NATIONAL ENERGY POLICY: CRUDE OIL AND REFINED PETROLEUM PRODUCTS

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BEFORE THE

SUBCOMMITTEE ON ENERGY AND AIR QUALITY

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NATIONAL ENERGY POLICY: CRUDE OIL AND REFINED PETROLEUM PRODUCTS

FRIDAY, MARCH 30, 2001

HOUSE OF REPRESENTATIVES,
COMMITTEE ON ENERGY AND COMMERCE,
SUBCOMMITTEE ON ENERGY AND AIR QUALITY,
Washington, DC.

The subcommittee met, pursuant to notice, at 10 a.m., in room 2123, Rayburn House Office Building, Hon. Joe Barton (chairman) presiding.

Members present: Representatives Barton, Bono, Walden, Boucher, and Markey.

Staff present: Jason Bentley, majority cunsel; Karine Alemian, majority professional staff; Andy Black, policy coordinator; Anthony Habib, legislative clerk; Rick Kessler, minority professional staff; Sue Sheridan, minority counsel; and Alison Taylor, minority counsel.

Mr. BARTON. The subcommittee will come to order.

The Subcommittee of Energy and Air Quality of the Energy and Commerce Committee is today continuing a series of hearings on national energy policy. Today's hearing is on crude oil and refined products. I want to thank our witnesses that are here this morning, and I want to thank our members that are here on a Friday when there are no votes scheduled.

I drove here today in a car that uses gasoline. I think most of us probably arrived here by transportation that uses gasoline, also. The demand for petroleum is not going down. Even though our motor engines continue to become more energy efficient and even though alternative fuel vehicles and public transit are making great technological advances, we have not yet left the age of the gasoline internal combustion engine.

Last night spot crude oil prices closed at $26.32 a barrel. Had that figure been over $30 per barrel, as was the average for November of 2000, more members would have been here today. Had that figure been $10.76, as it was 2 years ago this month, national attention would have been less than it is today.

We suffer the problems of an up-and-down market. Between 600,000 and 1 million barrels per day of domestic crude oil production was lost in the late 1990's, when oil prices were at all time lows adjusted for inflation. Many marginal wells were shut in and those wells, once shut in, are very difficult, if not impossible, to reopen. That supply has been recovered obviously with foreign imports, including more than half a million barrels per day from Iraq, of which we have economic sanctions in force.

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Our dependence upon foreign crude oil imports for more than half of our needs, perhaps 56 or 57 percent, means that consumers must bear the brunt of mood swings in world markets. A small amount of crude oil being produced or withheld by the OPEC trading cartel can change the spot price dramatically, which brings us to prices for petroleum products like gasoline, heating oil, fuel oil, propane and others, which have all seen price spikes in the last year.

The Energy Information Administration warns that gasoline inventories are even lower this year than they were last year and that this summer's prices are expected to be relatively high. Of course, part of the reason for high petroleum product prices is the base price of crude oil. But many other factors affect these prices, refinery capacity, refiner cost, business decisions based upon economic forecasts, inventory stocks and distribution constraints.

We are here today to talk about the upstream issues, such as increasing supply of crude oil generally, and the downstream issues dealing with refining, distribution and sales to consumers. We hope to hear from the witnesses what impacts the ability to improve supply, if any, would be on the cost of the product. If there are laws and regulations that Congress should review, we would like to know which ones those are. We need to learn more about the refinery business and the downstream markets for petroleum and products like heating oil. Do we have markets that encourage investment in refinery capacity? If not, why not?

The lessons of California's electricity problem should not be forgotten here. American consumers need sufficient supply to meet demand at an acceptable price. When energy supply is not adequate, we as a Congress and as a Nation have a duty to help the supply demand imbalance.

This subcommittee hopes to soon begin crafting comprehensive energy legislation dealing with all fuel sources as well as conservation and environmental issues. I look forward to working with members on both sides of the aisle, especially my distinguished ranking member, the gentleman from Virginia, Mr. Boucher, and I know that we are all concerned about our Nation's energy future. Your testimony today will help us in these efforts.

With that, I would like to recognize the distinguished gentleman from Virginia, Mr. Boucher, for an opening statement.

Mr. BOUCHER. Thank you very much, Mr. Chairman. Oil is the fuel for 40 percent of our Nation's energy consumption, and assuring an adequate supply of petroleum and refined petroleum products is essential to our Nation's energy security and to the affordability of gasoline and home heating oil for American consumers. I look forward to advice from today's witnesses about measures that we can take at the Federal level to reduce our dependence on foreign sources of crude oil, to reduce the volatility of prices for oil-derived products and to ensure that we can satisfy our Nation's oil needs in an environmentally acceptable manner.

A key question for our consideration this morning is why United States refinery capacity has not expanded to meet the demand for refined products. Ten years ago, domestic refineries were able to meet 94 percent of our domestic consumption needs. Today, that figure stands at 85 percent. What are the constraints inhibiting the

needed investment in new refinery capacity? And what can we do about those constraints?

I would also welcome the views of our witnesses concerning the recent reports that gasoline inventories are below the level of 1 year ago. Last year's inadequate inventories contributed to price spikes that occurred as the spring-summer driving season matured, and we were certainly hoping for a better report and projection for the year 2001. What are the problems that have caused these reduced inventories of gasoline? And what actions do our witnesses suggest that we as a committee take in order to address those problems?

I want to thank our witnesses for being here today. With those brief thoughts, Mr. Chairman, I look forward to their testimony.

Mr. BARTON. I thank the gentleman. We would welcome the gentlewoman from California for an opening statement.

Mrs. BONO. Thank you, Mr. Chairman. I have a written statement I will just submit for the record.

Mr. BARTON. Without objection, so ordered.

I would also encourage you to move closer to the center. I don't think we are going to be overwhelmed with members today.

We want to welcome our panel. Your statements are in the record in their entirety. We are going to start with Mr. Cook, who is the Director of the Petroleum Division of the Energy Information Administration, and we will go right down the line. I can't say we will save the best for last, but certainly for the last testifier we have one of the most noted experts in the State of Texas here from the Permian Basin, Mr. Pitts, who is going to give us kind of a cleanup testimony today.

Mr. Cook, we welcome you to the subcommittee. We recognize you for 6 minutes to elaborate on your testimony.

STATEMENTS OF JOHN COOK, DIRECTOR, PETROLEUM DIVISION, ENERGY INFORMATION ADMINISTRATION; STEPHEN D. LAYTON, PRESIDENT AND CEO, EQUINOX OIL COMPANY; GREGORY C. KING, VICE PRESIDENT AND GENERAL COUNSEL, VALERO ENERGY CORPORATION; PETER D'ARCO, PRESIDENT, SJ FUELS; THOMAS L. ROBINSON, CHIEF EXECUTIVE OFFICER, ROBINSON OIL CORPORATION; RICHARD KASSEL, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL; AND JOHN PAUL PITTS, OIL EDITOR, MIDLAND REPORTER TELEGRAM

Mr. COOK. Thank you, Mr. Chairman and members of the committee, for the opportunity to testify today on behalf of the Energy Information Administration. I will begin with an overview of recent oil market trends and the key underlying factors. I will then talk a little about our near-term forecasts.

A combination of factors contributed to the sharp increases in both crude oil and refined product prices experienced over the last year or so. On the demand side, strong economic growth through the first half of last year stimulated increased oil consumption. Additionally, this winter started out very cold, unlike the previous four winters. November and December were very cold in certain parts of the country, requiring significantly more energy for home heating. On the other hand, while oil supplies outpaced demand

growth last year, resulting in a slight gain in inventory levels, that excess supply proved to be too little to significantly boost global stocks from already low levels.

Arguably, tightness in crude markets has been the key factor driving high oil prices recently. Although the cold winter, robust economy and some fuel switching from natural gas has had an impact on product demand, it has been recent actions taken by OPEC that are largely responsible for the sharp increases in oil prices from the $10 lows we saw in December 1998. OPEC dramatically reduced crude production in 1998 and early 1999, so much so that even after four increases last year, inventories remained at extremely low levels.

Furthermore, scarce crude supplies encourages high near-term prices relative to those for future delivery. This situation, known as backwardation, discourages inventory growth and maximum refinery production. Thus, with low crude stocks and low product stocks, there is little flexibility to adjust to changing conditions setting the stage for volatility.

I will turn next to our short-term forecasts, beginning with crude oil. At their March 17 meeting, OPEC members agreed to reduce production quotas by a million barrels a day effective next month. This is in addition to the 1.5 million barrel a day reduction taken in January. The combined 2.5 million barrel a day quota reduction puts actual likely OPEC production significantly below last summer's levels. This is expected to continue the tight balance between global supply and demand, resulting in continued low inventories worldwide, especially in the developed countries of the OECD. Given these low stocks, we expect prices for OPEC's basket of crude oils to remain toward the high end of its $22 to $28 range.

Since WTI, West Texas Intermediate, the key U.S. bench mark crude oil, tends to run about $3 or $4 higher than the OPEC basket, this puts our forecast at $29 to $30 later this year.

Turning to distillate markets, in spite of strong demand this winter, heating oil stocks have not dropped the way they normally do the first quarter of the year. Warm weather in Europe, high margins for heating oil encouraging record levels of imports and refinery production have offset strong demand. Thus, at this point distillate stocks are now back in the normal range, which bodes somewhat better for next year.

I say this because refiners may not have to produce or import as much distillate product this summer in order to rebuild inventories ahead of next winter. Nevertheless, I should caution that the improved outlook does not take into account the potential for continued unusually high demand from large end-users. Should we have hot weather this summer, this could result in higher diesel demand as more peaking units and backup generators are used. Regardless, with the heating season ending and more comfortable inventory levels, we should see retail prices begin to decline from current levels as seasonal demand diminishes.

Unfortunately, even with this decline, on average retail prices have been relatively high, resulting in higher bills for consumers. For example, due to higher prices and colder weather, the average bill for oil heat in the Northeast was nearly $1,000 this year compared to under $600 two winters ago.

Turning to gasoline, with crude prices expected to rebound from the recent lows and continued low stocks, EIA projects that prices at the pump will rise modestly as the year's driving season begins. While EIA expects little difference from last summer's average price of $1.50 a gallon, stocks are projected to be about the same or less. This could set the stage for regional supply problems and significant price volatility. With little stock cushion to absorb unexpected changes in supply and demand, regional problems can arise even from temporary losses in refining capacity or pipeline disruptions, particularly since there is little excess refining capacity available during the summer.

This lack of excess capacity leaves the domestic system dependent on high imports and smooth operations from the infrastructure, both pipelines and refineries, if we are to avoid significant price fluctuations. However, imports cannot function as a relief valve to the same degree as we see in distillate markets, since few overseas refiners make the summer grades of gasoline used in many parts of this country.

The prospect of regional supply problems is also increased by the differing regional gasoline product requirements arising from Federal and State air quality programs, which limit the distribution system's flexibility to respond.

I will close with a positive note. It is expected that a year's experience behind them should make the refining industry more able to produce the summer grades of gasoline first introduced last year. This concludes my testimony. I would be happy to answer any questions.

[The prepared statement of John Cook follows:]

PREPARED STATEMENT OF JOHN COOK, DIRECTOR, PETROLEUM DIVISION, ENERGY INFORMATION ADMINISTRATION, DEPARTMENT OF ENERGY

Thank you, Mr. Chairman. I would like to thank the Committee for the opportunity to testify on behalf of the Energy Information Administration (EIA).

I will begin with an overview of recent crude oil and petroleum product trends and the underlying factors behind them. I will then address our near-term forecast.

A combination of factors contributed to the sharp increases in both oil and refined petroleum product prices experienced over the past year or so. On the demand side, strong economic growth through the first half of 2000 led to increased oil consumption. Additionally, this winter started out very cold, unlike the previous 4 winters, which were much warmer than normal. November and December were very cold in certain parts of the country, requiring significantly more energy for home heating than in recent winters.

On the other hand, supplies of crude oil and petroleum products in 2000 just kept pace with demand growth, resulting in continued low inventory levels, and leaving high prices.

Crude oil prices have been a key factor driving refined product prices in recent years. Although the cold winter, robust economy, and some fuel switching from natural gas to oil had an impact on petroleum product demand, it was action taken by OPEC and a rebounding Asian economy that sharply increased oil prices from the $10 per barrel low levels seen in December 1998. OPEC dramatically reduced its crude oil production in 1998 and early 1999, so that even after four separate production increase agreements in 2000, inventories remained at extremely low levels. Scarce crude supplies encourage high near-term prices relative to those several months out. This situation, referred to as backwardation, discourages robust growth in inventories, and discourages maximum refinery production. With low crude oil and product inventories, there is little flexibility to adjust to changing conditions, and the stage is set for volatility.

I would now like to focus next on our short-term forecast, beginning with **Crude Oil.** At their March meeting, OPEC members agreed to reduce production quotas by 1 million barrels per day effective April 1. This production quota reduction is in

addition to a 1.5-million-barrel-per-day cut agreed upon in January. Combined, the 2.5-million-barrel-per-day quota reduction is expected to continue the very tight balance between global crude oil supply and demand, resulting in continued low inventories worldwide, and especially in the developed countries of the OECD (Figure 1). Given low stocks, EIA expects prices for OPEC's basket of crude oils to remain toward the high end of its target range of $22 to $28 per barrel, at least for the balance of 2001. However, West Texas Intermediate (WTI), the U.S. benchmark crude oil, tends to run about $3-$4 per barrel higher than the OPEC basket price, given its higher quality. Our forecast then, projects WTI to average about $29 to $30 per barrel (Figure 2) again this year and next. This forecast assumes that Iraqi oil exports bounce back to levels easily achieved beginning in the second quarter of 2001. But Iraq is probably the biggest wild card that could generate higher prices in the short term.

Now, **Distillate Fuel.** In spite of strong demand this past winter, heating oil stock levels have not weakened over the past month or two as would normally occur. Warm weather in Europe, in combination with high heating oil margins, encouraged record levels of imports and refinery production of heating oil, countering strong demand. Thus, for the country as a whole, distillate stocks are now back within the normal range after being well below normal for most of the winter. This indicates refiners may not have to produce and import as much product to build inventories prior to next winter to maintain them in the normal range. However, this does not take into account the potential for continued unusually high demand from the industrial and electricity sectors. Hot weather this summer could result in higher diesel demand as more peaking units and backup generators are used.

With the heating season ending, retail heating oil prices are expected to remain at or possibly decline some from current levels as seasonal demand diminishes. Nevertheless, retail prices remain relatively high on an historical basis, resulting in higher bills for consumers.

This past winter, the average bill for heating with oil in the Northeast was nearly $1,000, compared to $760 last winter and under $600 the previous two winters. Although consumers did not face the price spike they saw last winter, preliminary data indicate consumption was about 11 percent higher than last year, because of colder weather and high natural gas prices encouraging some fuel switching. Higher consumption levels, lower initial stock levels, and higher crude oil prices relative to last winter have combined to push up the average cost of a gallon of heating oil by 18 percent this winter. Together, the increases in consumption and price raised winter oil heating bills by about 31 percent.

Turning to Gasoline. With crude oil prices rebounding from their recent lows, and continued lower-than-normal gasoline stock levels, EIA projects that prices at the pump will rise modestly as this year's driving season begins. While EIA expects little difference from last summer's average price of $1.50 per gallon, gasoline inventories going into the driving season are projected to be about the same or even less than last year (Figure 3), which could set the stage for regional supply problems that once again could bring about significant price volatility, especially in the Midwest and on both coasts.

With little stock cushion to absorb unexpected changes in supply or demand, regional problems can arise from temporary or permanent losses of refining capacity, or pipeline disruptions, particularly since there is little or no excess U.S. refining capacity available in the summer. This lack of excess capacity leaves the domestic gasoline system dependent on high imports and smooth operations from the infrastructure, both pipelines and refineries, if it is to avoid a substantial near-term price run-up. However, imports cannot function as a relief valve for tight gasoline markets as effectively as in the case of distillate, since few overseas refiners make the summer grade Phase II gasoline that is required in many parts of the United States. The prospect of regional supply problems is also increased by the differing regional gasoline product requirements, arising from Federal and State air quality programs, which limit the distribution system's flexibility to respond. On the positive side, though, it is expected that with a year's experience behind them, the refining industry's ability to make the Phase II reformulated gasoline first required last year should be improved.

Finally, I would like to expand briefly on U.S. refining capacity. Capacity constraints are more of an issue with gasoline during the summer than with heating oil during the winter (Figure 4). Refineries usually run at their peak capacities when gasoline demand is highest during the summer. In 1997 we saw for the first time, a situation where a temporary shortage at the end of the summer could not be resolved with an increase in domestic production because operating refineries were running at very near full capacity. Last summer, while individual refiners ran at full capacity, the industry as a whole did not run as high as we have seen histori-

cally. This was generally due to a 550,000 barrel per day increase in operating capacity since 1998. While this suggests some potential for higher domestic gasoline production this summer, any incremental production will necessarily be quite small, given that further capacity growth in 2001 and 2002 is not expected to be significant. For almost 20 years, we have had an excess of refining capacity in this country, but that is no longer the case.

This concludes my testimony, and I would be pleased to answer any questions the Committee may have.

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Mr. BARTON. Thank you, Mr. Cook. We do appreciate you being here.

We now want to hear from Mr. Stephen Layton, who is the President and Chief Executive Office of Equinox Oil Company in The Woodlands, Texas. He is representing the Independent Producers Association of America, IPAA. Welcome. Your testimony is in the record. We would let you summarize it for 6 minutes.

STATEMENT OF STEPHEN D. LAYTON

Mr. LAYTON. Thank you, Mr. Chairman, members of the committee. I am Steve Layton, Chairman of the Crude Oil Committee of the Independent Petroleum Association of America. Today I am testifying on behalf of the IPAA, the National Stripper Well Association, and 32 cooperating State and regional oil and gas associations. These organizations represent the thousands of independent petroleum and natural gas producers that drill 85 percent of the wells in the United States. This segment of the industry has been damaged most by the lack of an energy policy that recognizes the importance of our domestic natural resources. Independent producers are indeed the linchpins to the continued development of the country's petroleum and natural gas resources.

Today's hearing addresses issues associated with crude oil and its domestic use. Mr. Chairman, my written testimony details the events that have placed us in the current situation and presents our recommendations. I will highlight several of the key points in my oral testimony.

First, our national policies must be based on a realistic view of the marketplace. While the natural gas market is largely North

American and is basically free, the supply of crude oil and its price are largely determined by geopolitical considerations, by actions of producer nations, actions taken both for economic and for political reasons. Domestic producers must live with the consequences of these decisions. When oil prices collapsed in 1998 and 1999, domestic producers lost $19 billion of revenue. Crude oil prices are also affected by actions or, more accurately, the reactions of the commodity markets. These markets can particularly influence prices at the extremes with overreactions to what is in many cases imprecise supply and demand data.

Second, national policies need to recognize the nature of domestic production. Approximately 20 percent of domestic crude oil comes from Alaska. But this is a resource that due to depletion is providing almost 1 million barrels a day less of oil production than in 1990. The Alaskan National Wildlife Refuge presents the opportunity to sustain and grow this Alaskan supply level for years to come. Another 20 percent of the domestic production comes from the offshore, but only the western and the central Gulf of Mexico are being aggressively developed. In the offshore, future development of the resource base will be defined first by what areas are accessible and second by the Federal royalty policies that apply. The majority of domestic production, about 60 percent, comes from the lower 48 States onshore. Of this, roughly one-third comes from marginal wells, wells that average about 2.2 barrels of oil per day but still are competitive in the global marketplace, and collectively these marginal wells equal the amount of oil imported from Saudi Arabia. A great deal of effort will be required to maintain or hopefully to expand this onshore production. This is a challenge that must be met.

Third, domestic policy needs to recognize that independent producers are rapidly becoming the backbone of the industry. They are responsible for the majority of the production, operations and drilling activity in the lower 48 States. Independents require different policies than large integrated companies. Their revenues come solely from the sale of their oil and their natural gas production. They are therefore much more susceptible to price swings and market instability.

Fourth, domestic production needs a stable climate to maintain the production levels essential to meet future demand. National crude oil policy must be committed to stability. The 1998 and 1999 price crisis has demonstrated that consequences adverse to domestic production affect both oil and natural gas. The two are inherently intertwined. Moreover, a significant factor in today's high oil and natural gas prices is the reduced capital reinvestment which resulted from that same price crisis, so the consequences apply not only to oil and gas producers but to consumers as well.

Crafting Federal policy is difficult, but some elements should be obvious to everyone. First, there is a compelling need to understand the supply and demand of crude oil on a worldwide scale. The Department of Energy Oil Data Transparency Project should be supported. This effort would improve the quality of information available to understand what is happening in the worldwide petroleum market. This could reduce the volatility of the market and provide an early warning mechanism for potential supply and de-

mand imbalances. This information should be used to develop policies that focus on improving domestic production rather than relying on criticizing OPEC and expecting foreign nations to bail the United States out during periods of tight supply. We must always strive to control our own destiny.

Second, policies need to recognize how vulnerable the domestic industry is to instability. The National Petroleum Council estimates that we need to increase investment in domestic exploration and production by $10 billion annually over the next 15 years to meet future demand. For producers, most of this will have to come from retained revenues and this is largely an issue of tax reform. Congress should enact legislation to maintain and enhance investments, such as a marginal well tax credit and other tax provisions designed to encourage exploration and production, including incentives to plow back or reinvest revenues during periods of higher prices.

We need to avoid policies that result in closures of small refineries that purchase and process domestic crude oil. This limits the markets available to independent producers for the sale of their production. We must acknowledge the importance of a strong and stable labor pool for the industry through assistance to educational institutions that are developing and rebuilding training programs. This industry lost 65,000 jobs during the most recent price crisis. About 40 percent have been recovered, but they are not the same highly skilled employees that left. Training new workers is critical to the long-term health of the industry. We also should recognize the importance of the Department of Energy's fossil energy programs designed to improve drilling, production and environmental technologies available to independent producers.

Finally, policies must address the importance of access, particularly with regard to regulatory constraints. The impact on our energy supply should be considered when new regulations, resource management plans and interagency agreements are created. Domestic oil production can be an integral part of the Nation's future energy supply. The 1998 and 1999 price crisis proved that a healthy oil industry is essential to the development of the country's natural gas resources, but because the industry competes in a world marketplace that is defined largely by the political decisions of producer nations, it is critical that our national energy policy recognizes the vulnerability of the industry and of the Nation.

With that, I will conclude my testimony, Mr. Chairman.

[The prepared statement of Stephen D. Layton follows:]

PREPARED STATEMENT OF STEVE LAYTON ON BEHALF OF THE INDEPENDENT PETROLEUM ASSOCIATION OF AMERICA AND THE NATIONAL STRIPPER WELL ASSOCIATION

Mr. Chairman, members of the committee, I am Steve Layton, Executive Vice President of Elysium Energy, LLC. of Houston, Texas, and Chairman of the Crude Oil Committee of the Independent Petroleum Association of America (IPAA). Today, I am testifying on behalf of the IPAA, the National Stripper Well Association (NSWA), and 32 cooperating state and regional oil and gas associations. These organizations represent the thousands of independent petroleum and natural gas producers that drill 85 percent of the wells drilled in the United States. This is the segment of the industry that is damaged the most by the lack of a domestic energy policy that recognizes the importance of our own national resources. NSWA represents the small business operators in the petroleum and natural gas industry, producers with "stripper" or marginal wells. These producers are the linchpins to continued development of domestic petroleum and natural gas resources.

Today's hearing addresses issues associated with crude oil and its domestic use. To fully address the role and policy issues associated with petroleum, it is important to understand how the nation's current petroleum situation occurred.

THE PETROLEUM CENTURY

Petroleum—the energy source that dominated the 20th Century—will continue to be pivotal for the foreseeable part of the 21st Century. It is the most versatile energy source available today. It is the most political of energy sources—the substance that makes countries go to war, the substance that countries must have to wage war. And yet, it is also a commodity—like sugar or pork bellies. As a commodity, it has been one of the most volatile the world has seen.

As the 20th Century began, petroleum was being found, produced, and wasted. In the US, states had to step into the production of petroleum to protect their resources. They created commissions to determine where wells could be developed and how much they could produce—forcing conservation and stabilizing the supply and price. After World War II petroleum's global nature changed the supply structure. As US demand increased and foreign supplies of petroleum became available, prices were largely defined by what refineries were willing to pay. This system worked fine for refineries but not for producers, particularly foreign producer nations that relied on petroleum sales to fund their national budgets. It led in part to the creation of the Organization of Petroleum Exporting Countries (OPEC).

By 1973 OPEC controlled enough petroleum production that if it acted collectively, it could determine whether the world had enough supply or too little; it could determine the market price. Driven by political events of the time, a band of OPEC countries found the will to restrain exports and OPEC control of prices began. Like all cartels, OPEC's strength is in solidarity and trust. By 1986 this trust was lost and OPEC members began competing for market share, driving prices to their lowest levels since the early 1970's.

Ultimately, the OPEC infighting ended and new production quotas were devised. But, at the same time, a profound change in petroleum pricing was beginning. In 1983, the New York Mercantile Exchange began to trade oil futures on its commodity market. Over time, commodity market trading would become the price maker. Petroleum prices would not be set by regulators controlling supply, by refiners stating what they would pay, or by OPEC oil ministers setting production quotas. It would be defined on the tumultuous and volatile trading floors of the NYMEX. We are seeing the consequences of this change.

1998-99: LOW OIL PRICES AND THE CRISIS THEY CREATED

In late 1997 several events combined to initiate a precipitous drop in world oil prices—events that are now defining current energy issues. First, Asian economies, which had been generating the greatest increases in petroleum demand, suffered substantial contractions—lowering their growth in petroleum use. Second, OPEC—not perceiving this situation—agreed to increase production quotas. Third, the Northern Hemisphere benefited from a mild winter—reducing its petroleum demand. Fourth, weakness in the Russian economy resulted in higher exports of Russian petroleum. Fifth, Venezuela and Saudi Arabia engaged in a market share battle that led to higher volumes of petroleum exports.

Taken together, these events triggered price drops on the commodity markets. OPEC then recognized the nature of the events and initiated production reductions, but a new factor was surreptitiously entering the arena. Iraq's petroleum production is defined by the UN sanctions program. With little notice, the UN allowed Iraq to increase the amount of production it could sell. At the beginning of 1998, Iraq exported roughly 500,000 barrels/day. By the beginning of 1999, Iraq was exporting 2.5 million barrels/day. This dramatic increase occurred while other OPEC countries were reducing production. Virtually every action to bring supply and demand back into balance was offset by Iraq increases. The commodity markets continued to drive prices down.

The consequences to petroleum production were devastating. Capital investment to develop new production and to maintain existing production was slashed throughout the world. Even the OPEC countries curtailed development projects to divert diminishing petroleum revenues to maintain their national budgetary commitments to their citizens. The effects of lost capital are twofold. First, all oil wells deplete over time. While new technology has made the discovery of oil more effective, it has also allowed oil reserves to be depleted more quickly. Some recent studies suggest that the current oil depletion rate in the Gulf of Mexico is now averaging 26 percent per year. This is dramatically higher than historic rates of 3 or 4 or 5 percent per year. Without adequate investment to maintain existing production, critical resources

were lost—many of which will never be recovered. Second, the loss of an investment year in the petroleum production business creates a critical time lag. The new production that was needed first to replace depleted resources and second to meet expanding demand was not there. IPAA warned in early 1999 that this loss of capital could produce serious production capacity limitations as early as 2000.

1999-2000: OPEC REBOUNDS, BUT THE DAMAGE IS DONE

In March 1999, OPEC countries agreed to substantial reductions in exports; Mexico, Norway and other producer countries joined in. Prices began to rebound, but so did demand. The US economy remained robust and Asian economies recovered. By year's end, prices had returned to 1997 levels, but by then the consequences of a year's lost investment began to tell. In the US, where 65,000 jobs had been lost, only 7,000 had been recovered; where the oil rig count had fallen by 331, it had increased by only 67. Internationally, the results were similar. Strapped for revenues to meet national budgets, new production was not being developed and existing production was not maintained.

Continued demand growth and reducing inventories of petroleum were leading NYMEX commodity prices still higher. In March 2000, OPEC acted again—this time to increase production. It was not an easy task. When OPEC agreed to cut production, Saudi Arabia agreed to the biggest reduction—in part to offset the increased share that Iraq had acquired. Yet, when increases were at issue, no other OPEC country wanted to give market share to the Saudis, but many countries had now lost their previous production capacity—the consequence of lost investment.

While Americans demanded that OPEC "open the spigots" and let the oil flow, the reality was that the capacity was not there except for Saudi Arabia, Kuwait, and the United Arab Emirates. In its effort to raise production in September 2000, the fundamental issue had not changed. Even after a year of high petroleum prices, new capacity is lagging because of the low prices in 1998-99. While OPEC countries, particularly Saudi Arabia talked about increasing production again if petroleum prices did not fall, Kuwait announced that it could not meet its current quota. In reality the world's excess oil production capacity was whatever production the Saudis could muster. Even then, questions remained regarding worldwide tanker capacity, the quality of the remaining oil that can be produced, and the accuracy of estimates of remaining spare capacity such as those of the International Energy Agency.

Since the end of 2000, OPEC has chosen to reduce its production targets. Publicly, these actions are based on its assessment of whether world oil demand will diminish either because of slower economic activity or because of historic seasonal demand fluctuations as spring approaches. However, it is also possible that the intense production efforts of 2000 may have stressed the facilities in these countries as it has in the United States and they require the flexibility to rehabilitate their operations. While the United States has criticized OPEC's actions, the situation reflects the tenuous nature of world oil supply following the 1998-99 oil price crisis.

And then there's Iraq. Since early 1999, IPAA has warned that UN policies were placing Iraq in a position where it could ultimately control the world price of oil and demand the end to UN sanctions. On September 19, 2000, the *Wall Street Journal* article, "Iraq Pumps Critical Oil, and Knows It" crystalized this risk.

Every six months, the UN revisits Iraqi sanctions and each time there is a tension over what Iraq will do. For all the talk of using the Strategic Petroleum Reserve to mitigate price concerns about heating oil or gasoline, perhaps the real issue will be whether the world can physically meet its petroleum needs if Saddam "closes the spigot." Then, the SPR will be needed for its true purpose—meeting a supply crisis. Clearly, the decision on releasing SPR oil in late 2000 was based on the politics of the Northeastern and Midwestern states. Its purpose was to manipulate the commodity markets that had little response to the OPEC increases. It would be far more beneficial to assure that adequate low income assistance is provided to purchase heating oil or to address better ways to shift supplies of gasoline than to risk placing our economic future in Saddam's hands in an attempt to change the commodity price of oil on the NYMEX.

A NATION DEPENDENT ON FOSSIL FUELS

National energy policy must reflect an accurate understanding of the nature and politics of world oil supply and demand. The US is the second largest petroleum producer in the world; yet, domestic production has dropped by over 10 percent—to 5.8 million barrels/day—since the 1998-99 low price crisis. To meet future natural gas demand and provide the nation with its true strategic petroleum reserve of oil—domestic production—national policies must recognize the importance of a healthy domestic exploration and production industry.

During the past three decades the United States has become more dependent on energy and more dependent on foreign energy. While there have been numerous efforts to define a national energy policy, none have been successful. Today, the world is operating with its tightest supply of petroleum and the United States is facing tight natural gas supplies. Now is the time to clearly address national energy policy and build the program that is needed to meet future demand.

Like it or not, the nation will be dependent on fossil fuels for the foreseeable future. In particular, petroleum and natural gas currently account for approximately 65 percent of the nation's energy supply—and will continue to be the significant energy source. Natural gas demand, for example, is expected to increase by more than 30 percent over the next decade.

INDEPENDENT PRODUCERS—THE LINCHPIN TO FUTURE DOMESTIC PETROLEUM AND NATURAL GAS

It is important to recognize that the domestic oil and natural gas industry has changed significantly over the last fifteen years. The oil price crisis of the mid-1980's and policy choices made then triggered an irreversible shift in the nature of the domestic industry. Independent producers of both oil and natural gas have grown in their importance, and that trend will continue. Independent producers produce 40 percent of the oil—60 percent in the lower 48 states onshore—and produce 65 percent of the natural gas. They are becoming more active in the offshore, including the deep water areas that have previously been the province of the large integrated companies. At the same time those large companies are now mainly focusing their efforts overseas, in addition to Alaska and the offshore, because they are aiming their investments to seek new and very large fields. Domestic energy policy must recognize this reality.

RECOGNIZING THE ROLE OF THE MARKET

Future energy policy should rely on market forces to the greatest degree possible. For natural gas the market is strong and active. Natural gas supply is essentially North American and overwhelmingly from two countries that rely on private ownership and the free market—the United States and Canada. Currently, exploration and development of natural gas in both countries is being aggressively pursued when the opportunities are there, and can be accessed. In the United States drilling rig counts for natural gas are running at rates that are as high as they have ever been since natural gas drilling was distinguished from petroleum. The principal constraints are finding the capital to invest, getting access to the resource base, finding competent personnel, and obtaining rigs. If the market is allowed to work, it will continue to draw effort to produce this critical resource for domestic consumption.

Oil, however, is a different situation. In making decisions regarding developing domestic petroleum resources, the nature of the world petroleum market must be recognized. Although the United States remains the second or third largest producer of petroleum, it is operating from a mature resource base that makes the cost of production higher than in competitor nations. More importantly, most other significant petroleum producing countries rely on their petroleum sales for their national incomes. For them, petroleum production is not driven by market decisions. Instead, their policies and their production is determined by government decisions. Most are members of OPEC, the Organization of Petroleum Exporting Countries. Several are countries hostile to the United States like Iraq, Libya, and Iran. Even those that are generally supportive of the United States, like Saudi Arabia and Kuwait, are susceptible to unrest from both internal and external forces.

Thus, the market price for petroleum will be largely framed by production decisions driven not by the market, but by the politics of these countries—both by internal issues and global objectives. United States domestic policy decisions must reflect this reality—looking to this factor in taking actions that can affect domestic production and producers. But, more importantly, it must recognize that a healthy domestic *oil* production industry is also essential for a healthy domestic *natural gas* industry, *because they are inherently intertwined.*

For example, the failure of the United States to recognize the need to respond to the low oil prices of 1998-99 resulted in adverse consequences for both oil and natural gas production. The nation has lost about 10 percent of its domestic oil production—most of which has been made up by imports from Iraq. And, in addition, the tight natural gas supplies this year are partially attributable to the drop in natural gas drilling in 1998-99 when oil prices were low and capital budgets for exploration and production of both oil and natural gas were slashed by producers because drilling under those conditions made no economic sense.

It is equally important to recognize that while all of these factors influence the ultimate prices of oil and natural gas, it is the commodity markets that have the final say. The role of these markets has emerged from a minor factor in the mid-1980s, when oil and natural gas trading began, to the dominant force today. While many people want to point toward OPEC or big oil, the ultimate price maker is the trading floor of the commodity markets. This has added a new volatility to oil and natural gas prices. Its impact is still poorly understood but must be considered.

However, it is clear that the market reacts to whatever information it can obtain. During the low oil prices of 1998-99 and even during the high prices of 2000, the impreciseness of this information likely created incorrect perceptions of the fundamental situation in the market. The widely held belief that there were large volumes of crude oil available that helped suppress prices in the 1998-99 time period proved incorrect. But, it also worsened the state of the industry such that productive capacity was lost. One action that has been developed to respond to this problem is the creation of an Oil Data Transparency initiative by the Department of Energy to create better information worldwide on supply and demand.

PROVIDING ACCESS TO ESSENTIAL CAPITAL

The nation must avoid making bad policy choices like it has in the past. For example, because oil and natural gas exploration and production are capital intensive and high-risk operations that must compete for capital against more lucrative investment choices, much of its capital comes from its cash flow. The federal tax code is a key factor in defining how much capital will be retained. In the late 1970's and early 1980's when oil prices were high and drilling activity was soaring, the industry was hit by the Windfall Profits Tax that pulled a net $44 billion from the industry at a time when it could have been invested in new exploration and production. In addition, in 1986, when the industry was recovering from the low oil prices of that year, the Alternative Minimum Tax (AMT) was created. The AMT sapped capital from the industry when it was desperately needed. From 1986 to 1997 (before the latest price crisis) domestic oil production dropped by 2 million barrels per day—roughly 25 percent of 1986 capacity. Thus, those tax policies stifled the industry at a time when U.S. energy demand was increasing significantly.

Instead of such counterproductive tax actions, the Administration and Congress need to enact provisions designed to (1) encourage new production, (2) maintain existing production, and (3) put a "safety net" under the most vulnerable domestic production—marginal wells. Congress has considered a mix of tax reforms that have widespread support. They include provisions to allow expensing of geological and geophysical costs and of delay rental payments that encourage new production, extending the net operating loss timeframe and revising percentage depletion that assist both new and existing production, and a countercyclical marginal well tax credit when prices fall to low levels. All of these are programs that independent producers need because their revenues are limited to their production.

Beyond these immediately needed policy changes, new tax policies must be developed to meet future demand. In 1999 the National Petroleum Council released its Natural Gas study projecting future demand growth for natural gas and identifying the challenges facing the development of adequate supply. For example, the study concludes that the wells drilled in the United States must effectively double in the next fifteen years to meet the demand increase. Capital expenditures for domestic exploration and production must increase by approximately $10 billion/year—roughly a third more than today. While these estimates are cast in the context of natural gas, the task to maintain or even enhance domestic crude oil production could be similarly stated. Generating this additional capital will be a compelling task for the industry. As the National Petroleum Council study states:

> While much of the required capital will come from reinvested cash flow, capital from outside the industry is essential to continued growth. To achieve this level of capital investment, industry must be able to compete with other investment opportunities. This poses a challenge to all sectors of the industry, many of which have historically delivered returns lower than the average reported for Standard and Poors 500 companies.

For the industry to meet future capital demands—and meet the challenges of supplying the nation's energy—it will need to increase both its reinvestment of cash flow and the use of outside capital. The role of the tax code will be significant in determining whether additional capital will be available to invest in new exploration and production in order to meet the $10 billion annual target.

There are a number of different approaches that should be considered. The AMT remains a constriction. While the AMT was modified to exclude percentage depletion from the calculation of the alternative minimum taxable income (AMTI), inde-

pendent producers remain subject to the AMT with regard to intangible drilling costs (IDCs). Specifically, if "excess intangible drilling costs" exceed 65 percent of net income from all oil and gas production, these costs are "potential preference items". AMTI cannot be reduced by more than 40 percent of the AMTI that would otherwise be determined if the producer was subject to the IDC preference. This 40 percent rule forces many independent producers—particularly smaller ones—to curtail drilling once the expenditures become subject to the AMT. Now is a time when drilling needs to increase significantly. It makes no sense for the federal tax code to be a barrier to this effort.

Some of the future focus also needs to be directed to getting more out of existing resources. For example, while the Enhanced Oil Recovery tax credit exists, it is based on technologies that are twenty or more years old. This provision should be restructured and updated.

Equally significant, policies need to address encouraging more new development. Proposals to encourage domestic exploration and production should be created. A number of concepts are already in play and need to be more fully evaluated.

For example, the Section 29 tax credit for unconventional fuels proved to be a strong inducement to developing those resources. It applies to wells drilled prior to 1993 and uphole completions thereafter. Just last July, the Federal Energy Regulatory Commission acted to reinstate its certification process to address many wells that would otherwise qualify for the Section 29 tax credit. But, the existing credit expires in 2003 and provides no incentive for current development since the qualifying wells had to have been drilled before 1993. S. 389 extends the existing credit and creates a second drilling window that also applies to heavy oil.

Fundamentally, the question facing the nation is how to marshal the capital to develop its domestic resources. To date the $10 billion annual spending increase target has not been met. At issue is how to obtain capital for domestic development. One source is the capital markets and some of this amount will come from there, but it has significant drawbacks. First, the capital markets have yet to show a strong interest in the oil and gas exploration and production industry despite the recent high prices of both commodities. Second, where the capital markets are likely to focus their attention will be on large companies. So, while some large independents may derive some of their capital from these markets, it will only be a portion and smaller independents will need to look elsewhere. Third, there is no guarantee that such capital will go into domestic production because even with regard to investment in exploration and production activities, capital must compete against other projects including international ones.

The next source of capital will be from the revenues generated by higher production and higher prices. First, the magnitude of this capital may be overstated because just as prices for oil and natural gas have increased, prices for drilling rigs and other costs are also increasing which will squeeze the capital that is available. Second, this capital will also be directed to the most promising projects, so there is no guarantee that it will be invested domestically. Third, this revenue will be significantly reduced by taxes.

The challenge, then, is to create a mechanism to direct the capital to domestic production. One such approach would be to create a "plowback" incentive that would apply to expenditures for *domestic* oil and natural gas exploration and production. This type of proposal would encourage capital formation and development of *domestic* wells provided it was immediately beneficial. Therefore, it would have to be creditable against both regular and AMT taxes and any excess available for carryback and carryforward. It would address the compelling need to improve natural gas supply as well as reduce the growing dependency on foreign oil. It must, in fact, apply to both oil and natural gas because they are inherently intertwined—often found together. Moreover, because of their inherent link, a healthy domestic natural gas exploration and production industry cannot exist without a healthy comparable oil industry.

PROVIDING ACCESS TO THE NATURAL RESOURCE BASE

National energy policy must also recognize the importance accessing the natural resource base. While this issue has been addressed extensively for natural gas in other hearings, its importance should not be underestimated. Crude oil production is also significant on government controlled lands and has to confront the same permitting problems and access constraints. The Arctic National Wildlife Refuge (ANWR) has been the focal of access discussions and its reserves are largely oil. The Department of Energy recently released a comprehensive report, *Environmental Benefits of Advanced Oil and Gas Exploration and Production Technology,* dem-

onstrating that the technology for development of resources in sensitive environments is available. And, it is being employed, when exploration is allowed.

Without policy changes, the nation may not be able to meet its needs. Currently, much of the offshore is off limits to development because of moratoria that are based on technologies that have been replaced decades ago. The rationale for these moratoria is outdated and inaccurate; *there must be a reassessment of these decisions in the context of today's technology and tomorrow's needs.*

Even in those offshore areas of the Gulf of Mexico that are open for development, the federal policies that determine royalties will also significantly define the extent to which development will occur. For example, over the past half-decade, Gulf of Mexico development has soared, partly because of the Deep Water Royalty Relief Act that specified how royalties would be determined for a set time period. This allowed producers to plan their investments better. However, the Deep Water Royalty Relief Act was largely used by large integrated companies and its specific provisions expired in 2000. Now, as independent producers are also seeking deep water opportunities, the planning window is narrow and the policies are less certain. On the Outer Continental Shelf, marginal properties remain that could be developed if the royalty policies were right. All of these issues need to be addressed with the full understanding that independent producers will be increasingly willing to develop these areas as large integrated companies look toward the Ultra-deep Water and overseas for the large fields that they need to find.

Onshore, an inventory of resources is underway. It is an important first step. But, it is equally important to understand that access to these resources is limited by more than just moratoria. The constraints differ. Monument and wilderness designations prohibit access to some areas. Regulations like the Forest Service roadless policy and prohibitions in the Lewis and Clark National Forest are equally absolute.

At the same time the permitting process to explore and develop resources often works to effectively prohibit access. These constraints range from federal agencies delaying permits while revising environmental impact statements to habitat management plans overlaying one another thereby prohibiting activity to unreasonable permit requirements that prevent production. There is no single solution to these constraints. What is required is a commitment to assure that government actions are developed with a full recognition of the consequences to natural gas and other energy supplies. IPAA believes that all federal decisions—new regulations, regulatory guidance, Environmental Impact Statements, federal land management plans—should identify, at the outset, the implications of the action on energy supply and these implications should be clear to the decision maker. Such an approach does not alter the mandates of the underlying law that is compelling the federal action, but it would likely result in developing options that would minimize the adverse energy consequences.

THE OTHER CHALLENGES TO DOMESTIC CRUDE OIL PRODUCTION

Any realistic future energy policy will take time. There is no simple solution. The popular call for OPEC to "open the spigots" failed to recognize how serious crude oil production has been constrained by the low oil prices of 1998-99. While the producing industry lost 65,000 jobs in 1998-99, only about 40 percent of those losses have been recovered and they are not the same skilled workers. If measured by experience level, the employment recovery is far below the numbers. Less obvious, but equally significant, during the low price crisis equipment was cannibalized to keep operating and support industries were devastated. Even now, while natural gas drilling rig use has reached record levels, oil rig counts are only about 60 percent of their 1997 level. It will take time to develop the infrastructure again to build new drilling rigs and provide the skilled services that are necessary to rejuvenate the industry. For example, a number of Texas and New Mexico community/junior colleges are recreating programs to train rig workers—programs that were shut down during the price crisis. This is an area where federal assistance could improve the success of the programs and speed their efforts.

There are longer term issues that must be fully understood as they affect domestic crude oil production. Some of these have been suppressed as the industry has had to respond first to the low oil prices and then to rebuild itself as prices increased and supply tightened. For example, domestic refining capacity has shifted during the past decade or so. Many of the smaller refineries scattered throughout the middle part of the country have shut down due to increased capital requirements—in part compelled by the requirements of the Clean Air Act. These refineries were purchasers of domestic crude and as they close down, this affects where domestic crude can be sent and its economics. Similarly, pipelines that once took crude oil to refineries are being reconfigured to take product from these refineries. This

both eliminates a domestic crude oil market and may affect the regional market of another refinery that is purchasing local crude. The consequence may be to create a preference for foreign crude over domestic. Similarly, crude oil pipelines connecting to Canada can adversely affect domestic production in northern states and those supplying midwest refineries.

The interrelationships between energy sources can also have adverse effects. For example, California heavy crude oil production is confronted with its own problems resulting from high natural gas prices. Because this production requires special treatment to heat it, natural gas is used to generate steam for injection. However, with natural gas prices at current high levels operating costs are so high that production is being shut in and may be lost. High electricity costs can have the same effect. Electricity is one of key operating costs for crude oil production. Particularly for marginal wells, high electricity costs can take away the profitability of a well and force it to shut down.

CONCLUSION

The challenges facing domestic crude oil are diverse and complicated. Because crude oil is a world market, supply is not determined by pure market forces—it can be defined by political decisions. Moreover, the commodity markets then add greater uncertainty. These dynamics taken together with the high marginal costs associated with domestic crude oil production create an uncertain investment atmosphere.

Overall, attracting capital to fund domestic production under these circumstances will be a continuing challenge. This industry will be competing against other industries offering higher returns for lower risks or even against lower cost foreign energy investment options. The slower the flow of capital, the longer it will take to rebuild and expand the domestic industry. Providing access to the resource base will be critical and requires making some new policy choices with regard to federal land use. Rebuilding the domestic infrastructure is essential but difficult in the near term. Longer term a stable policy structure is critical.

Domestic crude oil production remains an important national security issue. Maintaining or enhancing domestic production is an important national objective. The failure to have clear policies has resulted in two significant adverse events—the 1986 low price crisis that ultimately led to the loss of 2 million barrels per day of domestic production and the 1998-99 low price crisis where the consequences are still being determined.

It is time for this country to take its energy supply issues seriously and develop a sound future policy. Certainly, there is room in such a policy for sound energy conservation measures and protection of the environment. But, energy production—particularly petroleum and natural gas—is an essential component that must be included and addressed *at once.* Independent producers will be a key factor, and the industry stands ready to accomplish this component, if policy reflects that reality.

Mr. BARTON. Thank you, Mr. Layton, we appreciate your testimony.

We now want to hear from Mr. Gregory King, who is Vice President and Chief Operating Officer of Valero Energy Corporation in San Antonio, Texas. We welcome you, sir. Your statement is in the record in its entirety. We would ask you to summarize it in 6 minutes.

STATEMENT OF GREGORY C. KING

Mr. KING. Chairman Barton, Congressman Boucher and members of the subcommittee, thank you for this opportunity to testify regarding the national energy policy and its relationship to the U.S. refining industry.

My name is Greg King, and I am Executive Vice President and Chief Operating Officer of Valero Energy Corporation. Valero is now the largest independent refiner in the United States, with refineries on the East Coast, West Coast and the Gulf Coast. We now have a combined throughput capacity of 1 million barrels a day.

I am also here on behalf of the Natural Petrochemical and Refiners Association, which represents 98 percent of the refining capacity in the United States. President Bush recently remarked that

tightness in gasoline supplies and volatility in price are directly related to the fact that we don't have enough refining capacity. He further observed that we haven't built a refinery in America in 25 years. We couldn't agree more. Over the past two decades, domestic refining capacity has fallen from 17.9 to 16.5 million barrels a day, or a 9 percent decline, while gasoline demand has increased 20 percent since 1984. We have gone from 315 refineries to 152 refineries in the last 20 years. The U.S. is more dependent on imported products than any time in our history.

Now, it is not easy to isolate a single cause for the shortage we face in domestic refining capacity. We do know that the regulatory burdens faced by the industry certainly don't help. Refiners face near simultaneous implementation of significant reductions in sulfur for both gasoline and diesel fuel and perhaps limitations on the use of clean fuel additives such as MTBE. At the same time, the U.S. EPA has made it increasingly difficult for refiners to expand capacity based upon novel and restrictive interpretations of the New Source Review Program. The first challenge for policymakers is to avoid making the situation worse. Precipitous action to ban MTBE would be problematic from an environmental and a supply perspective.

This January, DOE's Office of Policy noted that eliminating MTBE would effectively reduce the domestic supply of gasoline by 550,000 barrels a day, or about 6.8 percent of our current capacity. Now, in our view MTBE concerns should be directly addressed through programs to detect and fix leaking underground storage tanks and through effective remediation programs. As I know the chairman would not follow California's path on electricity deregulation, I urge the committee and Congress not to follow California's lead to ban MTBE.

Some have further suggested that mandating a certain amount of ethanol could boost supply. Actions like this tend only to compound problems, not alleviate them. Based on our review at our refinery out in Benicia, California, an MTBE ban coupled with an ethanol blending would reduce the production volume of gasoline at our facility alone by 8 percent. We think that is indicative of what would happen in the rest of the State. Even some proponents of the MTBE ban in California now admit that California cannot turn to ethanol without substantial price increases and supply disruptions.

Another challenge that we face as an industry is the continuing difficulties with the so-called Unocal patent. As many of you know, Unocal participated in regulatory deregulation proceedings in California and then successfully patented the results of this joint exercise. Unless some legislative relief is found from this situation, supplies of clean gasoline will be made more costly. Suffice it to say, the imbalance between refining capacity, supply and demand did not emerge overnight and it won't be solved overnight, either.

However, concrete steps to address refining issues should include the following: First, address the cumulative effects of regulations. When the EPA, DOE and the Office of Management and Budget conduct their reviews of each regulation, the cumulative impact of regulations on supply, distribution and costs should be fully considered before taking action.

Second, do not change the rules of the game in the middle of the game. Retroactive reinterpretation of regulatory programs wastes scarce capital resources. Congress should consider enacting measures that compensate impacted parties when the reversal of Federal regulations strand business with useless equipment that was built specifically to comply with Federal law.

Third, reform the permitting process in order to facilitate capacity expansion and maintenance. By questioning State permitting decisions and policy over the past 20 years, EPA will only further slow down the permitting process and divert State resources toward reviewing past decisions. This is inappropriate at a time when it is critical that State permitting authorities and refiners work together.

Finally, consider tax incentives to encourage environmental improvements. Valero alone spends over $100 million a year in environmental compliance expenditures. But the real cost of environmental standards is lost international competitiveness for U.S. refiners. Although by no means a complete solution, the Congress should consider some combination of tax credits for environmental compliance or at least enhanced depreciation for such investments.

President Bush recently remarked that the solution for our energy shortage requires long-term thinking and a plan that will take time to bring to fruition. We agree. Any successful plan must take into account the current state of the U.S. refining industry.

Thank you very much for this opportunity to testify.

[The prepared statement of Gregory C. King follows:]

PREPARED STATEMENT OF GREGORY C. KING, EXECUTIVE VICE PRESIDENT AND CHIEF OPERATING OFFICER, VALERO ENERGY CORPORATION

Chairman Barton, Congressman Boucher, and Members of the Subcommittee, thank you for this opportunity to testify regarding the implications of a National Energy Policy on Crude Oil and Refined Petroleum Products. My name is Greg King, and I am Executive Vice President and Chief Operating Officer of Valero Energy Corporation.

Valero is a Fortune 500 company based in San Antonio, with over 3,000 employees. The company currently owns and operates six refineries in Texas, California, Louisiana and New Jersey with a combined throughput capacity of approximately one million barrels per day, making it the nation's largest independent refining company. Valero is recognized throughout the industry as a leader in the production of premium, environmentally clean products such as reformulated gasoline, CARB Phase II gasoline, low-sulfur diesel and oxygenates. The company markets its products in 34 states through an extensive wholesale bulk and rack marketing network, and in California through approximately 85 Valero branded retail and 270 other retail distributor locations.

Valero is a member of the National Petrochemical and Refiners Association, and is pleased to appear on NPRA's behalf today. NPRA's membership includes virtually all U.S. refiners, as well as petrochemical manufacturers using processes similar to refineries. Its members own and/or operate almost 98 percent of U.S. refining capacity. NPRA includes not only the larger companies, but also many small and independent companies.

Valero is proud of its record of environmental achievement, which goes beyond its commitment to produce cleaner-burning fuels and additives. Investing millions of dollars in pollution prevention and waste minimization, Valero was the first petroleum refiner ever to receive the prestigious Texas Governor's Award for Environmental Excellence and was recognized during the Clean Air Celebration for its "outstanding environmental stewardship and leadership."

CURRENT STATE OF THE REFINING INDUSTRY

The United States has long recognized the importance of domestic refining to its economy. Many people in various states across the country have found high-paying

jobs in the refining sector, and the energy sector plays a vital role in the gross domestic product of the U.S.

Unfortunately, the refining capacity of the United States has been in a continual decline for a number of years. In the past twenty years, the number of domestic refineries dropped from a high of 315 to only 152, a 48% decrease. During the same period, domestic refining capacity fell from 17.9 to 16.5 million barrels per day, a 9% decline, while gasoline demand increased 20% since 1984.

While refiners have historically been able to meet consumer demand by simply expanding capacity, U.S. utilization is currently at virtual capacity so there's not much room to increase production. Utilization rates hit a high of 97% last summer and were as high as 94% in December. Expansion of existing capacity has been constrained by permitting challenges, raising questions about our industry's ability to meet future demand domestically.

To compound the problem, the one thing that all of the new environmental regulations have in common is that they reduce supply. And, to make matters worse, refiners must direct much of their capital investments to meet environmental regulations so there is less capital available for much-needed expansion projects. In fact, increasingly stringent environmental regulations, often adopted in piecemeal fashion, have created operational constraints and have sharply curtailed the flexibility of refiners to expand. Over the course of the last decade, the National Petroleum Council estimated that total investments to comply with the Clean Air Act Amendments in the refining sector exceeded the total book value of the refineries brought into compliance by $6 billion dollars. Things are even worse today. Refiners face near simultaneous implementation of reductions in gasoline sulfur and air toxic constituents, changes to diesel fuel to reduce sulfur to ultra-low levels, and, perhaps, limitations on the use of clean-fuel additives like MTBE. At the same time, the U.S. Environmental Protection Agency has made it increasingly difficult for refiners to expand capacity based upon novel and restrictive interpretations of the New Source Review (NSR) program.

Of course, the Clean Air Act is just one piece of the puzzle. A regulatory blizzard swirls around the U.S. refining industry. We have included a more comprehensive list of the real and potential federal regulatory burdens that can interfere with an adequate supply of refined product. See Appendix I. In addition, individual state actions (e.g., NAAQS implementation, California, New York and Connecticut bans on MTBE) will further jeopardize fuel supplies.

Unfortunately, the conditions that have caused our current stretched capacity in refining are not likely to resolve themselves in the near future without careful planning and a balanced energy policy that takes refining issues into account. Indeed, as we enter the summer driving season, refiners will struggle to make up inventory deficits created by the need to produce more home heating oil this past winter. Also, unusually high natural gas prices last winter directed natural gas into direct usage and away from feedstock usage. As a result, less MTBE and alkylate were made, thus further depriving the summer driving season of some of its usual cushion in gasoline inventories. The tight market for MTBE is already fueling predictions of another summer of high gasoline prices. According to the Energy Information Administration, MTBE inventories in February were down 22.4% from a year ago and MTBE production declined by 9.2% from the year-ago level. This decline has contributed to lower production of RFG at a time when demand for RFG continues to grow. This problem could be exacerbated by the unreliability of electricity supply in California, which could result in power outages that force refiners and pipelines to shut down.

Therefore, American consumers may see an increase in prices at the pump this summer. As *USA Today* reported earlier this month, gasoline prices might exceed $2.50 per gallon in some areas. Tightness in capacity is much of the problem: even as EPA eased the clean air restrictions on ethanol use for Milwaukee and Chicago, one Midwest refinery announced that it would be unable to meet regulatory constraints and therefore will close down. Loss of one refinery may reduce Midwest supply by as much as 9%—eliminating the potential gains that might have resulted from EPA's actions. *See USA Today,* March 9, 2001, at 3B.

After his first briefing with the National Energy Policy Task Force, President Bush recognized the dire situation with refining capacity and its direct relationship to high prices at the pump. The President stated on March 19 that: "it's important for American consumers to understand that if we have a price spike in refined product, it's not going to be because of the price of crude oil being $25 or $26 a barrel; it's going to be because we don't have enough refining capacity." He concluded: "We think that the major impact on gasoline prices, if they go up, is a result of not generating . . . enough refined product to meet the demand of U.S. drivers. And we haven't built a refinery in 25 years in America." We concur with the President's as-

sessment and believe that a key component of any National Energy Policy must create an environment that enables domestic refiners to invest in and increase our nation's refining capacity. Such an environment can only be created if an appropriate amount of consideration is given to the supply/demand impact of future regulations.

MTBE

One challenge for policy makers is to avoid making the situation worse. Precipitous action to eliminate the fuel additive MTBE that has been detected in ground and surface water would be problematic from an environmental, energy price and supply perspective.

In a January 2001 presentation, authors from DOE's Office of Policy and the Oak Ridge National Laboratory reminded us that an MTBE ban is equivalent to a loss of 300,000 barrels per day of premium blendstock. Since MTBE is an exceptionally clean burning, high-octane gasoline additive, it allows refiners to extend the gasoline pool by bringing in lower octane components. Eliminating MTBE would effectively reduce the domestic gasoline supply by 550,000 barrels a day or roughly 6.8% of the total daily consumption of gasoline. The severe energy and environmental consequences of proceeding in this fashion will further increase our dependency on imports.

Banning MTBE does not address the potential problem of MTBE in groundwater. The fact remains that MTBE is most often detected in groundwater as a result of gasoline leaking from underground storage tanks. Assessments of MTBE were made prior to implementation of the current Underground Storage Tank regulations. As more data is developed—including data from California—the percentage rate of MTBE detections seems to be declining. With regard to surface water concerns, a recent report confirmed that a water-quality sampling project completed in 46 Texas Lakes on behalf of the U.S. Geological Survey concluded that, "health concerns about MTBE in water is not a factor."

MTBE concerns can be directly addressed through programs to detect and fix leaking underground storage tanks and through effective remediation programs. As I know the Chairman would not follow California's path on electricity deregulation, I urge the Committee and Congress not to follow California's lead with a ban on MTBE.

Ethanol Mandate

Some in Congress and elsewhere have further suggested that mandating a certain amount of ethanol usage could boost supply. Actions like this tend only to compound problems, not alleviate them. While the current fuel market includes a healthy share for ethanol, further mandates are likely to be counterproductive. An ethanol mandate will make it harder for refiners to provide cleaner fuels to consumers at acceptable prices. Due to ethanol's high blending vapor pressure, pentanes are backed out of the gasoline pool, further decreasing supply. An ethanol mandate will hinder refiners' ability to optimize the quality and volume of cleaner-burning gasoline. This will increase refining costs, and negatively impact both gasoline supplies and price. According to the California Energy Commission, the costs of substituting ethanol-blended gasoline in that state could increase refining costs by up to 7 cents per gallon. Based on our review at the Valero Benicia Refinery, an MTBE ban, coupled with ethanol blending reduces production volume by 8%.

UNOCAL

Another challenge that could complicate the picture is the continuing difficulties with the so-called Unocal patent. As many of you know, Unocal participated in regulatory negotiation proceedings in California and then successfully patented the results of this joint exercise. Recently, the U.S. Supreme Court decided not to hear an appeal of the patent, thus leaving refiners the choice of paying a large licensing fee to Unocal (on the order of 5.75 cents per gallon), or "blending around" the patent (also a very costly alternative). In addition, refiners face four more patents that further severely limit our flexibility. Unless some relief is found from this situation, supplies of clean, reformulated gasoline will be made more costly in the near term. And, we should recall that last summer the Congressional Research Service listed the on-going controversy regarding the Unocal patent as a contributing factor in last summer's high fuel prices.

HOW DO WE FIX THE PROBLEM WITH REFINING?

Suffice it to say, the imbalance between refining capacity, supply and demand did not emerge overnight, and it won't be solved overnight. The domestic refining industry finds itself in the same position as the domestic oil and gas producers of twenty years ago. Without proper attention to the role of the domestic refiner in shaping

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energy policy, you will see the nation's dependence on imported petroleum products increase. The current Administration and the Congress are off on the right foot: they are cooperatively working toward a national energy policy that will include some consideration of refining issues and appropriate legislative and executive action.

We strongly recommend you keep refining issues in mind as you fashion legislative responses to our current energy situation. In particular, remember that a diversity of refining capacity that includes robust participation by domestic independent refiners is critical to produce a system capable of meeting the economic, environmental and security demands of the United States.

Additional concrete steps to address refining issues should include the following:

- **Address the cumulative impact of regulations.** There is a tendency to view each regulation imposed upon refining in a vacuum, particularly when measuring primary and secondary economic impacts. However, as we observed above, the plain fact is that the refining sector has numerous, overlapping regulations. Most recently, compliance deadlines have come one on top of another. When EPA, DOE and the Office of Management and Budget conducts their reviews of each regulation, the cumulative impact of regulations on the supply, distribution, and cost on transportation fuels should be fully considered before taking action.
- **Ensure thorough review of regulations.** Preparation of an Energy Impact Statement for major rules could help ensure that energy supply impacts are fully understood and balanced with environmental goals. Proper use of cost-benefit analysis to ensure cost-effectiveness of regulations is another essential tool.
- **Do not change the rules in the middle of the game.** Retroactive reinterpretation of regulatory programs such as EPA's NSR enforcement activities constitute rulemaking without due process and opportunity for comment. Also, changes in requirements that negate good faith compliance investments waste scarce capital resources that are much needed for other projects such as refining capacity expansions. To deter unwise government intervention, Congress should also consider enacting measures which compensate impacted parties when the reversal of federal rule or regulations strand business with useless equipment which was built specifically to comply with federal law.
- **Reform the permitting and New Source Review processes in order to facilitate capacity expansion and maintenance.** By questioning state permitting decisions and policy over the past 20 years, EPA will only further slow down the permitting process and divert state resources towards reviewing past decisions. This is inappropriate at a time when it is critical that state permitting authorities and refiners work together to expedite the permitting processes for important upcoming environmental regulations, such as the Tier II gasoline sulfur reduction requirements. We believe that any real reform must address both substantive and procedural issues. Real reform should ensure that NSR applies only if emissions actually increase significantly. The current system of perpetual exposure to NSR cannot be defended; and
- **Consider tax incentives to encourage environmental improvements.** The costs associated with environmental compliance often make the difference between a competitive refinery operating in the U.S., and one that closes. Valero alone spends on the order of $100 million per year in environmental compliance expenditures. The real cost of these environmental standards is lost international competitiveness for U.S. refiners. The Office of Technology Assessment has found that the cost to the domestic refining industry for pollution abatement is substantial and is higher than for most other industries. API has calculated that petroleum refining could account for a disproportionate 17% of the national environmental expenditure in the year 2000. Although by no means a complete solution, the Congress could consider some combination of tax credits for environmental compliance or enhanced depreciation for such investments.

CONCLUSION

While these responses to current refining difficulties are by no means comprehensive, they represent a start. President Bush recently remarked that, "the solution for our energy shortage requires long-term thinking and a plan that we'll implement that will take time to bring to fruition." At Valero, we couldn't agree more. However, any plan, in order to succeed in providing the American consumer with reliable and affordable motor fuel supplies, must take into account the current state of the US refining industry and of our product distribution infrastructure.

Thank you very much for this opportunity to testify.

APPENDIX ONE: OVERLAPPING FEDERAL REGULATORY REQUIREMENTS

Tier II Gasoline Sulfur—In December 1999, EPA announced a final rule to provide new Tier II motor vehicle emission and gasoline sulfur standards. The Tier II standards adopt stricter tailpipe emission standards for motor vehicles beginning in model year 2004 and phase in over a ten-year period for larger models, such as sports utility vehicles. The gasoline sulfur standard is a national annual average standard set at 30 parts per million, a 90 percent reduction over current national levels. The new sulfur standard would be phased in beginning in 2004 and must be met by 2006.

California MTBE Phase-out—In March 1999, Governor Davis of California issued an Executive Order to phase out the use of MTBE in California no later than December 31, 2002. In December 1999, CARB adopted gasoline standards without using MTBE. The Governor also petitioned EPA to waive the 2% oxygen content mandate for federal RFG in the state.

Regional Haze—In July 1999, EPA promulgated a final rule requiring states to establish goals for improving visibility in 156 national parks and wilderness areas. States will develop strategies and plans for reducing emissions of air pollutants that contribute to poor visibility in these areas. These plans will likely include controls to reduce emissions of fine particulates, $PM_{2.5}$. Fine particulates are emitted by mobile and stationary sources. The schedule for states submitting SIPs is uncertain because the regional haze program is linked with the new NAAQS $PM_{2.5}$ SIP process, which was invalidated by the courts.

Off-Road and On-Road Diesel Fuel—In December 2000, EPA released a final rule for highway diesel fuel that includes a 15 ppm sulfur cap effective in 2006. EPA is expected to issue a proposal controlling the sulfur content of off-road diesel fuel.

Gasoline Air Toxics—In December 2000, the Agency promulgated a restrictive mobile source air toxics standard for gasoline effective in 2002.

Refinery MACT II—In September 1998, EPA proposed National Emission Standards for Hazardous Air Pollutants from Petroleum Refinery Vents. This rulemaking, refinery MACT II, covers emissions from the catalytic cracker, catalytic reformer, and sulfur plants.

Section 126 Petitions—In August 1997, eight northeastern states filed Section 126 petitions. The Clean Air Act gives a state the authority to petition EPA to set emission limits for specific sources of pollution in other states that contribute to its ozone nonattainment problems. In December 1999, EPA granted four of the petitions filed by the states of Connecticut, Massachusetts, New York, and Pennsylvania. The granting of these petitions would require 392 facilities to reduce NO_X emissions. Refineries and petrochemical plants are on the list of affected facilities. There is litigation challenging these petitions pending action in the US Court of Appeals for the D.C. Circuit. These petitions were originally conceived as a "backstop" for EPA's NO_X SIP call which also was the subject of legal challenge. The US Supreme Court recently upheld EPA's authority regarding the NO_X SIP call which will likely make that the main approach for further controls in this area.

New Source Review Enforcement Initiative—EPA's Office of Enforcement has said it will target enforcement actions against refineries for alleged noncompliance with the New Source Review program, based for the most part on a new interpretation of what constitutes a modification triggering NSR permitting requirements. EPA has filed actions against the paper and utility industries seeking the highest penalties under the Clean Air Act. The NSR regulations were issued in 1980 and supplemented by seven volumes of guidance documents and altered over the years by informal policy in letters, memoranda, and other documents outside of the public notice and comment process.

Climate Change—The U.S. signed the Kyoto Protocol on November 12, 1998. in this as yet unratified treaty, the U.S. agreed to a 7 percent reduction in greenhouse gas emissions from 1990 levels between 2008—2012. According to some analysts, this 7 percent reduction could translate into a 40 percent reduction in fossil fuel use. Fossil fuel production, including gasoline manufacture would be affected.

Residual Risk—Under Section 112 of the Clean Air Act, EPA is required to assess the residual risk posed to public health and environment after implementing technology-based MACT (maximum achievable control technology) standards for major industrial sources emitting toxic air pollutants. Refineries and petrochemical plants are currently subject to several MACT standards. After this assessment, EPA may promulgate additional regulations and require additional emission reductions for these sources.

Urban Air Toxics Strategy—In July 1999, EPA released its Integrated Urban Air Toxics Strategy to provide a framework for reducing air emissions and health risks from toxic air pollution in urban areas. EPA identified 33 toxic air pollutants

as posing the highest risks and targeted 13 new area sources (smaller industrial and commercial facilities) for new national standards. Gasoline distribution and oil and natural gas production facilities are on the list. The Agency released a Report to Congress, dated July 2000, that summarized actions to reduce public health risks and listed research needs.

Mr. BARTON. Thank you, sir. We do appreciate you flying up from San Antonio.

We now want to hear from Mr. Peter D'Arco, the President of SJ fuel in Brooklyn, New York. You have testified before this subcommittee before and done an excellent job. I am sure you are going to do the same today. Your testimony is in the record. We would ask you to summarize it in 6 minutes.

Welcome back to the subcommittee.

STATEMENT OF PETER D'ARCO

Mr. D'ARCO. Good morning, Mr. Chairman and committee members. I am Pete D'Arco, Vice President of SJ fuel. I appreciate the opportunity to discuss the petroleum industry today. I would like to review the state of the oil heat industry and the progress that has been made since last year. I would also like to discuss the motor fuels industry and the recently finalized rules affecting diesel. In particular, I would like to encourage you and the committee to closely examine the rule recently issued by the Environmental Protection Agency to lower the sulfur in diesel fuel.

Prior to the start of the winter, many said that distillate prices would spike or we would run out of product because inventories of distillate were below normal. However, the free market that I represent did many things to avoid a problem. First, many interruptible consumers of natural gas entered into supply contracts. Additionally, many residential consumers entered into contracts for supply while others merely transferred their business to dependable vendors. What we have seen is an industry that has responded to a winter that is colder than normal since the winter of 1993-1994. Last year the winter was 10 percent warmer than normal and this year the winter in many areas is 5 percent colder than normal for a swing of 15 percent.

Additionally, record prices for gas led many interruptible consumers to switch to heating oil for generating electricity and heat. Thus, the demand for heating oil is much higher this winter than last but the market has worked to avert problems. In fact, the Department of Energy has seen prices in New York fall nearly 15 cents a gallon since the beginning of this year. There has been no concern about supply, and our customers are pleased that they are not tied to utility pricing and product is being delivered consistently.

This success story is in sharp contrast to the continuing and persistent problems now confronting the natural gas and electricity industries. While I am not an expert in either area, it is apparent that at the residential level in California, there are only one or two suppliers and that the grid is controlled by a single entity. This limited and controlled competition has been proven to be incapable of matching a competitive field.

In focusing on our success compared to the utility problems in California, we believe the Congress must recognize some of the unique attributes of oil markets that can give it a competitive edge.

Since oil is easy to transport, it is an international product. Instead of perceiving this to be a problem, we should recognize it as a competitive advantage. Can you imagine where natural gas prices would be today if everyone in the Northeast relied on natural gas for heating?

With respect to the motor fuel industries, for nearly a year the United States had significant problems with distribution and supply of refined products. Unfortunately, the Environmental Protection Agency has issued a rule that will impact distribution at every level. In 1990, the country used essentially two distillates. No. 2 distillate was used for home heating oil, truck diesel and off-road equipment diesel. Kerosene, our No. 1 distillate, was used as a jet fuel, for inner city buses and a blend stock for diesel and heating oil in the winter months. Today, due to congressional and environmental initiatives, there are six fuels. The Environmental Protection Agency rule further divides the on-the-road fuel into a 500 parts per million fuel and a 15 parts per million fuel. However, we are not merely adding one fuel. It is conceivable that we are adding two new products for a grand total of eight when the tax status is considered.

PMAA is concerned with adding new fuels and thus supports a more rational approach to the rulemaking now being considered. The new rule will require the new 15 parts per million fuel for new trucks and older trucks can continue to use the older diesel at 500 parts per million. There is no harm in an old truck using a new fuel and there are some environmental advantages. However, the rule that EPA has issued will create confusion in the marketplace, lead to difficult enforcement issues and stress our distribution system.

We would note that the transitional program proposed by EPA is similar to that of the leaded-unleaded transition that occurred in the seventies. EPA found a 17 to 20 percent noncompliance with the rule. The leaded-unleaded program was the last transitional program. Apparently for 20 years we remembered this problem and avoided it. Unfortunately, diesel phase-in is likely to repeat that same problem, disrupting the distribution system and at the same time hampering the smooth implementation of this important environmental program. PMAA is thus encouraging Congress to override EPA and transition the fuel at a single point in time.

Thank you, Mr. Chairman, for the opportunity to testify.

[The prepared statement of Peter D'Arco follows:]

PREPARED STATEMENT OF PETER D'ARCO, SJ FUEL, ON BEHALF OF THE PETROLEUM MARKETERS ASSOCIATION OF AMERICA

Good Morning Mr. Chairman, and committee members. I am Peter D'Arco and I am the President of SJ Fuels. We are a third generation company located in Brooklyn, New York and deliver fuel to nearly 5000 locations. I am here on behalf of the Petroleum Marketers Association of America. PMAA represents 7,800 petroleum marketers. These marketers ell 40 percent of the gasoline, 50 percent of the diesel and nearly 75 percent of the heating oil distributed in the United States.

As the country reflects on the last year's energy issues, I welcome the opportunity to discuss the status of the refined petroleum products industry with you. It has been six months since I testified before this Committee and I applaud you for holding another hearing. As you know, Mr. Chairman developing natural resources is a long term proposition and what we do today will have an impact on America's energy future ten and twenty years from now. However, the core of any energy strategy must continue to be the free market'

Today, I would like to review the state of the oilheat industry, and the progress that has been made since last year. I would also like to discuss the future of the motor fuels industry, and the recently finalized rules affecting both gasoline and diesel. In particular, I would like to encourage you and the committee to closely examine the rule recently issued by the Environmental Protection Agency (EPA) to lower the sulfur in diesel fuel.

First, I would like to update the committee on the heating oil industry. Last year, its ability to respond and its resilience was questioned as prices rose sharply when the weather became extremely cold in the winter. The problems related to unusual weather patterns that caused transportation problems, and refinery problems. However, as you know our company as well as thousands of other businesses both large and small responded. Refineries increased production, wholesalers searched the globe for product, and marketers like myself staggered deliveries to ensure all customers had product at all times. I would like to contrast that behavior with what has occurred in California where monopolies or semi-monopolistic utilities unilaterally decided to cease distribution of electricity to selected communities. Now, the state of California is subsidizing electricity purchases on a daily basis, and has just imposed a massive rate increase

That stands in sharp contrast to the industry I represent. Last winter forced many firms from the business, others sold out at the end of the year. However, at no time did the federal or state government begin to pay their bills. In fact many of the energy experts predicted a similar debacle this year. There was an obsessive focus on inventories, and the fact that they were below normal.

Many said that prices would spike or we would run out of product because these inventories of distillate were below normal. However, the free market that I represent did many things to avoid a problem. First, many interruptible consumers of natural gas entered into contracts for supply. Additionally, many residential consumers entered into contracts for supply, while others merely transferred their business to dependable vendors. And what we have seen is an industry that has responded to a winter that is colder than normal for the first time since 1993 and 1994. Last year, the winter was 10 percent warmer than normal, and this year the winter in many areas is 5 percent colder than normal, for a total swing of 15 percent. Additionally, record prices for gas led many interruptible consumers to switch to heating oil for generating electricity and heat. The market responded by searching internationally for product, and in January, imports of distillate into the northeast were 2.5 times higher than normal.

As a result we have seen level and declining prices in many markets. According to the Department of Energy prices in New York have fallen nearly 15 cents since the beginning of the year. There has been no concern about supply and our customers are pleased that they are not tied to utility pricing, and product is being delivered consistently. For my industry, failing to deliver product to a customer is the same as losing the customer. As I said last spring we will do anything necessary to get supply to customers, and since I am a customer to my supplier, he will do the same.

The one lesson that we must take from this is that the free market works. Particularly when there are competitors to force competition.

PMAA believes that as the Congress considers establishing a new energy strategy, how to ensure that markets have multiple competitors must be the guiding principle. Congress must work to have competitors in the various energy fields, in oil at every level, in natural gas at every level, and in electricity at every level. Further, attempting to encourage one of these sectors to be dominant will necessarily be harmful. We are dismayed by many proposals now circulating which could encourage consumption of natural gas or electricity. We believe consumer choice will lead to people selecting the best fuel for their use, and the best fuel for the future, tilting the playing field will always decrease competition, and thus should be avoided.

Flexibility comes from competition, as competitors adapt to changed circumstance. And as you know each winter is different, each year competition is more intense. As the heating oil industry demonstrated this year, many wholesalers searched worldwide for product. Brokers distributed the product between markets. Refiners worked round the clock to increase production. Finally the ability of oil to be stored at every level, from homeowner to refiner allowed the industry to distribute the product efficiently. Similarly, the final customer was able to time his or her purchases, how much they should store who should they buy from and what type of contract they should enter into with their supplier. And as every business knows, the best discipline for a market is a customer, and the competitors I described are each customers of each other, and they are always trying to get the best value and deliver the best product to the ultimate consumer.

This is in sharp contrast to the continuing and persistent problems now confronting the natural gas and electricity industry. While I am not an expert in either area, it is apparent that at the residential level in California there are only one or two suppliers, and that the grid is controlled by a single entity. This limited and controlled competition has been proven to be incapable of matching a competitive field.

As we debate energy policy, many raise the issue of imports of crude oil into the country. As you know, the heating oil industry relies on domestic crude for approximately 50 percent of the fuel oil produced, and uses domestic refineries plus Canadian refineries for nearly all the refined product consumed. Similarly, the vast majority of gasoline and diesel consumed in the United States is refined in the United States. However, as we have seen in California, their isolation from the country for fuel and electricity makes their problems worse, perhaps we should recognize that an international market is preferred to a domestic market.

We would again contrast the oil industry with the natural gas industry. While gas is generally domestic sourced and distributed, it cannot utilize worldwide energy resources in a problem time. As we know, natural gas prices have risen sharply and likely will not drop substantially until more production goes on line in the United States. Again, the oil industry because of the easy transportability of oil can search internationally for product. We must acknowledge that oil will always be an international product, as transportation is a small fraction of the cost, and thus, the domestic oil industry will always be tied to the international economy. Dissimilarly, both coal and gas are more difficult to transport and thus will tend to be domestic industries.

We do not believe that our energy policy should in any way be altered to give these two domestic products advantages in our market. Consider the situation we would be in today, if somehow the United States was independent of international energy markets. Oil would not be available to take some of the pressure off of natural gas demand, and the utility industry would not only be coping with making more electricity for California, they would have had to supply the 5 percent increase in demand for oil in the northeast. Where would prices be today if that were our energy policy of five years ago?

PMAA does of course agree that steps must be taken to increase domestic production. Having crude developed both domestically and internationally increases competition, and thus benefits consumers.

PMAA would also urge the Congress to liberalize the waiver provisions within the Jones Act. During heavy weather, barges cannot transit from New York to Boston, or from the gulf coast to New York. However, many foreign flag tankers could be diverted into this trade if the government would allow waivers of the Jones act. Such a course would allow wholesalers to buy product in the gulf coast and bring it up to the northeast if the pipeline systems are at capacity. Additionally many of these tankers can be used in heavier weather that would allow product to move between Boston and New York.

PMAA would now like to turn its attention to the motor fuels industry. As you know, PMAA represents the marketers who sell over 40 percent of the gasoline and 50 percent of the diesel sold in the United States.

For nearly a year, the United States had significant problems with distribution and supply of refined products. The Environmental Protection Agency had to delay implementation of reformulated gasoline in St. Louis because of supply and pipeline problems, and prices for reformulated gasoline spiked in Milwaukee and Chicago, and then gasoline prices spiked throughout the Midwest. While some of the problems related to lack of refined product, much of the problem related to distribution problems. Pipeline problems outside St. Louis initiated the Midwest problem. This proceeded to Chicago where the new reformulated gasoline was more difficult to manufacture than was anticipated. A pipeline problem in Michigan exacerbated the problem. Thus, much of the problems were sourced to a distribution system that is at capacity, and thus has limited ability to recover from problems.

Unfortunately, the Environmental Protection Agency has issued a rule that will impact distribution at every level. In 1990, the country used essentially two distillates for all uses. Number 2 distillate was used for home heating oil, trucks, and off-road equipment. Kerosene or Number 1 distillate was used as a jet fuel, for inner-city buses, and a blendstock for diesel and heating oil in the winter months. In the last ten years we have subdivided each of these fuels by four. We have a high and low sulfur fuel for both diesel and kerosene, and we have a dye system, which is used for the tax status of the product. Thus, each of two products described above has been divided and are now six distinct products.

The Environmental Protection Agency will further divide those pools into a 500-ppm fuel and a 15-ppm fuel. However, we are not merely adding one new fuel we

are adding two new fuels, one taxed, and one not taxed. Thus, there will be eight distinct distillates.

How does this affect distribution? The petroleum industry has always been a high volume industry relying on fungible products. A barge would carry a large load of a single product, a pipeline would carry millions of gallons of a single product that would supply every terminal in its area before transitioning to a new product, and a truck would distribute the multiple grades of gasoline and diesel. Now each of these transportation systems must lose its economies of scale as smaller and smaller volumes of product are transported. Staging in the pipeline becomes more difficult. Terminals may choose to handle only a selection of the products, or put one of these products into smaller tanks, or perhaps not sell a particular product. Marketers may have to drive farther to find the product they are searching for, and make more stops to distribute the same volume of product. Thus, each change increases distribution costs.

PMAA has thus supported a more rational approach to the rulemaking now being considered. As the Committee understands, the new rule will require the new 15 PPM fuel for new trucks, and older trucks an continue to use the older diesel at 500 PPM. There is no harm in an old truck using the new fuel, and there are some environmental advantages. However, the rule that EPA has issued will create confusion in the marketplace, lead to difficult enforcement issues and stress our distribution system.

PMAA would note that the transitional program proposed by EPA is similar to that of the leaded unleaded transition that occurred in the 70's. EPA stated at that time there was 17-20 percent non-compliance with the rule as consumers used funnels to overcome the nozzle restrictors or simply removed the restrictor in their tanks. This behavior destroyed the emissions devices, and thus much of the environmental gains were lost. To counter this, EPA began an enforcement program targeted at marketers. Unbelievable as this may seem, marketers were directed to memorize vehicle designs and descriptions to prevent misfueling. PMAA distributed vehicle profiles to marketers to assist in this process. EPA also considered price controls to ensure that the leaded gasoline was sold at the same or higher prices than the unleaded program to counter this problem.

The leaded unleaded program was the last transitional program with both gasoline and diesel being implemented at once. Apparently for twenty years we remembered this problem, and avoided it. Unfortunately, the diesel phase in is likely to repeat that problem, disrupting the distribution system and at the same time hampering the smooth implementation of this important environmental program.

PMAA is thus encouraging Congress to override EPA and transition the fuel at a single point. We are of course concerned with supply, and whether the refiners will be able to make the fuel. While their concerns are real, we recognize that nearly all of the problems of the last year are distributional and we do not want them to occur for four straight years

Additionally, I would like to offer one final comment on the number of rules that have come out affecting the domestic refining and distribution industry. Each new rule affecting refining requires substantial capital investment. Similarly, the splitting of the fuels pools also requires substantial investment. Each time that happens, there is a bias in favor of large plants that can more readily absorb the investment and spread it over more gallons. This bias leads to an industry of fewer competitors. Additionally, each of the competitors must try to always be at 100 percent capacity. However, when demand increases or there are problems with supply, big problems await everyone.

We believe that the Congress must recognize this and try to ensure that our country's energy policy is as flexible and multi-source reliant. Competition will benefit the American consumer, the economy and the environment.

Mr. BARTON. Thank you, sir.

We would now like to hear from Mr. Thomas Robinson, who is the Chief Executive Officer of the Robinson Oil Corporation in San Jose, California. We have heard a lot about California over the last month or so in this subcommittee. Welcome. Your testimony is in the record. We would ask you to summarize it in 6 minutes.

STATEMENT OF THOMAS L. ROBINSON

Mr. ROBINSON. Good morning. Yes, California is an interesting place. Good morning, Mr. Chairman and members of the subcommittee. My name is Tom Robinson. I am CEO of Robinson Oil,

San Jose, California. Our company owns and operates 28 Rotten Robbie retail gasoline outlets located in the San Francisco Bay Area of California.

I appear before this subcommittee today as a representative of the National Association of Convenience Stores, NACS, and the Society of Independent Gasoline Marketers of America, SIGMA. Collectively, NACS and SIGMA members sell more than 75 percent of the gasoline and diesel fuel purchased by American consumers each year. I appreciate this invitation to appear at this hearing to present testimony on the Nation's energy policy as it relates to crude oil and refined petroleum products.

The companies I represent today are different from the other witnesses at today's hearing. For all practical purposes, we are a surrogate for the Nation's gasoline and diesel fuel consumers. Our primary mission is to secure adequate supplies of gasoline to sell consumers at a competitive price. My company is not involved in the exploration or production of crude oil, nor is it a refiner. If companies like mine, independent marketers of motor fuels, are unable to secure this adequate supply, then we cease to be a competitive force in the marketplace, and if independent marketers cease to be an effective competitive force in the marketplace, then consumers lose as retail gasoline and diesel fuel prices rise in response to the supply shortage.

NACS and SIGMA have two primary messages for the subcommittee today. First, we must collectively and aggressively address the motor fuel supply problems that are facing this Nation. Otherwise, the fuel price spikes we have witnessed for the past decade in California and for the past 2 years in other parts of the Nation will become worse and more frequent. Our failure to act has, is and increasingly will cost consumers more at the pump.

Second, the debate over the future of our Nation's energy policy need not be confrontational. Our Nation can have both a clean environment and affordable, plentiful supplies of gasoline and diesel fuel. However, in order to achieve these twin goals, all sides of the current debate, industry, government, consumers and environmentalists, must approach this debate in the spirit of cooperation, not confrontation. This includes a reasonable attitude and an understanding of the tradeoffs.

The challenge facing the Congress today is straightforward. We must preserve current and future improvements in air quality while at the same time maintaining and expanding supplies of motor fuels. Otherwise, our Nation's consumers will continue to pay the price when supply shortages occur and retail prices at the pump spike as they have done repeatedly over the past few years.

As a Californian, I have become only too familiar with this routine. NACS and SIGMA do not have a specific legislative proposal to put forward at this time. Instead, we offer the following principles which we are convinced must be part of any legislative initiative: One, greater fungibility in motor fuels and a stop to the balkanization of our Nation's gasoline and diesel fuel markets. I cannot overemphasize the importance of this particular point. The second point is fuel requirements that recognize the limitations and strengths in the motor fuel distribution system in the United States. Three, reasonable implementation plans for new environ-

mental initiatives. Four, fuels programs that set performance goals rather than specific formulas or mandates. And, five, it must be economically feasible to upgrade the Nation's refining capacity to make these clean fuels.

We look forward to working with this subcommittee and others in Congress to explore legislative options in the months ahead. We certainly offer our assistance to the subcommittee in this exploration. The debate over our Nation's energy policy is just starting, but the crisis has been occurring for some time. We can either discuss potential solutions collectively now or we can point fingers, cast blame and collectively suffer the consequences as we have seen occur in the California electricity crisis.

We encourage all parties to this debate to adopt fresh and reasonable approaches. Both the environment and our Nation's motor fuel consumers can be winners in this debate, but only if all sides agree with the premise that environmental protection and affordable energy are not inherently contradictory goals. NACS and SIGMA assert that these goals need not be irreconcilable.

Thank you for the opportunity to testify today.

[The prepared statement of Thomas L. Robinson follows:]

PREPARED STATEMENT OF THOMAS L. ROBINSON, CHIEF EXECUTIVE OFFICER, ROBINSON OIL CORPORATION REPRESENTING THE NATIONAL ASSOCIATION OF CONVENIENCE STORES AND THE SOCIETY OF INDEPENDENT GASOLINE MARKETERS OF AMERICA

Good morning, Mr. Chairman and Members of the Subcommittee. My name is Tom Robinson. I am Chief Executive Officer of Robinson Oil Corporation of San Jose, California. Our company owns and operates 28 "Rotten Robbie" retail gasoline outlets located in the San Francisco Bay Area of California.

I appear before this Committee today as a representative of the National Association of Convenience Stores ("NACS") and the Society of Independent Gasoline Marketers of America ("SIGMA"). NACS represents an industry of more than 120,000 retail outlets, 75 percent of which sell motor fuels. In 1999, convenience stores sold more than 117 billion gallons of motor fuels which accounts for more than 60 percent of American consumption.

SIGMA is an association of approximately 260 motor fuels marketers operating in all 50 states. Together, SIGMA members supply over 28,000 motor fuel outlets and sell over 48 billion gallons of gasoline and diesel fuel annuallyor approximately 30 percent of all motor fuels sold in the nation last year.

Collectively, NACS and SIGMA members sell more than 75 percent of the gasoline and diesel fuel purchased by American consumers each year.

I appreciate the invitation to appear at this hearing to present testimony on our nation's energy policy as it relates to crude oil and refined petroleum products. The companies I represent today are different from all of the other witnesses at today's hearing. For all practical purposes, we are a surrogate for the nation's gasoline and diesel fuel consumers. Our primary mission is to secure adequate supplies of gasoline to sell to consumers at a competitive price. My company is not involved in the exploration or production of oil, nor does it refine oil. If companies like mine, independent marketers of motor fuels, are unable to secure this adequate supply, then we cease to be a competitive force in the marketplace. And if independent marketers cease to be an effective competitive force in the marketplace, then consumers lose as retail gasoline and diesel fuel prices rise in response to the supply shortage.

NACS and SIGMA have two primary messages for this Subcommittee today. First, if we, collectively, do not address aggressively the motor fuels supply crisis that is facing this nation in the near future, then the price spikes we have witnessed, for the past decade in California and for the past two years in other portions of the nation, in gasoline, diesel fuel, and other petroleum products will become the norm rather than the exception. Ultimately, if we fail to act, it will be consumers who will pay for this inaction—through higher retail motor fuels prices at the pump.

Second, the debate over the future of our nation's energy policy need not be confrontational. Our nation can have both a clean environment and affordable, plentiful supplies of gasoline and diesel fuel. However, in order to achieve these twin

goals, all sides to the current debate—industry, government, consumers, and environmentalists—must approach this debate in a spirit of cooperation, not confrontation.

These are not new points for either the associations I represent or for me. As a California marketer I have personally witnessed these events happening over and over again. I personally have had the opportunity to present these points to Congress in the past. Unfortunately, our warnings have been ignored. However, it is my personal hope that the renewed attention to the need for a national energy policy will produce the results NACS and SIGMA have been calling for over the years.

The challenge facing this Subcommittee and your colleagues in Congress today is straightforward. We must preserve current and future improvements in air quality while at the same time maintaining and expanding supplies of motor fuels. Otherwise, our nation's consumers will pay the price when supply shortages occur and retail prices at the pump spike, as they have done repeatedly over the past three years in several areas of the nation and over the past decade in California. And these price spikes will not be limited to the additional expense of producing the new cleaner fuels. Rather, they will be multiples of this amount as the market drives prices far above the additional cost of manufacture in times of short supply.

I firmly believe that our nation is facing a serious energy crisis in the motor fuels refining and marketing industry. Dozens of petroleum refineries have closed over the past two decades and new environmental protection mandates, such as low sulfur gasoline and diesel fuel, are likely to exacerbate this trend. Operating inventories of diesel fuel and gasoline are at historically low levels and the nation's refineries are operating at or near maximum capacity. Gasoline and diesel fuel demand is increasing by between one and two percent each year, and yet the number of refineries operating to meet this ever increasing demand is decreasing. In 1990, there were essentially six different types of gasoline being sold nationwide. Now, there are over 25 different gasoline formulations, all being transported and distributed through the nation's motor fuel infrastructure. The pressure of overlapping federal, state and local regulations has crippled what was previously one of the most efficient commodity distribution systems in the world—the United States' fungible grade motor fuels distribution system.

As the saying goes, there is no free lunch. It should not surprise policy makers that after tens of billions of dollars in environmental compliance costs borne by refiners and marketers, the complete fragmentation of the motor fuels distribution system, and the politically-motivated diverse gasoline formulations adopted by various states, there is a price to pay—a price that ultimately must be paid by consumers of gasoline and diesel fuel. As long as the motor fuels refining and distribution system works perfectly, supply and demand stay roughly in balance and retail prices remain relatively stable. However, if a pipeline or refinery goes down, overseas crude oil production is reduced, the weather disrupts smooth product deliveries, or a new regulatory curve ball is thrown at the motor fuels refining and marketing industries, we do not have the flexibility to react and counterbalance these forces.

If there is one point that I really want to emphasize it is the point of "no free lunch". Our country can have clean and environmentally friendly fuels and it can have plentiful supplies—there will be a cost and it will be borne by the consumer (that is a given)—our job is to make the lunch, if not free, at least a fair bargain.

Californians have become somewhat accustomed to motor fuels price volatility over the past five years because California is in fact the laboratory for the fuels programs that EPA currently is forcing on the rest of the country. When a refinery in California goes down, or a pipeline breaks, the impact on prices is almost immediate. In California, gasoline prices can increase by 40 cents per gallon within two or three days. When prices get high enough to attract supply from other markets, then eventually the supply shortage is alleviated and prices start to fall.

This is the reason I am appearing before you today. The motor fuels supply problems we have witnessed in California over the past decade are now being visited on the rest of the nation. If we do not act, independent motor fuels marketers (who I am very concerned about), and gasoline consumers (who we all should be very concerned about), will suffer in the near future.

The public policy solution to the current motor fuels supply crisis will not be simple, but it must be addressed. NACS and SIGMA posit that the solution is not the rollback of environmental protections. This solution is a non-starter and should be discarded. Alternatively, NACS and SIGMA encourage Congress to consider an effective plan to assist our nation's domestic refining industry to meet the challenges posed by ever more stringent environmental mandates and restore fungibility to the nation's distribution system. This will increase gasoline and diesel fuel supplies and keep retail prices down.

We must collectively arrive at a public policy that assures that our nation's refineries, both large and small, stay in business, expand to meet increases in demand, and produce clean, affordable motor fuels. But this policy cannot be achieved without enlightened government policies and programs. The capital expenditures that refineries must make over the next six years in order to meet new environmental mandates are huge. And many refineries, particularly small, regional refineries, will be unable to justify those expenditures and will cease operation—further straining motor fuels supplies. Already, this year, Premcor announced that it would close its Blue Island refinery rather than undertake the upgrades necessary to make low sulfur gasoline and diesel fuel. Other refineries, owned by both large and small companies, will follow suit in the next few years.

NACS and SIGMA urge Congress to assist these refineries in making these upgrades. This assistance will be particularly important to small- and medium-size "regional" refineries because the environmental upgrade costs fall more heavily on these smaller refineries because they do not enjoy the economies of scale that some larger refineries possess to make these upgrades. And, in many cases, these smaller refineries represent the "marginal" gallon of gasoline and diesel fuel in many marketplaces—the gallon that is the difference between adequate supplies and supply shortages.

Motor fuels marketers and refiners are not always on good terms. We compete daily in the marketplace for customers and market share. So it may seem odd to have motor fuels marketers recommend to Congress that assistance must be given to our nation's domestic refining industry. However, without adequate and diverse sources of gasoline and diesel fuel supply, independent marketers cannot exist. Thus, the solution we are proposing to Congress is the only way our segment of the marketing industry can survive and can continue to provide consumers—your constituents—with the most affordable, clean gasoline and diesel fuel in the world.

NACS and SIGMA do not have a specific legislative proposal to put forward at this time to put our joint recommendation into operation. Instead, we offer the following principles which we are convinced must be a part of any legislative initiative: (1) greater fungibility in motor fuels and a stop to the balkanization of our nation's gasoline and diesel fuel markets; (2) fuel requirements that recognize the limitations and strengths of the motor fuel distribution system in the United States; (3) reasonable implementation plans for new environmental initiatives; (4) fuels programs that set performance goals, rather than specific formulas or mandates; and (5) it must be economically feasible to upgrade the nation's refining capacity to make these clean fuels.

We look forward to working with this Subcommittee and others in Congress to explore legislative options in the months ahead. We offer our assistance to this Subcommittee in this exploration.

The debate over our nation's energy policy is just starting. But the crisis has been occurring for some time. We can either discuss potential solutions collectively now, or we can point fingers, cast blame, and collectively suffer the consequences—as we have seen in the California electricity crisis.

We encourage all parties to this debate to adopt fresh approaches to the problems our nation is facing. Both the environment and our nation's motor fuel consumers can be the winners in this debate, but only if all sides agree with the premise that environmental protection and affordable energy are not inherently contradictory goals. NACS and SIGMA assert that these goals need not be irreconcilable.

Thank you for inviting me to present this testimony. I would be pleased to answer any questions my testimony may have raised.

Mr. BARTON. Thank you, Mr. Robinson. We do appreciate you coming all the way from California to testify.

We would now like to hear from Mr. Richard Kassel, who is the Senior Attorney for the Natural Resources Defense Council. He comes from the East Coast in New York City. We welcome you, sir. Your testimony is in the record and we ask that you summarize it in 6 minutes.

STATEMENT OF RICHARD KASSEL

Mr. KASSEL. Thank you, Mr. Chairman, members of the committee. Thank you for the opportunity to testify today. At NRDC we believe strongly that the Nation needs a balanced energy policy that meets a series of equally important energy, public health and

environmental goals. At NRDC I run our Dump Dirty Diesels campaign, so I will spend some time on EPA's recent diesel rule. Other specific energy issues are addressed by my colleagues in attachments 1 and 2. But as background, here is where we are.

Once again America faces a national debate about its energy future. Two distinct visions of this energy policy and energy future are emerging. One vision focuses chiefly on extracting as much energy as possible, mostly in fossil fuel form, in hopes that supply can somehow catch up with demand. That vision in the past has delayed capital investments in more efficient power generation, hoping to maximize short-term profits by squeezing extra years out of old, dirty plants. That vision also minimizes the environmental impacts of a supply side approach, including global climate change.

Users often count environmental regulation as an issue to obscure its call for more drilling and more production. The California situation and some of the responses are instructive here. Contrary to suggestions from the White House and some today, the California crisis and our national energy problems are not caused primarily by pollution regulation and will not be solved by drilling in the Arctic National Wildlife Refuge or other sensitive areas. The real reasons for the California crisis include a market structure that failed to ensure long-term supplies as a hedge against volatile spot market prices, rapid consumption growth in neighboring States that is overloading the interstate power grid, cutbacks in electricity infrastructure investments throughout the West due to unfavorable expectations of return on those investments, and reduced hydropower generation due to low rainfall.

As if that was not enough, investigations continue of alleged anticompetitive practices by power generators. Rigorous permit procedures have not been the reason for the lack of growth in the California energy supply side.

There is an alternative vision that is also emerging. That vision calls for encouraging innovation, investment and new technology to meet our energy needs in an environmentally responsible manner. This vision invests in the efficient use of energy, renewable energy sources, places priority on using energy resources in a way that is least damaging to our environment and strives to minimize the public health harms of the extracted resources that we continue to consume. It promotes economic growth, industrial competitiveness and does not force consumers to make sacrifices. It accepts the reality of global climate change and invests accordingly.

NRDC believes that U.S. energy policy should follow this alternative path which is described more fully in attachment 3. We believe we can meet our energy needs through innovative investments and policies, like investing in efficiency and renewables, like providing tax credits for hybrid vehicles, home insulation and smart growth, like improving the fuel efficiency of tires and vehicles, and like strengthening efficiency standards for appliances, buildings and so on.

I will spend my remaining time talking a bit about the diesel rule and its role in ensuring clean, reliable goods movement in America in the 21st century. Of course diesel trucks provide the backbone of America's goods movement, yet diesel pollution is one of our most enduring pollution problems. Diesel trucks comprise

roughly 7 percent of the Nation's vehicles, but they consume more than 40 percent of the Nation's transportation energy use and they emit more than half of the asthma attack inducing and cancer causing particulates in many urban areas and roughly one-third of the transportation-related smog and acid-rain-causing nitrogen oxides.

Recently EPA Administrator Whitman reaffirmed the agency's commitment to cleaning up this pollution source, thereby helping to assure them a responsible place in America's energy future. Nearly eliminating the sulfur in diesel fuel will be the key to this step just as removing lead from gasoline was the key to cleaning up cars 20 years ago.

The diesel rule's substantial flexibility and lead time will be critical to ensuring the widespread national availability of the new low sulfur diesel as it comes to market in the coming decade. This flexibility includes allowing a percentage of the higher sulfur fuel to be sold in each regional petroleum district from 2006 to 2009, allowing intra-district trading among refiners to assure an efficient and smooth transition, and providing extra provisions to help small refiners, extra time and extra flexibility. It includes interim dates for diesel at the refinery, at the terminal and at the retail levels to keep the fuel flowing smoothly in a way that providing a retail compliance date only has not done in the past.

In sum, these options reflect past experiences with other fuel shifts, and it is the right way to do it.

As we have heard, some individual firms will bear significant costs to upgrade old refinery infrastructure but to society the costs are reasonable. EPA estimates that diesel fuel costs might increase by about 5 cents a gallon over the course of the decade. Indeed, two of the largest diesel sellers, BP and Tosco, have each announced that they will be selling the 15 part per million diesel fuel in the West in the next year at a comparable incremental cost without the benefits of a national program's economy of scale.

We believe that this undercuts the statements of the American Petroleum Institute and others in the oil industry who have suggested that the costs will be much, much higher. We also believe that it is worth noting that in the past, environmental regulation history has been filled with examples of regulations that did not cost nearly as much to implement as industry advocates had previously estimated before they became law.

In conclusion, our Nation stands at a historic moment and we face a historic opportunity to develop an energy policy that can meet many critical energy, economic and environmental needs. Also, we finally have the technology to clean up many of our most enduring and polluting energy sources. The diesel rule is just one example of such a case. At NRDC we look forward to working with the subcommittee and all interested parties toward such a successful energy policy for the Nation. Thank you again for the opportunity to testify.

[The prepared statement of Richard Kassel follows:]

PREPARED STATEMENT OF RICHARD KASSEL, SENIOR ATTORNEY, NATURAL RESOURCES DEFENSE COUNCIL

I. INTRODUCTION

Mr. Chairman and members of the Committee, thank you for the opportunity to testify today. At NRDC,[1] we believe strongly that the nation needs a balanced energy policy that meets a series of equally important energy, public health protection and environmental quality goals.

Towards that end, I will limit my oral comments to a discussion of the Environmental Protection Agency's recent step to insure that America's future freight needs are met in a way that minimizes environmental and public health impacts, and that ensures that diesel fuel supplies remain adequate and protected from price and/or supply spikes.[2] Other issues—including power plant emissions, new source review, and our response to President Bush's reversal on carbon dioxide—are summarized in NRDC's March 21, 2001 testimony before the Senate Subcommittee on Clean Air, Wetlands, Private Property and Nuclear Safety, attached hereto and incorporated herein as Attachment 1; environmental issues related to natural gas exploration, development and production from submerged federal lands on the Outer Continental Shelf (OCS) are summarized in NRDC's March 15, 2001 testimony before the House Subcommittee on Energy and Mineral Resources, attached hereto and incorporated herein as Attachment 2.

II. BACKGROUND: ENERGY POLICY IN THE 21ST CENTURY

At the dawn of a new century, America finds itself once again grappling with a chronic problem—how to provide enough energy for its growing population and its growing economy. The United States has 5 percent of the world's population, but consumes nearly a quarter of the world's energy supply. We use energy to heat our homes and our businesses, power our computers and telephone systems, run our automobiles and aircraft, drive our manufacturing plants and hospitals, and deliver every good we use. In short, we have constructed an economy and a way of life that depends on the ready availability of energy.

Two distinct visions of an energy policy for the United States have emerged to meet these demands. One vision focuses chiefly on extracting as much energy as possible, mostly in fossil fuel form (oil, coal and natural gas), in hopes that supply can catch up with demand. The alternative vision, however, calls for encouraging innovation and new technology to meet our energy needs in an environmentally responsible manner. This vision emphasizes efficient use of energy, places priority on using energy resources that are least damaging to our environment, and strives to minimize the environmental and public health harms of the extractive resources we consume. It promotes economic growth and American industrial competitiveness. This energy path would not force consumers to make sacrifices. Instead it relies on improved technologies that will eliminate waste while increasing productivity and comfort.

NRDC believes that U.S. energy policy must follow this alternative path. America can and must rely on the application of technological advances already in place and readily available as a way to reduce consumption and/or minimize environmental and public health impacts. Such an approach will decrease America's reliance on foreign sources of energy in the near- and long-term, protect the environment and the public's health, provide for America's energy needs, and buffer the economy against short-term swings in the market. NRDC's recently published report, *A Responsible Energy Policy for the 21st Century* examines these issues in detail. The executive summary is attached hereto and incorporated herein as Attachment 3.

III. CLEANER TRUCKS ARE CRITICAL TO ENSURING CLEAN, RELIABLE GOODS MOVEMENT IN THE 21ST CENTURY

Diesel trucks provide the backbone of America's freight movement, yet diesel pollution has been one of America's enduring pollution problems—with impacts that are far greater than the size of the vehicle population would suggest. Diesel trucks comprise roughly 7 percent of the nation's vehicles, but their impact is far greater. More than 40 percent of the nation's transportation energy use comes from the na-

[1] The Natural Resources Defense Council (NRDC) is a national, non-profit environmental advocacy organization. Founded in 1970, NRDC has over 400,000 members nationwide, and offices in Washington, DC, New York City, Los Angeles and San Francisco.

[2] Control of Air Pollution from New Motor Vehicles: Heavy-Duty Engine and Vehicle Standards and Highway Diesel Fuel Sulfur Requirements, 66 Federal Register 5002 et seq. (January 18, 2001) (hereafter, the "Diesel Rule").

tion's diesel trucks and buses, equivalent to more than 5,000,000 barrels of crude oil per day.[3] More than half of the particulate matter found in some urban areas come from diesel tailpipes—soot particles that have been linked to increased asthma attacks, cancer and even premature death. Roughly one-third of the transportation-related smog- and acid rain-causing nitrogen oxides come from diesel tailpipes.

Recently, EPA Administrator Christine T. Whitman reaffirmed the agency's commitment to cleaning up these trucks—thereby helping to assure them a responsible place in America's energy future. This commitment came in the form of a complex, thorough rule making that will bring about the most significant improvement in the environmental performance of the nation's vehicles since the removal of lead from gasoline two decades ago.

EPA's Diesel Rule was supported by more than 75,000 Americans who provided written comments to EPA, and by an extremely diverse coalition of supporters that included the Alliance of Automobile Manufacturers, the California Trucking Association, International (formerly Navistar), Tosco, BP, the Manufacturers of Emission Controls Association, the American Lung Association, the U.S. Public Interest Research Group (USPIRG), the Union of Concerned Scientists, the Clean Air Network, the Clean Air Trust and others.

Briefly, EPA's Diesel Rule will do the following: Starting in mid-2006, 97 percent of the sulfur in diesel fuel would be eliminated, in a four-year phase-in that provides substantial flexibility for refiners, special allowances to help small refiners, and significant flexibility for vehicle and engine manufacturers. With sulfur largely eliminated, drastic emissions reductions will be possible, using advanced emission controls that cannot be used with today's high-sulfur diesel fuel. Starting with the 2007 model year, soot particles from new diesel engines will be slashed by 90 percent. By the end of the decade, tailpipe emissions of smog-forming nitrogen oxides (NO_X) would be cut by 95 percent. As a result, diesel vehicles will achieve gasoline-like emissions levels.

These emission reductions will be huge—equivalent to removing the pollution from 13 million of today's 14 million trucks from the roads. When fully implemented, the Diesel Rule will result in the elimination of 2.6 million tons/year of NO_X, 115,000 tons/year of non-methane hydrocarbons, and 109,000 tons/year of particulates. This will avoid 8,300 premature deaths, more than 23,000 cases of acute or chronic bronchitis, 360,000 asthma attacks and other avoidable health impacts annually.[4]

There are three keys to the successful implementation of EPA's Diesel Rule. First, the desulfurization of today's high-sulfur diesel fuel is necessary to achieve the predicted health and emissions benefits. Just as a small amount of lead in gasoline disables automobile catalytic converters, even a small amount of diesel sulfur will disable the most promising emission controls for nitrogen oxides and will make the soot controls less effective. In other words, a smaller, compromised sulfur cut (as has been suggested by the oil industry) would render the EPA's proposed PM and NO_X targets unachievable.

Second, the Diesel Rule's substantial flexibility and lead-time will be critical to the success of the Diesel Rule. Various implementation options are available on a region-by-region basis to ensure that there is widespread, national availability and supply of the low-sulfur diesel fuel from the beginning of the program. However, these options are designed (e.g., a percentage of higher-sulfur fuel will be allowed from 2006-2009 in each regional petroleum district, intra-district trading will be allowed, etc.) to provide important implementation flexibility to small and other refiners who need it during the first four years of the program. This will provide the widespread fuel availability that is critical to every truck operator. Also, this approach (including a four-year phase-in of the NO_X standard) will provide engine and vehicle manufacturers with adequate lead time to efficiently phase-in the exhaust emission control technology that will be used to achieve the health benefits of the new standards.[5]

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[3] Oak Ridge National Laboratory, U.S. Department of Energy, *Transportation Energy Data Book,* October 2000, p. 2-7.

[4] Statement of EPA Administrator Christine T. Whitman, February 28, 2001. *See also* 66 Federal Register 5002 (January 18, 2001).

[5] One other point is worth noting. By requiring that all highway diesel fuel produced by refiners or imported to begin meeting the new sulfur standard by April 1, 2006, and all highway diesel fuel at the terminal level begin meeting the new sulfur standard by May 1, 2006, EPA is providing adequate lead time to ensure that all highway diesel fuel users can buy the low-sulfur diesel fuel by June 1, 2006 and is providing a clear and useful road map to implementing the sulfur limits in a manner that avoids market disruptions that could occur if only a retail compliance date were provided.

Third, although some individual firms will bear significant costs to upgrade old refining infrastructure, the costs are extremely reasonable to society as a whole. EPA estimates that the Diesel Rule will increase the cost of a new truck or bus by about one percent or less, and that diesel fuel costs might increase by five cents per gallon. Indeed, BP and Tosco have each announced that they will be selling 15 ppm diesel fuel next year at comparable cost, completely undercutting the excessive claims of other oil industry commenters. In sum, EPA estimates that the benefits outweigh the costs by sixteen to one.[6] It is worth noting that even these cost estimates are likely to be high—the past three decades of environmental regulations are filled with examples of air pollution regulations that did not cost nearly as much as industry advocates had previously estimated.

IV. FURTHER DETAILS ON THE HEALTH THREAT OF DIESEL EMISSIONS

More than fifty studies show links between particulate matter generally and a wide range of health impacts, including increased asthma attacks and emergencies, endocrine disruption,[7] numerous cardiopulmonary ailments, cancer and premature death.[8] Nitrogen oxides contribute to ground-level ozone formation, acid deposition, nutrient pollution of waterways, and secondary (i.e., atmospheric) formation of particulate matter.

While numerous studies have concluded that the particulate matter and nitrogen oxide emissions in diesel exhaust are harmful to human health, NRDC is increasingly concerned about the growing evidence that diesel particulates are associated with increased cancer risk. Diesel exhaust has long been considered to be at least a probable human carcinogen by the National Institute of Occupational Safety and Health (NIOSH) and the World Health Organization's International Agency for Research on Cancer (IARC).

In the past two years, three actions by various government bodies moved the nation further along this path: In July, EPA staff reiterated its prior conclusion that diesel exhaust is a likely human carcinogen, based on compelling epidemiological studies.[9] We expect the Clean Air Scientific Advisory Committee to finalize its work on this document at its October meeting. In August 1998, the California Air Resources Board (CARB) formally declared diesel particulate exhaust to be a toxic air contaminant.[10] And in December 1998, the National Toxicology Program advisory board recommended that diesel exhaust particulates be listed as "reasonably anticipated to be a human carcinogen" in the ninth edition of the Congressionally-mandated Report on Carcinogens.[11]

Diesel's link to cancer results in thousands of avoidable cancers nationwide. The association of the nation's state, territorial and local air pollution officials estimates that current levels of diesel pollution result in over 125,000 potential lifetime cancers nationwide, based on their extrapolation of the MATES-II study.[12]

NRDC is also especially concerned about the growing incidence of asthma in our nation, as well as the association between diesel particulate matter and asthma attacks. A recent study estimated that asthma cases would double by 2020, hitting one out of every five American families. [13] Nobody knows what causes asthma, but numerous studies have found associations between pollution (i.e., both ozone and particulate levels) and acute respiratory symptoms, including asthma attacks and hospitalizations.[14]

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[6] See footnote 4.

[7] *Endocrine/Estrogen Letter,* June 2, 2000, p. 6. Researchers at the Science University of Tokyo found testicular abnormalities in male mice that inhaled diesel exhaust.

[8] *NRDC, Exhausted by Diesel,* Third edition, May 1999, pp. 5, 8.

[9] U.S. EPA, Office of Research and Development, Health Assessment Document for Diesel Emissions, EPA/600/8-90/057E, July 2000, SAB Review Draft.

[10] California Air Resources Board, Resolution 98-35 (listing of diesel particulate as a toxic air contaminant), adopted August 27, 1998.

[11] *See* <http://www. dieselnet.com/news/9812ntp.html>

[12] State and Territorial Air Pollution Program Administrators/Association of Local Air Pollution Control Officials (STAPPA/ALAPCO), *Cancer Risk from Diesel Particulate: National and Metropolitan Area Estimates for the United States,* March 2000. This report was based on calculations of cancer risk first published in South Coast Air Quality Management District, *Multiple Air Toxics Exposure Study* (MATES-II), Draft Final Report, November 1999.

[13] Pew Environmental Health Commission, *Attack Asthma: Why America Needs a Public Health Defense System to Battle Environmental Threats,* May 2000.

[14] Regarding ozone associations, *see, e.g.,* Gilmour MI, "Interaction of air pollutants and pulmonary allergic responses in experimental animals," Toxicology 1995 Dec 28; 105(2-3): 335-42; regarding PM associations, *see, e.g.,* Nel AE, Diaz-Sanchez D, Ng D, Hiura T, Saxon A, "Enhancement of allergic inflammation by the interaction of diesel exhaust particles and the immune system," J Allergy Clin Immunol 1998 Oct; 102 (4 Pt 1): 539-54.

V. WHY THE OIL INDUSTRY COUNTER-PROPOSAL DIDN'T WORK

Throughout the comment period, various oil industry representatives suggested a counter-proposal of 50 ppm. NRDC continues to view this approach as completely unworkable.

At a sulfur level of 50 ppm, PM traps are likely to suffer high failure rates, leaving oxidation catalysts that yield only a 20 percent PM reduction [15] as the most likely PM after-treatment technology. While some PM traps (including the most promising continuously regenerating traps) can operate at 50 ppm, trap clogging and failure is a serious problem at this level, due to the formation of sulfate PM. Fuel economy also suffers, as a result of increased regeneration needs. As a result, it would be difficult—if not impossible—for engine, aftertreatment and/or vehicle manufacturers and/or sellers to warrant such a trap for the full useful life of the vehicle, and fuel economy-sensitive vehicle users might not welcome the technology. Consequently, if EPA had adopted a 50 ppm sulfur cap, manufacturers and sellers would be likely to opt for the less effective oxidation catalyst, rendering the proposed 0.01 g/bhp-hr PM standard unachievable.

Likewise, under a higher-sulfur approach, engine manufacturers and vehicle sellers would likely opt for selective catalytic reduction (SCR) as their preferred NO_X after-treatment because it is less sulfur-sensitive than NO_X adsorbers and other NO_X after-treatment technologies that are in development. NO_X adsorber efficiencies are dramatically reduced when sulfur contacts the NO_X storage bed. Perhaps for this reason, the Manufacturers of Emission Controls Association has testified that industry efforts to develop an effective NO_X adsorber would cease if EPA had chosen a 50 ppm cap.[16] While SCR seems capable of significant emission reductions, it also requires the development of a nationwide urea infrastructure that would cost billions of dollars to install, operate and maintain. As with oxidation catalysts, it seems unlikely that the NO_X standard would be achievable with an SCR-only strategy.[17]

It is worth reiterating that the oil industry's preferred 50 ppm sulfur limit would have had a negative effect on the fuel economy of the nation's trucks and buses—hardly an issue for the industry that sells the fuel. For example, NO_X adsorbers are expected to consume diesel fuel as they cleanse themselves of stored sulfates. As noted above, PM trap regeneration is inhibited by diesel fuel's sulfur—leading to increased PM loading, increased exhaust backpressure, and decreased fuel economy.[18] In other words, the higher the sulfur cap, the lower the fuel economy.

CONCLUSION

With a new century, a new President and a new Congress, our nation stands at a historic moment, and we face a historic opportunity to develop an energy policy that can meet many critical needs. Innovative technologies and policies allow us to finally move away from an energy policy that is focused primarily on increasing supply, and towards an energy policy that meets our energy needs while simultaneously meeting our environmental and public health needs. Further, we finally have the technology to clean up many of our most polluting energy sources. The Diesel Rule is just one example of such a case.

At NRDC, we are excited about the possibilities for the alternative path discussed at the outset of this testimony. We look forward to working with the Committee and all interested parties towards such a successful energy policy for the nation.

Thank you again for the opportunity to testify today. For further information, please do not hesitate to contact Richard Kassel at (212) 727-4454 or at <rkassel@nrdc.org>.

Draft

[15] Statement by EPA Office of Transportation and Air Quality (OTAQ) Director Margo T. Oge, June 19, 2000, at EPA's hearing on the Diesel Rule, pp. 53, 55.

[16] Testimony of Bruce Bertelson, Manufacturers of Emissions Control Association, June 19, 2000, as reported in the transcript of EPA's New York hearing on the Diesel Rule, June 2000, p. 56.

[17] EPA OTAQ Director Oge noted that EPA estimated that a 50 ppm sulfur limit would yield NO_X reductions of 20 percent, presumably because of the perceived limits of SCR technology. See footnote 15 above.

[18] Memorandum from former EPA Official Michael P. Walsh to Interested Parties, May 17, 2000, p. 10.

Attachment 1

PREPARED STATEMENT OF DAVID G. HAWKINS, DIRECTOR, AIR & ENERGY PROGRAMS, NATURAL RESOURCES DEFENSE COUNCIL BEFORE THE SUBCOMMITTEE ON CLEAN AIR, WETLANDS, PRIVATE PROPERTY, AND NUCLEAR SAFETY, COMMITTEE ON ENVIRONMENT AND PUBLIC WORKS, U.S. SENATE, MARCH 21, 2001

Mr. Chairman, members of the Subcommittee, thank you for your invitation to testify on behalf of NRDC, the Natural Resources Defense Council, regarding the Clean Air Act and national energy policy. NRDC is a nonprofit citizen organization dedicated to environmental protection, with more than 400,000 members nationwide. Since 1970, NRDC has followed closely the implementation of the Clean Air Act and has sought to promote actions under the law that carry out Congress' policy decisions to protect public health and the environment from harm caused by air pollution.

With all respect to the Subcommittee, my first point today is to suggest that the title of this hearing does not capture the issue before us. Rather than discussing ways to change the Clean Air Act to harmonize with an independently determined national energy policy, we need to define our tasks as identifying the goals that are important to Americans in the areas of energy, public health protection, and environmental quality and then designing energy and clean air policies that support these goals. I think any objective view of the historical record would demonstrate that the way we have pursued our energy goals in the past has interfered with Americans' desire for clean air, rather than the other way around. Today's hearing appears to be prompted by concerns that the Clean Air Act is interfering with meeting the nation's energy needs. While I welcome the opportunity to speak to these claims, I think it would be healthy for your sister committee, the Senate Committee on Energy and Natural Resources, to hold a hearing to review widespread concerns regarding the impact of our energy policies on public health and the environment. NRDC certainly would appreciate any encouragement you can give your colleagues on that Committee. Perhaps Senators Campbell, Graham, and Wyden, who serve on both Committees, could form an Health, Energy, Environment Harmony Caucus!

In this testimony I would like to touch on three topics: the need to clean up electric power plants, the flaws in President Bush's change of position on including carbon dioxide in that program, and the role of new source pollution control requirements in the nation's air quality management program and useful improvements to that program.

I. THE NEED FOR A COMPREHENSIVE PROGRAM TO CLEAN UP POLLUTING POWER PLANTS.

Today, electricity generation imposes an enormous burden of air pollution on the American public and the great bulk of that pollution comes from plants that are not meeting technically feasible, affordable modern environmental performance standards. This fact is the product of actions, both lawful and unlawful, that have resulted in an electric generating fleet that is older, dirtier, and less efficient than is needed to protect health and the environment.

As I explain in greater detail in Part III of my testimony, Congress in 1970 drew a distinction between existing pollution sources and sources that are new or modified: new and modified power plants were required to minimize air pollution through performance standards based on state-of-the-art clean power techniques, while existing, unmodified plants were required to clean up only to the degree needed to address local air quality problems.

There were several reasons for this approach. First, most air quality problems were perceived as local. Second, at the time, the electric power industry was mostly a local one. Third, the exemption was assumed to be temporary—Congress believed existing plants would retire and be replaced by new ones meeting modern performance standards.

Now, nearly 30 years later, the facts on the ground have changed. We know now that many of our most threatening air pollution problems are not local—they are regional, national, and even global. Our electric generating industry is rapidly becoming a national industry with all parts of the country connected by wires over which the product can move anywhere in three large regions of the lower 48 states. And those powerplants that were supposed to retire have, by lawful and unlawful means, kept on running like the Energizer Bunny. As a result, pollution from electric power generation is a dominant cause of nearly all our most pressing air quality related problems.

Four pollutants cause a host of public health and environmental damage: sulfur dioxide, nitrogen oxides, mercury, and the pollutant no one can get away from, car-

bon dioxide, the dominant greenhouse gas. Electric generation in the U.S. is the largest single source of these four horsemen of air pollution. Electric powerplants release over two-thirds of total U.S. emissions of sulfur dioxide; they release forty per cent of U.S. carbon dioxide; and they release about one-third of the nation's nitrogen oxide and mercury pollution.

These pollutants are responsible for a Pandora's box of health and environmental harm:

- fine particles, formed from sulfur and nitrogen emissions, that contribute to tens of thousands of premature deaths in the U.S. each year;
- smog, that plagues our major cities, and causes respiratory attacks in kids and seniors;
- acid rain, that still damages lakes, streams, forests, and monuments;
- regional haze, that spoils trips to national parks for millions of visitors annually;
- nitrogen emissions, that help over-fertilize estuaries, including the Chesapeake Bay, Long Island Sound, Pamlico Sound, and the Gulf of Mexico, leading to dead zones where aquatic life perishes;
- mercury contamination of lakes and streams, that has lead 40 states to issue continuing advisories of the fish that store this toxin; and,
- carbon dioxide driven climate change, that threatens "
- to kill millions of people through more destructive floods, droughts, heat waves, intense storms, and climate-related infectious disease;
- to produce sea-level rise that would inundate the homes of tens of millions of people and cost hundreds of billions of dollars in damages and for countermeasures in those countries with the resources to respond; and
- to destroy complex ecosystems that have evolved over thousands of years under the influence of climate cycles that were not destabilized by fossil fuel combustion.

Consider also the energy we waste with current generating technology. Today's fossil generating plants are about 34% efficient in converting the chemical energy found in fossil fuels into electricity. What that means in real terms is that we must mine *three* tons of coal and pollute the air with the emissions caused by burning *three* tons of coal just to get electricity with the energy equivalent of *one* ton of coal. In fact, the energy we *waste* each year in making electricity is greater than the total energy in all the coal we burn each year in the United States. Stated another way, if we could increase the efficiency of our power plant fleet from about 34% to around 68%, we would cut sulfur, nitrogen, mercury, and carbon pollution from electricity generation in half, even with no change in the fuel mix.

Our plague of pollution problems and wasted energy is the result of policies and practices that still allow 30, 40 and 50-year old plants to keep operating without meeting modern performance standards for pollution or efficiency. In addition to harming health and the environment, the *de facto* grandfather status of most of today's power plants creates unfair competition in the electricity market. In effect, the patchwork of lenient or nonexistent rules at the state and local level, combined with evasion of federal requirements, has created pollution havens where grandfathered plants can engage in domestic environmental dumping, distorting fair energy markets.

As we move to modernize the electricity market economically, we must accompany it with modern environmental performance measures. A central purpose of electric industry restructuring legislation is to create a free and fair, competitive market for energy services. But fair competition is impossible in an environment where air pollution performance requirements are balkanized. Because electricity markets are connected by wires, different pollution standards promote a "survival of the filthiest" market, where the power plants that are the dirtiest, run harder because they can slightly underbid cleaner generators.

These market distortions do not deliver consumer benefits. The price differences caused by different pollution requirements are quite small—usually 2-3 mills per kilowatt-hour or less—but these small differences are enough to give dirtier producers a decisive market advantage in many areas. The market distortions also discourage investment in new, cleaner, more efficient generation and in renewable resources.

Under the current rules, an entrepreneur who seeks financing for, say, a clean, high-efficiency natural gas plant can point out that it emits no sulfur, no mercury, and much less nitrogen oxides (NO_X) and carbon dioxide (CO_2) than the competition. But, with the partial exception of sulfur (for which allowance programs exist under the acid rain law), this superior environmental performance has no economic value in the market place. The financier wants to know whether the plant will be able to run more cheaply than the competition. If the competition is a group of

grandfathered coal-fired power plants, the answer often will be no, and financing may go to a higher-polluting new plant rather than a clean one.

To address the egregious health, environmental, and economic flaws in the current air pollution control programs, a number of bills were introduced in the last Congress and last week the bipartisan "Clean Power Act of 2001," S. 556, was introduced in the Senate. Among its lead sponsors are three members of this Committee, Senators Lieberman, Clinton, and Corzine. The Clean Power Act establishes industry-wide caps on tons of each of the "four-horsemen" pollutants: sulfur dioxide (SO_X), NO_X, CO_2, and mercury. The caps on SO_X and NO_X would provide building blocks for meeting health-based smog and fine particle standards (challenged unsuccessfully by industry in the Supreme Court) and would reduce acid rain further. The mercury cap would attack the largest single remaining U.S. source of this pollutant. And the CO_2 cap would return the industry's emissions to 1990 levels—the target set in the 1992 Rio Climate Treaty that the first President Bush signed and that the Senate has ratified.

With the exception of mercury, for which there are both local and regional concerns, the bill would implement the cap through market-based approaches where power generators could trade their clean-up obligations to meet the caps in the most efficient manner. One possible market mechanism, a "generation performance standard," would define the amount of pollution that could be legally emitted for a kilowatt-hour of electricity from fossil generation, thus creating a level playing field for those generators. This system will directly reward cleaner, more efficient generators.

In contrast to the current situation, if the Clean Power Act were now law, a developer of a new clean power plant would be able to show direct tangible economic benefits from its reduced environmental impact. Because the new plant would be able to generate electricity below the average pollution performance required under the law, every kilowatt-hour generated would also generate another source of revenue: emission allowances that can be banked or sold on the market. This additional revenue stream would make financing such projects that much more attractive.

A final benefit of these integrated pollution cleanup bills is that they provide a clear roadmap for business in planning long-term investments. The history of clean air progress has developed as a series of unconnected initiatives, typically focused on a single pollutant. Today, we can survey the next 10-15 years and be confident that additional measures will be pursued to reduce the four horsemen pollutants. But if we pursue the traditional approach, no one can say now with confidence, when, how deep, and in what order these important steps will occur.

As a result, business planners must approach today's investments by making educated guesses about environmental requirements. Billions of dollars are changing hands as generation plants are sold under state restructuring programs. One thing we can say for sure is that someone is guessing wrong. By enacting integrated cleanup programs, Congress could both provide certainty and reduce the tendency to prolong dependence on existing outmoded plants through the traditional process of applying end-of-pipe cleanup devices normally aimed at controlling only one pollutant.

In short, we know we need to reduce a range of damaging pollutants from the electric generating sector; we know how to do it; and we know that failure to take these steps now will increase damage, prolong uncertainty, and encourage unfair competition. Mr. Chairman and members of the Subcommittee, we hope you will seize the opportunity presented by the Clean Power Act to harmonize clean air and energy goals. By doing so you can address the key issues that face the industry and the public in a manner that produces a cleaner, more efficient, more sustainable, and more competitive electricity market that delivers energy services for lower costs.

II. PRESIDENT BUSH'S POSITION ON CARBON DIOXIDE

As you know, on March 13, 2001, President Bush announced that, despite his campaign promise to support emission reductions for all four major pollutants from power plants, including carbon dioxide, he now opposes inclusion of CO_2 in a power plant control bill. You may also know that NRDC and virtually every other environmental organization strongly objected to the President's change of position, the reasons he gave for his decision, and the way in which he made his decision.

From what I have said in Part I of my testimony you can understand that NRDC believes that control of carbon dioxide from power plants is as critical to health and the environment as control of the other three pollutants. Requiring the electricity industry to return its carbon emissions to 1990 levels is a practical and necessary first step in demonstrating that the U.S. intends to honor its commitment under the 1992 Rio Climate Treaty, which, as I said, has been ratified by the Senate. Failure

to include carbon dioxide in a clean-up bill would mean the legislation would not be comprehensive. By decoupling carbon emissions from control strategies on the other three pollutants, a limited bill would increase the tendency for plant owners to make short-sighted investments in control methods that might reduce sulfur, nitrogen, and mercury but would perpetuate high levels of carbon emissions. Indeed, a narrow-focus strategy that slaps controls on inefficient, outmoded generators could well extend the life of such facilities further, wasting energy and making it more difficult and costly to reduce carbon when Congress decides (as I believe *will* happen) to take on that threat to planet. A narrow bill would send a confusing signal to investors: is carbon really off the table or will it be put back on in a couple of years just after we have selected a strategy that ignores that pollutant? A two-step program to control the four major pollutants from electric generators will cost consumers more in the end than enacting a comprehensive bill now.

Let me turn to the reasons President Bush gave in his March letter for his about-face. The first reason cited by the President is his claim that carbon dioxide is "not a "pollutant' under the Clean Air Act." To start, the claim that carbon dioxide is not a Clean Air Act pollutant is irrelevant as a justification for abandoning his pledge to support a new law (imagine President Lincoln announcing he would oppose adoption of the 14th Amendment because he had learned that the original Constitution did not prohibit discrimination). However, President Bush is wrong on the law as well as on his logic.

To my knowledge, the only official interpretation of the status of carbon dioxide under the Act was issued in a legal memorandum prepared in April 1998, by the chief agency officer authorized to interpret the Act, EPA General Counsel Jonathan Z. Cannon (copy attached). In his memorandum, Mr. Cannon concluded that while not yet covered by regulations issued under the Act, carbon dioxide met the statutory criteria for a "pollutant" as the term is defined in the law. Indeed, as pointed out by Mr. Cannon, carbon dioxide is mentioned by name in a list of multiple pollutants from fossil fuel power plants for which Congress directed EPA to develop pollution prevention programs. Sec. 103(g). To be sure, this section of the law does not by itself confer authority on EPA to regulate carbon dioxide, just as it does not provide regulatory authority for any of the other pollutants listed in section 103(g) that EPA *has* regulated under other provisions of the Act. While lawyers will argue about the scope of EPA's current authority to regulate carbon dioxide, the Act is clear that carbon dioxide is a pollutant. (See attached NRDC Fact Sheet.)

Perhaps some will argue, Mr. Cannon was general counsel in the last administration and we now have a new president. It is true that President Bush is the Chief Executive of the United States but his oath under the Constitution is to faithfully execute its laws, not to make them up. If President Bush did not rely on Mr. Cannon's existing interpretation of the Act, on what official's legal interpretation did he rely? Was a memorandum of law prepared for the president's consideration? If so, by whom? We don't know the answers to these questions and we should know, to promote confidence in the way the president reaches his decisions.

President Bush's second reason for changing his position was an assertion that including carbon dioxide in new legislation would lead to significantly higher electricity prices. Was this conclusion based on any analysis performed by his administration? Apparently not. His letter cites one report for the high cost conclusion: "Analysis of Strategies for Reducing Multiple Emissions from Power Plants." I will say more about this report in a moment. First, let me point out that while the president apparently did not ask his own appointees to prepare an analysis for him, there were four other reports done in the last six months regarding the costs of programs to reduce power plant emissions of carbon dioxide. The other four studies, including a November, 2000, Department of Energy report, *Scenarios for a Clean Energy Future,* concluded that substantial carbon dioxide reductions from the electric sector could be achieved at very low costs. For example, the DOE "Clean Energy Future" study found that electric sector carbon dioxide emissions could be reduced to 1990 levels with a net increase in Americans' energy bills of less than 1% in the year 2010 and with large energy bill savings in later years due to more efficient use of energy. Citations to this and the other studies are attached.

Thus, there were five studies the president could have consulted regarding the costs of carbon controls—four that found low to modest costs and one outlier that forecast high costs. Unfortunately, his letter leaves the impression that his staff seized on the EIA analysis, not based on any broad review of the issue but because it contained the conclusion that could be used to rationalize the president's change of position. If this is correct, it is quite striking. The president made an explicit and clear policy commitment during the campaign. His surrogates repeated his pledge in additional public appearances during the campaign. One would think that before abandoning such an explicit promise, the president would have directed a thorough

review by his own administration team of policy options and the costs of those options to determine whether there was a real conflict between his promise and Americans' energy goals. At the very least, one would have hoped that the president's staff would have recommended a process that included an examination of all relevant recent analyses and, when presented with a conflict in those analyses, that more time would have been taken to determine which cost analyses were more reliable. While the president's letter states the information he received "warrants a reevaluation," he didn't announce he was undertaking a reevaluation. He just made a decision that flatly contradicted his campaign pledge. All of these facts suggest that careful policy analysis had very little to do with the president's decision.

What should we make of the report cited by the president? While he called it a "Department of Energy Report," the analysis is, in fact, a "Service Report" prepared by the Energy Information Administration (EIA) for submission to former Congressman David McIntosh in response to his request for an analysis of emission reduction scenarios specified by the congressman. Now EIA is respected for its analytical capabilities but it is also clear that when Congressmen McIntosh requested the analysis, his staff knew before the EIA computers were turned on that the result would forecast high costs for carbon controls. Given Mr. McIntosh" vehement opposition to any form of carbon emission reductions, this prospect probably did not make him unhappy.

Is EIA's predictable result due to deliberate deception by EIA? Certainly not. It is an artifact of the approach EIA used to evaluate the policies specified by Mr. McIntosh. The analytic approach and assumptions that EIA adopts in modeling electric services options guarantee that any policy aimed at significantly reducing carbon from electricity generators will be calculated as having a high cost. One would have more confidence in the reality of this prediction if there were no credible conflicting conclusions. But, in fact, the Department of Energy Clean Energy Future study I mentioned above, uses the same model run by EIA and reaches dramatically different conclusions. A principle reason for this is that in DOE's runs, analysts incorporate a number of sensible policies designed to help Americans use electricity and natural gas more efficiently. These policies lower consumer energy bills and make it possible to clean up power plants at much lower costs. For example, the DOE analysis ignored by the president includes policies found in Chairman Smith's recently reintroduced Energy Efficient Buildings Incentives Act, S. 207, also sponsored by Senators Reid, Lieberman, and Chafee of this Committee. By examining a harmonized set of energy and clean air policies such as those championed by Chairman Smith, the DOE Clean Energy Future report comes much closer to the truth about the costs of smart carbon reduction programs than the EIA service report done at Mr. McIntosh" request.

President Bush also refers to concerns about current high energy prices in California and other states as supporting his new position on carbon dioxide. This point really does not withstand analysis. Prices are high today and generation capacity in California and the West is constrained. But any legislation enacted by Congress for power plants will not affect energy supplies today. Instead, a reduction timetable will be some years in the future, allowing time to install pollution controls and for repowering or replacement of the very plants whose breakdowns contributed to California's problems in the last year. As explained in attached NRDC fact sheets, environmental requirements have not caused today's electricity price and supply problems and no amount of scapegoating will change the facts or improve our chance of designing effective remedies.

Finally, I must comment on the president's statements regarding the Kyoto Protocol in his letter. Just last month the president's foreign policy officials requested and received a delay in the resumed meeting of the parties to the Rio Climate Treaty, previously scheduled for May 2001. The State Department requested this delay because, it told other countries, the administration was conducting a comprehensive review of climate change policy that could not be completed by the May meeting.

How is that need for a thorough review to be squared with the president's apparently definitive denunciation of the Kyoto agreement in his letter? Granted, in this case, his statements are consistent with views he expressed on the campaign trail. But why not await the review he has promised before reaffirming views he formed without benefit of such an analysis? The president says the Kyoto agreement would "cause serious harm to the U.S. economy." What analyses did he review in reaching this conclusion? The previous administration published analyses concluding that compliance with the agreement would have less than a 1% impact on forecasted GDP, equivalent to adding no more than a month or two to a ten-year forecast for achieving a vastly increased level of wealth in this country. The president may well disagree with the previous administration's analysis but on what basis? Wouldn't he and the American public be benefited by preparation of the best objective anal-

ysis that the new administration is capable of producing? Why the hurry to issue the verdict before hearing the evidence?

The other thing the president had to say about the Kyoto agreement was that it was unfair because it does not establish the same reduction targets for China and India as for the United States. In my opinion, this is a shameful statement. Consider that the U.S. and other developed countries are among the wealthiest nations on earth and that they have put into the atmosphere about 75% of the carbon dioxide that has accumulated since the start of the industrial revolution 150 years ago. Consider also the relative economic ability of the U.S., India, and China to take the first steps in demonstrating that we can fight global warming. The mortality rate for children under 5 years old in India is thirteen times higher than in the U.S.; China's mortality rate for these children is 6 times higher than ours. In India, close to half the population attempts to survive on less than $1 per day; in China, one in five people lives on this level. Consider electricity consumption: the average American uses more electricity in a day than the average person in India uses in a month; compared to China the average American uses more electricity in a month than a Chinese person uses in fifteen months.

For the president to demand that India and China make equal commitments to control carbon dioxide as a condition for the U.S. to take a first step along with other wealthy nations, flies in the face of Americans' vision of our country as a compassionate and responsible world citizen. America's heart is bigger than this. The president spoke of compassion during the campaign and I have to believe his heart is bigger than this too.

There is a practical point to be made here as well. China and India are important nations to engage in global strategies to fight climate change. The U.S. certainly needs a strategy to break down barriers with these countries and produce a more cooperative basis for discussion of all countries' global warming responsibilities over time. But what possible strategy could underlie the President's decision to single out China and India for criticism in his letter? Did Secretary of State Powell advise that this would be helpful in moving those two countries to a position that is less contentious on this issue? That seems unlikely.

NRDC hopes the president actually will evaluate and reevaluate his positions on carbon dioxide from power plants and the Kyoto agreement, rather than flatly reversing one position and restating the other with no current analysis to inform his decisions. If he does so, he could rebuild some badly needed bridges that are now in flames.

III. THE CLEAN AIR ACT'S DUAL-TRACK AIR QUALITY STRATEGY

Now I want to turn to the role of new source review under the Clean Air Act. Members who read my testimony before this Subcommittee in February, 2000, will find this material familiar, since I repeat in this section, what I said at that time.

In 1970 Congress adopted a dual-track program to protect and enhance our nation's air quality. The first program calls on states to adopt comprehensive pollution control programs under state law to achieve air quality objectives set forth in National Ambient Air Quality Standards (NAAQS) adopted by EPA. This ambient program is an example of the "assimilative capacity" approach to environmental management—based on the belief that the environment can assimilate a certain amount of dirt or toxins released from human activities without causing identifiable harm. This approach starts by identifying exposure levels of pollution that current research indicates may be tolerable for humans and ecosystems and then seeks to reduce emissions from pollution sources enough to meet the maximum tolerable exposure targets.

The 1970 Act's ambient management program strengthened previous efforts enacted by Congress in the 1960s and relied on states to set control rules for pollution sources at levels just tough enough to bring total pollution down to the level of the national ambient standards. Implicit in this approach is that an area's air quality determines the amount of clean-up required of sources. Even if there are readily available means of reducing a source's pollution, a state is not required to adopt such measures if not needed to meet the NAAQS.

But Congress did not rely exclusively on the assimilative approach to air quality protection in the 1970 Act. Congress adopted another strategy designed to minimize air pollution by requiring sources to meet emission performance standards based on modern "best practices" in pollution abatement. The performance standard approach does not set required levels of control based on the air quality conditions of particular areas. Rather, the required emission reductions are determined by assessing how much polluting processes can be cleaned up, taking account of technical and economic constraints.

Congress expected that future ambient goals would likely be more ambitious than 1970's defined goals and wanted an independent program that would be effective in reducing total emissions over time. Congress' intent in the performance standard program was to use the force of new purchases and investments to incorporate advances in pollution prevention and control as a complementary strategy to the ambient management program.

Congress applied the performance standard approach to both stationary and mobile sources but with some important distinctions. In the mobile source area (cars, trucks, buses), only entirely new vehicles were subject to federally-established modern performance standards. Congress was presented with analyses demonstrating that with traditional rates of "fleet turnover," most of the benefits of tighter new car standards would be experienced in less than 10 years.

In requiring performance standards for stationary sources, Congress adopted more sweeping provisions. The Act requires that both new and modified stationary sources must meet modern performance standards. Congress in 1970 also adopted a very expansive definition of "modification," to assure that environmental performance would improve as investments were made.

The 1970 Act's principal tool for improved pollution control for new and modified sources was the New Source Performance Standard (NSPS), a national, categorical requirement based on very good, but not the best, pollution minimizing practices. In 1977, when the Act was amended, Congress adopted the new source review (NSR) and prevention of significant deterioration (PSD) programs to strengthen efforts to minimize emissions and air quality impacts from new and modified sources.[1] In the 1977 Amendments Congress expanded both the scope of the rigor of the requirements for improved performance from new and modified sources. Coverage would no longer be limited to the categories for which EPA had adopted NSPS requirements; rather all new and modified sources above certain pollution tonnage thresholds would be required to minimize their emissions. Second, the level of the performance requirement would not be tied to often out-of-date NSPS; rather case-by-case determinations of current best performance would be required. Third, covered sources locating in clean areas as well as dirty areas would have to pass ambient impact tests to prevent a worsening of air quality. In 1990, Congress again increased its emphasis on pollution prevention from new and modified sources, reducing the size thresholds for coverage in badly polluted areas.

In sum, Congress has repeatedly endorsed the concept of modern performance standards for new and modified pollution sources, adopting, in successive amendments, strengthened requirements intended to make the NSR programs more effective in reducing pollution.

However, these programs have for twenty years been the subject of criticism from industry representatives and from many academic economists. The economists' argument runs, "why should new sources be regulated more strictly than existing sources? After all, air quality is determined by how much pollution is released and where it is released. The air certainly cannot tell the difference between a pound of pollution from a plant built in 1965 and that from a plant built in 1995."

Critics of the Act's new source requirements argue that instead of regulating new and old sources differently, we should simply establish our desired air quality objectives and allow them to be met by the most efficient means. Under this approach, agencies first would do research to identify the adverse effects of air pollution on health and welfare; next, agencies would convert this research into environmental standards; then, the agencies would design pollution control programs to achieve the environmental standards; finally, agencies and pollution sources would implement the pollution control programs and the air would become cleaner.

This critique and prescription has a certain superficial appeal. As I have mentioned, the ambient management program has been a central program of the Clean Air Act since 1970 and it should continue. The question is whether it is prudent to rely on the ambient standards approach as the *only* strategy for improving and protecting air quality. In my view that would be a mistake.

The 1970 and later Clean Air Acts reflect a judgment by Congress that the ambient standards approach should be the major pollution control strategy but that it should be complemented by other independently functioning programs such as the NSR and Mobile Source Emission Standards programs. I think that this judgment was a wise one. The history of air pollution control efforts both before and after the 1970 Act reveals that the ambient standards approach, while conceptually sound, has its weak spots, which when exploited by well-organized opposition, can prevent the program from solving air quality problems in a timely fashion.

[1] For simplicity, for this testimony I will refer to these programs generally as NSR.

First, the Government's capacity to acquire unambiguous information about natural processes is very limited. The research is complex, expensive, and time consuming. Due to perennial shortages of money, talent, and time, most of the studies undertaken in the past and those being conducted now are less than perfect. As a result, their conclusions are easy to pick apart and dismiss as not dispositive. Moreover, the health effects we are concerned about are increasingly related to chronic exposures to low levels of combinations of pollutants. We have never conducted an adequate study to characterize the effects from these kinds of exposures and none is even planned.

The uncertainties in what we know about air pollution effects in turn lead to controversy and delay in establishing environmental standards. All of us, including this Committee, have experienced this controversy in the continuing disputes about EPA's revised ozone and particulate standards.

The next step in the process—control program design—can also be affected. Different interests argue at length about how emissions in a particular location relate to air quality in that location or elsewhere. This can and has led to uncertainty, controversy and delay in designing pollution reduction programs to meet environmental standards. The continuing fights over efforts to address transported air pollution are an example of this problem.

Another weak spot in the ambient standards abatement program is that it often requires large changes in established patterns of behavior. When an air pollution control agency adopts a regulation that applies to an existing source it is trying to get firms to spend their money, time, and thought in ways they have not planned. Not surprisingly, these firms often resist, which leads to uncertainty, controversy and delay in the final step of the ambient standards approach, the actual implementation of pollution reduction measures in the real world.

This resistance to change often feeds back to the first step in the ambient standards process, setting the standards themselves. Pressure is mounted to weaken existing standards and to oppose the setting of new ones. Again, the unified fight of industrial polluters against the revision of the ozone and particulate standards highlights this problem.

These weaknesses do not call for abandoning the ambient standards approach. But they do suggest the wisdom of complementing that approach with programs that are strong where the ambient approach is weak. The Act's NSR programs meet that need. Implemented properly, these programs can assure that as new well-controlled sources replace old ones, we will make progress in reducing emissions as our economy grows. By controlling the major pollutants, the new source programs also serve as a hedge against unidentified risks associated with those pollutants. By dealing with engineering facts rather than biological facts, the new source programs usually involve more manageable factual controversies. We are relatively good at measuring the dollar costs of meeting performance standards and calculating the emission reductions such standards can provide. Finally, by focusing on new and modified sources, the new source programs can lessen the social and political costs of reducing pollution. Because they operate at the time firms are making new investments, these programs allow firms to plan pollution prevention and control into their plant operations.

All of this does not argue that the new source programs should replace the ambient program, only that they should complement that program. For the new source programs have weaknesses in areas where the ambient program performs better. The new source programs focus on the highly technical details of engineering and thus are too insulated from effective public participation. Controlling pollution only from new sources often is not the cheapest way to achieve a unit of emissions reduction. In my view, the premium we pay to accomplish reductions where the ambient program has failed to deliver them is a prudent investment, but controls on new and modified sources should not be our only program. Finally, new source programs, because they are technology based, do not guarantee a desirable level of environmental quality. We will degrade our air quality unless we improve pollution reducing methods and processes at least as fast as we grow. The new source programs do not create adequate incentives for such improvements and thus must be complemented by the ambient standards and PSD programs which do recognize that clean air is a scarce resource.

In sum, the Clean Air Act's dual track approach to air quality management employs the principle of diversification to reduce risks. In an uncertain world, a prudent investor will forego putting all her money into the one stock with the apparent highest yield. Instead she will spread her risk by selecting a range of investments—some which offer high risk and high yield and others which offer less risk and less yield. Similarly, the Act resembles a stable ecosystem which has a diversity of spe-

cies. Such systems are much less likely to fail in the face of adversity than systems that have no diversity.

IV. HOW SHOULD EPA'S NSR PROGRAMS BE "REFORMED"?

NRDC has participated over the last decade in stakeholder discussions convened by EPA to consider ways to improve the Act's NSR programs. A major reason these talks have made little progress is the lack of agreement on the purposes of these programs. There are two major purposes: to assure that new investments do not degrade air quality and to assure that when new investments are made, emissions are minimized by requiring sources to meet performance standards that reflect modern emission prevention capabilities.

While a great deal of attention has been paid to the complexity of the NSR permitting process, the larger environmental failure of the NSR program is that the program has not brought down emissions as Congress intended. Citizens, pollution control agencies, and members of Congress are increasingly aware of the fact that grandfathered air pollution sources are more and more the central impediment to clean air progress. Contrary to the intent of Congress, investments in new production have not resulted in existing grandfathered sources being replaced by facilities that must meet modern performance standards. As a result, grandfathered sources dominate the pollution inventory throughout the United States.

The degree to which old stationary sources determine our nation's burden of air pollution is striking, especially when compared to the impact of old cars on pollution loads. For example, fossil electric powerplants built more than 20 years ago are responsible for 84% of total US nitrogen oxides (NO_X) pollution from that sector and 88% of sulfur dioxide (SO_X). In contrast, 20-year-old cars contribute less than 7% of US car NO_X pollution and 3% of that sector's VOC (volatile organic compounds) pollution.

It is obvious that the Title II new mobile source program has done quite a good job of preventing old cars from dominating today's pollution problems but the Title I new stationary source program has performed miserably on this score.

There are some obvious reasons for the NSR program's poor pollution reduction performance. First, the rules themselves contain too many loopholes that allow sources to avoid NSR even though they continue to make significant investments year after year. Second, as recent enforcement actions have alleged, there are many instances of firms escaping the requirements of the rules by misclassifying projects in an unlawful manner.

Reform of the NSR program should address its failure to produce pollution reduction from old grandfathered sources as a priority issue as well as explore ways to simplify the NSR process. A genuine reform of the program should aim to make two basic changes: the program should apply to more industrial projects than it now does and the review process should be streamlined to enable decisions to be made quickly while protecting the public's right to participate. Instead, the "reform" proposals EPA has published over the last decade have concentrated almost entirely on changes that would *expand* the loopholes of the current rules so that even fewer grandfathered sources would be required to clean up as they upgraded their capital equipment.

The combination of categorical exemptions and exclusions, weak rules for calculating emission increases, and broad provisions for "netting out" of review allow far too many sources to avoid the NSR program indefinitely. When illegal evasions of the rules are added to the many exemption opportunities in the rules, we get the results we see—most sources never encounter the federal NSR program and their pollution remains with us.

NRDC has filed lengthy comments with EPA on these issues over the years and I will not burden the Subcommittee with a recitation of the details here. I would like to mention one area—that of "netting." Netting is the jargon for a transaction that allows new projects at existing sources to escape NSR. In essence it allows the source operator to count "reductions" from grandfathered pieces of polluting equipment at the site in calculating whether a new project will result in an emission increase that would require new source review. By allowing sources to avoid the modern performance requirements of NSR, netting preserves the status quo, perpetuating excessively high levels of pollution originally emitted by poorly-controlled, grandfathered pollution sources.

Netting rewards sources that have managed to manipulate the current system to preserve high levels of emissions. Current netting policy allows those high emission levels to function as an asset that can be deployed to avoid NSR/PSD review. Thus, netting operates at cross purposes with sound air quality objectives. It creates incentives to keep emissions at unnecessarily high levels and perpetuates an inefficient

allocation of emission "shares" by providing the greatest rewards to the most polluting sources. Netting frustrates one of the primary objectives of the NSR/PSD program, which is to link requirements for modern emission performance standards to investments, so that emissions are reduced as the economy expands. Instead, netting allows existing emission levels to be perpetuated indefinitely.

While the netting rules are complex, the fundamental problem with the approach is easy to understand. Netting allows a grandfathered pollution source to "bequeath" its excessive pollution privileges to its descendant, the new piece of equipment. Under netting, the new piece of equipment is not required to meet modern performance standards; it can emit at much higher levels by relying on the pollution entitlements transferred from old, grandfathered pieces of equipment. In this way, excessive amounts of pollution can live on long after the original sources have disappeared. Netting resembles the former hereditary peerage system in England, where membership in the House of Lords and other privileges were handed down from generation to generation. England recently acknowledged this system has no proper place in a modern democracy. We too need to eliminate the pollution peerage that is imbedded in EPA's netting rules.

For nonattainment NSR, the Supreme Court in *Chevron* made it clear that EPA has the authority to eliminate the availability of netting altogether.[2] One perverse effect of netting in nonattainment NSR is that new equipment is installed without meeting "lowest achievable emission rate" (LAER) performance standards. This in turn means that a greater level of emission reduction is required to offset the new equipment's emissions than if the new equipment had met LAER standards. These additional emission reductions must come from a finite pool of existing emission sources whose total pollution load must be further reduced for the area to attain the ambient standards. Thus, the effect of NSR netting is to allow existing source owners to unilaterally dedicate the cheapest and easiest emission reductions in a nonattainment area to compensate for poorly-controlled new units, leaving state and local control agencies with the more difficult task of developing an attainment plan from the more expensive, politically controversial remaining emission reduction opportunities.

EPA's original defense of its 1981 change to allow netting under the nonattainment NSR program was that areas choosing such an approach would be required to develop timely attainment plans in any event so that there would be no environmental harm. It is now the year 2000 and EPA can no longer deny that the theory it presented to the Supreme Court in the early 1980s has no basis in reality. In fact, areas have not succeeded in developing timely and adequate attainment plans. State and local agencies have protested repeatedly to EPA that they cannot identify sufficient, politically feasible emission reductions to demonstrate timely attainment. EPA has responded with policies that have permitted lengthy delays in the submission of adequate plans. Given that the premise for EPA's initial adoption of NSR netting in 1981 has not been achieved, it is time for nonattainment netting to be abolished.

To restrict netting in the PSD NSR program, EPA should reform its definition of contemporaneous so that only activities which are part of the project for which the netting claim is made can qualify. Second, EPA should reduce the netting credits available for shutting down or limiting operations at existing units to reflect the obvious fact that the new emission-increasing projects will have greater longevity than the older existing units that are generating the netting credits. For example, consider a source that proposes to build a 100-ton-per-year new unit with a 35-year useful life and to net out the increase with the shutdown of a 100-ton source that has only 5 years of life remaining. The stream of emission reductions from the shutdown source ends after 5 years but the emission increases from the new source continue for an additional 30 years. There clearly is an enormous increase in the cumulative emissions from the facility over the life of the new project that is not captured if netting credits are given for the shutdown unit based only on a comparison one year's emissions.

V. NEW SOURCE REVIEW AND ENERGY FACILITIES

Over the last year, as we have experienced high prices and shortages in some energy markets, the cry has been raised that permitting requirements, including the Act's NSR requirements, are preventing construction of needed facilities. These are not new claims. They are raised whenever the basic fact that energy is a scarce resource makes its way on to the evening news. So we see repeated references to the fact that California "has not built a major power plant in a decade" and the claim

[2] *Chevron, U.S.A., Inc. v. NRDC*, 467 U.S. 837 (1984).

that permitting requirements are the reason. As NRDC's attached fact sheet points out, the claim is wrong. Power plant construction slowed to a trickle in California in the 1990s not because of permitting requirements but because private investors first did not forecast enough demand to be assured of returns that would beat other uses for their money; then uncertainties created by the development of a deregulated electricity market caused further hesitation. A review of California's permitting files demonstrates that nearly all power plant projects were approved and without significant delays. The fact is, had there been no permitting requirements at all in California during the 1990s, private investors still did not have adequate market incentives to spend money building new plants.

However, in this Congress bills have been introduced that would carve gaping exemptions for from NSR requirements for new and modified power plants. For example, S. 60 and similar provisions in S.389, Senator Murkowski's energy bill, would exempt from NSR and from any additional emission regulation, projects at new or existing coal-fired power plants. While these exemptions are labeled "credit for emission reduction" or "clean-coal" projects, in fact the legislation does not require emissions to be reduced as a condition for eligibility. The eligibility criteria are so broadly drafted that virtually any expansion project at an existing plant or any new coal plant could be built with an exemption from NSR and a prohibition of coverage by new pollution control requirements, such as future rules for mercury controls or rules to reduce nitrogen oxides to address regional smog problems. A detailed analysis of S. 60's exemptions, which applies as well to similar provisions in S. 389, is attached.

In truth, these efforts to repeal Clean Air Act safeguards are short-sighted and counterproductive to the goal of increasing public acceptance of new energy projects.

While the nation's energy concerns continue to be a convenient excuse for attacking environmental permitting requirements, with the "NIMBY syndrome" derided as a telltale symptom of our ills, the fact is, people want nearby plants to be as clean as possible and want the chance to participate in location decisions. Weakening the Clean Air Act would increase anxiety and opposition to new projects, not lessen it.

As you consider this issue I would encourage each member of the Subcommittee to ask, "how close is the nearest large fossil fuel generating station to my home—1 mile away, 2, 5, 10?" Suppose a new station was proposed less than a mile from your home; how would you talk about it in your own kitchen or living room? Would you like the opportunity to ask questions about the design, performance, scale, and perhaps even the location of the project? Would you like a public process that your neighbors could join in? Would you like the right to get answers from the approval authorities? Would you like some recourse if officials ignored your questions and suggestions for improvement of the project? Other Americans want these same safeguards and they deserve better than to be labeled "NIMBY."

The path to harmonizing clean air and energy goals is not down the road of exemptions from safeguards. The right path involves adopting comprehensive integrated programs to clean up existing polluting power plants and improving current new source programs so that they more reliably and efficiently assure citizens that expanded energy supplies can be achieved without degrading environmental quality. Mr. Chairman and members of the Subcommittee, NRDC would be happy to work with you to move down this path. Thank you for the opportunity to present these views and I am happy to answer any questions you may have.

Attachment 2

PREPARED STATEMENT OF LISA SPEER, SENIOR POLICY ANALYST, NATURAL RESOURCES DEFENSE COUNCIL, BEFORE THE SUBCOMMITTEE ON ENERGY AND MINERAL RESOURCES, HOUSE COMMITTEE ON RESOURCES, MARCH 15, 2001

My name is Lisa Speer. I am Senior Policy Analyst with the Natural Resources Defense Council (NRDC) in New York. NRDC is a national nonprofit organization of scientists, lawyers, and environmental specialists, dedicated to protecting public health and the environment. Founded in 1970, NRDC serves more than 400,000 members from offices in New York, Washington, Los Angeles, and San Francisco. My testimony today addresses environmental issues surrounding natural gas exploration, development and production from submerged federal lands on the Outer Continental Shelf (OCS).

1. BACKGROUND: ENERGY POLICY IN THE 21ST CENTURY

At the dawn of a new century, America finds itself once again wrestling with a problem that has, off and on, been at the forefront of U.S. politics for several decades: energy. The United States has 5 percent of the world's population, but con-

sumes nearly a quarter of the world's energy supply. We use energy to heat our homes and our businesses, power our computers and telephone systems, run our automobiles and aircraft, and drive our manufacturing plants and hospitals. In short, we have constructed an economy and a way of life that depends on the ready availability of energy.

Two distinct visions of an energy policy for the United States have emerged to meet these demands. One vision focuses chiefly on extracting as much energy as possible, mostly in fossil fuel form (oil, coal and natural gas), in hopes that supply can catch up with demand. The alternative vision, however, calls for encouraging innovation and new technology to meet our energy needs in an environmentally responsible manner. This vision emphasizes efficient use of energy, and places priority on using energy resources that are least damaging to our environment. It promotes economic growth and American industrial competitiveness. This energy path would not force consumers to make sacrifices. Instead it relies on improved technologies that will eliminate waste while increasing productivity and comfort.

Therefore, NRDC believes that U.S. energy policy must rely on the application of technological advances already in place and readily available as a way to reduce consumption. Such an approach will decrease America's reliance on foreign sources of energy in the near- and long-term, protect the environment, provide for America's energy needs, and buffer the economy against short-term swings in the market. NRDC's recently published report, *A Responsible Energy Policy for the 21st Century* examines these issues in detail. I ask that the report be included in the record.

2. NATURAL GAS RESOURCES OF THE OUTER CONTINENTAL SHELF

As the cleanest burning fuel, natural gas makes an important contribution to the nation's energy supply. Some argue that natural gas development on the Outer Continental Shelf should be promoted. They argue that the risk of oil spills is negligible, and that environmentally sound development can take place. This argument ignores the reality that oil spills are not the only environmental concern related to OCS development. Offshore gas development, like oil development, causes substantial environmental impacts, including the following.

Onshore damage: The onshore infrastructure associated with offshore oil or gas cause significant harm to the coastal zone. For example, OCS pipelines crossing coastal wetlands in the Gulf of Mexico are estimated to have destroyed more coastal salt marsh than can be found in the stretch of land running from New Jersey through Maine.[1] Moreover, the industrial character of offshore oil and gas development is often at odds with the existing economic base of the affected coastal communities, many of which rely on tourism, coastal recreation and fishing.

Water pollution: Drilling muds are used to lubricate drill bits, maintain downhole pressure, and serve other functions. Drill cuttings are pieces of rock ground by the bit and brought up from the well along with used mud. Massive amounts of waste muds and cuttings are generated by drilling operations—an average of 180,000 gallons per well.[2] Most of this waste is dumped untreated into surrounding waters. Drilling muds contain toxic metals, including mercury, lead and cadmium. Significant concentrations of these metals have been observed around drilling sites.[3]

A second major polluting discharge is "produced water," the water brought up from a well along with oil and gas. Offshore operations generate large amounts of produced water. The Minerals Management Service estimates that each platform discharges hundreds of thousands of gallons of produced water every day.[4] Produced water typically contains a variety of toxic pollutants, including benzene, arsenic, lead, naphthalene, zinc and toluene, and can contain varying amounts of radioactive pollutants. All major field research programs investigating the fate and effects of produced water discharges have detected petroleum hydrocarbons, toxic metals and radium in the water column down-current from the discharge.[5]

Air pollution: Drilling an average exploration well generates some 50 tons of nitrogen oxides (NO_X), 13 tons of carbon monoxide, 6 tons of sulfur dioxide, and 5 tons of volatile organic hydrocarbons. Each OCS platform generates more than 50 tons

[1] Boesch and Rabalais, eds., "The Long-term Effects of Offshore Oil and Gas Development: An Assessment and a Research Strategy." A Report to NOAA, National Marine Pollution Program Office at 13-11.

[2] MMS, 2000. Gulf of Mexico OCS Oil and Gas Lease Sale 181, Draft Environmental Impact Statement (DEIS), p. IV-50.

[3] *Id.*

[4] *Id.,* p. IV-32.

[5] *Id.,* p. IV-32-33.

per year of NO_X, 11 tons of carbon monoxide, 8 tons of sulfur dioxide and 38 tons of volatile organic hydrocarbons every year.[6]

Oil spills: If offshore areas are leased for gas exploration there is always the possibility that oil also will be found. We no of no instance where a lease prohibits an oil company from developing oil if oil is found in a "gas prone" region. We are not aware of any company ever agreeing to such a condition in the history of the OCS program. Without such a restriction included in a lease there would be no assurances that oil in fact would not be developed, raising the possibility of an oil spill. According to statistics compiled by the Department of the Interior, some 3 million gallons of oil spilled from OCS oil and gas operations in 73 incidents between 1980 and 1999.[7] Oil is extremely toxic to a wide variety of marine species, including marine birds, mammals and commercially important species of fish.

3. THE OCS MORATORIA

Beginning in 1981 and every year since then, Congress has imposed restrictions on OCS leasing in sensitive areas off the nation's coasts. These moratoria now protect the east and west coasts of the U.S. and most of the Eastern Gulf of Mexico. The moratoria reflect a clearly established consensus on the appropriateness of OCS activities in most areas of the country, and have been endorsed by an array of elected officials from all levels of government and diverse political persuasions, from former President George H.W. Bush to Governor Jeb Bush of Florida, and from Governor Tony Knowles of Alaska to Governor Gray Davis of California.

We strongly oppose any attempt to lift the moratorium, or to promote gas development in other sensitive OCS areas, including the Sale 181 area off the west coast of Florida and areas off Alaska. We have called on the Interior Department to remove these areas from the new Five Year OCS Program currently under development.

4. DRILLING IN THE MORATORIA AREAS, THE SALE 181 AREA AND THE ALASKAN OCS IS NOT NECESSARY.

Despite assertions from industry and their supporters on Capitol Hill, it is not necessary to drill in sensitive areas to meet America's energy needs. For example, industry is pressing to drill in the moratorium areas, the Eastern Gulf of Mexico, and off Alaska. But such drilling is unnecessary because seventy per cent of the nation's undiscovered, economically recoverable OCS oil and gas, and 80% of the nation's undiscovered, economically recoverable OCS gas, is located in the Central and Western Gulf of Mexico. [8] Thus, removing the moratorium areas, the OCS off Alaska, and the Eastern Gulf of Mexico from the 5 Year Program will leave the vast majority of the nation's OCS oil and gas available to the industry.

Large untapped energy efficiency resources provide a much better choice. Congress can help by providing tax incentives for the construction of energy efficient buildings, manufacturing energy-efficient heating and water heating equipment. These measures could save 300 Tcf of natural gas over 50 years.[9] This is more than twelve times the Interior Department's mean estimates of economically recoverable gas located outside the Central and Western Gulf of Mexico.[10] These strategies will do far more to increase our nation's energy security than a "drain America first" policy of exploiting sensitive offshore and onshore federal lands.

Thank you for the opportunity to testify.

Attachment 3

A RESPONSIBLE ENERGY POLICY FOR THE 21ST CENTURY

Principal Authors: Daniel Lashof and Patricio Silva. *Contributing Authors:* Alyssondra Campaigne; Sheryl Carter; Ralph Cavanagh; Sarah Chasis; Charles Clusen; Karen Garrison; David Goldstein; Nathanael Greene; David Hawkins; Roland Hwang; Kit Kennedy; Lisa Speer; Johanna Wald; Faith Weiss; and Gregory Wetstone, Natural Resources Defense Council, March 2001.

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[6] *Id.,* p. IV-40.

[7] MMS, 2000. Gulf of Mexico OCS Oil and Gas Lease Sale 181, Draft Environmental Impact Statement (DEIS), pp. IV-50.

[8] U.S. Department of the Interior, Minerals Management Service (MMS), 2000. Outer Continental Shelf Petroleum Assessment, 2000, page 5 and Gulf of Mexico Assessment Update.

[9] NRDC, 2001. A Responsible Energy Policy for the 21st Century, p. 32.

[10] U.S. Department of the Interior, Minerals Management Service (MMS), 2000. OCS Petroleum Assessment, 2000, p. 5 and Gulf of Mexico Assessment Update.

EXECUTIVE SUMMARY

This report offers a responsible approach to meeting America's energy requirements. And it is balanced, recognizing the need to extract resources, while proposing a range of environmentally preferred ways to increase supply and energy efficiency improvements that could substantially reduce the demand for energy without forcing Americans or American industry to make sacrifices.

The cornerstone of NRDC's (Natural Resources Defense Council) plan is increased energy efficiency, relying not on pie-in-the-sky, undeveloped technologies, but on readily available and cost-effective processes and technologies. In the short-term, the plan calls for increased reliance on natural gas as a bridge to renewable and environmentally sound energy sources in the future. Correspondingly, the plan calls for reducing U.S. reliance on dirtier fossil fuels—oil and coal. And the plan addresses the urgent needs of low-income households for affordable energy services.

In sharp contrast to NRDC's common sense approach is the Bush administration's controversial energy initiative. Among other things, it calls for opening the Arctic National Wildlife Refuge coastal plain to oil drilling and development, and for rolling back environmental safeguards to pave the way for more fossil fuel development. Already the plan has come under severe criticism for the irreparable harm it would cause pristine areas of the wildlife refuge. That criticism is entirely accurate. But there is another fundamental reason to reject the proposal: it is completely unresponsive to the problems it purports to address. It would make virtually no difference to America's energy supply in the short- or long-term, it would have no impact on energy prices, and it would have no practical effect on America's dependence on foreign sources of oil.

RESPONSIBLE OIL POLICY: FUEL EFFICIENCY, NOT FOOLISH DEVELOPMENT OF THE ARCTIC NATIONAL WILDLIFE REFUGE

Key Recommendations:

- Provide tax credits to individuals who buy clean and efficient advanced-technology vehicles employing hybrid gasoline-electric drive.
- Raise fuel economy standards for new cars, sport utility vehicles (SUVs), and other light trucks to an average of 39 miles per gallon over the next decade.
- Require replacement tires to be as fuel efficient as the original tires on new vehicles.
- Expand programs to weatherize low-income Americans' housing and help pay their energy bills.
- Provide incentives for smart growth development patterns that reduce sprawl.
- Do not drill in the Arctic National Wildlife Refuge.
- Do not drill in sensitive offshore areas, including moratorium areas, Alaska, and the eastern Gulf of Mexico.
- Maintain existing protections for sensitive onshore public lands and extend protection to other special places.

The reality that proponents of drilling in the Arctic National Wildlife Refuge refuse to acknowledge is that the United States cannot drill its way out of its energy problem. America has 5 percent of the world's population, but consumes nearly a quarter of the world's oil supply. It already has extracted the majority of its available oil. The obvious conclusion is that the United States can have a much greater impact on oil prices worldwide and can do more to help ensure its own economic security by cutting its demand.

For example, simply upgrading the quality of replacement tires to match that of tires that come as standard equipment on new cars would save 5.4 billion barrels of oil over the next 50 years—70 percent more than the total amount of oil that would likely be pumped from the Arctic Refuge over the same time period. Updating fuel efficiency standards to reflect the capabilities of modern technology would produce even greater savings. Increasing fuel efficiency standards for new vehicles to an average of 39 miles per gallon over the next decade would save 51 billion barrels of oil over the next 50 years—more than 15 times the likely yield from the Arctic Refuge.

DRILLING THE ARCTIC REFUGE IS UNRESPONSIVE TO AMERICA'S ENERGY NEEDS

The case for drilling the Arctic National Wildlife Refuge made by the Bush administration and its supporters on Capitol Hill makes no sense. Proponents wrongly present drilling as a solution to the current California energy crisis. They overstate how much oil could be pumped. They understate the environmental consequences. In fact, drilling in the Arctic Refuge coastal plain would have no bearing on California's current crisis, would cause huge and unnecessary envi-

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ronmental damage, would do nothing to address America's long-term need for greater energy efficiency, would not affect the price of gasoline at the pump, and would not significantly reduce U.S. dependence on foreign oil.

The available oil from the Arctic National Wildlife Refuge is a drop in the bucket of America's energy needs. The best U.S. Geological Survey estimate is that less than a six-month supply of oil could be economically recovered from the Arctic Refuge (about 3.2 billion barrels, spread out over a 50-year period), and that it would take at least 10 years of exploration, drilling, and pipeline construction before the oil would reach refineries. In its peak year of production—2027—the Arctic Refuge would yield less than 2 percent of projected U.S. consumption in that year.

Proponents overstate how much oil would be extracted from the refuge. Proponents of drilling maintain that as much as 16 billion barrels of oil would be pumped from the Arctic Refuge. The claim is a gross exaggeration that ignores the U.S. Geological Survey's conclusion that about 60 percent of the oil in the Arctic Refuge would not be economically feasible to produce. Even if there were 16 billion barrels of oil available in the refuge, more than three times as much could be saved by raising vehicle fuel economy standards to an average of 39 miles per gallon.

Drilling in the coastal plain would have no impact on California's electricity problems or any other state's electricity problems. Most U.S. electric power plants do not use oil. Less than 1 percent of California's electricity is generated by burning oil. The average for the United States as a whole is only 3 percent. And as noted above, oil from the refuge would not flow to refineries for at least a decade.

Drilling in the Arctic National Wildlife Refuge would have no impact on the price of energy. The oil market is global, and refuge oil would expand global oil reserves by just 0.3 percent—a quantity far too inconsequential to affect prices at the pump or elsewhere.

Drilling in the coastal plain would spoil an irreplaceable natural treasure. The Arctic National Wildlife Refuge is a fragile wilderness that would be ruined by oil drilling.

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RESPONSIBLE ELECTRICITY POLICY: CLEAN AIR, ENERGY EFFICIENCY, CONVERSION TO RENEWABLES

Key Recommendations:

- Establish a national "system benefits" fund to promote energy efficiency, support research and development, and maintain universal service.
- Establish a federal "portfolio standard" to ensure that renewable energy steadily increases its market share at minimum cost.
- Extend the renewable energy production tax credit, which encourages greater reliance on emerging renewable energy sources.
- Provide tax incentives for advanced energy-efficient buildings and appliances.
- Strengthen energy-efficiency standards for appliances and buildings.
- Establish comprehensive limits on air pollution from power plants covering emissions of carbon, nitrogen, sulfur, and mercury.
- Require full disclosure to customers about the sources and environmental impact of their electricity.
- Reject new subsidies for so-called "clean coal" technology and nuclear power, and eliminate existing subsidies.

Another form of energy in the news today is electricity. As Californians suffer through an unprecedented electricity crunch, politicians a continent away are beginning to debate the causes of—and solutions to—the shortfall.

Contrary to suggestions from the White House, the California crisis is not a function of pollution regulation, and it will not be solved by drilling in the Arctic National Wildlife Refuge. The real reasons for the crisis include a market structure that failed to ensure long-term supplies as a hedge against volatile spot market prices, rapid consumption growth in neighboring states that is overloading the interstate power grid, cutbacks in electricity infrastructure investment throughout the West, and reduced hydropower generation due to low rainfall. As if all of that were not enough, investigations continue of alleged anti-competitive practices by power generators.

Also contributing to the crisis is a contraction in available natural gas supplies, leading to higher costs (almost one-third of California's electricity is generated with natural gas). Again, the upswing in natural gas prices is partly the result of industry decisions to forego exploration and cut storage levels after years of low commodity prices. Another contributor to natural gas price increases is a short-term reduction in pipeline capacity in the Southwest due to an explosion last summer.

California already has acted to reduce its exposure to volatile short-term electricity markets by providing for a more balanced portfolio of longer-term purchase contracts. Looking ahead, the fastest, cheapest, and cleanest response to the electricity crisis is to take advantage of the state's many immediate opportunities to ramp up its investments in energy efficiency and renewable energy. These measures already contribute more than 15,000 megawatts to the Western power grid, which never needed them more. And the California Energy Commission recently issued emergency upgrades for efficiency standards governing all new buildings, which will yield the equivalent of two giant coal-fired power plants (1,000 megawatts) in the next five years. Also, last September, the Legislature and Gov. Gray Davis created a 10-year, $5.5 billion investment fund for energy efficiency and other sustainable energy technologies. California legislators could do more, starting with making a large additional investment from California's budget surplus in energy efficiency and renewable energy.

California also needs more highly efficient natural-gas-fired power plants. NRDC and other environmental groups support the ongoing additions of such plants, which have had no difficulty meeting California's siting requirements. Since April 1999, nine plants totaling nearly 6,300 megawatts have received siting approval. Six are under construction, and at least three are expected to be on-line by the end of this year (2,368 megawatts). At least 14 more plants capable of generating about 7,000 megawatts are poised to follow, rebutting claims that environmental safeguards somehow prevent additions of generation capacity. The new plants (both renewable and fossil) are dramatically cleaner than their aging gas- and coal-fired competitors across the Western power grid. Indeed, the capacity additions anticipated over the next several years are both clean and large enough to begin improving air quality by displacing those dirtier competitors during at least some hours of the year.

Nonetheless, President Bush said recently, "If there's any environmental regulations . . . preventing California from having a 100 percent max output at their plants—as I understand there may be—then we need to relax those standards." But as reported by the *Los Angeles Times* on January 25, Richard Wheatley, spokesman for Houston-based Reliant Energy Co., which operates four Southern California power plants, said that the assertion that environmental regulations are holding back output "is absolutely false. We're making every megawatt available on request. We factor the air quality regulations into our daily operating basis, and they are not causing us to withhold power." The *Times* could find only one small, obsolete plant that had to suspend operations temporarily to comply with air quality standards, and it accounted for less than 0.2 percent of California's peak power needs.

In the long-term, the best path for California is the best path for America: strong clean air standards; increased reliance on energy-efficiency measures; a shift away from obsolete, inefficient fossil-fueled plants as a source for electricity; and, eventually, full conversion to renewable and environmentally sound forms of energy.

Taken together, these measures will reduce power plant pollution. The electricity-generating sector today is the single largest source of the four pollutants responsible for the most serious local, regional, national, and global air pollution problems we face. These four horsemen of power plant pollution are: sulfur dioxide (causing acid rain and producing fine particles), nitrogen oxides (causing ozone smog), mercury (causing neurological damage), and carbon dioxide (causing global warming).

Policies to limit air pollution are fragmented and based on outdated assumptions, resulting in excessive emissions and distorted electricity markets. As a result, support continues to grow for integrated requirements to reduce the four horsemen. A major benefit of an integrated pollution cleanup approach is that it would provide a clear road map for business in planning long-term investments.

Large pollution reductions can be achieved at reasonable cost while meeting America's electricity needs by maximizing energy efficiency and reliance on renewable energy technologies. Market barriers, however, have inhibited the widespread deployment of environmentally preferred electricity demand and supply options. Two of the most effective and market-compatible public policies to address this problem are public goods or system benefits funds, and renewables portfolio standards.

A public goods or system benefits charge—a small surcharge on customers' electricity bills—can help fund cost-effective, long-term investments in energy efficiency, low-income services, and renewable energy resources. At least 20 states have some form of system benefits charge.

Renewables portfolio standards, meanwhile, encourage greater diversity of energy resources, which enhances reliability by requiring electricity providers to include a minimum percentage of renewable energy resources in the electricity mix they deliver to their customers.

RESPONSIBLE NATURAL GAS POLICY: SENSIBLE EXTRACTION, SENSIBLE PIPELINE SITING

Key Recommendations:

- Provide tax incentives for the construction of energy-efficient buildings and for manufacturing energy-efficient heating and water-heating equipment.
- Adopt a comprehensive pipeline approach ensuring that pipelines are constructed and operated in an environmentally sensitive manner, with strong safety oversight, and, whenever possible, along existing routes.
- Reject plans to construct an offshore pipeline off the Arctic National Wildlife Refuge coastal plain.
- Plan an Alaska gas pipeline if needed to deliver Prudhoe Bay gas to the lower 48 states that follows the Trans-Alaska Pipeline System and the Alaska-Canadian Highway right-of-ways; complies with all U.S. and Canadian environmental laws; has a thorough, new environmental impact statement; and incorporates the best pipeline safety and environmental measures.
- Do not drill in sensitive offshore areas, including the moratorium areas, Alaska, and the eastern Gulf of Mexico. Maintain existing protections for sensitive onshore public lands and extend protection to other special places.

Of the three fossil fuels that dominate the U.S. energy market, natural gas is by far the cleanest burning fuel. It is, therefore, a key part of NRDC's energy policy—the bridge to greater reliance on cleaner and renewable forms of energy. Increased energy efficiency in homes and factories not only would lower consumers' energy bills; it would also free up large amounts of natural gas to help meet the needs of new, highly efficient, combined-cycle (combustion and steam turbine) power plants. Stronger and better-enforced building codes augmented by tax incentives for constructing buildings that exceed code requirements would pay a double dividend: lower heating and electric bills, and less pollution.

But natural gas is not sufficiently clean to be considered the long-term answer to America's energy needs. Extracting gas, transporting it to market, and burning it all cause pollution in various forms.

NRDC recognizes the need for continued exploitation of America's natural gas resources, but believes that certain federal lands should be afforded special protection. This applies to existing protected areas, including roadless national forest areas and the Rocky Mountain Front. Additional areas that should be protected include Wyoming's Red Desert, Utah's fabled red rock country, and the area in and around Vermillion Basin in northwest Colorado.

The energy production industry and its champions in Washington sometimes assert that America's public lands natural gas resources have been put off limits, but in fact, 95 percent of onshore federal public lands in the Rocky Mountain region managed by the Bureau of Land Management (including split estate lands) remain open to exploration and production leasing. Similarly, nearly 70 percent of the nation's untapped economically recoverable offshore oil and gas resources are open for these purposes. Oil and gas development should be excluded from sensitive offshore areas, including existing moratorium areas, Alaska, and the eastern Gulf of Mexico.

Another important natural gas issue involves siting pipelines to carry gas from drilling sites to market. NRDC believes that pipelines should be constructed and operated in an environmentally sensitive manner, with strong safety measures and oversight, and, whenever possible, along existing routes. For example, plans to construct an offshore pipeline off the Arctic National Wildlife Refuge coastal plain should be rejected. Instead, if Prudhoe Bay gas supplies are needed to serve markets in the lower 48 states, any Prudhoe Bay natural gas pipeline should follow the Trans-Alaska Pipeline System and the Alaska-Canadian Highway right-of-ways; undergo a thorough, new environmental impact statement; comply with all U.S. and Canadian environmental laws; and incorporate the best pipeline safety and environmental measures.

CONCLUSION

Eventually the United States will have no choice but to turn to greater energy efficiency and renewable sources of power. Demand for fossil fuels surely will overrun supply sooner or later, as indeed it already has in the case of U.S. domestic oil drilling. The capacity of our air and land to absorb unlimited quantities of waste from fossil fuel extraction and combustion is also limited. As that day draws nearer, policymakers will have no realistic alternative but to turn to power sources that today make up a viable but small part of America's energy picture. They also will be forced to embrace energy efficiencies—those that are within our reach today, and those that will be developed tomorrow. Precisely when they come to grips with that reality—this year, 10 years from now, or 20 years from now—will determine how smoothly the transition will go for consumers and industry alike.

Mr. BARTON. Thank you, Mr. Kassel. We appreciate that.

Last but not least, we want to hear from John Paul Pitts, who is the Oil Editor for the Midland Reporter Telegram in the Permian Basin in west Texas. As a personal note, I have been involved in energy issues in some shape, form or fashion for almost 20 years, and of all the people I have met with, talked to, listened to, read, researched, and I think I am pretty comprehensive in at least having contact with most people that are supposed to know something about oil and gas issues, I would put Mr. Pitts at the very top of the list in terms of personal knowledge and integrity on these issues. So it is truly an honor to have you before the subcommittee that I chair.

We have got your testimony in the record and look forward to having you summarize it in 6 minutes.

STATEMENT OF JOHN PAUL PITTS

Mr. PITTS. Thank you for those kind comments, Chairman Barton. Distinguished members of the committee, my name is John Paul Pitts. I am the Oil Editor of the Midland Reporter Telegram, a Hearst newspaper serving the Permian Basin of west Texas and southeast New Mexico. I am honored to be here today to provide this committee what insight or information I can as you take on the urgent task of developing a comprehensive national energy policy that will provide America with abundant, sustainable, secure, and affordable energy for the short term and the long term.

The Permian Basin, comprised of 52 counties in west Texas and New Mexico, is larger than Norway, Italy or Ireland. It is a prolific oil and gas producing area, accounting for 75 percent of all the oil in Texas and 18 percent of the Nation's 5.8 million barrels of daily oil production. The oil and gas capital of the Permian Basin is Midland, Texas, a world class oil town that is both highly dependent and highly focused on oil and gas.

This oil centered intensity has given us a community of oil and gas producers highly attuned to energy issues with views tending to be reflective of the entire industry.

Mr. BARTON. Mr. Pitts, would you suspend a minute. Do you know of anybody who just recently moved to Washington that was from Midland, Texas?

Mr. PITTS. My friend George Bush.

Mr. BARTON. That is right. I think you should put that in your testimony if you are talking about Midland, Texas.

Mr. PITTS. I didn't want to drop names.

Mr. BARTON. Continue.

Mr. PITTS. I will have to find my place here.

This oil centered intensity has given us a community of oil and gas producers highly attuned to energy issues and with views tending to be reflective of the entire industry. In other words, if you could take the entire domestic oil industry and somehow distill it and condense it into one city of 106,000 people, you would have essence of oil, or Midland, Texas.

In February, the Reporter Telegram interviewed a large cross-section of these producers and asked key energy policy questions on energy policy issues. I would like to share some of those findings with you. First, most producers in the Permian Basin think it is

a now or never situation for our oil and gas policy. Ninety-seven percent feel that this is the President and this is the administration and this is the Congress and this is the year. If it doesn't happen this year, it will never happen.

By the same token, less than half think it can happen. They don't think it is politically possible. They just don't think the Nation is ready yet to make the hard choices for a viable energy policy.

Second, there is great concern among Permian Basin producers about national security. Eighty percent are very concerned about it. They feel that we must begin now to back away from the treachery in the Middle East before it is too late. Yet three quarters do not believe that we can become energy independent if you were to conceive the best energy policy you could.

Third, while producers feel a national energy policy should deal with oil price volatility, 68 percent would not support a floor price on crude oil. They say floor prices don't work, you have a ceiling that will be artificial, a floor that will be artificial and it will be subject to government manipulation.

A resounding 86 percent do favor the OPEC trading band of 22 to $27 as the best means of controlling price volatility for U.S. producers and consumers. The main fear there is that OPEC cannot maintain the discipline to hold that together. I interviewed at one time the Oil Minister of Saudi Arabia. He told me that trying to keep OPEC together was like trying to herd chickens. Over half of the Permian Basin does believe that NYMEX, and not OPEC, is the real villain behind oil price volatility and some would welcome a legislative remedy for that.

Fourth, while basin producers feel that America has gone too far down the road of dependence to achieve total energy independence, we do feel that the U.S. oil decline curve of 2 percent to 3 percent per year can be flattened, not turned up but flattened. That will be with a pricing scenario of $20 for a sustained period and an energy policy that encouraged domestic production, access to domestic reserves, new technology and intense drilling. By the same token, applying those same policy factors to natural gas, producers feel that 30 Tcf annual gas production can be achieved and sustained within 10 years, but only in the context of a North American gas market and only at a price of $5 per Mcf. That means no more cheap gas.

Last, Permian Basin oil producers also noted that in addition to price instability, excessive environmental regulation is a concern, regulations like the one that recently shut down rigs in New Mexico and sent fathers home without a paycheck because the noisy rigs were interfering with the mating habits of the prairie chickens.

In conclusion, as an oil and gas journalist, I feel that it is absolutely critical that our Nation develop an energy policy that relies on homegrown energy and decreases our dependency on foreign sources. We have managed without an energy policy for two decades, but it would really, really be pressing the odds to think that we could go one more decade without a major crisis. I am talking about a major confrontation in the Middle East. The blackouts in California have been a wake-up call for America. If we don't heed

them, the next wake-up call may be body bags stacked on the deck of an aircraft carrier in the Persian Gulf.

I thank you for your attention. I will answer any questions I can.

[The prepared statement of John Paul Pitts follows:]

PREPARED STATEMENT OF JOHN PAUL PITTS, OIL EDITOR, MIDLAND REPORTER TELEGRAM

Good Morning, Chairman Barton, distinguished members of the committee. As this committee goes forward in its quest for a national energy policy, I am honored to be allowed to provide what insight I can, as an oil and gas journalist for the past 25 years, and the oil and gas editor of the Midland Reporter Telegram for the past 18.

I am not here today with another bag of statistics, a legislative wish list or well-worn argument, but simply the results of a survey of a small segment of America's oil and gas producers. Hopefully, as you go forward with the urgent task of creating policy to fix America's energy problems for the short term and the long term, this survey information will provide you more insight into the challenge.

This survey of Permian Basin oil and gas producers addresses many of those challenges.

THE PROLIFIC PERMIAN BASIN

Larger than Norway, Italy or Ireland, the Permian Basin is a prolific, geological province, comprised of 52 counties in West Texas and Southeast New Mexico, accounting for 75 percent of all the oil in Texas, and 18 percent of the nation's 5.8 million barrels of daily oil production. The capitol of the Permian Basin is Midland Texas—a world class oil town, and a microcosm of the domestic oil industry. If somehow, you could take the entire domestic oil industry—from Louisiana to California and Texas to Canada and distill it down into a single city of 106,000 you would have essence of oil or Midland, Texas.

Because Midland lives and dies by the price of oil and gas, and the issues that impact those prices, producers, there, are perhaps more keenly attuned to oil and gas issues than any other oil town in America—including Houston.

Chairman Barton was in Midland recently on a fact-finding mission for this committee, and I am sure he will agree with me that when it comes to getting a feel for America's energy destiny, Midland is a go-to-place.

THE PRODUCER SURVEY

Each year the Reporter-Telegram interviews a cross-section of Permian Basin oil and gas producers—majors and independents—from Midland to Hobbs, New Mexico, conducts a survey, in which it attempts to interview each oil and gas producer—major and independent—in order not only to determine spending and activity levels for the year, but producer opinions on key issues. We do not ask for a simple yes or no, but sought to engage them in discussion to validate a bigger picture.

While it is neither highly scientific, or large in sample, over the years the Reporter-Telegram Producer Survey has proven nevertheless to be a highly accurate barometer of mood and money in the oilpatch. That's because there are a large number of producers, intensely focused on oil and gas, in a region with one of the oldest and largest concentrations of oil and gas in the world.

Today, we offer the results of our survey questions on energy policy, in hopes that it will , perhaps, give the committee a broader understanding of America's oil and gas producers, a better feel for what needs to be done and what is politically possible, and physically "doable." Over decades of trying to make a living in the risky and politically charged oil business, Midland oil and gas producers have developed a strong sense for the possible and impossible. Here are some of the responses.

ENERGY POLICY

On the issue of energy policy we asked: Is the time right for an energy policy?—And how high should it rank on President Bush's policy agenda.

To no one's surprise 97 percent, said "yes" this is the time. Only three percent said no.

On its ranking as a priority, 91 percent said it should be "high or very high" on President Bush's agenda. But 9 percent said it should rank less than that.

From the responses we detected not only a great deal of enthusiasm, that a national energy policy is finally on the table, but a strong sense of finality—we heard many times that it was now or never if America is to finally have an energy policy.

Next we asked: Do you think it is politically possible to achieve a national energy policy?

Only 44 percent said "yes," 25 percent said "no," and 30 percent said "maybe." If producers were all over the board on this response, one must remember that the oil industry has had along history of disappointment in matters energy policy issues. While they want it to be true, it is very apparent that they are not long history of disappointment in matters of energy policy. While they want it to be true, (that an energy policy is coming) it is very apparent that they are not confident that Congress can bridge the political differences or that the public will be able to overcome their NIMBY ways or their bias against the oil and gas industry. Also for decades, producers have been told repeatedly, that it is politically impossible to achieve an energy policy.

The traditional argument is that there are more energy consumers than producers and the only thing consumers care about is cheap energy—and the cheaper the better. One producer noted: "We will never get the consuming public's attention on energy until they begin to stack American body bags on the deck of air craft carriers in the Middle East."

ENERGY SECURITY

Next we asked: How concerned are you or your company about energy security?

Over 80 percent said they were very concerned, while 19 percent said they were not. Why only 80 percent and not 100 percent?

I sensed that some thought oil and gas had become too global for anything drastic to happen. Also there is the lull factor created by the fact that we have gone decades without an energy policy and have had to fight only one war—which we easily won. Most, however, acknowledged that it was sheer folly and highly dangerous to be 57 percent dependent on foreign oil producers. Especially when America has so many energy resources and some of our foreign oil suppliers are openly hostile to America—its culture and religious heritage. And then there is Iraq. We are their biggest oil customer, but they are so bad we have to bomb them from time to time—taking care not to hit any oil facilities.

ENERGY INDEPENDENCE

Energy independence will become one of the most critical aspects of a national energy policy. Is it a realistic goal—or not? If it is not, should we just forget about an energy policy, and focus on our military? We phrased this question very carefully.

We asked—is energy independence a realistic goal to pursue, in the context of a comprehensive energy policy that includes conservation, access to reserves, coupled with the use of broad-based energy resources including: coal, nuclear, oil, natural gas and alternatives?

The majority, 68 percent, said that even with the best energy policy, energy independence is impossible, that we have gone too far down the road of dependence to become totally free of foreign oil producers. Only 31 percent thought it was possible.

Many of those negative responses, however, were qualified by noting that energy independence should be pursued, even it may not be achieved. "You can't hit the bulls eye unless you aim for it," said one operator.

There was also the sense, that even though total energy independence is unattainable, we must begin to back away from the Middle East—even if it is only a little space, we must begin to put space between America and the treachery of the Middle East.

OIL PRICE STABILITY

Oil price volatility has proven to be highly corrosive to the welfare and security of America. During the downturn of 1997-1999, $11 oil nearly destroyed the oil and gas infrastructure. Then, in 2000-2001 high oil prices, above $35, produced a near train wreck in the economy.

We asked Basin producers if they would support a floor price on crude oil as a means of controlling oil price volatility.

Over 60 percent, said they would not support a floor price. The reasons: Price controls don't work. Every floor has a ceiling. Both floor and ceiling would be artificial and mismanaged by government. But 37 percent said they would support a floor price.

Next we asked: Do you approve of NYMEX as a pricing mechanism for crude oil?

Of those responding, 54 percent said they did not approve of NYMEX as a pricing mechanism for world crude oil. Another 11 percent said they did not think it was the right pricing mechanism, but accepted it because, "it was the only thing we

have." Another 11 percent had no opinion, and only 23 percent thought NYMEX was a legitimate and useful pricing mechanism for world crude oil.

Most of the comments reflect the opinion that: NYMEX does not truly reflect free market principles; that it is a price-maker and not a price-taker; that there are too many more paper barrels trading; that it was volatility by design for the benefit of commodity traders. There is a strong feeling, even among those who favor NYMEX, that it must be changed to prevent extreme price volatility.

Then we asked about the OPEC trading band of $22-$27. Is it a good pricing mechanism for world crude? Is it working?

About 86 percent said "yes" it was a good pricing mechanism. It is working and it is good for OPEC, U.S. consumers and domestic producers. Most of the 14 percent who responded negatively to the idea of the trading band qualified their answers by noting that they feared OPEC did not have the discipline to make it work.

OIL AND GAS PRODUCTION

As the number one energy consumer in the world, America is faced with two major challenges:

1. flattening an oil production decline curve of 2-3 percent per year,
2. trying to discover, develop and sustain 30 Tcf per year of gas production within the next 10 years.

We asked: With the right oil price scenario, intense drilling, and access to domestic reserves, do you think the domestic oil industry can flatten the oil decline curve?

Approximately three-quarters said they were confident the steep oil decline curve could be flattened—26 percent did not. While most said the maturity of U.S. reservoirs, would be the biggest hurdle to flattening the decline curve, they also thought new technology could help compensate for maturity, and thought that opening access to domestic reserves would be a bigger factor in flattening the decline than increased drilling.

We also asked about natural gas: With the right gas price scenario, intense drilling and an energy policy that encourages exploration and production, do you think a North American gas market can reach and sustain the target of 30 Tcf natural gas production per year? There is more optimism here.

A solid 89 percent thought a North American gas market could sustain that level, only 11 percent did not. Again access to reserves, was given as the key to achieving the 30 Tcf goal. Also, that it is developed within the context of a North American natural Gas Market that includes Alaska, the Lower 48, Canada, and Mexico. Few feel the U.S. can do it alone.

ENVIRONMENTAL CONCERNS

Asked to rank their top concern as producers—lack of rigs and crews, oil price volatility or unreasonable environmental regulation, we found few who would rank them and choose all three as top concerns.

Environmental Extremism is 11the bee in the bonnet" for basin producers. For example, during the California crisis, when natural gas was in short supply and gas prices soared above $10, rigs in New Mexico, drilling for natural gas were shut down, and men with families to feed were put out of work—so as not to disturb the prairie chicken during its mating season.

THE BOTTOM LINE

I think the bottom line of our survey is this: There are many things to be addressed and fixed to have a viable national energy policy. Permian basin producers strongly support a national policy, and when called upon to step forward help solve America's energy dilemma will do so, even though they have doubts that conditions in America have changed enough for an energy policy to happen.

As unfortunate as it is, we can only hope that the California situation will suffice as America's wake up call on energy—that it is only black outs that are needed to get America's attention and not body bags.

I applaud the Committee for the very serious work it is doing in moving forward to formulate a long term energy policy, that will provide the nation with secure, abundant, sustainable and affordable energy sources for decades to come—an energy policy that will hopefully decrease the danger we face from over dependence on Middle East oil.

As you seek to build consensus around energy policy issues, I hope this information can be of some use. Thank you very much.

Mr. BARTON. We thank you, Mr. Pitts. We do appreciate you flying up from Texas.

We are going to have 10-minute question rounds and if we need more than one round, we will certainly do that. The Chair would recognize himself for the first 10-minute round.

Mr. Cook, in your testimony, you didn't really give us an overview of the world situation in terms of production and consumption, or the U.S. production and consumption. Do you know approximately how many barrels per day is produced of oil in the world market?

Mr. COOK. We expect global oil supply, global oil production to run 76 million barrels a day or so.

Mr. BARTON. Is that about where it has been the last 3 or 4 years, or is that up a little bit?

Mr. COOK. It has grown significantly since the early 1990's.

Mr. BARTON. What was it—could you get that information, the trend line where the world production curve is going?

Mr. COOK. Sure.

[The following was received for the record:]

From 1990 to 2000, world oil production has risen by approximately 10 million barrels per day (mmbd) from 66.7 mmbd to 76.6 mmbd. This was an average 1.4 percent annual increase, although the increase was not steady. World oil production remained relatively flat through the early 1990s. The year 1994 marked the beginning of larger annual increases in production. From 1994 to 1998, world oil production rose 11.9 mmbd, increasing from 63.2 mmbd in 1994 to 75.1 mmbd in 1998. This created an average surplus of about 1.5 mmbd for 1998.

OPEC drastically cut production in 1998 and early 1999, resulting in reduced world crude oil production of 74.2 mmbd for 1999. Crude inventories have remained extremely low despite four production increases in 2000 to attain a production level of 76.6 mmbd.

In 2001, OPEC reduced its quota 1.0 mmbd in January and then another 1.5 mmbd when they met on March 17. While OPEC members have tended to produce more than their quotas, EIA estimates that this combined cut of 2.5 mmbd per day would put OPEC production below last summer's levels.

Mr. BARTON. Is world consumption in that same range, about 76 million barrels a day right now?

Mr. COOK. It averaged about 76 last year.

Mr. BARTON. Now, in the United States do you know what our domestic production is averaging per day?

Mr. COOK. Crude oil is about 5.8 million barrels a day.

Mr. BARTON. 5.8. About how many million barrels of equivalent do we get in terms of natural gas liquids per day in the United States?

Mr. COOK. That one I would have to get back to you on.

[The following was received for the record:]

Natural Gas Liquid (NGL) production comes from both natural gas processing plants and refineries. Natural gas processing plants account for about 73 percent of total production. There is some seasonality to natural gas liquids (NGL) production levels, with production being higher in the summer months as refiners produce butane that cannot be used in gasoline during the summer (the butane is used in the winter).

NGL production levels tend to fluctuate anywhere from 2.0 to 2.6 million barrels per day (mmbd), depending on the time of year. However, January 2001 production was only 1.8 mmbd, the lowest level for any month in at least ten years. This is due in part to the high price of natural gas, which encourages refiners to simply sell the gas for a higher profit than they could make by removing the wet NGL streams.

Mr. BARTON. The number I have is about 2 million barrels.

Mr. COOK. 2 million, right. Correct.

Mr. BARTON. What is the United States consumption per day in millions of barrels?

Mr. COOK. We are running between 19 and 20 million barrels a day, depending on the season.

Mr. BARTON. So that is up then significantly from where it has been?

Mr. COOK. Absolutely. Demand growth has been very strong. That is one of the main reasons why excess refining capacity has dropped.

Mr. BARTON. If you could provide the committee with the historical data say for the last 10 to 15 years in world production, world consumption, United States production, United States consumption, but in general the consumption of petroleum in the United States for the last 5 or 6 years is on an upwards curve.

Mr. COOK. Absolutely. A strong economy.

[The following was received for the record:]

From 1990 to 2000, world oil production and consumption have risen steadily, increasing by approximately 10 million barrels per day (mmbd) or an average 1.4 percent annual increase. However, production and consumption did not always change together, and price variations reflect these imbalances in cycles of demand and production.

World oil production reached 75.1 mmbd in 1998, creating an average surplus of about 1.5 mmbd. Resulting low prices in 1997 and 1998 led OPEC member countries to drastically cut production in 1998 and early 1999. World oil production for 1999 was about 74.2 mmbd, which was about 0.72 mmbd below consumption.

Despite four increases in 2000, crude inventories remain extremely low. World oil production for 2000 was about 76.6 mmbd, which was approximately 0.8 mmbd in excess of consumption.

OPEC cut 1.5 mmbd in January 2001 and then cut another 1.0 mmbd when they met on March 17. This combined cut of 2.5 mmbd per day would put OPEC production below last summer's levels.

U.S. oil consumption has increased steadily since 1990. Consumption has risen from 17.0 mmbd in 1990 to 19.5 mmbd in 2000. However, U.S. oil production has actually declined during this period, falling from 9.7 mmbd in 1990 to 9.1 mmbd in 2000, including crude oil and natural gas liquids production.

Mr. BARTON. Has that continued in spite of the price spike that we saw about 1½ years? Did that have any impact on consumption?

Mr. COOK. Well, last year the consensus is that U.S. oil demand did flatten out. In fact, gasoline dropped some because of the significant price jump from 1999 to 2000.

Mr. BARTON. Okay.

Mr. COOK. It is still relatively high.

Mr. BARTON. Mr. Layton, you are the closest thing we have here to a spokesman for the producing sector, because you were representing the independent producers.

The American Petroleum Institute, which would represent the major oil producers, chose not to participate. They were willing to send their executive director who is headquartered here in Washington. And he is a very able gentleman. But we wanted what I call a real-world witness, somebody who is actually out in the market; and for whatever reason, that was not possible.

So if people in the audience are scratching your heads about how we managed to have an oil hearing without Exxon, Mobile, Texaco, Chevron, some of those folks participating, they chose not to be

here, except for the executive director, who again is a very abled person, if he had been here.

So I am going to ask you some questions, knowing that you don't represent the major producers.

What is your best guess about how much oil production we can get in the United States if we really made a major emphasis on supply, as if we were willing to look at the OCS, willing to look at ANWR, willing to look at Federal lands in the United States that are currently off limits, put some production incentives back into the Tax Code? If we did all of the things that people talk about doing, do you know how much we could increase the approximately 8 million barrels a day that we have right now, if you include natural gas liquids?

Mr. LAYTON. I think that is a two-step process. The first step is to flatten the decline curve, and that is a challenge that I think can be met with—I do not want to make it sound like it is easy, but it certainly is well within reach, if we can bring stability and, more importantly, the perception of stability to the marketplace.

That can be done with providing tax incentives, with removing some of the perception that you have inability to access lands to drill. And with those steps in place, I think we can flatten production. We are not going to increase production until we come to the point where we can stop the decline.

The next step—I think probably that the best thing for me to point to is what happened roughly 20 years ago when the Alaskan Pipeline came online, and all of a sudden we saw an extra 2 million barrels a day of oil production coming down from Alaska. I do not know that there is a better example for me to point at, other than that. And that was not that long ago. Maybe there is not another 2 million barrels a day of production that could come out of ANWR or come from more drilling in the deep-water Gulf of Mexico, but we do not have to look back too far to see a huge jump in the domestic crude oil supply.

Mr. BARTON. Prudoe Bay is currently producing at approximately 1 billion barrels a day. Is that not correct? Mr. Cook may know the answer to that, but it is on the decline.

Mr. LAYTON. Yes, it is. I think last year is the first year that Alaskan production had dropped blow a million barrels a day. It is just barely below a million.

Mr. BARTON. If we do not do something somewhere in the North Slope, that production decline is going to accelerate.

Mr. LAYTON. It certainly will; and more importantly—and maybe your witnesses from the API could address this more accurately than I can—but the production in Alaska, as you know, comes to the pipeline, and there is a critical mass that is required to keep that pipeline going. And I have heard that that number is several hundred thousand barrels a day of production.

So you are not going to ride that million barrels a day of production down to zero before there is not any Alaskan crude coming. It will shut off long before it hits zero.

Mr. BARTON. Mr. Robinson, you represent the marketers. Of course, your actual chain of convenience stores and gasoline service stations is in California; is that not correct?

Mr. ROBINSON. Correct.

Mr. BARTON. Are California gasoline prices lower or higher than the national average?

Mr. ROBINSON. Higher.

Mr. BARTON. Quite a bit higher, aren't they?

Mr. ROBINSON. Typically.

Mr. BARTON. And where does most of the crude oil come from that is refined in the products? Doesn't most of it come from Alaska?

Mr. ROBINSON. California has a fair amount of crude, but an awful lot of it comes from North Slope.

Mr. BARTON. All right. So if we were not to drill in ANWR and the production decline continues on the North Slope, would you think gasoline prices on the West Coast would go up or go down?

Mr. ROBINSON. They would likely go up.

Mr. BARTON. Would likely go up. That is what I think, too.

Mr. Pitts, can you tell me how many wells have been drilled approximately in the Permian Basin?

Mr. PITTS. I would estimate 6 to 700,000.

Mr. BARTON. 6 to 700,000. Where does West Texas get its water supply?

Mr. PITTS. Groundwater.

Mr. BARTON. You need to turn your microphone on.

Mr. PITTS. I am sorry.

Mr. BARTON. You said groundwater.

Mr. PITTS. Yes, groundwater.

Mr. BARTON. How many of those 6 or 7,000 wells have contaminated water supply in West Texas.

Mr. PITTS. In all of Texas last year, there were 52.

Mr. BARTON. Fifty-two.

Mr. PITTS. Of 600—that is just wells in the Permian Basin. There are probably several million wells in all of Texas.

Mr. BARTON. Has there been any permanent contamination from all of those wells drilled in West Texas?

Mr. PITTS. No, sir, it has all been taken care of.

Mr. BARTON. All of you rowdy wild rambunctious wild catters out West for all of the wild talk about raping and pillaging the environment, they have drilled almost three quarters of a million oil wells and gas wells, and they managed to do that without damaging the environment in any kind of a permanent situation?

Mr. PITTS. Would you believe that?

Mr. BARTON. I believe it. I am asking you. You are the expert.

Mr. PITTS. Yes, sir, it happened.

Mr. BARTON. Okay. Mr. Kassel, you are obviously a little outmanned here, but certainly if we had a little broader perspective, it would be a pretty equal fight.

I am almost tempted to say—we used to say one ranger, one riot. We can say in your case, you know: one energy hearing, one environmentalist is all we need. You know, it is a pretty fair fight. I thought your testimony was well spoken.

Mr. KASSEL. Thank you.

Mr. BARTON. But I do not think this subcommittee has any serious objection to focusing on conservation and trying to improve the environmental protection in existing laws. We are certainly in favor of that.

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But would you agree from your side of the equation it is also appropriate that we do what we can to increase the domestic supply, if that is possible?

Mr. KASSEL. I think the real issue isn't one of supply or demand. It is meeting our energy needs. Most of the folks on the panel today are talking about meeting our energy needs with a basket of new sources of supply. We have a different view. Our view is that the combination of supply side and demand-side management, with more focus on demand-side than we have seen in the past, can really bring us much closer toward meeting our environmental need—our energy needs over the long haul.

There are some—again, the California situation provides some instruction. You know, drilling in the Arctic Refuge or offshore is not going to solve or even help at all the short-term electricity crisis in California.

Mr. BARTON. I agree with that.

Mr. KASSEL. And we all agree—I think everybody agrees with that. And yet that is a piece, a large piece of the debate.

But if you look at what they are doing in California, they have taken some very important steps that will increase efficiency of energy use over the next few years in a very clean way to offset the need for more production.

It does not mean there will not be more production, and I think we all know that there will be some more production as well.

But take one example, the California Energy Commission issued an, under an emergency basis, efficiency standards for new buildings. Those standards will roll out over 5 years. It will take the place of 2,000 megawatt coal-fired power plants. That is a way to meet the energy need in California without adding to the pollution.

Mr. BARTON. Of course, there is a cost to that. I am not opposed to what they did, but you do not increase efficiency and installation capability at zero costs. I mean, it costs money to do that. You recognize that.

My last question—then I want to go to Mr. Boucher—you do live in New York City, so I do not know the answer to this question. Do you own an automobile?

Mr. KASSEL. I have owned an automobile——

Mr. BARTON. You have owned an automobile.

Mr. KASSEL. [continuing] in my life. My first car was a 1972 Thunderbird, which probably——

Mr. BARTON. So you at least——

Mr. KASSEL. [continuing] was 8 miles a gallon.

Mr. BARTON. You at least have been in an automobile?

Mr. KASSEL. I was in an automobile. I was in a taxi today. I live in Manhattan, so I do not need one.

Mr. BARTON. I think that is a wise decision.

I recognize the gentleman from Virginia for 10 minutes for questions.

Mr. BOUCHER. Thank you very much, Mr. Chairman.

For a couple of years, I also lived in Manhattan; and I found out having a car was more of a burden than an opportunity, so I gave it up very quickly.

I want to say thank you to our witnesses for their outstanding testimony this morning.

Just a brief follow-up with regard to the Alaskan production of oil, a concern has been expressed about the fact that production from the Prudoe Bay is beginning to decline below 1 million barrels per day; and the suggestion that some have made is that the next obvious step might be to explore and develop in the Arctic National Wildlife Refuge.

What has not been mentioned is that there is another possible source of production in Alaska, and that is the National Petroleum Reserve, which is 23 million acres altogether, lying just to the west of Prudoe Bay.

And I am wondering if any of our witnesses this morning, perhaps Mr. Kassel, Mr. Layton or Mr. Robinson, all of whom have made comments with respect to the potential for developing the ANWR, can give us any information about what might be expected were development to proceed with regard to the National Petroleum Reserve.

During the course of the last year, Secretary Babbitt made exploration in that area possible leading toward the potential for development, and I wondered if perhaps that is a way that we might continue to provide supply for the Alaska oil pipeline and to keep production in Alaska going so as to benefit the United States economy, while at the same time maintaining the Arctic Natural Wildlife Refuge in its current condition.

Mr. Kassel, do you have any information?

Mr. KASSEL. I think I would like to defer to some of my colleagues who focus on that part of our energy policy. As I said at the outset, my focus has been on the diesel rule, and my real focus is on air pollution and vehicle policy.

But I will provide you a written answer if you would like.

Mr. BOUCHER. That would be helpful. Do other witnesses care to comment on the question? Mr. Layton?

Mr. LAYTON. Well, I confessed not having a great deal of knowledge about the potential of the reserve. My comment would be that exploration anywhere in an environmentally sound fashion is a good thing, but if you are trading off exploring in an area that may have less promise than the one that perhaps you want to, if that is the tradeoff that you make, then you are certainly not gaining as much ground as you could.

And if this industry, and I firmly believe it can, can effectively explore in either of those areas in an environmentally sound manner, I do not know that the two really should be mutually exclusive.

Mr. BOUCHER. But you have not actually focused on the potential of the National Petroleum Reserve to provide a substantial supply of oil to the United States.

Mr. Robinson, do you have any comments you would like to make?

Mr. ROBINSON. Yes, I am certainly not an expert on the reserve; but as I mentioned—and I talked about performance standards for fuels—I think that you look at that exploration, if you set your performance standards which you expect those folks that are attempting to drill oil to meet whatever environmental standards that are necessary, I believe, No. 1, they can. And you should—at that point

you should attempt to take advantage of those resources in a responsible manner. I mean, to me——

Mr. BOUCHER. Thank you. It is an interesting response, but hardly directed to the question. It would appear to me that before we plunge headlong into developing a pristine wilderness area that the better course might be to examine in detail what potential there might be for the Arctic National Petroleum Reserve to provide substantial supply to the United States. That is a comment.

I do have some other questions.

Mr. Cook, I would like to ask you a little bit about refinery capacity in the United States. About a decade ago, we had sufficient refinery capacity to meet approximately 94 percent of the needs that we had for refined product in this Nation. Ten years later, that number has declined to 85 percent, and it is generally thought that the absence of sufficient domestic refinery capacity is a contributing factor to the high price of gasoline and to the gasoline price spikes that we experienced last year and some anticipate that we may experience again as the spring and the summer driving season comes upon us.

Some of the witnesses this morning have suggested that one of the reasons that we do not have adequate refinery capacity is because of the operation of various environmental requirements, the clean air laws, perhaps the sulfur rule, and other Clean Air Act requirements.

I would like to just review with you a little bit of the history of refinery capacity in the United States and get your comments on that assertion as to whether or not it is accurate.

Let me just cite a few numbers. It appears that in the United States, refinery capacity grew steadily in the 1970's and reached a peak in 1980. By 1985, 5 years later, the number of operating refineries had dropped dramatically to 223, and that was substantially below even the 1970 level of 276.

So in 1970, we had 276 refineries; and by 1985, that number had dropped to 223. By the time that President Bush signed the Clean Air Act in 1990, the number of operating refineries had already dropped to 205. And so it would appear that there was a very substantial decline in the number of refineries in the United States by the time those major amendments to the Clean Air Act of 1990 were adopted.So the trend had already begun and was quite dramatic.

Now, in view of that history, would it be reasonable for us to conclude that the problem with regard to inadequate refinery capacity in the Nation really is not the Clean Air Act, but was other factors, and that those other factors might be things like the end of price controls in 1981 and the determination that approximately that time of the small refinery crude oil entitlement program?

Your views with regard to those matters would be very welcome, Mr. Cook.

Mr. COOK. Well, first of all, there at the very end, I think you touched on why we saw the big drop in the number of refineries. In the early and middle 1980's, we had that shake-out period where the small, inefficient refineries would never have existed in the first place were it not for the regulatory program. So in some

sense, taking those out is probably analytically the right thing to do.

Now, there was—even after the shake-out—I would term adequate refining capacity in the late 1980's, even up until the early 1990's, recognizing that it is a global market now and that at the same time Europe enjoyed, or the opposite, if you are a refiner, a significant amount of excess capacity as well.

So any temporary tightness through this period was quickly responded to by both domestic and foreign refineries with a large influx of product, gasoline in particular.

So this tended to keep margins relatively low throughout this period along with some warm weather. You move into the middle 1990's and that is when this excess capacity begins to get fairly small.

We had a very strong U.S. economy, very strong demand for petroleum that outstripped a significant uptick in refinery capacity from the mid-1990's up through this point up 1.5 million to 2 million barrels a day. So while the number of refineries had dropped over this period, there was still ongoing upgrading going on; but it just occurred at a somewhat slower pace than the strong demand growth over the second half of the 1990's.

The real question here was why wasn't it stronger, and I would say that the margins are key here. With that excess gasoline capacity in Europe, which still exists, this, along with again some high stocks and cheap crude oil and some warm weather in the middle to late 1990's, kept those margins less than what would be necessary to stimulate significant increases in refining capacity.

This is not to say that the environmental regulations do not contribute to it; of course they do, because they add to costs of compliance. You have to invest for that, plus you have to invest for the economic factors.

Mr. BOUCHER. Would your conclusion be that the primary motivation for the existing level of capacity, the primary problem that there not being enough capacity to meet a larger amount of our domestic needs is economic as compared to problems that arise from environmental requirements?

Mr. COOK. I would say both, but the bottom line is the margins have not been sufficient to stimulate capacity growth.

Mr. BOUCHER. Why aren't the margins sufficient enough? What is the major problem there?

Mr. COOK. Again, there is a lot of capacity in Europe. So we get a little temporary tightness in gasoline like we had last year, you know, off and on, 1996, late 1997; and within 3 to 4 weeks a flood of gasoline will arrive on the East Coast undercutting prices and margins and quickly restoring the market balance.

So while there may be a month period where refiners enjoy relatively healthy margins—you average it out for the year—when you look at the history over the last 15 years and compare it with other industries where the capital could go, it is just not an attractive environment.

Mr. BOUCHER. Mr. Chairman, with your indulgence, I would like to pose one other question to one of the witnesses.

Mr. BARTON. Sure.

Mr. BOUCHER. This will be fairly brief.

Mr. D'Arco, I would like to ask you about the operation of the Jones Act and the potential that we could either make more readily available Jones Act waivers or perhaps consider repeal of the Jones Act altogether.

The Jones Act requires that for domestic shipments within the territorial waters of the United States that we use American-flag carriers; and foreign-flag carriers oftentimes could provide that service at a much lower price, which in turn might make the availability of fuels cheaper to the end user.

I can say that I personally have long felt that major modifications or repeal of the Jones Act altogether would be appropriate. I think you have some information about the recent operation of that act.

What I would like for you to do, if you can, is give us a sense of how many waivers under the Jones Act have been applied for within the last year or, perhaps, 2 years; how many have been granted; and if none have been applied for, why not.

Is it the waiver provision that is not sufficiently generous to make the waiver process worthwhile and what change, if any, do you think would be necessary in order to assure that we can use more cheaper foreign-flag carriers for this transport than can occur today?

Mr. D'ARCO. Sir, I do not know actually—I do not know how many waivers have been applied for and issued over the last few years. I can certainly get that information for you from my trade association, but it is an important issue.

And I know a lot of the product that is needed in winter season that cannot be provided by local refineries must come from the Gulf Coast, and the pipelines do not have the capability at all times to deliver that fuel. So it would be a wonderful thing if we can use foreign-flag ships to bring it into New York Harbor and ameliorate the price situation.

Mr. BOUCHER. Okay. Thank you, Mr. D'Arco. Thank you, Mr. Chairman.

Mr. BARTON. Thank you for that last question. Let the record reflect that was on my list of questions for the next round.

The gentlewoman from California, Congresswoman Bono, is recognized for 10 minutes.

Mrs. BONO. Thank you, Mr. Chairman. I would like to thank the panelists for your time today. I am very new on this committee; I think I have been here for 3 weeks. I just want to say that I am enjoying learning about these issues a great deal. I have a brother who is in this business as an independent producer, and I should have listened to him as I was growing up. And he reminds me of that daily now.

My first question is to Mr. Layton. In your testimony, you referred to the critical time lag for production capacity to meet demand because of the lack of investment in new development. How long is this time lag?

Mr. LAYTON. It certainly is something that could easily exceed a year, and the reason I say that is because if we go back to 1998 and 1999 and see what happened primarily to independent producers, capital sources dried up, debt problems were there; and so

once the prices recovered, you are not immediately in a position to go out and spend money on drilling new wells.

You have got to heal the company, if you will; and that takes time. I mean, that process to a certain extent is still going on. The rig count has grown substantially, particularly if you look at natural gas. But if you look at the number of rigs that are out drilling for oil right now, we have not approached the level that we were in 1997. So, you know, we are a couple years beyond that price crisis of 1998 and 1999. And I would still say we are not in the period of time in terms of drilling where we have fully recovered.

Mrs. BONO. Is the California crisis helping with that recovery?

Mr. LAYTON. The California crisis is, I think, very ironic to me. You have a situation in California now where oil producers are seeing higher prices than have been seen in many, many years. Yet, because so much of the production in California is incorporated in enhanced-recovery operations that use steam, and to generate steam, you have to buy natural gas. And so many producers have had to shut in their steam generation operations and, therefore, are actually going to experience a decline in production unless they are able to start steaming their properties again.

And so even though the price of oil is high, margins out there are really tough because of the costs to generate steam, which is tied directly to the price of natural gas.

Mrs. BONO. Thank you. To just change subjects, but still with you, Mr. Layton. I am hoping to take a trip myself actually up to Alaska this summer to see ANWR before I have to take a position on it either way. I think it is a novel approach sometimes for a politician to actually to see what you are voting on, and I hope to do it.

But in your testimony, you mentioned the technology currently available for the development of resources in areas like ANWR. Can you describe some of these technologies and explain how they are environmentally friendly?

Mr. LAYTON. Probably the—I think the technology that reduces the footprint required to develop is the one specific one I would point to, and that is where you have wells that can be drilled directionally from a very compact location, so rather than scattering wells all over a large area, you are able to drill many, many wells from a very small area that extend out and are able to tap reserves that are a long, long ways away from where the actual drilling operations are. So that is the one technology that I would certainly say would minimize the environmental impact.

Mrs. BONO. Thank you. Mr. King, some in Congress want to eliminate the additive MTBE from the national fuel supply. They say that MTBE has been detected in water. Can you update us on the science?

Mr. KING. As you know, MTBE has been detected—as you know it began in Santa Monica and that was a very sensationalized case, and what we have found is that the number of detections has actually flattened out and actually been in decline.

We have to remember that in California, it is only like 1 percent, I believe, of the total water systems that have been tested have we found any traces of MTBE. And then only .2 of 1 percent of those

wells have we found levels of MTBE in excess of the maximum containment level.

So we think it is an issue that is overblown, and it has unfortunately tarnished the reputation for this product that is extremely effective at reducing air pollution. And it is something that I think we need to deal with through the—as I mentioned in my comments—through the leaking underground storage tanks and fixing those tanks, which is the source of not only MTBE leaks but also other components of gasoline like benzene and things that are known carcinogens. We have to remember also MTBE is not a known carcinogen, and I think it is very important to recognize that issue.

Mrs. BONO. Thank you. You answered my next question, too.

Some of my colleagues also labor under the impression that any volume lost in banning MTBE would quickly be made up by using ethanol. What are your views on that?

Mr. KING. Ethanol is a product that simply will—if you replace ethanol with MTBE, it would not keep the same level of gasoline. You cannot blend as much ethanol as you can MTBE. There are limits with the amount that you can blend—it is 10 percent—for two reasons:

First of all, any level above 10 percent affects the engine's performance, and the car will not work as well; and then second, the subsidy, the Federal subsidy for ethanol stops at 10 percent.

And the only reason why you would ever blend ethanol is if you were able to take advantage of the Federal subsidy; and so, therefore, we actually, as I said in my comments, at our refinery in California alone, if we switch MTBE with ethanol, we lose 8 percent of our gasoline production.

And I think that number that we have studied in California is just replacing ethanol with MTBE, we would see a reduction of supply of around 100,000 barrels a day; and that is already in a very, very tightly balanced supply and-demand situation in California.

So we do not believe that ethanol is the answer, not only from a supply perspective, but it is simply not available in the quantities that are needed. It is hard to transport. It is very difficult to transport. It is more water soluble than MTBE.

There is just simply not the capacity of ethanol to do the replacement with MTBE. So there are several issues with ethanol that we find problematic as a potential solution to our gasoline shortage issue.

Mrs. BONO. Thank you. My next question is for Mr. Robinson. One of the biggest questions facing consumers and many legislators is our price is going to spike again this year.

Mr. Robinson, you have daily, direct contact with consumers; you hear from them more than we do, and prices are going up. So do you believe we are going to have price spikes this summer, and why is that?

Mr. ROBINSON. We have had numerous price spikes. Nothing is changed to stop that. At this point, there is no good reason to expect that the past will not occur in the future. Our situation is that we have basically sort of a stressed system, refining and distribu-

tion system. It is a very tight system, caused partly because we have a number of different specifications for fuels.

It takes a very small problem to make a very large price increase. We have got the oxygenate mandate which makes the problem even more difficult; and then if you add in a few other problems, for example, you know, natural gas is going up. Natural gas impacts MTBE; that impacts the overall supply. It also in particular impacts the higher octane products; and so, you know, you couple all of these things, there is no good reason not to expect that we will continue to have any price spikes.

Mrs. BONO. Do you have any idea what Congress can do to provide relief for our constituents this summer?

Mr. ROBINSON. I think a really good place to look at is the oxygenate mandate. You know, I think Mr. King mentioned about four things, and I would like to add a couple of things to those. He mentioned that you really need to look at the cumulative regulatory effects. You just need to consider it as you are going forward. That is not necessarily a quick fix, but you need to look at that as you go forward. I think that is an important thing.

You need to have clear rules. They need to be reasonable, and you need to have an implementation time that the job can get done. You need to look at the permit process. I think the permit process, a lot of times that stresses the system too, and that is somewhat of an artificial requirement.

He mentioned tax incentives for environmental costs. That is something that you can look at that will help on the supply side.

I think, in particular, you need to look at the number of fuel specifications. We have continued to add more and more fuel specifications. What you end up with—I mean, we have RVPs. We have reformulated gasoline, nonreformulated gasoline, reformulate gasoline with ethanol, reformulated gasoline without ethanol. You have different kinds of diesels. You really have stressed the system.

What happens is a lot of times you have products, but you have artificial shortages because you have the wrong product in the wrong place or the right product in the wrong place, however you want to say it. So I think you need to look at the performance standards instead of mandates and then in particular—and this is, you know, something that I think is very, very important for California—is you need to look at that oxygenate mandate, and you need to get rid of it.

Mrs. BONO. Thank you. My time has expired. Thank you, Mr. Chairman.

Mr. BARTON. Thank you, Congresswoman.

The gentleman from Massachusetts, Mr. Markey, is recognized for 10 minutes for questioning.

Mr. MARKEY. Thank you, Mr. Chairman, very much.

Mr. Cook, let me ask you, based upon EIA's present-day analysis of the current market conditions, do you believe that America is in an energy crisis?

Mr. COOK. That terminology would be something that a statistical organization would probably choose to avoid. There is no question that supplies are extremely tight right now, and the risk of price spikes for summer gasoline is high.

Mr. MARKEY. Would you agree with the statement in the Republican staff memo that they gave us today that "while crude oil prices have gone up in nominal terms, when adjusted for inflation, they are still lower than historical prices"? And the statement again in their memo to us and to the world "in today's dollar prices for crude oil peaked in 1981 at about $70 per barrel using 2001 dollars, and today it's about $26 to $27 a barrel"?

Would you agree with that analysis?

Mr. COOK. It sounds like my testimony last summer.

Mr. MARKEY. As we know, imitation is the sincerest form of flattery; and if it could get the staffers on the Republican side home earlier at night, they probably did so in complete concurrence with your findings. Would you agree with that, Mr. Cook?

Mr. BARTON. Will the gentleman yield?

Mr. MARKEY. I would be glad to.

Mr. BARTON. I come from an oil-producing State; I will put on the record I think oil prices are too high.

Mr. MARKEY. Too high?

Mr. BARTON. Too high, if that helps the gentleman's point.

Mr. MARKEY. It is just the opposite.

Mr. BARTON. It is just the opposite.

Mr. MARKEY. I am making the opposite.

Mr. BARTON. You want to say they are too low?

Mr. MARKEY. No, I am saying it is just like Goldie Locks, they are just right. I mean, they could be a little lower, okay? A little lower. But, you know, $22 to $28 a barrel at least is the stated goal of OPEC; and they are at the upper end of that range right now, but it is also within a range that is not overly detrimental to the American economy, compared to $70-a-barrel prices in 1981, which were having a devastating impact on our economy.

Is that a correct summary of your point, Mr. Cook?

Mr. COOK. There are a couple of things here. First of all the $70 high is correct; $30 today puts you in the—at the upper end of the lower third on the historical real-price range.

Mr. MARKEY. The upper end of the lower third?

Mr. COOK. The lower third.

Mr. MARKEY. Your mother would not be proud if you came home with that as your report card; but for oil prices, that is a good grade, isn't it?

Mr. COOK. Let us just say it is in the lower—it is below the median price since——

Mr. MARKEY. Below the median price.

Mr. COOK. [continuing] since 1981. However, that is not the end of the story. That suggests that from an economic impact point of view, whether it is the household or whatever, it is not an extremely high price. However, it is the volatility that I think concerns all decisionmakers and households. When nominal prices swing out of the historical range—nominal prices now have historically ranged between $17 and $21—and when they swing out of this range, even with a dip to $10 in less than a year to $30, that causes a lot of investment confusion and causes a lot of consumption confusion.

So I do think—we have to take that volatility very seriously.

Mr. MARKEY. Well, let me say this: the President is dead wrong. We are not in an energy crisis. I think all the evidence makes it clear that in the same way that he is talking down the economy so that he can justify his huge tax cuts, he is talking up an energy crisis that does not exist so that he can drill in the Arctic Wilderness and other environmentally sensitive parts of the United States. In both instances, he is dead wrong.

His analysis of the energy situation is completely inaccurate, looking at all of the historical numbers of where we are. And if we are in a crisis, he has the wrong solution, because we cannot extract oil from the Arctic Wilderness for at least 8 to 10 years. Meanwhile, he has yet to mention the words suburban utility vehicle, air conditioners, and every other appliance or device which has been manufactured by man that is now consuming all of this energy, which gives us a much higher probability of getting a near-term solution.

One word, yes or no, we will go down the line. Are we in an energy crisis, Mr. Layton? Crisis, yes or no?

Mr. LAYTON. Yes.

Mr. MARKEY. Mr. King.

Mr. KING. California certainly is.

Mr. MARKEY. I am not talking about an electricity crisis in California. I am talking about a national energy crisis. Yes or no?

Mr. KING. I think we are, yes.

Mr. MARKEY. Yes, fine. Mr. D'Arco.

Mr. D'ARCO. No.

Mr. MARKEY. No. Mr. Robinson.

Mr. ROBINSON. I am a Californian, realize.

Mr. MARKEY. I am not talking about an electricity crisis, Mr. Robinson. I am talking about a national energy crisis.

Mr. ROBINSON. You can't ignore——

Mr. MARKEY. Yes or no, are we in a national energy crisis, Mr. Robinson?

Mr. ROBINSON. Yes.

Mr. MARKEY. Yes, thank you. Mr. Kassel.

Mr. KASSEL. No.

Mr. MARKEY. No. Mr. Pitts.

Mr. PITTS. Yes.

Mr. MARKEY. Yes. Thank you.

Now, I would like to ask each of you, do you support in a crisis, as we did in 1975 in this country when we increased the efficiency standards for automobiles from 13 miles a gallon to 27 miles a gallon, moving to increase, mandate the fuel economy standards once again for automobiles and especially for SUVs, which have never had any standards imposed?

Under your own definitions that that we are in a crisis, should we impose standards on those vehicles that consume ⅔ of all of the oil that we consume in our country?

Mr. Layton?

Mr. LAYTON. No.

Mr. MARKEY. No, thank you. Mr. King.

Mr. KING. No.

Mr. MARKEY. No. Fine. Mr. D'Arco.

Mr. D'ARCO. No.

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Mr. MARKEY. No, fine. Mr. Robinson.

Mr. ROBINSON. It is going to take more than one word. But I think I will agree with you.

Mr. MARKEY. I will take that. Mr. Kassel.

Mr. ROBINSON. My point is that SUVs will——

Mr. MARKEY. We will come back to you. I will come back to you, Mr. Robinson. Mr. Kassel.

Mr. KASSEL. I said we were not in a energy crisis, but we should close the SUV loophole and fuel economy and bring us up to 39 to 40 miles a gallon by the end of the decade.

Mr. BARTON. Mr. Pitts.

Mr. PITTS. I agree with you.

Mr. MARKEY. You agree with me.

Mr. BARTON. If the gentleman will suspend.

Mr. MARKEY. I would be glad to.

Mr. BARTON. We encourage the gentleman to show the enthusiasm he normally does, but this is not an oversight hearing. We do not need to be on the verge of brow beating the witnesses.

Mr. MARKEY. I am not brow beating the witnesses. I am trying to extract answers in the very wise time constraints that the chairman is imposing upon the members of the committee.

Mr. BARTON. You are one of the wisest, most valuable members of the subcommittee.

Mr. MARKEY. I think you. That is a tribute from Caesar.

Mr. BARTON. That is actually seriously meant. But you know, there will be times that we need to be in the witness' face, but I do not believe this is one of those times.

Mr. MARKEY. I am not in the witness' face. I'm trying to actually get helpful information from them. See, sometimes what you have to do in order to get answers from people is to paradox them so that they can understand the inherent contradictions in their testimony, only by making them really simplify down the essential contradictions in their positions can you get them to confront that and ultimately to reconcile so that we can get a real answer that is helpful to the American people; otherwise their testimony appears to be self-serving from an industry perspective, but is it really helpful from a national perspective.

Mr. BARTON. I understand. This is just not a grand jury.

Mr. MARKEY. We obviously do not have them under oath.

Mr. BARTON. We will give the gentleman more time, because I took—that took 2 or 3 minutes, so please continue.

Mr. MARKEY. So that is my—that is the essential points that I am trying to make, Mr. Chairman, that the President—once again I am saying this clearly—is trying to create an atmosphere of artificial energy crisis in order to drill in environmentally sensitive areas in our country while ignoring the fact that we put 2/3 of all the oil that we consume in the United States in gasoline tanks.

Yet we have now rolled back the efficiency of automobiles and SUVs and light trucks back to the same standards that they were in the early 1980's. If there is a crisis, we must deal with it as a crisis. If it is not, we should not take the most environmentally sensitive parts of our country.

I think, Mr. Chairman, that we should drill in all parts of the United States that are not environmentally sensitive. But second,

we have to realize that we only have in the United States 3 percent of all of the oil reserves in the world. That is our disadvantage when we compete against OPEC.

Our advantage is that we are the most technologically sophisticated Nation in the world. That is how we are going to bring OPEC to its knees, only by looking at automobiles and SUVs and light trucks and air conditioners and all the other devices that consume energy and making them much more efficient can we ultimately take OPEC and regain the national and global agenda.

We are playing into their hands, and so here we are on the committee that prides itself as being the technological committee of Congress, and instead of talking about the devices which we have control over, all of those automobiles, all of those SUVs, all of those air conditioners and saying how do we make them more efficient, the President says to us, that we are in a crisis, let us go to the Arctic, the most environmentally sensitive part of the United States, and drill to produce oil that will not come down to the United States for another 10 years; and when it finally arrives in California, since they do not burn oil in order to generate electricity, that oil will go into the gasoline tanks of SUVs.

Now what kind of crisis is that that we will drill in the most environmentally sensitive part of the United States to build a pipeline to put into tankers to bring it to California to put it in SUVs?

Can we be smarter than that? Can we not find some better and more decent way of dealing with the legacy that we should be leaving to every subsequent generation of Americans?

I would ask, Mr. Chairman, that the next hearing be on energy efficiency. I think that that would be—having a hearing on all of the issues that deal with how much we consume in this country, how much higher percentage of all the energy per capita that we consume, and I think that that would help to flesh out this whole debate. But right now, we have not talked about alternative energy resources. We have not talked about energy efficiency.

We have witnesses down here that think we are in an energy crisis, but we should not look at where we put all of our energy. As far as oil is concerned, we put it in gasoline tanks.

So I do not think we are really hearing, in other words, the kind of balanced presentation of the problems and the solutions. I agree with Mr. Cook, and he did a very good job with the certain amount of terminological inexactitude to deal with his governmental job to tell us where we were in the upper—the upper part of the lower third of energy prices historically.

That is not a crisis. What we have is, in fact, an unwillingness on the part of our country to deal with the fact that we are consuming all of this energy.

I am just going to yield a final second here to Mr. Robinson so he can elaborate, if you would like to, on your answer on SUVs.

Mr. ROBINSON. I can tell you a few more things, but my point is, I just do not think SUVs should necessarily be treated any differently than anything else. That is my point.

Mr. MARKEY. You mean separate from automobiles?

Mr. ROBINSON. Yes.

Mr. MARKEY. I agree with you 100 percent.

Mr. Kassel, we have basically 20 percent of the vehicles out there on the street now are SUVs and people—Chrysler has announced a Unimark, it is 10 feet high and 7½ feet wide and it gets 10 miles to the gallon. There is the kind of announcement that the United States is looking for in terms of energy efficiency, huh? And that is heading in the wrong direction; we are going backwards. The big announcement should be that SUVs are going to get 25 miles a gallon, not 10 miles a gallon.

Mr. Kassel.

Mr. KASSEL. I just wanted to agree with what you have been saying——

Mr. BARTON. Agree with him quickly, because the Chair gave him an extra 5 minutes which he already exceeded.

Mr. KASSEL. One quick sentence, increasing fuel economy across the board to 39 miles per gallon would yield the equivalent energy consumption to 15 Arctic Refuges.

Mr. MARKEY. Thank you, Mr. Chairman. Thank you for your generosity.

Mr. BARTON. Let is put a few things on the record here. The gentleman from Massachusetts has asked that we do a hearing on, I think, liquefied natural gas. That we are trying to work in the schedule.

Great minds do think alike sometimes, even from opposite political spectrums, because one of the next hearings we are going to do is on conservation efficiency renewables, and I know that has been briefed at the staff level. It may not have yet reached the exulted levels of senior members like yourself, but it is in the works.

Mr. MARKEY. I am in the top part of the lower third of the information chain.

Mr. BARTON. And we are working together toward a comprehensive strategy in which all things are on the table, including some of the things that are nearest and dearest to your heart. Democracy is a wonderful thing.

Mr. MARKEY. Thank you.

Mr. BARTON. The gentleman from Oregon, Mr. Walden, is recognized for 10 minutes.

Mr. WALDEN. Thank you, Mr. Chairman.

I appreciate the opportunity to follow my distinguished colleague from Massachussetts. It is a long way from Massachusetts to Oregon, but we may actually share some common goals, including energy efficiency and conservation; and I look forward to that hearing.

I happen to be among those, even though I was not polled, who agree there is an energy crisis. I also do not believe that the only part of the energy crisis or the way you solve it is ANWR. I think that is a very small issue in terms of the overall problem that we face in terms of energy.

I think it is wrong to suggest that it is the answer or the only reason the President says we have a problem. I have an energy crisis in my district and in my region.

When 1,285 steel workers are laid off and may never get their jobs back because the electrical power is too expensive and their power is being bought out and sold on the market, and the plants shut down, that is a crisis.

When we are paying $2 a gallon for gas as we did last year in Oregon—and I some day would love to get to the bottom of why that is—that is a crisis. That is a crisis for the men and women who are trying to figure out how to pay for the gas to go in their tank—and it is more than just SUVs in my district—because I got tractors and other farm machinery they are trying to put gas into and diesel into—it's very expensive. So mark me down as a person who believes there is a crisis.

I was kind of taken by your comment about how you would support drilling in parts of the United States that are not environmentally sensitive, because I would love to have a definition or have you point out on a map where those places are. Because I tend to think every place has a little environmental sensitivity to it.

Mr. MARKEY. Prudoe Bay, the National Petroleum Reserve, all of that is still is yet to be developed.

Mr. WALDEN. And should be developed. I think there is an issue too that should be looked at: If we add to the supply out of our own reserves, does that just get exported and is there market manipulation going on? I know the FTC has looked at that a bit on the West Coast. Whether there is or not, I do not know. I would love to hear from our witnesses about that. Because what good does it do to go through the fight opening up new areas to drill if what happens to the amount that we drill gets shipped overseas in part of a global trading environment?

Do you all have a comment on that particular side of things, the export of domestic oil as it relates to trying to move the market one way or another? All right.

Mr. KING. I will comment.

Mr. WALDEN. Talk to me about it.

Mr. KING. I will comment on it from the refiners perspective. Last year about this time, we bought a refinery from Exxon in California, and that refinery ran primarily crude oil from the Alaskan North Slope, and also some California crude called SJC, San Joaquin Valley, exclusively from those two places.

It is difficult to get incremental supplies of ANS. First of all it is declining in production. Second, it has a very tight market out there in terms of who is buying and who is offering for sale that crude. One of the things that we are doing is actually trying to bring crude in from the AG and from other sources to compete with that crude and to bring more supply in so that we can ultimately drop the costs of gasoline for the consumer.

So I do not know if I specifically answered your question, but we are doing what we can as a refiner to force competition in that market; and, you know, we do not support exporting that crude away from our American needs.

Mr. WALDEN. How much impact do all of these different boutique fuels, as they are labeled, have in terms of the costs of gasoline in the market? And I apologize for being here late, maybe you covered this.

Mr. KING. I did not cover that, but that is a good question. I think it does have an impact on the price of gasoline. Because, for example, in California, California has the strictest standards for gasoline in the country. It is very difficult to make that gasoline,

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and you do not make it outside of California other than a few selected areas maybe in Asia, but it takes a lot of money to get that over here.

We do make it in one refinery in Corpus Christi, but that is very unusual; and it takes certain market dynamics and transportation costs to get it there.

So the same thing in the Midwest, they use ethanol. It is difficult to blend ethanol and to provide components to make ethanol; and, therefore, they hit a very tight supply demand situation, and we saw what happened there last summer.

Different standards in the South, different standards in the Northeast, and different times that certain things happen with respect to vapor pressure and things that affect gasoline production. So it does have impact on prices.

Mr. WALDEN. Because that is where we get a lot of our gas in Oregon is imported in from California.

Mr. KING. Either that or you get a lot from Washington State.

Mr. WALDEN. I think it is both 70 and 30 percent, one from the other. And it strikes me that we end up in the price vise pretty quickly out there; we certainly have over the last couple of years. And then you get into all of these zoning issues, the zones that get set by the oil companies as well. I think it is something that this committee frankly ought to be looking at as well.

Mr. KING. Mr. Robinson might be able to talk about the zoning situation in terms of pricing. I am more focused for your attention on the refining capacity. I do not think you have a refiner in Oregon.

Mr. WALDEN. We do not.

Mr. KING. So you are dependent upon the sources, as we said, from Washington and California.

Mr. WALDEN. Before we go to Mr. Robinson, can you tell me from your perspective what are the impediments to a new refinery in, say, a State like Oregon? Is there just not enough volume there? Is it a permitting process? Is it we are not the right end into some pipeline? What is it?

Mr. KING. Primarily, I think—and this speaks of the whole country—I mean, the question should be why do we not build refineries in our country including Oregon, and it is permitting. Permitting has a lot to do with it.

It is difficult to get permits. Most people do not want a refinery in their backyard.

The other thing is you've got overlapping regulations. We talked about this. You have got regulations on the fuels that we produce, and then there are also significant regulations on the refining—it is the refinery itself. Then you compound that with the rules changing in the middle of the game.

You get halfway through a particular mandate or a situation that is dictated by the government, and then the rules change and you have a stranded investment. That is not necessarily an environment that attracts capital.

As Mr. Cook accurately pointed out, our business has basically historically been about the same rate of return as a mutual fund, with a whole lot more risk.

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Mr. WALDEN. See, my concern is that we are sitting here today with gas prices at $1.49 to $1.69 or higher in my hometown—frankly, it is always higher—and I am afraid we are going to wake up this summer and the same situation we found ourselves when it comes to electricity this winter when it comes to gas prices. I will have to go home and explain why gas prices are back up over $2 a gallon in northeast Oregon.

Mr. KING. I think it is two things. First of all, it is crude oil prices. They are higher than they were last year, but if you really look at the issue; there is plenty of crude oil on the market. In fact, OPEC is cutting crude because there is too much. So what does that tell you?

It tells you that there is a problem with converting that crude oil into product, which is the lack of refining capacity in our country. That is the issue. That is why we are where we are on gasoline prices.

Mr. WALDEN. So to take this back to the electricity example, the problem we have is a lack of supply. And there are a lot of people in my region where we are now having blackouts in California, we are not going to spill water for fish. We are having all of these problems. They are saying, How did we get here? Why did someone not see this coming? What are we going to do about this supply? And everybody is rushing in to fill in the gap. How do we have a more reasonable approach when it comes to adding a refinery?

Mr. KING. I think we need to have a more receptive process by which a refinery is permitted and allowed to be in someone's backyard. On the electricity situation in California, I don't think a new power plant has been built in California in 10 years. Whereas demand has grown significantly, there are 4 million extra people in California. So it is the same concept. How do we make it easier? You make the permitting process easier. We don't change the rules in the middle of the game. We do the things that I have talked about.

Mr. WALDEN. Are the environmental laws that are in place, are you talking about relaxing those or just making the process itself easier?

Mr. KING. We are not—and this is something that I think is important for everyone to know—we are not in favor of relaxing the laws. I think that should come as a nice surprise to Mr. Kassel. But we are not in favor. We just want——

Mr. WALDEN. Tell us what they are and stick to them.

Mr. KING. Here is a good example. We are talking about lowering the sulfur in diesel fuel. We make several different types of diesel fuel. There are many categories: on-road diesel, off-road diesel, heating oil, jet fuel. But we are only talking about right now changing the specifications for on-road diesel. Then the next thing you know, in a year there will be a change in spec for off-road; then in a couple of years it will be jet fuel, then heating oil. So we are constantly compounding this issue, and we have got to spend capital retrofitting refineries over and over again; and we would just like one comprehensive plan to say, this is what we are going to do from a regulatory standpoint.

Mr. WALDEN. Those regulations, are they coming from the Congress, the EPA?

Mr. KING. They are coming from Congress, they are coming from the EPA, they are coming from the States, at the State level. We have incremental pressures. We have two refineries in the Houston area. They are being asked to reduce air emissions in Houston more so than other parts of the country. So we have got to even do more work there, and that capital has no return whatsoever. So your return on capital on that is zero. Whatever you couple that with, it is difficult.

Mr. WALDEN. That is my concern, we are going to wake up, no new refineries, heck of a gas price spike this summer, not that you would have a refinery in place by then, anyway; and it strikes me that you could live with these environmental laws if you had certainty long term so that you could plan for it and invest your capital wisely.

Mr. KING. That is right. The other thing that would help, sir, I think is at least an investigation into possible tax incentives for environmental equipment and maybe accelerated depreciation or giving us some advantage, some incentive to make those investments. Because the major, major oil companies, are diverting their capital away from the refining sector and going through the E and P sector, toward the exploration and production section of their company versus their refining system.

Mr. WALDEN. I have overrun my time. Thank you, Mr. Chairman.

Mr. BARTON. The gentleman's time has expired. The second round of questions is going to be for 5 minutes so we are going to try to wrap this up in the next 30 minutes or so. Before I start asking questions, just a kind of general overview. Mr. Cook pointed out in response to my questions in the first round that world production and consumption is somewhere in the 75- to 76 million-barrel-per-day range. OPEC is producing between 25 and 30 million barrels per day depending on their quotas that they set and how much cheating there is—OPEC is a swing producer. They can raise production, lower production.

Saudi Arabia is about 7 to 8 million barrels a day, so Saudi Arabia by itself with a list cost of $1 to $2 a barrel can kind of target the range; and if they get the price elasticity demand correct—they have this target price that Mr. Cook put on the table—they try to manage the world oil market. I happen to think that their target price is too high. I disagree some with Mr. Markey when he says the prices are acceptable. I think they need to be lower. We need lower oil prices; we need lower natural gas prices. That would help tremendously in our electricity markets if natural gas prices were lower than they are.

I would agree with Mr. Markey on the definition of a crisis versus a problem. We do have an energy problem in this country, and it is both a consumption problem and a supply problem. We need to address it. Conservation is part of it that Mr. Kassel is supportive of as, I think, are most of the other panel members; but I think supply increases are also a part of it. Now, I want to ask Mr. King, who is representing the refiners, my understanding is that your specific company does use MTBE in its reformulated gasoline; is that correct?

Mr. KING. That is correct.

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Mr. BARTON. In response to questions from Congresswoman Bono, I think you indicated that MTBE is not a carcinogen; is that correct?

Mr. KING. That is correct.

Mr. BARTON. Isn't the worst thing you can really say about MTBE is that if it gets into the water table, it stinks?

Mr. KING. It smells bad.

Mr. BARTON. It is not a nice smell. It smells like rotten eggs.

Mr. KING. Right. At large levels. But the levels we are talking about, I don't think that is the issue. But you are right, that is the concern, is the smell.

Mr. BARTON. If we were to ban MTBE as the Governor of the State of California has done by executive order, what would that do to the ability to actually meet the clean air standards that are in place? There are two ways to do it. One is—I guess three. MTBE is an additive at the refinery; ethanol is an additive at the terminal; and Chevron, I think Chevron, has a patented reformulated gasoline that can meet the standards in some areas of the country. Which of those is the least cost option?

Mr. KING. Keeping MTBE in the gasoline pool is the least cost option.

Mr. BARTON. If we were to take the MTBE out of the equation, do you have any data on what the overall cost increase would be in areas that are currently using MTBE?

Mr. KING. I don't know if I have—I think I have heard numbers. It is a range, as usual. Anywhere from 7 to 14 cents are numbers that I have heard. So I think it would have a definite impact on the price.

Mr. BARTON. It would add 7 to 14 cents a gallon?

Mr. KING. Those are the numbers that we have heard, the ranges, yes. It will certainly be more costly to produce the gasoline. Now, whether you can pass every penny of that on, I don't know.

Mr. BARTON. Are refineries in the United States set up that they can blend MTBE or not blend MTBE and there is no difference to them, there is no cost difference, there is no output difference; or are refineries actually set up more specifically for particular feed stock and a specific type of crude oil with the addition of MTBE?

Mr. KING. Most refiners are set up to allow them the flexibility. But of the oxygenates that have been utilized, MTBE and ethanol, 85 percent of refiners that blend an oxygenate choose MTBE. So most of them are set up to handle MTBE.

Mr. BARTON. Under the current Tax Code, does MTBE get any special tax considerations?

Mr. KING. No.

Mr. BARTON. Do any of the other oxygenate substitutes, additives, get tax considerations?

Mr. KING. Yes, they do. Ethanol does.

Mr. BARTON. Ethanol does. Do you know approximately what the tax consideration is in cents per gallon or dollars per gallon or dollars per barrel or whatever the standard of measure is?

Mr. KING. It is 54.5 cents a gallon of ethanol.

Mr. BARTON. 54.5 cents per gallon.

Mr. KING. Of ethanol.

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Mr. BARTON. Of ethanol. Per gallon. Not per barrel. Per gallon. That is a pretty good deal.

Mr. KING. It isn't, if you are the American consumer.

Mr. BARTON. But it is if you are getting it.

Mr. KING. It is if you are getting it, no doubt about it. But if you are a taxpayer in this country, I think people would like to know that. And to the extent that we would consider expanding the pool for ethanol, that is a real problem.

Mr. BARTON. What would happen if that tax benefit were taken away?

Mr. KING. No one would blend ethanol.

Mr. BARTON. Ethanol would not be cost competitive without that. In any region of the country, even in the Midwest?

Mr. KING. I don't believe that it would be competitive.

Mr. BARTON. My time is about to expire, so I would recognize the gentleman from Virginia for 5 minutes, Mr. Boucher.

Mr. BOUCHER. Thank you very much, Mr. Chairman. Mr. D'Arco, I would like to propound a couple of additional questions to you.

In your testimony, you have talked at some length about the new rule with regard to sulfur content in the diesel stream. Under that rule, older trucks can continue to use diesel fuel at the level of 500 parts per million of sulfur in the diesel stream, while for newer trucks a different standard is imposed; and that standard is 15 parts per million in the stream.

You suggest that this new rule, because it has two differentiations, of the amount of sulfur in the stream that is allowable is causing some dislocation and confusion in the market, because producers will presumably in some cases at least continue to produce diesel fuel at both levels of sulfur content. Why would that problem not be effectively addressed if all of the producers do what some of them have done and simply decide to move immediately to the lower content and only produce one fuel and that fuel would have 15 parts per million? Why not do it that way?

Mr. D'ARCO. That is actually our position. We are looking for that to happen.

Mr. BOUCHER. So you think that will happen?

Mr. D'ARCO. I honestly don't know. I do know that if we have these two separate fuels, certainly it is going to create supply problems because terminal facilities as they exist in the Northeast cannot handle the abundance of products.

Mr. BOUCHER. Your suggestion is that in fact the best way to address that particular problem is for the producers to make one fuel, and that would be at the lower level of 15 parts per million?

Mr. D'ARCO. That is correct.

Mr. BOUCHER. I have a question that is primarily for the purposes of clarification. You have a reference in your testimony to a dye system that is used for tax purposes. Is that a dye system that is required in the diesel sulfur rule, or is it required in some other EPA rule? Why is this dye system used and what is it?

Mr. D'ARCO. That system exists to identify which fuels are subject to motor fuel taxes and which are not.

Mr. BOUCHER. And what is the source of that requirement?

Mr. D'ARCO. I am sorry, I don't understand.

Mr. BOUCHER. Where does that requirement derive?

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Mr. D'ARCO. Congressional mandate.

Mr. BOUCHER. It is a congressional mandate. It is contained in the statute?

Mr. D'ARCO. Yes.

Mr. BOUCHER. The chairman was saying that we prefer the nicer term, Federal law, to congressional mandate.

Mr. Layton, let me turn to you, if I may. In your testimony, you have raised some concerns about the impediments to drilling on the outer coastal shelf. I want to ask you a little bit about your expression of those concerns. There was recently a disaster off the coast of Brazil in which a large drilling rig sank. In view of that experience, I wonder what kind of assurance you could offer to someone like the current head of the EPA, the former Governor of New Jersey, Ms. Whitman, who opposed drilling offshore or perhaps to Florida Governor Jeb Bush, who has also opposed drilling offshore, that a similar kind of disaster would not happen in the United States if we were to make it easier for production to take place on rigs that are located on the outer continental shelf. What assurance could you offer?

Mr. LAYTON. An honest assurance that there are no hundred percent guarantees that something bad would not happen. But I would ask that they go back and look at the record of the industry, particularly over the last 20 years. Not only in the incidents that did happen but how the industry and the technology that is available allowed the industry to cope and to take care of problems if they did come up. I think they will find that there are very, very few problems that have arisen and certainly not of the magnitude of the one you just mentioned. But those that have, I think the industry is in a position that it can be very responsive and has been very responsive to take care of the obligation to clean up if there is an incident that has happened.

Mr. BOUCHER. Was there any particular lack of safeguard in the case of the Brazilian incident that we could reliably assume would not be repeated with regard to offshore drilling in the United States? Was there any particular facet of that Brazilian experience that was unique, and do we have any confidence that whatever affected that drilling rig would not affect a rig in the United States?

Mr. LAYTON. I apologize to the Congressman. I really am not in a position to address that.

Mr. BOUCHER. Thank you very much, Mr. Layton. Thank you, Mr. Chairman.

Mr. BARTON. Before we get off the subject, could we—would EIA have data on the amount of oil spilled from drilling platforms versus oil spilled from tankers bringing imported oil? Is such data available? Or is that such an esoteric statistic that it is not obtainable?

Mr. COOK. Given our budget, I am not aware of any such data collection.

Mr. BARTON. Mr. Layton?

Mr. LAYTON. Congressman, I believe there is some data available. I will take it upon myself to find that.

Mr. BARTON. I wouldn't put my hand on a Bible, but my recollection is that we have had more spills from tankers in the last 20

years than we have from drilling rigs. I know that is the case in the Gulf of Mexico off the coast of Texas.

Mr. LAYTON. My recollection is the same as yours. But I will collect that and submit it to the Congress.

Mr. BARTON. The gentleman from Oregon is recognized for 5 minutes.

Mr. WALDEN. Thank you, Mr. Chairman.

Mr. Pitts, you noted that the results of your survey indicated a majority of those interviewed did not approve of NYMEX as a pricing mechanism for crude oil and believe it causes unnecessary price volatility. Do you or any of the producers have suggestions on how to create more price stability?

Mr. PITTS. The OPEC pricing ban is working very well. Everybody I have talked to agrees with it and thinks it is working and it should stay in place.

Mr. WALDEN. Do others want to comment on that?

Mr. LAYTON. I would add a comment and, that is, one mechanism that I believe would help would be the Department of Energy's oil data transparency project. That project has the goal of making sure that the information that is out there that drives the markets is in fact as accurate, as accessible as possible. If the markets do overreact—and I think there is some evidence that momentum carries them too far one way or another—it certainly adds insult to injury if they are overreacting to the wrong data, and that is what I believe the Department of Energy effort is designed to try and combat. And so I certainly think that is one thing that should be supported and worked on very much.

Mr. WALDEN. Let me follow up on some of the information issues and the way prices are set and all. It used to be that there were 10 to 13 players in the market; no one company could set the market price. But now with all the information available on the Internet, quick access to information, what effect does that quick access to information have on the consumer?

Mr. LAYTON. Is your question addressed to me?

Mr. WALDEN. Whoever wants to take it. You seem brave enough to answer.

Mr. LAYTON. Brave or foolish, I am not sure which.

It certainly, over the years as information has become more available, has changed the price of our commodities, crude oil and natural gas. You can look back historically—and you have to go back a number of years to see that—but the price of oil might change a few times during the year. Now we have it changing daily and not by 25 cents a barrel, but maybe a dollar a barrel and maybe $5 a barrel over a week's period of time. I think the additional volatility probably is the biggest impact on the consumers, and I guess that can be good for them in the short term. I don't agree it is good for them in the long term if volatility is downward because it is downward as it was in 1998 and 1999; it is going to bounce back like it has.

Mr. WALDEN. I guess it is somewhat like their siting of refineries. I think what people want most is some level of predictability as they do their own budgeting, whether you are in a small business or just a household budget. If you are commuting and gas is 98 cents 1 year as it was and close to $2 the next, how do you

budget for that? I just wondered how that—everybody gets information right away. Does that really end up having a positive effect on the pricing structure? Does it create more volatility? Does it do damage to the marketplace in terms of competitiveness? Mr. Robinson? Or is it not an effect at all?

Mr. ROBINSON. I think it has a degree of an effect. When things are tight and information is flowing, you are going to see rapid run-ups. You will also see—when it gets loose, you will also see the prices going down. The villain really isn't, though, the information. It might make it a little bit quicker, but it doesn't materially impact it overall. Just like all the technology, it makes things a little quicker, but you would have gotten there anyway.

Mr. WALDEN. Anybody else? Mr. Kassel?

Mr. KASSEL. I think one impact that we might see with the incredibly fast flow of information is a quickening of when problems become crises. We have been talking—before we were talking about is it a crisis or is it a problem, and we had a variety of different answers to the question. The reality is that the country needs a balanced energy policy that meets a whole array of energy, economic, and environmental and health goals. We don't have that now.

But what we do have is a near-hysteria pitch growing over what are we going to do, what are we going to do, which is in part increased by the incredible flow of information that we all have. But our response should be to the problem that we have, to the lack of the policy. So yes, we have to be talking about the supply side as we have done in many cases, for most of today, but we also have to talk about how do we free our fuel economy so that we can meet the energy needs, the consumption needs of America's driving without having to go offshore, without having to go into sensitive areas like the Arctic Refuge. I think that is a debate that will take time to unroll. And it flows at a different pace than the kind of information flow you are talking about.

Mr. WALDEN. I am out of time. Thank you, Mr. Chairman.

Mr. BARTON. The gentleman's time has expired. For the last 5 minutes of questioning, the mild-mannered man from Massachusetts, the mellifluous Mr. Markey.

Mr. MARKEY. Thank you, Mr. Chairman, very much. I will try to merit the confidence that you have in me to maintain that demeanor.

First of all, let me say that we don't have as many oil wells in Massachusetts as we would like to; and so even when prices are in the upper part of the lower third, prices, we still believe that prices are too high, so I just want to make that clear. The point I was trying to make is we don't have an energy crisis, we have an energy problem; and a problem as a result lends itself to more judicious consideration. We can exclude the more extreme resolutions of that crisis, if we want to work together. On the other hand, if we want to take the most extreme solutions, then it can only be justified by calling something a crisis. So let me ask this, Mr. King. I thought I heard you say—maybe I was wrong—but I thought I heard you say that there is plenty of crude oil in the world. Did I misunderstand that?

Mr. KING. I think at this—it is all seasonal. It is all dependent upon supply and-demand fundamentals, but I think—at this time, I think there is a general feeling at least among OPEC that there is too much oil.

Mr. MARKEY. But I thought you said there is plenty of crude oil, but because there is plenty of crude oil that OPEC has decided to cut back because it affects their ability to have the price that they want; is that correct? Would that be an accurate summary?

Mr. KING. I think that is accurate for today. It wasn't true last year when they were increasing production. But their feeling is that with the slowdown in the economy, they are trying to figure out how do we regulate the oil. So therefore they are having to cut back their production.

Mr. MARKEY. Exactly. So the point again, to put a point on it, is that there is plenty of crude.

Mr. KING. That is right. But I think what we are talking about here is a domestic energy policy. There is not plenty of crude oil in the United States. That is the real issue. It is the same thing with refining capacity.

Mr. MARKEY. We only have 3 percent of the oil reserves in the world, so we are never going to be able to drill our way out of the crisis. There is no way—you do agree that there is no way that we could ever reach a point where we have 100 percent of our oil production in the United States produced domestically?

Mr. KING. I do agree with that, but I also believe that we have become over time now, the last 10 years, 20 years, we are more and more dependent on OPEC than we ever have been. So, therefore, I think we have lost some of that power that we want to have back, as you have mentioned.

Mr. MARKEY. Let me show you a chart here that BP Amoco has provided to the committee in terms of the share of global oil production from 1965 to the year 2005. According to this chart, this is BM Amoco, that OPEC today is producing just about the same level of total production in a global marketplace as it was 15 years ago. In fact, it is lower today than it was back in the late sixties and early seventies. Meanwhile, the non-OPEC production has remained stable over the last generation. In fact, it is higher than it was back in the 1960's and right up to the mid-1970's.

Mr. BARTON. We will need that chart, to put it in the record. I have seen the same chart, but we need to make sure we get it into the record.

Mr. MARKEY. I place a great deal of weight on BP Amoco's analysis. I don't know about you, Mr. Chairman.

Mr. LAYTON. I would be happy to comment on that chart.

Mr. MARKEY. Please do so, Mr. Layton.

Mr. LAYTON. There is one difference that doesn't show up on the chart and, that is, excess production capacity with the OPEC countries. In the earlier years where that production hit that level you pointed to, there was an enormous amount of capacity beyond what OPEC was actually producing. The issue that we are dealing now with in the global marketplace is that the only excess production capacity prior to the recent cuts that were made really resided with Saudi Arabia, and it was maybe 2 million barrels a day. So if there was a cushion, not if, there was a cushion there in years past, that

cushion has almost disappeared. And I think that is something that certainly—I don't disagree with what the chart shows, but it is information that is not available on that chart.

Mr. MARKEY. Again, I am just trying to make the point that—I guess you are trying to make the point that we are too dependent on OPEC on the one hand, but that they should produce more on the other. I understand that. That is again another one of these contradictions that we have. But ultimately, no matter what we do in our own country in terms of additional production, our better way of putting pressure on OPEC so that they are at the lower end of what their production needs are to satisfy all their members in terms of the revenues they need to satisfy the citizens of their countries in terms of their needs is to continue to lower the amount of oil that we consume, in automobiles and SUVs.

Then there is pressure on their membership to raise the oil production because you kind of hit a bottom level, below which they can't go back to their own citizens and say that we are going to lower the production of oil again. Because, obviously, Saddam Hussein is going to be arguing that he has a right to produce more oil because he has been off the market for so long, and Mexico and others are also going to be saying we need to produce more.

I just think that we are not using our primary tool, which is our technological superiority, in order to leverage this relationship with OPEC. That is our single most underutilized tool. It just seems to me that if we can boast about putting a man on the Moon or having invented the Internet and made all the information in the world available at the fingertips of every citizen of our country and every citizen of the world, it seems to me that it is kind of a sad commentary on us as a Nation that we are now using 1982-level automotive efficiency tools.

It seems to me that on the central relationship to our economy, our dependence upon imported oil, that we are looking at this technology and basically ignoring the potential benefits that we could extract from it in terms of our relationship with this unstable source of energy for our economy.

I would just make one final point, Mr. Chairman. The BP Amoco charts also include a very interesting point, which is that U.S. oil products, imports into the United States, have stayed within the same band, that is, 1.5 to 2.5 million barrels of oil a day of refined product for the last 10 years. It stays right inside of that band. There is no real spike that is evident right now or last year or the year before, and that in terms of again these historical trends, that there is no justification for drilling in the Arctic Wildlife Reserve or moving to those more vulnerable areas before we have looked at the National Petroleum Reserve, Prudhoe Bay, looked at other potential—I will tell you the truth.

I look at natural gas in Prudhoe Bay, and I am astounded that we haven't brought that down yet. There is only about 7 trillion cubic feet of natural gas that people estimate is over in the Arctic Wildlife Reserve, but there is 25 to 30 trillion cubic feet in the Prudhoe Bay area. Yet the pipeline hasn't been built; it hasn't been brought down. So I think if we are going to be looking, in other words, at where the energy is that we can all agree, Democrat, Republican, liberal, conservative, environmentalist, producer, that we

really haven't even begun to tap those resources yet before we have to reach the more vulnerable parts of our country. I thank you, Mr. Chairman.

Mr. BARTON. Thank you. We will try to get those charts you referred to into the record. The Chair would also ask unanimous consent that the February DOE monthly highlight fact sheet be put into the record from the energy information agency unless you have got a later one out. The latest we have is February. When would the March highlight data sheet be out, Mr. Cook?

Mr. COOK. Could you clarify which data sheet you are talking about?

Mr. BARTON. EIA DOE Government February 2001 Energy Highlight. It is petroleum supply summary table H1. I know you know every one of the things you do. Generally when do they come out? I want to put this one in because I am told at the staff level it is the latest one we have, but if there is a March one we will certainly put—we will show you——

Mr. COOK. We don't have final March monthly data yet. Without taking a look at what you are looking at there, I suspect maybe that is using December data.

Mr. BARTON. Actually, it has estimates for February and January. I guess the actual would be December. It does say—it says total petroleum demand averaged 20 million barrels per day. This was the highest daily average for February since 1979. Crude oil production was 5.9 million barrels per day, the lowest since February 1950. We have got the highest demand we have had in 21 years and the lowest production we have had in 51 years according to the—that would tend to be a problem.

Mr. COOK. Do you have an estimate for February on that table?

Mr. BARTON. Yes, sir.

Mr. COOK. Okay. Approximately the end of the first week of April.

Mr. BARTON. That is next week.

Mr. COOK. Yes. We will have all of the data from March in a preliminary form, and we can give you an estimate then for the March figure.

Mr. BARTON. Thank you. I wasn't trying to create an argument right at the end. I was just asking unanimous consent to put the latest data into the record. Hearing no objection, so ordered. If we can update the data, we will put that into the record, too.

[The following was received for the record:]

Data will be available on the EIA website (www.eia.doe.gov) on Wednesday, April 18 in the Weekly Petroleum Status Report.

Mr. BARTON. I want to thank our panels. I want to thank the Members for being here on a day that we don't have votes. There may be written questions from the staff for the record. If so, we would ask that you reply expeditiously. We have probably three to a half a dozen more hearings before we begin to try to put together a package, a legislative package. We appreciate your attendance. Again, I want to give special thanks to Mr. Pitts for coming. We do appreciate your attendance. This hearing is adjourned.

[Whereupon, at 12:30 p.m., the subcommittee was adjourned.]