly one-third of the planet's economic output. Energy is an essential—indeed critical—input for that success story both to continue and to grow.

It is imperative that energy needs be balanced with environmental impacts and that this evaluation be complete and up-to-date. There is no doubt that growing usage of natural gas harmonizes both objectives. Finding and producing natural gas is accomplished today through sophisticated technologies and methodologies that are cleaner, more efficient, and much more environmentally sound than those used in the 1970's. It is unfortunate that many restrictions on natural gas production have simply not taken account of the important technological developments of the preceding thirty years. The result has been policies that deter and forestall increased usage of natural gas, which is, after all, the nation's most environmentally benign and cost-effective energy source.

Natural gas consumers enjoyed stable prices from the mid–1980's to 2000, with prices that actually fell when adjusted for inflation. Today, however, the balance between supply and demand has become extremely tight, creating the tightrope effect. Even small changes in weather, economic activity, or world energy trends result in wholesale natural gas price fluctuations. We saw this most dramatically in the win-

ters of 2000–2001, 2002–2003, and 2003–2004. Most analysts believe that we will continue to see it on a longer-term basis.

In the 1980's and 1990's, when the wholesale (wellhead) price of traditional natural gas sources was around $2 per million British thermal units, natural gas from deep waters and Alaska, as well as LNG, may not have been price competitive. However, most analysts suggest that these sources are competitive when gas is in a $3.00 to $4.00 price environment. Increased volumes of natural gas from a wider mix of sources will be vital to meeting consumer demand and to ensuring that natural gas remains affordable.

Increasing natural gas supplies will boost economic development and will promote environmental protection, while achieving the critical goal of ensuring more stable prices for natural gas customers. Most importantly, increasing natural gas supplies will give customers—ours and yours—what they seek: reasonable prices, greater price stability, and fuel for our vibrant economy. On the other hand, without policy changes with regard to natural gas supply, as well as expansion of production, pipeline and local delivery infrastructure for natural gas, the natural gas industry will have difficulty meeting the anticipated 50 percent increase in market demand. Price increases, price volatility, and a brake on the economy will be inevitable.

Second, we need to increase our focus on non-traditional sources, such as liquefied natural gas (LNG). Reliance upon LNG has been modest to date, but it is clear that increases will be necessary to meet growing market demand. Today, roughly 99 percent of U.S. gas supply comes from traditional land-based and offshore supply areas in North America. Despite this fact, during the next two decades, non-traditional supply sources such as LNG will likely account for a significantly larger share of the supply mix. LNG has become increasingly economic. It is a commonly used worldwide technology that allows natural gas produced in one part of the world to be liquefied through a chilling process, transported via tanker, and then re-gasified and injected into the pipeline system of the receiving country. Although LNG currently supplies less than 1 percent of the gas consumed in the U.S., it represents 100 percent of the gas consumed in Japan.

LNG has proven to be safe, economical and consistent with environmental quality. Due to constraints on other forms of gas supply and increasingly favorable LNG economics, LNG is likely to be a more significant contributor to US gas markets in the future. It will certainly not be as large a contributor as imported oil (nearly 60 percent of US oil consumption), but it could account for 10–15 percent of domestic gas consumption 15–20 years from now if pursued aggressively and if impediments are reduced.

It is unlikely that LNG can solve the entirety of our problem. A score of new LNG import terminals have been proposed, each with capacities of about 1- billion cubic feet per day. Even if all of these LNG terminals were built (which is frankly not a likely scenario), LNG would only supply about 10–15 percent of the expected market in 2025 of 35-trillion cubic feet annually. Given the intense "not on our beach" opposition to siting new LNG terminals, a major supply impact from LNG may be a tall order indeed.

Third, we must tap the huge potential of Alaska. Alaska is estimated to contain more than 250-trillion cubic feet—enough by itself to satisfy US natural gas demand for more than a decade. Authorizations were granted twenty-five years ago to move gas from the North Slope to the Lower–48, yet no gas is flowing today nor is any transportation system under construction. Indeed, every day the North Slope produces approximately 8-billion cubic feet of natural gas that is re-injected because it has no way to market. Alaskan gas has the potential to be the single largest source of price and price volatility relief for US gas consumers. Deliveries from the North Slope would not only put downward pressure on gas prices, but they would also spur the development of other gas sources in the State as well as in northern Canada.

Fourth, we can look to our neighbors to the north. Canadian gas supply has grown dramatically over the last decade in terms of the portion of the U.S. market that it has captured. At present, Canada supplies approximately 15 percent of the United States' needs. We should continue to rely upon Canadian gas, but it may not be realistic to expect the U.S. market share for Canadian gas to continue to grow as it has in the past or to rely upon Canadian new frontier gas to meet the bulk of the increased demand that lies ahead for the United States.

The pipelines under consideration today from the Prudhoe Bay area of Alaska and the Mackenzie Delta area of Canada are at least 5 years from reality. They are certainly facilities that will be necessary to broaden our national gas supply portfolio. We must recognize, however, that together they might eventually deliver up to 8-billion cubic feet per day to the lower 48 States—just 8 percent of the 95-billion cubic feet per day that is envisioned for the 2025 market.

There is much talk today of the need for LNG, Alaska gas, and Canadian gas. There is no question that we need to pursue those supplies to meet both our current and future needs. Nonetheless, it is equally clear that, in order to meet the needs of the continental United States, we will need to look principally to the lower 48 States.

STATEMENT OF THE AMERICAN FOREST & PAPER ASSOCIATION

The American Forest & Paper Association (AF&PA) appreciates the opportunity to submit a statement for the record on the importance of increased access to natural gas. The high cost of energy is having a very negative impact on U.S. manufacturers of pulp, paper, paperboard, and wood products. U.S. environmental policies of the past decade have encouraged increased consumption of natural gas while reducing access to natural gas reserves on public lands. This combination of increased demand and reduced supply has driven prices substantially higher.

The U.S. forest products industry is vital to the nation's economy. We employ approximately 1.3 million people and rank among the top ten manufacturing employers in 42 states with an estimated payroll of $50 billion. Sales of the paper and forest products industry top $230 billion annually in the U.S. and export markets. We are the world's largest producer of forest products.

Energy is the third largest operating cost for the forest products industry[1], making up more than 8 percent of total operating costs. Since 1972, this industry has reduced its average total energy usage by 17 percent through increased efficiencies in the manufacturing and production process. In addition, it has reduced its fossil fuel and purchased energy consumption by 38 percent, and increased its energy self-sufficiency by 46 percent. Although the industry is nearly 60 percent self-sufficient (using biomass), use of natural gas, coal, fuel oil, and purchased electricity is necessary to meet the balance of our energy needs.

Annually, forest products companies purchase about 395-billion cubic feet of natural gas. The price of natural gas in 2003 was nearly double the average price for 2002, forcing the industry to spend almost $1 billion more for the same quantity of fuel. This increased price for natural gas also significantly increases purchased electricity and the price of chemicals needed for our manufacturing operations. Higher natural gas prices have the additional effects of increased transportation costs.

Five years ago, the American Forest & Paper Association conducted research to determine the competitive position of U.S. manufacturers of paper and wood products as compared to our primary international competitors. Energy was the one area where our cost of production was slightly better than our competitors. Today, that situation is just the opposite. While the wellhead price of natural gas hovers between $5 and $6 per million British thermal units (BTUs) in the U.S., prices in the rest of the world are noticeably lower. Prices of natural gas our competitors pay in Western Europe are in the $3 to $4 range. Prices in Asia are around $1.50, and in Russia the price for natural gas is less than $1 per million BTU, putting our industry at a significant competitive disadvantage.

This disadvantage is on top of other competitive disadvantages this industry faces. Our taxes are higher than those of competing nations, and there are unfair trade barriers to the export of our products. The cost of compliance with our nation's environmental laws is higher, and transportation costs are greater than anywhere else around the globe. Government restrictions are also limiting our access to fiber—even though our forestry stock has increased by 39 percent since 1952. If we cannot successfully address these challenges, the public demand for forest products will increasingly be filled by other nations who do not adhere to our high standards.

The forest products industry alone has lost more than 120,000 high paying manufacturing jobs and closed more than 220 plants since 1997. These are the direct job losses and do not count the substantial multiplier effect of additional service jobs that have been lost as a result of the lost manufacturing activity in these mostly rural communities in America. Many of these plant closings have been attributed to high energy costs.

The most important thing that Congress can do to turn around the recent manufacturing job losses is to address the energy and environmental policies that are the root cause for the supply and demand imbalance of natural gas. Congress should enact a new energy policy that promotes the environmentally responsible develop-

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[1] Pulp, paper, paperboard, recycled paper and paperboard, tissue, lumber, and wood products mills.

ment of domestic oil and gas reserves and it should revise environmental laws to eliminate the unnecessary bias toward natural gas.

POLICIES TO PROMOTE ADDITIONAL SUPPLY

While the energy bill passed by the Senate in 2003 made some modest reforms, it fell short of dramatically changing the natural gas supply picture in the near-term. For example, there are significant reserves in the Rocky Mountains that can be accessed in a responsible way with little negative impact on the environment. Congress should enact legislation to reduce the barriers to this supply. In addition, expansion of transportation and infrastructure to bring additional natural gas to consumers from the Rocky Mountains, Alaska, Canada, and from overseas in the form of Liquefied Natural Gas (LNG) is essential to help keep gas prices affordable.

Permitting for new transmission and distribution pipelines takes too long to complete. It can take from two to 5 years to get the permits necessary for siting and construction of transmission and distribution pipelines and natural gas storage facilities. Congress and the Administration should work to minimize the bureaucratic red-tape and to expedite the permitting process for siting and construction of pipelines and natural gas storage facilities. The Department of Interior has recently issued some new regulations that could speed the permitting process. But, ultimately, Congress must act to ensure that bureaucratic process does not prevent timely development of natural gas supply.

Likewise, there are huge reserves in the Arctic National Wildlife Refuge (ANWR). A small amount of exploration and development in ANWR could mean substantial new supply available to meet the demand of a growing economy and provide a rebound for U.S. manufacturing and the many families and communities that depend on these jobs.

Federal restrictions also limit access to offshore natural gas resources in the Pacific, Atlantic, and Eastern Gulf of Mexico Outer Continental Shelf (OCS). Congress should, as a first step, require a Federal inventory of the gas reserves in the OCS. Environmentally responsible technologies exist that could allow additional offshore production without harming the environment; but, first, we must know the extent of the reserves. In the long term, Congress must relax the current restrictions and allow for environmentally responsible access to some of these OCS reserves.

The September 2003 National Petroleum Council study agreed that one of the biggest potential sources of new natural gas supplies would come from developing OCS resources. OCS resources can be developed safely with minimal impacts to the environment using new, safe drilling technologies. The OCS resources of Maritime Canada are being successfully and safely developed today, and the Government of Canada is reviewing the potential to open offshore Western Canada for exploration and development.

Concepts such as State revenue sharing, increased State authority in leasing decisions, and expanding and equalizing states' boundaries, provide an opportunity to overcome resistance to OCS development. By providing creative incentives to share revenues from developed OCS natural gas resources, states are encouraged to be part of the solution. In fact, by increasing states' authority in leasing decisions, much of the need for the current OCS moratoria could be eliminated.

Additional Federal research is also important to bring about potential new longer-term sources of energy and energy-related technologies. Research and deployment of technologies such as clean coal, coal gasification, and biomass/black liquor gasification must continue to be pursued. For decades, many paper and wood products mills have provided the majority of their own energy production. Many pulp and paper mills, for example, have run their paper machines using electricity largely supplied by mill-operated, onsite electric generators.

The forest products industry has embraced energy diversity by using both by-product biomass fuels (such as spent pulping liquor, hog fuels, bark, and wood chips) and purchased fossil fuels to produce steam and electricity used in its manufacturing processes. Successful development and full implementation of black liquor and biomass gasification programs could make our industry a net exporter of renewable electricity—removing some 35 million tons of carbon emissions from the air and generating nearly 22 gigawatts of electricity by 2020.

The introduction of gasification would enable far more efficient power generation via combined cycle or fuel cell prime movers, as well as the production of additional value added products like transportation fuels (e.g., Fischer-Tropsch middle distillates or hydrogen) and chemicals. In fact, the synthetic gas made from black liquor and biomass gasification could potentially produce 25 million gallons of liquid fuel per day, thereby reducing U.S. dependence on imported oil.

These initiatives entail substantial risk for an already capital-intensive industry. Important R&D remains to be completed to prove the gasification technologies can work without adversely impacting mill operations. Continued cooperation with the Federal Government is crucial to reducing risk to a level that will allow significant industry participation.

Similar initiatives are underway in the areas of clean coal technology and coal gasification. These technology development programs are essential to creating new and diverse sources of clean energy. Importantly, without guaranteed access to the grid, these new power sources will not be developed and implemented. For this and other reasons, it is critical that Congress maintain existing initiatives for combined heat and power (such as in the Public Utility Regulatory Policies Act), which can be as much as 80 percent efficient in the conversion of input fuel to useful energy.

Additionally, research on new technologies is needed to make inaccessible supplies of natural gas available, and turn projected resources into proven reserves. Many of the nation's existing supplies of natural gas are now in harder to reach areas.

POLICIES TO PROTECT THE ENVIRONMENT AND THE ECONOMY

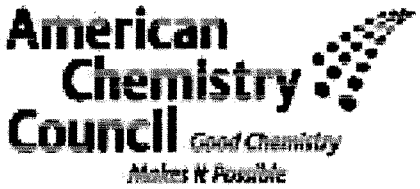
The Congress must re-examine current environmental policies that promote the exclusive use of natural gas for power generation at the expense of other fuel sources that can be used in an environmentally sound manner. Significant technology advancements have occurred in the past 20 years to make coal a viable fuel source for power generation that is not damaging to the environment. Environmental rules should be updated to reflect these technological advancements and to encourage a more diverse mix of fuels for power generation and other industrial applications.

Manufacturers are subject to a host of environmental laws that require control technologies that are natural gas intensive. The recent bias in regulations toward environmental control technologies that favor incineration is imposing substantial new demand pressures on natural gas. For example, the Pulp and Paper Cluster Rule, which was promulgated in the mid–1990's, requires paper mills to use an incineration technology to burn small amounts of volatile organic compounds such as methanol. This chemical is found in mouth breath in greater quantities than at paper mill fence lines. The technology used is called a "regenerative thermal oxidizer" (RTO), and it runs on a natural gas system. The end result is higher energy costs, higher emissions of SO2 and NOx for questionable benefits. For example, in the last 2 years operating costs to run the technology at one paper mill increased $1 million per year to $1.5 million. This increase was directly attributable to natural gas cost increase.

Permitting requirements under the Clean Air Act often prevent fuel-switching, which could in the short-term alleviate part of the industrial demand for natural gas. Allowing flexibility in permitting to accommodate fuel switching under shortage conditions could help in some limited circumstances. As a result, companies are prevented from managing energy costs through the use of other environmentally responsible fuels.

CONCLUSION

High energy costs, and particularly the high cost of natural gas, threaten the long-term viability of U.S. manufacturing and its contribution to the American standard of living. Congress can, and should, take action to increase the supply of natural gas and update environmental laws to reflect the technological advances that have occurred in the past decade, and to reduce the bias toward use of natural gas. Abundant and affordable energy sources are critical to the competitiveness of U.S. manufacturers, to the communities in which they operate, and the Americans they employ. Many U.S. businesses have been crippled by high natural gas prices that are driven in large part by U.S. energy and environmental restrictions. As the economy begins to rebound, it is critically important that Congress act quickly to ensure that government policies promote rather than restrict the responsible development of our nation's abundant supply of natural gas—both onshore and offshore.



STATEMENT OF

THE AMERICAN CHEMISTRY COUNCIL

BEFORE THE

COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS

ON

"NATURAL GAS SUPPLIES AND THE ENVIRONMENT"

March 24, 2004

The American Chemistry Council represents the nation's largest industrial users of natural gas. Last year, the US chemical industry's natural gas bill increased by $6.5 billion. Higher costs mean US producers are losing market share to foreign competitors. It means US companies have less money to invest in their businesses. And it means US companies are being forced to close production and eliminate jobs, more than 3 million manufacturing jobs since 2000 according to the Bureau of Labor Statistics.

Three years of extreme volatility in natural gas prices is taking a terrible toll on the chemical industry – a critical infrastructure industry vital to the country's national and economic security. Affordably-priced natural gas helped make chemicals the nation's largest export industry. In the late 1990's the industry posted the largest commercial trade surpluses in the nation's history -- $19.7 billion. Those exports have sustained hundreds of thousands of good-paying jobs.

The US has become a net importer ($9.6 billion last year) of chemical products – and much of this stunning decline can be traced to natural gas prices. Five years ago, chemical products poured from the US Gulf Coast to Asia. Today, we are being beaten by Asian importers in our own backyards.

Stephen Brown of the Federal Reserve Bank in Dallas recently told the Louisiana Public Service Commission, "You're looking at the gradual destruction of employment in certain petrochemical firms. Given the prices of natural gas and oil, the petrochemical industry here could be gone in 10 to 20 years."

Last week, the Washington Post ran an article on the front page of its business section. The headline said, "Chemical Industry in Crisis: Natural Gas Prices are Up, Factories are Closing, And Jobs are Vanishing."

"We have the highest natural gas prices in the industrialized world," R. William Jewell, vice president for energy at Dow Chemical, told the Post. In the past two years, Dow has closed four major chemical factories in North America and replaced them with production from Germany, the Netherlands, Kuwait, Malaysia and Argentina.

"These jobs didn't leave the US because of labor costs," Jewell told the Post. "They left the US because of uncompetitive energy costs."

In the past five years, the US chemical industry has lost $50 billion in business to foreign competition. High and volatile natural gas prices is a major reason why.

Natural gas price volatility is making chemical companies re-think their investment strategies. Should we put our capital spending into a plant in Texas, Delaware, Ohio or New Jersey that is fast becoming non-competitive, or should we put those same dollars into a facility in China? Sustained, high natural gas prices could tip the scales in making those decisions.

Last fall, the National Petroleum Council (NPC) issued a definitive report on natural gas markets. The NPC report projects that natural gas consumption by the chemical industry will decline by 25 percent in the next five years. Some of that will result from efficiencies, some will result from fuel switching, but most of that decline will come as a result of demand destruction – natural gas consuming factories shutting their doors and moving away.

The NPC report is the most important wake-up call ever issued on natural gas. It is nothing less than an indictment of business as usual energy policies -- policies that are fundamentally contradictory. The NPC stated it most succinctly:

"Government policy encourages the use of natural gas but does not address the corresponding need for additional natural gas supplies. A status quo approach to these conflicting policies will result in undesirable impacts to consumers and the economy, if not addressed. The solution is a balanced portfolio that includes increased energy efficiency and conservation; alternate energy sources for industrial consumers and power generators, including renewables; gas resources from previously inaccessible areas of the United States; liquefied natural gas (LNG) imports; and gas from the Arctic."

The report goes on to say how government policies contribute to price volatility. "Today, many regulations and policies affecting natural gas are in conflict. Public policies are promoting the use of natural gas as an efficient and environmentally attractive fuel. These policies have led to restrictions on fuels other than natural gas for the siting of power generation and industrial facilities, restrictions on fuel switching, and fuel choice limitations. Other laws and regulations have been enacted that limit access to gas-prone areas – areas where gas can be explored for and produced in an efficient and environmentally friendly manner – and there are outright bans to drilling in certain regions. There are laws and regulations that unnecessarily hinder pipeline and infrastructure siting or interfere with the functionality of the market in ways that lead to inefficiencies. Overall, these conflicting policies have contributed to today's tight supply/demand balance, with higher and volatile gas prices. The beneficial effects of additional gas use can be achieved more efficiently and at a lower cost with policies that eliminate the current conflicts."

The report says that business as usual will lead to a monumental tax on American consumers and businesses. Our current ways will impose $1 trillion in new costs on the economy.

We have carefully reviewed the reports finding and recommendations and find ourselves agreeing with nearly everything it says.

- The nation must get serious about using gas more efficiently and conserving energy. Some experts have estimated that reducing power consumption by 5 percent would reduce natural gas consumption by 1.5 trillion cubic feet a year – enough natural gas to heat 18 million homes.

- The nation must maintain a diverse fuel base and create more opportunities for consumers to switch fuels when market conditions warrant.

- The nation must invest in energy infrastructure.

- And the nation must increase natural gas supplies.

More LNG and building an Alaskan pipeline are important long-term solutions, but for industries like ours we need immediate action as well...

The key recommendation in the NPC report is that the time has come to lift the moratoria on gas basins in the Outer Continental Shelf (OCS) and open those areas to environmentally-responsible production.

NPC is right. OCS gas in the eastern Gulf of Mexico is the best source of new supply that can be brought to market in time to ease existing price pressures and make American manufacturing more competitive. Bringing OCS gas to market, NPC says, will reduce gas prices by some $300 billion over the next 20 years, enough to give a lot of American businesses a fighting chance to compete in global markets.

It comes down to this: if we don't remove the "off-limits" signs from gas fields in the OCS we will be hanging "going out of business" on manufacturing plants all over this country.

The existing moratoria don't make sense in today's world. Environmentally conscious nations like Norway, Denmark, Canada, Japan and the UK are safely and successfully producing gas from their coastal waters.

Current energy policies in the United States defy reason. The state of Florida, for example, will need to build close to two-dozen power plants in the next decade to keep pace with its appetite for electricity. The only kind of electricity generation capacity that can get sited there burns natural gas. While the state burns gas like there's no tomorrow, its Congressional delegation sends a letter to Congress telling members not to permit exploration for new gas in coastal waters, and the governor holds up construction of a natural gas pipeline from the Bahamas.

The nation can't go on trying to have it both ways. The NPC has created the definitive study of how we can right what's wrong with natural gas markets. Its recommendations must become the law of the land.

Attachment: February 9 CEO Letter to President Bush and Members of Congress

February 9, 2004

President George W. Bush
The White House

The Honorable Dennis Hastert
Speaker of the House

The Honorable William Frist
Majority Leader
United States Senate

The Honorable Jeff Bingaman
United States Senate

The Honorable Tom Daschle
United States Senate

The Honorable Tom DeLay
U.S. House of Representatives

The Honorable John Dingell
U.S. House of Representatives

The Honorable Pete Domenici
United States Senate

The Honorable Nancy Pelosi
U.S. House of Representatives

The Honorable Richard Pombo
U.S. House of Representatives

The Honorable Nick J. Rahall
U.S. House of Representatives

The Honorable Billy Tauzin
U.S. House of Representatives

Dear Mr. President and Members of Congress:

We are writing as leaders of major chemicals and plastics companies that are highly dependent on natural gas as both a fuel and a raw material. The price of U.S. natural gas, already the highest in the industrial world, has once again spiked and shows every sign of continued volatility this winter. Uncertainty about the reliability of supply has affected the natural gas market, causing dramatic daily swings in prices which are not supported by the current inventory status. These market swings are, by themselves, a cause of great concern. More importantly, they are a symptom of a larger structural problem: the over-reliance on natural gas in our national energy supply and the resulting imbalance between natural gas supply and demand. Left unaddressed, this situation threatens to curtail the current economic recovery in its tracks -- and to seriously erode the competitiveness of America's most significant and innovative exporter, the chemical industry.

It appears that 2004 will be the fourth year out of the last five in which natural gas prices will trend far above their historical levels - and this price trend is becoming increasingly extreme. Abnormally high natural gas prices have been the equivalent of a $111 billion tax on the economy over the past 18 months. Our industry, our employees, customers, suppliers and communities have already felt the effects. The U.S chemical industry, once the nation's largest net exporter, now has a large trade deficit.

It is important to note that this is not a free market problem. The high price of natural gas was created by government policies that increased demand for natural gas by encouraging its use, for example in power generation, while impeding the development of greater supply by discouraging more exploration and production. Having created the problem, it is now the government's responsibility to help solve it.

The energy bill awaiting final action in Congress does not address the long-term need for a plentiful supply of affordable natural gas. It does, however, represent an important first step toward addressing the needs we express in this letter. We agree with the Speaker's Task Force on Affordable Natural Gas and the recent report of the National Petroleum Council that more must be done. Specifically, we need a concerted national effort to promote greater energy efficiency, accelerated efforts to reduce the use of natural gas in the electricity sector, aggressive federal agency action to expedite drilling permits, and the immediate approval of the Mineral Management Service's rulemaking on royalty relief for deep gas drilling in existing wells in shallow waters. In addition, more must be done to ensure a diverse portfolio of energy sources to power the U.S. economy. Finally, a political consensus must be achieved that will open promising new areas for environmentally responsible natural gas production.

We also encourage Congress to examine the causes of volatility in the natural gas market and to enact reasonable measures to reduce the kinds of market distortions that we have seen in the last month. However, investigating the functioning of the natural gas markets should not be an excuse for inaction on comprehensive legislation.

All energy consumers are paying the price for government's current inaction. Many of us have already been forced to shift some production and good jobs overseas, where energy costs are a fraction of what they are in the U.S. We are now making investment decisions based on a globally non-competitive U.S. energy supply. Investments and jobs will increasingly go to Asia and the Middle East, the longer the U.S. goes without a rational energy policy.

The U.S. chemical industry employs one million Americans and converts $20 billion worth of natural gas-based fuel and feedstock into over $200 billion in beneficial products, serving a very wide range of consumer markets that are essential to daily life. Our products are found in consumer goods, military applications, medicines, medical equipment, and in the products of many other downstream industries.

Failure to address this deepening natural gas crisis puts America's global leadership in chemicals and plastics at serious risk. We urge you to go beyond the limits of the current energy debate and to do what is necessary to revive the global prominence of this key industry.

Sincerely,

William S. Stavropoulos
Chairman of the Board and
Chief Executive Officer
The Dow Chemical Company

Charles O. Holliday, Jr.
Chairman of the Board and
Chief Executive Officer
DuPont

Mark C. Rohr
President and Chief Executive Officer
Albemarle Corporation

J. Brian Ferguson
Chairman and Chief Executive Officer
Eastman Chemical Company

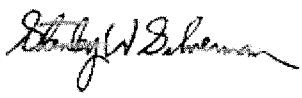
Attila Molnar
President and Chief Executive Officer
Bayer

William G. Walter
President and Chief Executive Officer
FMC Corporation

Stephanie A. Burns
President and Chief Executive Officer
Dow Corning

Dan F. Smith
President and Chief Executive Officer
Lyondell

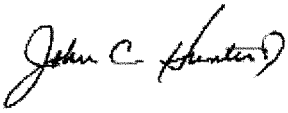
Jeffrey M. Lipton
President and Chief Executive Officer
NOVA Chemicals



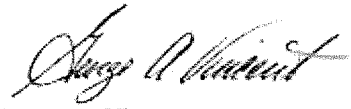
Stanley W. Silverman
President and Chief Executive Office
PQ Corporation

Raj Gupta
Chairman and Chief Executive Officer
Rohm and Haas

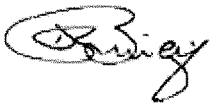
Myron S. Galuskin
President and Chief Executive Officer
Rhodia Inc.



John C. Hunter
Chairman, President and
Chief Executive Officer
Solutia



George A. Vincent
Chairman and Chief Executive Officer
The C. P. Hall Company



David G. Birney
President and Chief Executive Officer
Solvay America Inc.

William H. Powell
Chairman and Chief Executive Officer
National Starch and Chemical Co

John C. Salvatorie
President
Degussa Corporation

Francis X. Sherman
Chief Executive Officer
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Union of Concerned Scientists
Citizens and Scientists for Environmental Solutions

fact sheet

Renewable Energy Can Help Ease Natural Gas Crunch

Increasing renewable electricity use from 2.5 percent today to 20 percent by 2020 would reduce natural gas use by 6 percent, while saving consumers nearly $28 billion

An unprecedented surge of natural gas power plant construction (Fig. 1) over the past four years has contributed to rising natural gas prices, hurting American families and businesses:

- Natural gas prices today are more than double their 1990s level of $2.00-$2.50 per million cubic feet (Mcf).
- The U.S. Energy Information (EIA) has increased its gas price projection for each of the last seven years (Fig. 2.)
- Some analysts believe EIA's forecasts are still too low, and project gas prices staying in the $4-$6/Mcf range.
- Some manufacturing plants that rely heavily on gas have already had to reduce operation or move overseas.
- Natural gas accounts for about 90 percent of the cost of fertilizer, creating a hardship for farmers.
- High gas prices may cut U.S. economic growth by 2.1 percent, according to the Federal Reserve Bank of Dallas.

The primary solution proposed by the White House and many in Congress is to increase gas production. They would provide large new subsidies to gas producers, increase drilling in environmentally sensitive areas, and expand imports of liquefied natural gas (LNG). We would become increasingly dependent on importing LNG from some of the same OPEC countries we are now dependent on for oil.

Figure 1. Annual Additions to Electric Generation Capacity by Fuel, 1950-2002

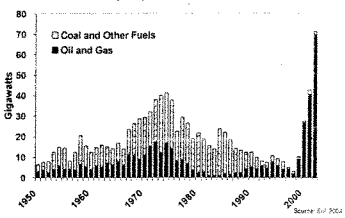
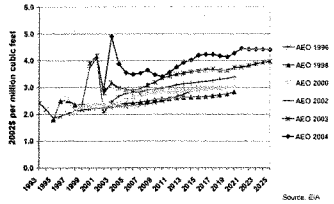


Figure 2. EIA Wellhead Natural Gas Price Forecasts

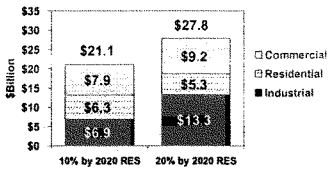


Renewable energy can save gas and reduce energy bills

Reducing gas use by improving energy efficiency and developing renewable energy sources can be faster, cheaper, cleaner and more secure than relying primarily on developing new gas supplies.

Past EIA analyses have found that consumers could save money on electricity and gas bills if electric companies met a standard of 10 percent renewable energy by 2020. With EIA's new 2004 gas price forecast, a renewable standard of 20 percent by 2020 would save even more money ($27.8 billion), according to new analysis by the Union of Concerned Scientists (UCS) using EIA's National Energy Modeling System. Commercial and industrial customers would be the biggest winners (Fig. 3).

Figure 3. Cumulative Savings by Sector, Natural Gas and Electricity Bills 2003-2025*
(10% by 2020 and 20% by 2020 RES)



*Net present value using a 7% real discount rate.

References and web links available at www.ucsusa.org/energy

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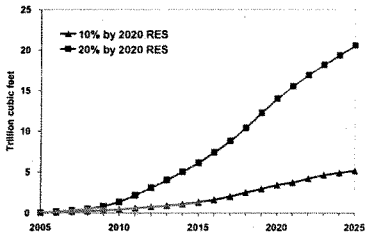
Previous UCS analyses have found that a 20 percent renewable electricity standard would save consumers money if renewable energy costs continue to decline as projected by UCS and the Department of Energy's national laboratories. The new analysis finds that a 20 percent standard is cost-effective even using EIA's more pessimistic projections for renewable energy technology costs. The analysis assumes the renewable energy tax credits included in the conference report on the national energy bill (Energy Policy Act of 2003) apply to renewable energy facilities entering service through 2006.

Under the 10 percent standard, renewable electricity could save as much as 0.5 trillion cubic feet (Tcf) per year compared to business as usual in 2020 (Fig. 4), and 5.1 Tcf cumulatively from 2005-2025. Achieving 20 percent renewable electricity by 2020 could increase the natural gas savings to 1.8 Tcf per year (20.6 Tcf cumulatively), equal to six percent of total projected 2020 gas use, or more than one-third of the natural gas consumed by U.S. households today.

Figure 4. Cumulative Natural Gas Savings

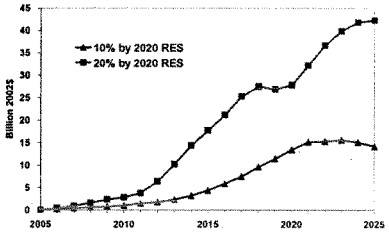


Renewable energy can reduce gas and electricity prices

Because increased renewable energy use reduces the demand for natural gas, and creates new competitors to traditional power plants, increasing renewable energy would reduce natural gas prices (Fig. 5). Achieving the 10 percent RES could reduce gas prices by 1.9 percent ($0.12 per million Btu) compared to business as usual in 2020. Cumulative (undiscounted) natural gas bill savings would reach $14.2 billion through 2025. A 20 percent standard could reduce natural gas prices by as much as $0.25/million Btu, resulting in cumulative (undiscounted) gas bill savings of $42.3 billion. Under current EIA forecasts, renewable energy begins to displace new coal-fired power plants (which become economically competitive) instead of natural gas facilities after 2020. As a result, renewable energy has less of an impact on natural gas prices in these later years, but it continues to provide total energy bill savings to consumers from lower electricity prices, and even greater air pollution reduction benefits.

The analysis found that a 10 percent renewable standard would decrease electricity prices throughout the study period. A 20 percent standard would reduce electricity prices through 2020. Between 2020 and 2025, as renewable energy displaced more coal, electricity prices would increase by up to 3 percent, using EIA's renewable energy cost assumptions.

Figure 5. Cumulative Natural Gas Bill Savings



Renewable energy plus energy efficiency provide the greatest benefits

Implementing effective energy efficiency measures can be the fastest and most cost effective approach to balancing gas demand and supply, with renewable energy providing a critical mid-term to long-term supplement. A recent study by the American Council for An Energy-Efficient Economy (ACEEE) confirms that modest near-term reductions in gas and electricity consumption through efficiency measures coupled with increased renewable energy use could significantly impact natural gas prices and availability, while saving consumers more than $75 billion on their natural gas bills over the next five years. The model used in ACEEE's analysis also demonstrates that the near-term natural gas price response and consumer savings from increasing energy efficiency and renewable energy could be much greater than projected in EIA's NEMS model.

ALASKA WILDERNESS LEAGUE

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FOR IMMEDIATE RELEASE
March 24, 2004

Contact: Lexi Keogh, Brian Moore, or Cindy Shogan, 202-544-5205

DARK ANNIVERSARY: EXXON VALDEZ OIL SPILL
Fifteen Years Later, Exxon's Mess Remains a Harsh Lesson

WASHINGTON – Today and tomorrow conservationists in Washington DC and across America will mark the occasion of the Exxon Valdez oil spill, which happened 15 years ago today. To commemorate the occasion, the Alaska Wilderness League released an online movie that looks at the devastation produced by the Exxon Valdez disaster on March 24, 1989, and draws parallels between the Valdez spill and the Bush administration's misguided plan to drill in the Arctic National Wildlife Refuge. The animation can be seen at www.NotAnotherValdez.com.

"It's too late to prevent the Exxon Valdez disaster, but it's not too late to prevent the Bush administration from drilling in the Arctic National Wildlife Refuge," said Cindy Shogan, Executive Director of the Alaska Wilderness League.

The animation is the centerpiece of the Alaska Wilderness League's campaign to increase awareness of the aftermath of the Exxon Valdez oil spill and educate people about the ongoing threats to the Arctic Refuge from oil and gas exploration and drilling. Though polls consistently show that most Americans want to protect the Refuge, certain Members of Congress and the Bush administration remain intent on exploiting it for short-term gain.

"If the oil industry messed up so badly 15 years ago, why should we trust that their plan to drill in the Arctic National Wildlife Refuge would be any safer?" said Shogan. "It is not worth sacrificing America's arctic for about 6 months of oil that won't flow for another 10 years."

The Bush administration was recently dealt a setback in its attempt to exploit the Arctic Refuge. Their back-door scheme – a provision to include revenues from oil drilling in the Refuge in the 2005 federal budget – was stripped from both the Senate and the House versions of the budget bill. However, conservationists remain vigilant for other efforts to open the Refuge.

A new report by the Energy Department's Energy Information Agency concluded that oil drilling in the Refuge would have only marginal effects, if any, on U.S. oil prices or imports. That report affirmed previous findings that oil from the refuge would provide less oil than the U.S. consumes in six months, and that no oil would reach market for ten years. According to the report, oil from the Refuge would not peak until the year 2025, and would account for a mere 3 percent of U.S. demand at peak production.

The 19-million-acre Arctic National Wildlife Refuge is the country's largest wildlife refuge. It contains one of the last intact expanses of arctic and subarctic ecosystems, providing essential habitat to polar bears, birds, musk oxen and arctic fox. The Coastal Plain of the Arctic Refuge is the calving ground for the 129,000-strong Porcupine Caribou herd, upon which the Gwich'in, a 7,000-year-old native culture, depends for their subsistence.

The Alaska Wilderness League is the only organization in Washington, DC devoted full-time to protecting Alaska's wild lands.

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National Environmental Trust

The Environmental Action Network for the 21st Century
1200 Eighteenth Street, N.W. Washington, DC 20036

Editorials warn against using record gas prices as reason to pass the 2004 version of the energy bill

"Congress should use the upsurge in gas prices as a stimulus to raise CAFE standards for both cars and trucks. It won't help motorists' wallets this summer, but it would lessen the pain down the road."
-- *Birmingham News*, "Saving gas: Congress should turn to CAFE to lessen pain at the pump," March 23, 2004

"Tapping the national reserve and diverting oil destined for it would provide just temporary and modest relief, however. And the latter — passage of the deceptively priced energy bill — would have no effect on prices in the short term, and little in the long term. Even the Bush administration has admitted that."
-- *Chattanooga Times Free Press*, "The gasoline price spiral," March 23, 2004

"The White House is clearly worried about high gas prices and hopes that by passing an energy bill it will appear to be "doing something." But no bill has the ability to ease the crunch in oil or natural gas prices before the election. The ethanol mandate would actually raise gas prices on the east and west coasts. Won't someone pull the plug on this overstuffed turkey once and for all?"
-- *Wall Street Journal*, "Another Power Play," March 23, 2004

"The cost of gasoline is rising again... This means discomfort for motorists and real pain for truckers and airlines. It also means, this being an election year, a certain amount of political grandstanding. If the Senate's initial response is any guide, Washington will choose short-term fixes over the tougher long-term solutions required."
-- *New York Times*, "Pinch at the Pump," March 22, 2004

"We don't have a lot of control on the supply side of gasoline. Despite the eagerness in some quarters to open up more drilling in the United States, our country has just 3 percent of the world's oil reserves. But we can get a handle on demand. And we should do it now."
-- *Phoenix Arizona Republic*, "Mirror, mirror . . . on the pump, what was it made those prices jump?," March 21, 2004

"We would prefer to see Congress take up a truly ambitious energy bill, one that actually reversed the advantages that the oil and gas industries have built into the tax code over time, and let markets do a better job of determining prices."

-- *Washington Post*, "Slicing Up Energy," March 21, 2004

"Because this is an election year, the politicians are going to tell us that the way to lower gasoline prices is to pass the energy bill that is stalled before Congress. That bill is a special interest grab-bag stuffed with billions of dollars worth of subsidies for the fossil fuel industry and containing the false promise that drilling in Alaska's Arctic National Wildlife Refuge will solve America's energy problems."
-- *Gainesville Sun*, "Shock at the pump: The cost of gasoline is not going to stop rising because of a new energy bill or because America starts drilling in Alaska," March 20, 2004

"How much a gallon will it take for energy policy to address the real issue of oil addiction that nobody wants to discuss?"
-- *Jackson Clarion-Ledger*, "Gas prices: Gas prices economic, political issue," March 19, 2004

"Blame the Congress. Blame the administration. Blame whomever you want — including the American public. The fact remains that we are a nation without an energy strategy that considers both domestic needs and international realities. And because of this, our nation is consuming itself toward a crisis."
-- *Anniston Star*, "Running on empty," March 18, 2004

"The United States is highly vulnerable to energy price shocks because it is the world's largest consumer and importer of oil. Congress should reduce America's reliance on foreign crude, and encourage a reduction in air pollution from vehicle tailpipe emissions, by passing long-overdue legislation mandating higher fuel economy standards for vehicles."
-- *Fort Worth Star-Telegram*, "Fuel for thought, "March 16, 2004

"The White House and congressional leaders keep saying how badly we need an energy bill. The suggestion is that the supply and price of fuel can be dictated by Washington. That's a dubious proposition at best. We're better off with no energy bill than one full of bad policy."
-- *Missoula Missoulian*, "Revised energy bill thinner, not better: The fatal flaw is the notion that energy production and use are driven by subsidies, not larger market forces," February 25, 2004

"OPEC, the international oil cartel, announced plans to cut back on production in an effort to keep prices high. The oil belongs to the member countries, of course, and it's theirs to use as they wish. But there is no reason American government policy needs to cede, without resistance, the economic clout that allows OPEC to do whatever it wants."
-- *Buffalo News*, "Tied to Mideast oil: Bush administration shows no inclination to reduce our energy dependence," February 22, 2004

March 23, 2004

The Birmingham News

Saving gas

Congress should turn to CAFE to lessen pain at the pump

Crude oil prices are approaching record highs, oil-producing countries have agreed to reduce output, gasoline inventories are low, and refineries are slow to buy large amounts of crude at such high prices. What does all this mean?

Record high gasoline prices. Worse, prices are expected to go even higher this spring and summer, possibly topping $2 a gallon.

What can be done to bring gas prices down? Not much in the short term. Eventually, though, market forces will lower prices after supply catches up with demand.

But long term, the sharp spike in prices - up 26 cents a gallon since January - underscores the need for a sensible national energy policy. Not the one, however, pushed by the Bush administration last year, which thankfully died in Congress. That plan was fat on subsidies to ethanol producers, heavy on controversial measures to increase production by drilling in the Arctic wilderness, and far too light on conservation.

Where the president and Congress failed miserably were in not requiring General Motors, Ford, DaimlerChrysler and other automakers to produce more fuel-efficient cars and trucks. Vehicles that go farther on a gallon of gas is the best way to conserve fuel and lessen the expense of escalating gas prices.

Some consumer and environmental groups for years have been urging the federal government to raise the corporate average fuel economy standards - an efficiency bar for automakers. For good reason: The CAFE standards work.

When they went into effect in the 1970s, the standards dramatically increased vehicles' fuel mileage and helped stabilize gas prices for two decades. From 1975 to 1984, fuel economy improved 62 percent without any loss in vehicle performance.

Of late, however, CAFE standards have lapsed, without any meaningful increase in years. So, too, has fuel economy lapsed, as automakers put their efforts in to building bigger, more powerful engines.

We're using more gas than ever before.

The auto industry has the technology today to build much more fuel-efficient vehicles. Hybrid cars produced by Honda and Toyota demonstrate that. But there's more money to be made for automakers by selling high-priced gas-guzzlers.

Congress should use the upsurge in gas prices as a stimulus to raise CAFE standards for both cars and trucks. It won't help motorists' wallets this summer, but it would lessen the pain down the road.

March 23, 2004

Chattanooga Times Free Press

The gasoline price spiral

If soaring gasoline prices haven't dented motorists' worry meter yet, analysts say, just wait for what's to come. Declining refinery stocks, rising crude oil prices (now over $38, a 13-year high), new rules for less-polluting gasoline, and rising summer-driving demand are expected to spike prices over the coming weeks and months to record highs in real, if not inflation-adjusted, costs.

Regrettably, leaders in Washington seem to be readying their customary response: An artful dodge contrived to divert attention, but not to fix the underlying problem. There's no sign of the meaningful, longterm strategy that the energy-use picture actually requires.

Washington is moving on two fronts. The Senate has voted, 52-43, to ease the shortage-induced price pressure on refined gasoline by releasing millions of barrels of gasoline from the national Strategic Petroleum Reserve, and by postponing planned purchases for the reserve. Republican senators also are using the price spiral to push again for passage of the administration's flawed energy bill.

Tapping the national reserve and diverting oil destined for it would provide just temporary and modest relief, however. And the latter — passage of the deceptively priced energy bill — would have no effect on prices in the short term, and little in the long term. Even the Bush administration has admitted that.

Both measures fail, as well, to address the core problem: This nation's spiraling rate of consumption and lax energy use standards vs. rising global competition for a declining resource.

The Bush administration rightly opposes siphoning supplies from the reserve for a non-emergency situation, and interrupting its post-9-11 plan to fill the reserve's 700-million barrel capacity. Diverting oil from the reserve would be a salve, not a remedy.

Adopting the larded energy bill also would be no help. Oil companies still will charge global market rates for crude if they are allowed to drain the oil in sensitive public lands, and OPEC still would control overall supply levels. This nation's untapped stocks, in any case, hardly would sate America's oil appetite very long. Drilling in the Arctic National Wildlife Reserve, for example, ultimately would deliver just a six-month supply for the United States, and it would take years to get that.

In fact, the United States cannot rationally continue to import more than half its oil, and consume 25 percent of the world's energy supply to fuel, inefficiently, the energy needs and wasteful consumption of 5 percent of the world's population. Neither can Americans, with just 2 percent of the world's known oil reserves, justify the cost of plundering our environment for the last drops of oil for momentary relief.

What's needed are mass transportation and gasoline conservation standards worthy of the name. The SUV loophole — the lower mileage standards for the light truck category vs. the higher standard for cars — must be closed. Vans, pickups and SUVs now account for half of all new passenger vehicle sales. Closing the mileage standard gap would save 134 million barrels of oil a year immediately and 268 million barrels annually after 10 years. Compared to the 900 million barrels imported annually from the Persian Gulf, that's significant. Raising car mileage standards to 35 mpg and encouraging purchases of more efficient hybrids (say, 25 percent) would produce huge savings, as well (310 million barrels of oil annually right away; 670 million barrels annually in 10 years).

As long as big oil companies and auto makers control Congress and suppress the conservation agenda, however, that won't happen. Motorists will remain at the mercy of OPEC controls, oil companies, gasoline refineries — and a short-sighted Congress.

March 23, 2004

THE WALL STREET JOURNAL

Another Power Play

The Senate energy bill is back, much in the way that Anna Nicole Smith has returned to cable TV. She cuts a leaner figure, but spend any time watching her and you discover she's the same old Anna.

You'll recall that the energy bill's most recent iteration collapsed last fall amid bipartisan embarrassment at its pork-filled price tag. Energy Chairman Pete Domenici, the Sisyphus of the Senate, is now trying to roll it up the Hill one more time, perhaps for a vote as early as this week. The New Mexican is assuring his colleagues that this "leaner" bill will only cost $14 billion (down from $31 billion) and "is the surest, swiftest way to address our many energy challenges."

If only. A friend of ours who once worked on energy policy for the White House budget office has inspected the new bill's 1,200-plus pages and reports that the makeover is mostly mascara. The "new" bill contains more than $200 billion in lucre for ill-conceived subsidies and programs, the effect of which would still be to return the country to the failed interventionist energy policies of the 1970s.

There is, for starters, about a cool $100 billion in newly authorized spending for everything from conservation to research, development, renewables, and even "Indian energy." Mr. Domenici will no doubt reply that this spending is merely "authorized" and must be approved in increments each year by Congress. But once the Members have given the spending their vote of approval, you can bet they will find a way to get it out the door.

Mr. Domenici has disguised another $86 billion by counting only part of the bill's costs. It includes funding for permanent federal programs only through 2008, though Congress would have to keep laying out another $71 billion for these programs through 2013. Similarly, many of the bill's tax subsidies expire in 2006, though legislators will surely extend the most popular -- adding another $15 billion.

We'll grant that Mr. Domenici has trimmed $6.5 billion in programs and subsidies. But $7 billion of his alleged savings come from increased taxes and fees that have nothing to do with energy. Our source tells us that one of Mr. Domenici's revenue sources is a bill to tighten tax shelter laws that is already being claimed by other Republicans to finance their pet spending plans. This all sounds about as accurate as last year's infamous Medicare cost estimates.

As for policy, the Senators have agreed to drop one of the few things that made the earlier bill worthwhile: liability protection for the makers of MTBE, the gasoline additive being phased out by new environmental laws. This is only fair given that MTBE was something Congress once encouraged.

But now that it has become a target of trial lawyers for alleged health effects, Democrats see signs of a tobacco-like windfall. Connecticut Attorney General (and trial-bar weathervane) Richard Blumenthal recently sent out an APB for any and all lawyers who want to represent his state in a suit against these companies. Given how much time Senate Republicans spend trying to pass even the mildest tort reform, it's amazing that Mr. Domenici has rolled over for Democrats on this one. If the House GOP rolls over as well, they might as well go back to being the minority.

The larger policy question is whether Republicans still believe in free-market energy policy. Market signals have done a good job of letting energy supply meet demand since Ronald Reagan repealed the Carter price controls and subsidies of the 1970s.

The Domenici bill, in contrast, contains more than 150 new or expanded subsidies for energy sources (ethanol, biodiesel, clean-coal and wind) that aren't now, and may never be, cost-efficient on their own. There isn't anything wrong per se with these products, but they should have to prove themselves in the competitive market against more cost-effective fossil fuels. Subsidies (and mandates requiring the use of certain products) suck up taxpayer dollars and redirect capital away from more plentiful and cheap energy sources, raising prices for everyone and establishing industries that are forever dependent on "energy welfare."

The White House is clearly worried about high gas prices and hopes that by passing an energy bill it will appear to be "doing something." But no bill has the ability to ease the crunch in oil or natural gas prices before the election. The ethanol mandate would actually raise gas prices on the east and west coasts. Won't someone pull the plug on this overstuffed turkey once and for all?

March 22, 2004

The New York Times

Pinch at the Pump

The cost of gasoline is rising again. The average price reached $1.72 a gallon last week, just a couple pennies below the all-time record. Without a turnaround in the price of oil, which has roared to a one-year high of $38 a barrel, or a magical increase in refining capacity, prices are likely to rise higher still. This means discomfort for motorists and real pain for truckers and airlines. It also means, this being an election year, a certain amount of political grandstanding. If the Senate's initial response is any guide, Washington will choose short-term fixes over the tougher long-term solutions required.

The Senate's response to inflation at the pump was an unenthusiastic vote — 52 to 43 — to divert millions of barrels of oil earmarked for the Strategic Petroleum Reserve for sale on the open market. The House has yet to concur while the administration opposes the idea, arguing that it is more important to fulfill President Bush's post-9/11 pledge to fill the reserve to its 700 million-barrel capacity.

There's nothing inherently wrong with using the reserve to help relieve market pressures on a temporary basis — President Clinton tapped the reserve for about 30 million barrels in 2000 to ease a shortage of home heating oil in the Northeast. But it should be done sparingly. The main purpose of the reserve, after all, is to provide backup supply in a genuine national emergency, and a price spike is not a national emergency. If we did, for some reason, decide to use the reserve to drive down prices, it would only work at the margins and for a short time. The reserves are no match for the pricing power of oil-producing countries like Saudi Arabia. The Persian Gulf nations alone produce 900 million barrels a year, half again of what lies in the salt domes of Texas and Louisiana.

A much better way to strengthen America's leverage, as this page has suggested before, is for the United States to limit its own consumption of energy. There are many ways to do that, but the most straightforward is to raise fuel economy standards by significant amounts. This is exactly what the country did after the oil shocks of the 1970's, resulting in huge savings in imported oil.

Unfortunately, memories are short in the United States Congress. The energy bills that have passed the House and await action in the Senate not only ignore fuel economy. They also encourage the unhealthy fiction that a country that uses about one-quarter of the world's oil but owns just over 2 percent of the world's reserves can somehow drill its way out of dependency. It can't be done. Until the nation faces up to that fact, it will remain dependent on a few important producers, and its economic and strategic vulnerability will continue.

March 21, 2004 Phoenix, Arizona

THE ARIZONA REPUBLIC

Mirror, mirror . . .

... on the pump, what was it made those prices jump?

Found: A major culprit in high gasoline prices. Americans, look in the mirror.

We may whine about the cost at the pump, but we aren't buying less gas. Nope, we're actually buying more gas. Average daily consumption last month was 3.7 percent higher than the same period a year ago.

Now that pesky law of supply and demand is kicking in: High demand is translating into high prices.

Meanwhile, there's plenty of upward pressure from other forces, including tight supplies, strained refining capacity and the differing blends of gas required in various parts of the country.

Historically, however, this isn't the priciest gas we've ever seen. Not when you adjust for inflation. That cheap gas in 1960 was actually $1.93 in today's dollars. In 1981, it hit a staggering $2.79.

But prices moderated in the 1990s. And now, our eyes are popping as we see the price of regular gas flirting with two bucks a gallon.

So what do we do?

• Prepare for a bumpy ride for the foreseeable future.

Crude oil accounts for nearly half the price of a gallon of gas. Oil prices have jumped, and prices are likely to stay up, partly because the Organization of Petroleum Exporting Countries (OPEC) plans to cut production starting April 1. That's just as we're headed into summer, when gas consumption is highest. There's also extra demand because the U.S. government is buying oil to boost its strategic reserves.

Refiners are already operating close to capacity to meet demand. And petroleum companies are paring inventory costs by holding down their stock of fuel: The average has dropped almost 9 percent in the past six years.

With so little extra margin, any sort of disruption, such as last summer's broken pipeline in Arizona, sends prices shooting up. Refiners have shown no interest in building more capacity, partly because of cost and environmental hurdles. Plus, they're doing quite nicely with today's high wholesale prices: Profit margins are up 47 percent from the fourth quarter of 2002.

• Resist the calls to ditch low-polluting gasoline formulas.

More than 20 different gasoline formulations are sold around the country, each designed to curb pollution in a particular market. Yes, this complicates distribution and makes it hard to bring extra fuel into a market that suddenly experiences a shortage. Arizona encountered just that dilemma last summer, when a ruptured pipeline shut off part of Maricopa County's supply of its specially formulated gas. But there are solutions for a crisis: Arizona got a federal waiver allowing us to use conventional gasoline, so gas could be trucked in from other states.

It would a bad bargain to sacrifice the progress we've made in cleaning up our air in the hope of paying a few pennies less for gas - especially when pollution, which aggravates respiratory and coronary problems, is costing us a bundle in extra medical costs and lost work time.

• Drive less.

We've all heard the mantra about combining errands, car-pooling and avoiding unnecessary trips. But we need to build less driving into our lives. The Valley must make more progress, through better planning, in reducing the necessity to drive, so that shopping and jobs are close to houses. Better transit needs to be part of the mix.

• Make our vehicles more fuel-efficient.

Americans knew what to do when we had a gasoline crisis in the early 1970s. We adopted standards for more efficient vehicles. And automakers met the challenge, improving overall fuel economy by 62 percent from 1975 to 1984. But then Congress put the brakes on tighter standards, and a loophole exempted SUVs.

Americans, who once thought it was patriotic to use less gas (half the oil for producing it is imported), are now snapping up gas-guzzling SUVs. Sales of SUVs were up by 18 percent in the first two months of this year compared with 2003, even though overall auto sales were down.

No wonder our vehicles are actually less efficient now than they were two decades ago. That doesn't have to be the case. Just by using existing technology, says the National Academy of Sciences, we can cut fuel consumption significantly.

We don't have a lot of control on the supply side of gasoline. Despite the eagerness in some quarters to open up more drilling in the United States, our country has just 3 percent of the world's oil reserves.

But we can get a handle on demand. And we should do it now.

March 21, 2004

The Washington Post

Slicing Up Energy

IN THEORY, the Senate still intends to pass an energy bill this year. In practice, the list of other items on the agenda isn't getting any shorter, and the return to a large, complicated and possibly unpopular bill in the months before an election seems unlikely. As a result, some senators are considering shaving off some pieces of the bill and finding other means of passing them. We would prefer to see Congress take up a truly ambitious energy bill, one that actually reversed the advantages that the oil and gas industries have built into the tax code over time, and let markets do a better job of determining prices. But in the meantime, the notion of passing a few intelligent energy measures separately might not be a bad one -- as long as senators do so wisely.

What senators should not do is use one or two upcoming "must pass" bills, such as the foreign sales corporation tax bill currently under discussion, to sneak through some of the least acceptable elements of the energy bill, in either its original or its "slimmed down" incarnation: measures providing more industry pork, subsidies for ethanol, funding for pet projects or worse.

Instead, with gasoline prices expected to skyrocket this summer and with stockpiles at a historic low, legislators should look at what pieces of the bill might reasonably be expected to moderate prices in the short and medium terms. Removing some of the bureaucratic obstacles to domestic oil drilling in uncontroversial sites would help; indeed, both environmental and energy groups have recently protested the backlogs at the Bureau of Land Management. Bringing in energy-efficiency standards for appliances, a change that is almost entirely uncontroversial, might usefully reduce household electricity bills too. Most important, though, the Senate and the House should again consider introducing legislation on electricity reliability that has been hammered out on both sides of Capitol Hill several times, as well as legislation requiring electricity markets to be cleaner and more standardized.

The risk, as some senators see it, is that if they pass a few popular, obvious measures, then they'll never have the momentum needed to get the unpopular, unhelpful measures through Congress on the back of another giant energy bill. But that, of course, is the best reason of all to adopt the piecemeal approach.

March 20, 2004 Gainesville, Florida

Gainesville Sun

Shock at the pump

The cost of gasoline is not going to stop rising because of a new energy bill or because America starts drilling in Alaska.

The "sleeper" issue of the 2004 elections is likely to be the rising cost of gasoline. As The New York Times warned on Thursday, "Anyone who has not been shocked by the rapid climb in retail gasoline prices, to record levels in some cities, may want to prepare for what is to come."

As Americans prepare to move into the spring and summer motoring seasons, there are two things they need to know about the rising cost of oil.

First, they ain't making the stuff any more. The oil that fuels our cars and our economy was "made" countless millennia ago, and we're draining the Earth's reserves far faster than it can ever be "replaced."

And second, what oil remains is going to become increasingly more expensive to get out of the ground and more difficult to secure and deliver to domestic gas pumps.

Oh yeah, we almost forgot; while America remains by far the world's largest consumer of crude, demand from the rest of the industrializing world is increasing. Last year, China alone manufactured more than 2 million automobiles, and the world's most populous country has just begun to rev up its economic engine.

"With China and India, we have an enormous increase in energy demand," David Wyss, chief economist for Standard & Poor's told Fortune magazine recently. "In the long run, prices are going to go up, so it's better to start adjusting to it now than getting hit with a shock later."

Because this is an election year, the politicians are going to tell us that the way to lower gasoline prices is to pass the energy bill that is stalled before Congress. That bill is a special interest grab-bag stuffed with billions of dollars worth of subsidies for the fossil fuel industry and containing the false promise that drilling in Alaska's Arctic National Wildlife Refuge will solve America's energy problems.

The energy bill will do nothing to stop the rise of, much less lower, gasoline prices. So what's the solution?

If gasoline is destined to become more expensive, and it is, then the only way to cope is to manufacture automobiles that run on less of it. It has been estimated that if federal fuel efficiency standards on new vehicles were raised to an average 35 miles per gallon, America would save 234 million barrels of oil the first year, and 518 million barrels a year after five years. Closing the "SUV loophole" that allows light trucks and sport utility vehicles to get lower gas mileage than automobiles would save about 134 million barrels a year. If a quarter of the passenger cars in America were hybrids, the savings would be 76 million barrels a year.

Considering that America now imports 900 million barrels of oil a year from the volatile Persian Gulf — the most dangerous region in the world — a mandate to manufacture more fuel efficient automobiles would be, literally, a declaration of American energy security.

The cost of gas is going up, and there is very little to be done about it. The only solution is to use less of the stuff.

March 19, 2004

The Clarion-Ledger
Mississippi's News Source

Gas prices

Gas prices economic, political issue

Gasoline prices — which hit a record $1.63 a gallon in Jackson last week — may soon erupt as a domestic political and economic issue.

The last time oil prices spiked, it was over uncertainty in the Mideast regarding the invasion of Iraq. Now with Iraq getting more "stable," prices are up again.

There was speculation a U.S. occupation would provide a guaranteed source of oil to buffer any OPEC decisions to cut supply and stabilize prices in America's favor. As the reasoning went, the United States would be in a less vulnerable position for energy supplies both in amount and price.

But, now, oil is selling at more than $38 a barrel, and gasoline prices are spiraling higher.

During a presidential election year, that becomes a domestic political issue. As other prices to rise due to transportation costs, threatening inflation, it's a domestic economic issue, too.

Meanwhile, America continues to be in denial about its consumptive ways and its dependence on foreign oil. How much a gallon will it take for energy policy to address the real issue of oil addiction that nobody wants to discuss?

March 18, 2004 Anniston, Alabama

ANNISTON STAR

Running on empty

Unlike a year ago, when record gas prices could be blamed on the Venezuelan oil strike and instability in the Middle East, the current situation has many causes.

Cold weather in the Northeast increased the demand for crude oil, which drove up prices. Producers are passing the cost of new environmental standards on to consumers. Venezuela is having another political meltdown. And OPEC raised prices by cutting production.

OPEC's decision reflects the complexity of the situation and the extent of the problem. Oil is traded in dollars and with the dollar weaker against other currencies, OPEC nations were watching their buying power diminish. So they raised prices to make up the difference. And American consumers are paying at the pump.

Which we are apparently happy to do. Turning our backs on successful conservation measures that were lowering our energy needs, we have begun driving bigger cars with bigger engines, and driving them more. Our love for the automobile is such that we cough up what driving a car requires, even if we have to take money from other parts of the family budget to do it.

But this is more than a problem of allocating personal resources.

Today we are importing more foreign oil than ever before. And much of that oil comes from countries whose governments could easily fall into the hands of elements that would not hesitate to use oil as a weapon of foreign policy. The very idea of being this dependent on other nations — be they friends or foes — does not bode well for the future.

And what are we doing about it?

Although some say that the invasion of Iraq was really about oil, the slowness with which we have brought that country's petroleum back to the market suggests that if the war was to shore up our energy resources, we did a pretty poor job of it.

Which, of course, would fit right in with the rest of our energy policy, because we are making a mess of that as well.

Blame the Congress. Blame the administration. Blame whomever you want — including the American public. The fact remains that we are a nation without an energy strategy that considers both domestic needs and international realities. And because of this, our nation is consuming itself toward a crisis.

So far neither George W. Bush or John Kerry has proposed a reasonable, responsible solution to the problem. It is about time one of them did.

March 16, 2004

FORT WORTH
Star-Telegram

Fuel for thought

Gasoline prices have jumped through the pump in recent weeks

Prices have reached a record-high nationwide average of $1.77 per gallon for all grades, a Lundberg survey of 8,000 stations reported Sunday.

On Monday, the American Automobile Association reported that the average price for regular unleaded gasoline was $1.72 nationwide and $1.60 in Texas. California had the highest average: a hefty $2.17.

Some analysts say Americans could pay as much as $3 a gallon during the peak summer driving season.

Don't count on that happening on a broad scale, especially in Texas, where fuel prices usually run below the national average.

When gasoline prices skyrocket, politicians inevitably scream, "Price gouging!" and demand an investigation. Conspiracy theories abound.

The truth, however, is that natural market forces of supply and demand are by far the biggest factor in gas prices.

Pump prices have risen as a result of higher prices for crude oil, which is refined to produce gasoline. Prices also have climbed because U.S. refineries are decreasing output now as they ready their plants for the higher production necessary to meet demand in spring and summer.

The market tends to correct itself, and what goes up will come down.

As crude oil and gasoline prices rise amid tightening supplies, oil producers sell more crude to cash in on the higher prices. The resulting increase in supply lowers oil prices, which in turn puts a damper on gasoline prices.

Refineries also are spurred to produce more gasoline as prices and demand rise. That increases the fuel supply and puts downward pressure on pump prices.

A sharp, sustained rise in gasoline prices also causes consumers to cut back. A Texas family planning a driving trip to California might opt to vacation closer to home.

Politicians, responding to constituents angered by soaring pump prices, also swing into action. As a result of the recent gasoline price spike, some U.S. senators are pushing to expand fuel supplies by putting less crude oil into the nation's Strategic Petroleum Reserve. That would make more oil available to refineries, which would put downward pressure on both oil and gasoline prices.

The United States is highly vulnerable to energy price shocks because it is the world's largest consumer and importer of oil. Congress should reduce America's reliance on foreign crude, and encourage a reduction in air pollution from vehicle tailpipe emissions, by passing long-overdue legislation mandating higher fuel economy standards for vehicles.

Gas prices have risen by about a quarter per gallon this year. They aren't expected to fall soon, but they also aren't expected to rise much more, according to the Lundberg survey.

Texans can expect to continue paying higher-than-normal pump prices for a while. But natural market forces should prevent them from having to pay anywhere near $3 per gallon.

February 25, 2004

Missoulian
MISSOULA, MONTANA

Revised energy bill thinner, not better

The fatal flaw is the notion that energy production and use are driven by subsidies, not larger market forces.

Last year's energy bill contained so much pork that even Congress couldn't choke it down. Its backers have returned, this time determined to serve up their subsidies in smaller portions. Don't swallow it.

The "trimmed down" energy bill returns to the U.S. Senate this week, not so much pared of its fat as offered in the installment plan. The price tag now is $14 billion. The bill that Democrats filibustered to death late last year would have cost $31 billion. The rest of the subsidies aren't exactly gone, merely parked until later. In some cases, tax breaks have merely been tweaked to phase in over time.

Included in this bill are subsidies - to name a few - for an Alaskan natural gas pipeline; various coal-fired generating plants; oil wells and, of course, ethanol production.

And for what? Have you paid a power bill lately? Bought a tank of gas? Energy prices are high, creating great opportunities for profit by energy producers and great motivation for energy users to find ways to conserve. The market is providing all the incentive anyone needs for producers to produce more and consumers to consume less. If private investors don't think, say, a new natural gas pipeline in Alaska is a prudent investment on its own merits, why should Congress force taxpayers to invest in it?

Don't give us that bit about energy independence, either. The United States isn't ever going to have energy independence, not so long as we burn oil. America has been trying for decades to stimulate energy production through subsidies and regulation, to little real effect. Anyway, at the same time the administration touts the economic benefits of "outsourcing" U.S. jobs to India and other foreign countries, it suggests that we should hope to rely on U.S.-produced energy. In fact, we should export things we make better or cheaper than other countries and we should import what we can buy more economically from other countries. Domestic oil isn't cheaper than imported oil. It sells for the same price. Once you add in the hidden costs of subsidies, collected with your taxes, some domestic oil actually costs a lot more.

Ethanol makes imported oil look cheap by contrast - at least if you look at the total cost of the fuel produced and subsidies paid. Decades ago, it may have seemed plausible to suggest subsidies were useful in getting the ball rolling with this alternative fuel made from corn. Now we know better. Ethanol's a good deal for people who grow corn and build ethanol plants. It's a lousy deal for taxpayers.

The White House and congressional leaders keep saying how badly we need an energy bill. The suggestion is that the supply and price of fuel can be dictated by Washington. That's a dubious proposition at best. We're better off with no energy bill than one full of bad policy.

February 22, 2004

THE BUFFALO NEWS

Tied to Mideast oil

Bush administration shows no inclination to reduce our energy dependence

What will it take for the federal government to get serious about reducing American dependence on Middle Eastern oil? For decades, our dollars have helped to sustain regimes that turn a blind eye to terrorism while they manipulate oil production to serve their own purposes.

That is what happened again the other day as OPEC, the international oil cartel, announced plans to cut back on production in an effort to keep prices high. The oil belongs to the member countries, of course, and it's theirs to use as they wish. But there is no reason American government policy needs to cede, without resistance, the economic clout that allows OPEC to do whatever it wants.

If it is the oil producing nations' right to use their resource as they will, it is the consuming nations' right to control, in whatever ways may be possible, how much they use. The Bush administration, led by a one-time oilman, has shown absolutely no interest in such restraint.

Former Bush spokesman Ari Fleischer once went so far as to defend consumption as an American birthright. Vice President Cheney derided conservation as nothing more than "a sign of personal virtue" and even qualified that sneering observation with a dismissive "perhaps."

No combination of factors will greatly diminish the American reliance on Middle Eastern oil anytime soon. But the related problems of the Middle Eastern oil economy and its tolerance for terrorism are significant enough that Washington should be eager to lay out a long-term strategy that will, at least, give OPEC nations pause before they flex their monopolistic muscle.

Conservation is not the only way to achieve that goal. Development of alternative energies is also important, and, as much as that could stress the American oil industry, the national interest demands that we reduce our dependence on the Middle East. Americans have shown they are willing to make sacrifices to protect the country. It happened during World War II and it happened during the 1970s oil embargo.

With the shock of 9/11 having faded, there may be less sense of a crisis today. Nevertheless, a president should be able to rally his countrymen to the wholesome task of depriving revenue to undemocratic regimes whose oil has created vast disparities of comfort and desperation, and, in so doing, has made it easier for men like Osama bin Laden to find pawns who are willing to commit crimes that make the hair stand on end.

It shouldn't take much to make American consumers want to stop subsidizing that work.

National Environmental Trust

The Environmental Action Network for the 21st Century
1200 Eighteenth Street, N.W. Washington, DC 20036

Energy Bill Not the Answer to High Gas Prices

With gasoline prices hitting record high prices even before the traditional summer spike, politicians are calling for immediate passage of the stalled energy bill in order to protect consumers at the gas pumps.[1] The problem is that this energy bill will do nothing to lower gas prices, either now or in the future. And Congress continues to refuse to consider real solutions that actually will protect consumers from high gasoline prices.

CLAIM: Failure to pass the energy bill in Congress contributes to high gas prices.

FACT: Recent gasoline prices spikes are due to world oil market conditions and have nothing to do with the failure to pass the energy bill currently in Congress. In particular, production cutbacks by OPEC and supply disruptions in Venezuela are the chief cause of the recent high gasoline prices.[2]

CLAIM: The energy bill will help lower consumer energy prices.

FACT: According to the U.S. Energy Information Administration, "On a fuel-specific basis, changes to [energy] production, consumption, imports, and prices [from the energy bill's impacts] are negligible."[3]

CLAIM: Increased oil drilling on U.S. lands will stabilize gasoline prices.

FACT: According to the Energy Information Administration, the U.S. contains only 2.14% of total proven world oil reserves, an amount too small to have a meaningful impact on world oil supply or prices.[4] To meet demand, the U.S. currently must import 57% of our oil, and our oil imports will rise to 64 percent by 2020.[5]

REAL SOLUTIONS

Conspicuously absent from the energy bill currently before Congress is any requirement to increase the fuel efficiency of cars, pickup trucks and SUVs. In the past, making vehicles go further on a gallon of gas has helped reduce U.S. vulnerability to volatile world oil markets and saved consumers money at the gas pumps.[6] Congress has not raised automobile fuel economy standards (CAFE) since they were first enacted in 1973. Doing so now would be the surest way to reduce U.S. oil consumption and save consumers money.

- ***If CAFE standards were raised to 35 mpg*** (average of 28 for light trucks, 43 for cars): After a five-year phase-in, the first year of full implementation would save 234 million barrels of oil per year. After five years of full implementation, the savings would increase to 518 million barrels per year.
- ***If the SUV loophole were closed***: After five years, the savings would be134 million barrels of oil per year. After 10 years, the savings would be 268 million barrels of oil per year.
- ***If 25 percent of new cars purchased were hybrids***: After five years, the savings would be 76 million barrels of oil per year. After 10 years, the savings would be 152 million barrels of oil per year.[7]

For comparison, we import 900 million barrels of oil per year from the Persian Gulf.

For more information, please contact Mark Wenzler, 202-887-8800, mwenzler@net.org

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[6] According to the National Academy of Sciences, "[I]f fuel economy had not improved [in the past 22 years], gasoline consumption (and crude oil imports) would be about 2.8 million barrels per day higher than it is, or about 14 percent of today's consumption." National Research Council -- National Academies of Science, "Effectiveness and Impact of Corporate Average Fuel Economy (CAFÉ) Standards, 2002; Executive Summary, p. 3, Finding 1, http://books.nap.edu/books/0309076013/html/3.html#pagetop.

[7] For more information on how CAFE oil savings numbers were derived, please e-mail mwenzler@net.org.

U.S. PIRG **Analysis**

Budget-Busting Energy Bill Fails to Reduce Energy Consumption, Prices or Imports: New EIA Report

"...Consumers and businesses need reliable supplies of energy to make our economy run so I urge you to pass legislation to modernize our electricity system, promote conservation, and make America less dependent on foreign sources of energy..." ***- President George W. Bush, State of the Union Address, January 20, 2004***

"I believe this energy bill does more to increase energy supply, encourage conservation and lower energy prices in every part of this country than any energy bill you are likely to see in the next several years." ***- Senator Pete Domenici, Roll Call, February 23, 2004***

"Changes to production, consumption, imports, and prices are negligible." ***— Energy Information Administration***

The federal energy bill (H.R. 6), which will cost taxpayers at least $31 billion, will have negligible impacts on energy consumption and production and will fail to reduce natural gas and electricity prices over the next 20 years according to a new report by the Energy Information Administration (EIA).[1] The findings of the report directly contradict assertions that the federal energy bill will reduce oil imports, decrease energy demand, and reduce energy prices for consumers.

According to EIA, the energy bill would fail to meet the criteria laid out by President Bush both in the short-term and the long-term: it would neither reduce energy consumption nor reliance on energy imports. The Senate's latest version of the energy bill (S.2095) is likely to have an even smaller effect on energy measures since it decreases direct spending, including spending on important energy efficiency programs such as the Energy Savings Performance Contracts (ESPC). **In the end, the energy bill will be all pain and no gain.**

Energy Bill Fails to Reduce Energy Consumption
EIA concludes "the impact on total primary energy consumption is small," detailing that:

- By 2010, energy consumption levels in the U.S. would actually increase by 14.4 percent both under business as usual projections and under the energy bill, indicating that the energy bill would have no effect on short-term consumption levels (see Table 1).
- By 2025, EIA projects that consumption levels will increase by more than 39 percent both under business as usual policies and under the energy bill.

In effect, the EIA report confirms that the energy bill does nothing to guarantee increased energy conservation and energy efficiency.

Energy Bill Fails to Reduce Oil Imports
Proponents of the energy bill have claimed that the bill will make America less dependent on foreign sources of energy, but EIA's analysis concludes otherwise.

- Petroleum imports are projected to increase by 24.7 percent by 2010 under current policies; if passed, the energy bill would still result in a 23.8 percent increase in petroleum imports.
- **By 2025, U.S. imports of petroleum would actually increase by an astonishing 82.9 percent under the energy bill, only slightly lower than the 84.8 percent increase projected under business as usual.**

Despite giving billions of dollars in taxpayer subsidies to the oil and gas, coal, and nuclear industries, the energy bill will do next to nothing to reduce our dependence on foreign sources of energy.

[1] The EIA report focused on provisions that, in EIA's estimation, have the "potential to affect energy consumption, supply, prices or imports." http://www.eia.doe.gov/oiaf/servicerpt/pceb/pdf/sroiaf(2004)02.pdf

Energy Bill Fails to Reduce Consumer Prices
The EIA report indicates that the energy bill will do nothing to provide consumers relief from rising natural gas prices.

- Natural gas production is projected to increase by 7.6 percent by 2010 under business as usual, whereas the energy bill would increase production by 9.4 percent—only 1.8 percent more.
- By 2025, the energy bill would have an even less significant impact, with gas production projected to increase by 26 percent under current policies versus a 27.3 percent increase under the energy bill.
- **The energy bill would have absolutely no impact on residential and commercial natural gas prices over the short or long-term.**
    - By 2010, residential and commercial natural gas prices would increase at virtually the same rate under business as usual policies as under the energy bill.
    - By 2025, residential natural gas prices would rise by 8.8 percent over 2002 prices and commercial prices by just over 16 percent both under business as usual and the energy bill.

A Cleaner Energy Future
America deserves a clean energy future that will reduce our dependence on oil and other polluting energy sources while increasing our production of clean, renewable energy. The energy bill weakens public health and environmental protections, provides billions of dollars in subsidies to the dirtiest energy industries, and does nothing to change the current energy outlook for America.

Table 1: Comparison of Energy Measures—Current Outlook (CO) and H.R. 6

	2002	2010		2015		2025	
		CO	H.R. 6	CO	H.R. 6	CO	H.R. 6
Primary Energy Consumption[i]	97.72	111.77	111.83	119.75	119.84	136.48	136.12
Petroleum Consumption	38.11	44.15	44.09	48.26	47.99	54.99	54.73
Natural Gas Consumption	23.37	26.82	26.61	28.74	28.63	32.21	32.34
Coal Consumption	22.18	25.23	24.84	26.32	26.07	31.73	30.94
Nuclear Power	8.15	8.29	8.34	8.48	8.91	8.53	9.02
Renewable Energy	5.84	7.18	7.85	7.84	8.13	9.0	9.06
Net Imports –Petroleum	22.56	28.13	27.93	33.20	33.06	41.69	41.26
Residential Energy Prices [ii]	14.73	14.21	14.16	14.93	14.75	15.38	15.28
Residential Natural Gas Prices	7.65	7.67	7.66	8.29	8.19	8.32	8.32
Commercial Energy Prices	14.68	13.77	13.69	14.62	14.40	15.28	15.14
Commercial Natural Gas Prices	6.37	6.64	6.63	7.32	7.22	7.41	7.40
Transportation Motor Gasoline Prices	11.15	11.87	11.89	11.87	12.12	12.06	12.30
Domestic Natural Gas Production (dry)[i]	19.56	21.05	21.41	22.20	22.23	24.64	24.90

i-Measured in Quadrillion Btu per year ii-2002 Dollars per Million Btu

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STATEMENT OF SOUTHERN UTAH WILDERNESS ALLIANCE

UTAH'S REDROCK WILDERNESS RICH IN NATURAL BEAUTY—NOT NATURAL GAS

WASHINGTON, DC.—Testifying before the Senate Environment and Public Works Committee, the Southern Utah Wilderness Alliance (SUWA), presented evidence showing that the sacrifice of Utah's crown jewel—America's redrock wilderness—would only provide a nominal quantity of natural gas. With 95 percent of oil and gas resources coming from lands entirely outside of lands proposed for wilderness designation, SUWA calls energy development in Utah's last remaining wild places both short-sighted and ineffective.

"SUWA is pleased that the Committee is holding a hearing on the environment and natural gas supplies because it allows the Congress and the American public to understand that wilderness is neither a cause nor a solution to our nation's energy predicament", said Stephen Bloch, SUWA Staff Attorney, who testified at the Committee hearing.

Since 2001, the Administration has distracted the American public by focusing the Nation's attention and its Federal land management policies on energy development in the country's few remaining wild places. Lands that even the Bureau of Land Management recognized as having wilderness values have been stripped of protection and are now targeted for energy leasing.

According to an analysis of data produced by the Department of Energy, the U.S. Geological Survey, and the State of Utah, approximately 95 percent of the State's gas and oil resources come from seven energy-rich "hot spots." None of Utah's seven key energy producing regions are proposed for protection in the America's Redrock Wilderness Act (S. 639/H.R. 1796). Even if Utah's proposed wilderness were exploited for its energy resources, the most current USGS data suggests that the land could yield little more than a few weeks of natural gas at current consumption levels.

"Our nation's last unprotected wilderness areas are an irreplaceable treasure, not a cash cow for the energy corporations," Bloch explained. "Moreover, even if we sacrifice Utah's redrock wilderness we cannot meaningfully reduce the price of natural gas."

"While the government's own data indicates that there is little natural gas to be gained from drilling Utah's wilderness quality lands, one thing is certain—exploration and development will leave lasting scars on this magnificent redrock landscape," said Bloch. "That, in my estimation, is truly a high price to pay."

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