

OIL SUPPLY AND PRICES

HEARING
BEFORE THE
COMMITTEE ON
ENERGY AND NATURAL RESOURCES
UNITED STATES SENATE
ONE HUNDRED EIGHTH CONGRESS

FIRST SESSION

TO RECEIVE TESTIMONY REGARDING OIL SUPPLY AND PRICES

FEBRUARY 13, 2003



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OIL SUPPLY AND PRICES

THURSDAY, FEBRUARY 13, 2003

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

The committee met, pursuant to notice, at 2:33 p.m., in room SD-366, Dirksen Senate Office Building, Hon. Pete V. Domenici, chairman, presiding.

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

The CHAIRMAN. We will start the hearing.

I have asked this hearing to take place to take testimony on global oil supply and global demand issues. We are particularly concerned in light of the recent sharp increases in the price of oil and gasoline.

Specifically, the committee is interested in, from my standpoint, what is occurring in the global oil markets today; what has caused the recent price increases; what is being done to prevent future supply shortages, and does our current energy policy address this.

I have decided to forego an opening statement on my own because we have four distinguished witnesses, and obviously no one wants to stay here very late. I would like very much for all of you to get a chance to testify and answer questions.

So with that, I yield to Senator Bingaman. Then, Senator Burns, we will yield to you for whatever your desires are on opening statements.

Thank you, gentlemen, for coming.

Senator BINGAMAN.

[The prepared statements of Senator Domenici and Senator Feinstein follow:]

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

I have called this hearing to take testimony on global oil supply and demand issues. We are particularly concerned in light of recent, sharp increases in the price of oil and gasoline.

Specifically, this committee is interested in:

1. What is occurring in the global oil markets today;
2. What has caused the recent price increases;
3. What is being done to prevent future supply shortages and does our current energy policy address this.

This is the second time in two years that this committee has held a hearing like this in response to the high price of crude oil. The last hearing was in February 2000. At that time, the United States was paying the highest price for oil since the

Gulf War. That meant that consumers were paying record prices for gasoline, heating and diesel fuel.

Fuel costs also drove up the price of food, textiles and manufactured products. Anything that had to be transported cost more, including people. Now, two years later, we are faced with the same crisis. Prices are soaring and supplies are down.

Today, crude oil is trading at \$35/barrel; Gasoline prices have hit \$1.60/gallon; Heating oil has hit \$1.20/gal. According to a 2000 International Monetary Fund study, our national prosperity takes a hit every time the price of oil climbs. Every \$5/barrel increase in the price of oil means an average reduction in the GDP of 0.4 percent.

Clearly, this already-slow economy does not need the further drag of rising oil prices. The current supply shortage is a result of a combination of factors:

- three month oil strike in Venezuela, which removed nearly 2 million barrels of day from the world market.
- cold winter weather in the Northeast.
- low crude and petroleum stocks and
- market jitters over Iraq.

Some of these causes are different than the ones two years ago. But what hasn't changed is our dangerous dependence on foreign oil. The U.S. consumes 19.5 million barrels of crude oil each day. Unfortunately, nearly 60 percent of our daily supplies come from imports. That number has been climbing for decades.

In 1973, we imported 35 percent of our oil. In 1990, imports had climbed to 42 percent. Now, 13 years later, we import nearly 60 percent of our oil. The Energy Information Administration estimates that figure will grow to 68 percent by 2025. While our dangerous dependence on foreign oil grows, our own production continues to decline. Today, we are producing no more oil than we did half a century ago. Our production today is the same as it was in 1950.

That isn't because we don't have it. The United States has the 12th largest amount of oil reserves in the world, according to the EIA.

If we continue on this path of declining production and increasing importation, our economy will suffer, the cost of heating our homes and driving our cars will continue to climb and we will continue to jeopardize our own national security.

It is a dangerous world. I am not comfortable turning over the fate of our economy and our national security to Middle East oil producers—or any other producer for that matter. It is bad energy policy. It is bad economic policy. If we are going to have enough oil and gas—and at a reasonable price—we have to explore our own available resources.

We have tremendous reserves in the Gulf of Mexico and the frontier of Alaska, not to mention the resources in the continental U.S. located on “multi-use” designated federal lands. If we don't step up the plate and take responsibility for providing more of our own energy, we allow foreign suppliers to hold hostage our economy and our national security.

I am committed to working with my colleagues to pass a comprehensive energy bill that will make responsible, environmentally-sound domestic energy production a priority. We have four outstanding witnesses here today to discuss the current oil prices and provide insight to our future supply outlook. We have deliberately limited the number of witnesses to ensure that members are able to hear from these experts and engage in serious discussion about our energy priorities and concerns.

It is a pleasure to have you here, and I look forward to hearing your testimony. Before we begin, I would like to remind my colleagues that the record will remain open until 5:00 pm today for members to submit questions.

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

Mr. Chairman, let me start off by saying that I am very concerned about America's fuel supply and the amount of oil this nation consumes.

The prospect of an imminent war in Iraq, the continued uncertainty in Venezuela, and the lack of a strong response from the Federal government to address our balkanized fuel market have all contributed to push the price of oil to over \$35 a barrel and the average price of gasoline to over \$1.50 per gallon nationwide.

Higher energy prices will impact every American family and business this winter and conditions will only worsen as we approach the peak driving season this summer. As usual, prices are predicted to be especially high in California.

If we go to war, prices are predicted to spike even higher since there could be a temporary loss of oil exports from Iraq and neighboring Persian Gulf countries.

Prices are also predicted to climb as oil companies shift more and more of their refining to use ethanol instead of the harmful fuel additive MTBE (Methyl Tertiary Butyl Ether). Currently, approximately 65 percent of the gasoline in California is blended with ethanol, not MTBE.

I believe there are a few ways the Federal government must respond now to the uncertain conditions on the horizon in our fuel markets.

First, Congress must allow states to waive the 2% oxygenate required in gasoline under the Clean Air Act.

This is something California has sought for quite some time because the requirement to blend California's gasoline with 2 percent oxygenate is an unnecessary cost to Californians and has polluted our waters with MTBE.

In California, Governor Gray Davis ordered a phase-out of MTBE by the end of 2003, but the Federal law requiring two percent oxygenates remains, putting our State in an untenable position.

This is because the best available substitute for MTBE to meet the two-percent requirement is ethanol, but there is not a sufficient supply of ethanol to meet the projected demand in California and the rest of the country. Congress must act to waive the two percent oxygenate requirement in place.

With inadequate ethanol supplies, we can expect supply disruptions and price spikes during the peak driving months of this summer. Higher costs for ethanol will add to predictions that retail gasoline prices may climb to unprecedented levels on their own this summer because of uncertainty in the world oil markets.

In the last session of Congress, I introduced legislation with Senator Inhofe—the Chairman of the Environment and Public Works Committee—to give California and other States the relief they need from the unwarranted, unnecessary 2 percent oxygenate requirement. I plan to reintroduce this legislation soon to give state officials flexibility to determine whether to use oxygenates in their gasoline.

As the Senate begins to craft an energy bill this year, I look forward to working with members of this Committee and other interested parties to come up with fair and equitable solutions to improve our fuel markets.

Another step Congress can take to reduce dependence on petroleum is to increase Corporate Average Fuel Economy standards.

I am concerned by the enormous amount of oil this nation consumes. The United States is now the largest energy consumer in the world, with 4 percent of the world's population using 25 percent of the planet's energy. 40 percent of the oil this nation uses goes directly into our automobiles—that means 12 million barrels of oil each day.

Today, SUVs and light duty trucks comprise more than half of the new car sales in the United States. As a result, the overall fuel economy of our nation's fleet is the lowest it has been in two decades—because fuel economy standards for these vehicles are far lower than they are for other passenger vehicles.

By employing technologies to increase efficiency and reduce our demand for oil, I believe we can pass on great savings to the American family and businesses—not to mention reduce carbon dioxide emissions.

Last month, Senator Snowe and I—along with 12 other Senators—introduced legislation to close the "SUV Loophole," and require that SUVs meet the same fuel efficiency standards as passenger cars by 2011. If implemented, closing the SUV Loophole would:

- Save the U.S. 1 million barrels of oil a day and reduce our dependence on foreign oil imports by 10 percent.
- Prevent about 240 million tons of carbon dioxide—the top greenhouse gas and biggest single cause of global warming—from entering the atmosphere each year.
- Save SUV and light duty truck owners hundreds of dollars each year in gasoline costs.

Simply put, this legislation is the single most important step the United States can take to limit dependence on foreign oil and better protect our environment.

Senator BINGAMAN. Thank you, Mr. Chairman. I will defer to your wishes and not make an opening statement. I am looking forward to hearing the testimony. I think it is very timely. There are a lot of serious issues related to prices and supply of oil and other fuel that we need to hear about today.

The CHAIRMAN. Thank you very much.

And we now proceed. Senator Burns, excuse me. Go ahead.

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

Senator BURNS. James May, it is nice to see you in a different venue. You have never been up here before. Thank you for coming.

Mr. Chairman, thank you for having this hearing. I am going to submit my statement for the record.

We completed a trip into Russia the first part of December looking at the possibilities of increasing our number of sources for energy. I have read a couple of books on Winston Churchill, and he says our security will be found in the variety of sources rather than the reliability on a single source, even though the supply may be large.

I think with new players coming into the world oil market, western Africa being one, the Caspian Basin, and Russia itself. However, in Russia there is a lack of infrastructure and investment to make it viable at this time. But if Russia wants to be a player in the world market, it will force them to adopt land reform and legal reform and those kind of things that we want to see in a worldwide market setting. I think we should pursue that.

So I thank you for holding this hearing today.

And we have been doing some things both on the supply side and also on new technologies that are very exciting, and I am excited about our witnesses today and looking forward to hearing their testimony.

[The prepared statement of Senator Burns follows:]

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

Thank you, Mr. Chairman, for holding this hearing today and to the witnesses for appearing. They are each experts who specialize in energy markets and can give us insight into the state of the U.S. Oil Supply and help us determine the direction we should be heading to with respect to our nation's energy policies.

The United States consumes about 19 million barrels of oil per day—60 percent of which we import from other countries. A great portion of the oil we use is used for transportation, about 12 million barrels per day. The U.S. is a big country, and we move people and products across it every day with great efficiency and safety. That is one of the reasons we lead the world in GDP.

Because our economy is greatly dependent on the ability to move these people and products, countless American jobs and families are intertwined with the price and availability of oil. Whether you think that is a good thing or a bad thing, it is the inescapable truth. Far beyond the price of gas at the pump, we all are beginning to understand that the source of the oil we buy is as important as the price. There is no reason to line the pockets of our enemies with the oil we buy.

There are three ways to improve long-term energy security with respect to oil: 1) reduce our overall use; 2) increase domestic production; and 3) increase the number of players in the world market. Alone, none of these is a silver bullet, but all three in combination can have a significant effect.

The population of this country is growing, which is a great thing. We are a prosperous and dynamic nation. That alone means we will probably continue to use more oil into the foreseeable future. Of course there are ways to reduce the amount of oil our people and their cars and trucks and airplanes use. We should be using more ethanol in this country—it's a hugely underused resource. And the President has supported the FreedomCar initiative to develop cars that run on hydrogen fuel cells, which I support wholeheartedly.

In Montana (at Montana State University) we are doing groundbreaking work on fuel cells, and it is a very exciting field. Some of the best scientists in the nation and the world have been working on fuel cells for the last twenty years and more, and I am encouraged by the President's commitment. However, our expectations need to be realistic. We are still in research and development phase of transportation fuel cells. The cost of energy produced by fuel cells is still sky-high and not nearly reliable enough. We'll get there, but it won't be tomorrow, and it won't be next year. You can look to fuel cells as the future, but not as the present.

On the domestic energy front, I echo the comments of my colleagues that we need to do more. We have oil and gas reserves on public lands that are completely impossible to access. ANWR is only one example. Slowly, we have let the "Not In My Backyard" philosophy overtake the need for a dependable domestic energy supply. We need to know where the reserves are and be willing and able to access them as a way to protect our country. With modern drilling technology and our high environmental standards, the United States should be leading the world in wise resource production. Instead, we have placed ourselves at the whim of a volatile world market. The U.S. may well be an importer of oil as long as any of us are alive, but we should be doing better than we are here at home.

Looking at our imports, there are actions we can take as a nation, and as a Congress to improve the current situation. We need to take a close look at our trading partners and promote democracy rather than terror. We need to encourage a more countries to be active players in the oil market. Places like Russia, Western Africa, the Caspian Basin, and others are emerging as promising sources. American investment in those countries can be the key to developing a liquid and stable worldwide market.

In many cases, that investment will not happen unless these countries undertake meaningful land and judicial reforms. We should encourage that reform, and make a commitment to those countries that are willing. For example, when I traveled to Russia in December, I met with government officials and who explained the great challenges they face in securing foreign energy investment. I signed a statement of joint cooperation between our countries with members of the Duma, and committed that I would bring the message back to you. As a result, I am introducing a Resolution to encourage improved cooperation with the Russian Federation on energy development issues, and I hope all of you will become cosponsors.

We all know we are in a challenging time, and the U.S. and each of us should do what we can to better our safety, our economy, and our security. Thank you to the witnesses for helping us determine what those actions should be.

The CHAIRMAN. Thank you very much.

Senator did you want to make any brief opening remarks?

Senator WYDEN. Whatever is your pleasure. Are we allowed to do that?

The CHAIRMAN. Just as brief as you can make it.

**STATEMENT OF HON. RON WYDEN, U.S. SENATOR
FROM OREGON**

Senator WYDEN. Thank you, Mr. Chairman. I very much appreciate your holding the hearing, Mr. Chairman.

I am particularly concerned because right now you have got consumers getting clobbered, but we are also seeing oil company profits soar through the roof. Royal Dutch Shell reported a \$2.8 billion profit for the fourth quarter of 2002, up 46 percent from the year before. During the same quarter, Exxon Mobil reported a 53 percent increase in its quarterly profit. We really need to get at these issues.

And I will say that I think it is very regrettable that the administration is unwilling to come here today to discuss these issues. We have tried, under both Chairman Domenici and Senator Bingaman, to work in a bipartisan way on difficult issues. You cannot do that if the administration is not here at a time when oil prices are one of the key economic issues of our time.

I appreciate your letting me say that, Mr. Chairman. I look forward to questions.

The CHAIRMAN. Let me comment on your last observation. The administration is not here. The administration is scheduled to be here. We are out on recess, and I think it is the following week or the first part of the week after that the Secretary will be here himself.

Senator Bunning, we did not have any opening remarks, either the chairman or I.

Senator BUNNING. I am just going to ask you permission to enter them into the record, and I will question the witnesses.

[The prepared statement of Senator Bunning follows:]

PREPARED STATEMENT OF HON. JIM BUNNING, U.S. SENATOR FROM KENTUCKY

Thank you, Mr. Chairman.

Oil is an important commodity that makes this country move. We rely on it to drive our cars, heat our homes, travel, and deliver goods and services to companies and homes across the country. America's reliable and affordable oil has helped raise our standard of living and enhance our modern life.

Thanks to new technology, we have increased our conservation to operate with less energy and less impact on the environment. Despite these accomplishments, the United States is currently facing a tight reserve of oil.

The long, cold winter we have experienced this year, the Venezuela crisis, and the threat of a possible war with Iraq have all made matters worse. Our gas prices are up almost 38 cents per gallon higher than last year's prices. This causes me concern, especially since the upcoming summer months are when so many families take to the road for their annual vacation.

Higher prices place a strain on American family's budget and, in turn, our economic recovery. The United States is the single largest user of petroleum in the world. Now is the time for us to boost our domestic energy sources as well as promote conservation.

The United States today produces less energy than we did in World War II. Our supplies are almost 120 million barrels lower than they were a year ago. The need to increase our own production of energy is especially true given the high possibility of war with Iraq. It is already estimated that fears over a war have driven oil prices higher in recent months.

Our national security has never been so important and we must strengthen our energy independence to protect ourselves from madmen like Hussein and the politic of the middle east. ANWR and other areas should be examined to reduce our dependence on foreign oil. ANWR alone has the potential to produce over 1 million barrels a day. That could fuel Kentucky's oil needs for the next 80 years.

We have no choice. We must reduce our dependence on foreign oil and increase our domestic supply.

I look forward to hearing about the status of our oil supply today. I appreciate the time our witnesses have taken today to come testify.

Thank you.

The CHAIRMAN. Great. Thank you so much. Thank you for coming today.

With that, we are going to proceed. Mr. Matthew Simmons, chairman and CEO of Simmons & Company from Houston, Texas, will lead off. Robert Ebel, director for the Center for Strategic and International Studies here in Washington. James May is here with a new hat on, president and CEO of the Air Transport Association. It is good to have you here. And Red Cavaney, president of the American Petroleum Institute. It is good to have all of you.

Let us start with you, Mr. Simmons.

**STATEMENT OF MATTHEW R. SIMMONS, CHAIRMAN AND CEO,
SIMMONS & COMPANY INTERNATIONAL, HOUSTON, TX**

Mr. SIMMONS. Chairman Domenici and fellow Senators, I have spent 30 years focusing exclusively on energy-related investment banking and research, and I am honored to be here to testify today. While I am a member of various energy groups, including the National Petroleum Council and several others, I am actually here today strictly as an independent energy observer and a concerned citizen about the gravity of America's energy issues.

The United States has a multitude of serious energy problems, but perhaps the most immediate and serious is our precarious oil supplies and ultra-low oil stocks. The last time U.S. oil stocks were so low was in October 1975. In the Gulf Coast, the Midwest, and the Rockies regions, crude stocks fell by another 7 million barrels last week, and in this critical region, crude stocks have never been lower on a day's usage basis.

Until recently, most of our oil problems have been largely ignored, but now the prices are on the move again due to increasing winter demand, flat new daily oil supply, and particularly Venezuela's oil system which is now in turmoil. And we are now likely to test exactly how much excess capacity the world really has, how well our global tanker industry can shift to radically different global oil flows, and even how well the U.S. Strategic Petroleum Reserve, the SPR, really works. The danger of physical shortages in one of more key petroleum products in the United States has probably never been so high.

Once oil prices bounced back to \$27-\$28 last summer, most oil observers assumed this high price was a war premium. What went almost unnoticed at the time was a rapid fall in U.S. petroleum stocks. U.S. petroleum stocks were already low as the third quarter came in. Then a series of bad luck events, two hurricanes, the Tokyo nuclear problem, the sinking of the Prestige, just continued to pull both U.S. and OECD stocks ever lower.

And finally came the surprise no one could have imagined. Venezuela, the United States' closest and long-term very loyal, reliable oil supplier, suddenly saw its oil system virtually shut down. Venezuela's production has apparently edged back, but exports are still 1.6 million barrels a day less than they averaged in November and for the most of the last couple of years. And the lost oil production in just December and January has taken about 120 million barrels out of the global oil system.

For the first few weeks of the Venezuelan strike, the impact on U.S. oil supplies was minimal, but this was probably simply a liquidation of stored oil stocks in the Caribbean and elsewhere. Once this temporary liquidation ended, U.S. oil stocks finally felt the full brunt of Venezuela's oil shutdown, and in almost every category of oil stocks, we are now at or approaching record lows.

This turmoil raises a series of troubling questions, which I outlined in my written remarks. It is far easier to raise these serious questions than it is to answer any of them, but let me highlight just the most serious of these.

Our low oil stocks are dangerously low. No one knows how serious they are because we have no solid data on where minimum operating levels in the oil system really are or even the status of secondary and tertiary stocks.

How will U.S. stocks ever get rebuilt?

The CHAIRMAN. Excuse me. Can I interrupt you for a moment first? I really do not want you to hurry. It seems like you are moving very fast. I have talked to you before, and you talk slower than that. Can you talk more slowly than that? It is much easier to understand you.

Mr. SIMMONS. I am watching my 5 minutes.

[Laughter.]

The CHAIRMAN. We will give you an extra 30 seconds if you talk more slowly.

In any event, what do you mean when you say oil stocks?

Mr. SIMMONS. The oil inventories that create the way that our logistics in the United States work. What is really misunderstood is for this country and its geographic size to actually keep 20 million barrels a day flowing through the system, we have to have an enormous amount of inventory that is really not usable. It is just a line pack. So when I say oil stocks, it is not equities. It is the physical inventory of crude oil and all the finished products.

The CHAIRMAN. Okay. Proceed.

Mr. SIMMONS. What we do not know is how dangerously low our oil stocks are because there is a very critical component called minimum operating levels, and once we drop below minimum operating levels, we have no operational flexibility left. We also, unfortunately, do not have any way to measure what is outside primary stocks. That is inventory holdings of 50,000 barrels or more.

How will U.S. stocks ever get rebuilt? It is unlikely, now that we are so low, that U.S. oil production will suddenly turn around. There are massive deep water developments underway today, but only a handful are going to come on stream in 2003, and production declines, I am afraid, in Alaska, the lower 48, and the shallow waters of the Gulf of Mexico are still accelerating.

In the last 6 years, global non-OPEC, non-former Soviet Union supply only grew by 2.2 million barrels a day, less than half over the prior 5 years, and effectively only four countries created almost all of this growth, and three of these four countries are now experiencing production declines.

The flattening of supply was not for a lack of exploration and production spending. As an example, the top five publicly held oil and gas companies spent in cash \$150 billion on E&P costs over the past 4 years, and their oil and gas production barely grew. The former Soviet Union turned out to be the only real positive oil supply growth in the past several years, but report after report now shows that Russia's physical ability to grow its oil exports is maxed out.

OPEC is still the giant source of the world's incremental oil, and within OPEC only one country has any sizeable excess capacity, Saudi Arabia. Saudi Arabia has been a constant and reliable supplier to the United States for over 60 years. Saudi Arabia steadfastly assured the OECD and the United States that it can increase its production from around 8 million barrels a day today to as high as 10.5 million barrels a day. But they also openly acknowledge that in order to sustain this surge rate, new wells need to be drilled.

Saudi Arabia, like the entire Middle East, has only a handful of giant oil fields which anchor a very high percentage of their daily output. With only one exception, all the Middle East fields are old.

Saudi Arabia's excellent reservoir technicians are very candid about Saudi's three-fold oil challenges. One, the mature age of their fields; two, the great amount of water coming out of these world-class reservoirs; and three, the tight complex formations they are now dealing with to keep production stable and growing. None of these oil challenges suggests there is an easy way to increase Saudi

Arabia's oil output rapidly on a sustained basis. And in my opinion, it is not a foregone conclusion that Saudi Arabia can sustain a 10.5 million barrel per day oil production, and it might be hard to even approach this production level. It has been over 20 years since Saudi Arabian oil fields produced a greater amount of oil than they do today.

If Saudi Arabia still has ample spare productive capacity, it might also become a moot point because of the severe limit in the world's tanker fleet. There are many troubling signs that the world has now run out of spare tanker capacity other than some very old, rusty ships.

We still have a month-and-a-half of winter weather remaining. Thus, U.S. oil demand is likely to stay high and oil stocks will probably continue to fall. And at some point it is likely that our Strategic Petroleum Reserve will need to be drawn, but it is also critical that this not be done prematurely merely to dampen high prices. The minute the United States announces it is using the SPR, many planned imports of oil from other producers will likely turn away to other parts of the world, and this could make tight markets even tighter. And we have never genuinely tested our SPR for any sustained period.

Absent a one-time supply boost from the SPR, there is no short-term remedy for the tight oil situation we presently face. The problem took too long to create for a quick fix to remedy the situation. The only regions that could add meaningful domestic oil are in Alaska and the offshore continental waters of the Atlantic and the Pacific, but much of this territory is still under strict drilling bans. It is also hard to alleviate these problems through voluntary conservation efforts, though every single effort to save oil helps.

Let me end these remarks by addressing the impact of \$30 to \$35 oil on our economy. Since we are possibly headed into a new era where high prices are a necessity to ensure steady supply, it is important that we really understand what high prices really mean.

How painful are current oil prices? \$35 oil in 2003 dollars would be about \$15.25 in 1974 terms. \$1.50 motor gasoline is still one of the least expensive liquids anyone can buy in any convenience store anywhere in the United States.

Higher prices clearly cost the American consumer more, but they also generate a far higher revenue to the Government in both royalty income and increased corporate income taxes. This windfall on extra Government revenue needs to be wisely used to help offset those most hurt by energy prices and for any measures that can boost supply.

An important final point people need to realize about high energy prices is that unlike some other parts of the economy, almost every cent of this increased revenue gets plowed back to keep the world supply from declining, and this plow-back creates jobs. So the impact is not entirely negative.

Thank you for the opportunity to address the oil supply problems we face. These are serious issues.

[The prepared statement of Mr. Simmons follows:]

PREPARED STATEMENT OF MATTHEW R. SIMMONS, CHAIRMAN AND CEO,
SIMMONS & COMPANY INTERNATIONAL, HOUSTON, TX

I am Matthew Simmons, Chairman and Chief Executive Officer of Simmons & Company International, a specialized energy investment bank. I have spent the past 30 years focusing exclusively on energy related investment banking and research. I am honored to be invited to testify today at this critically important Senate Energy Hearing about the current oil markets. While I am a member of various energy groups ranging from the National Petroleum Council to National Ocean Industries, U.S. Oil and Gas Association, and International Association of Drilling Contractors, I am here strictly as an independent energy observer.

I am here today to testify that the U.S. has serious energy problems on multiple fronts ranging from rapidly dropping natural gas supplies, dwindling spare capacity and feedstock concerns for our expanded electricity grid, and particularly our precarious oil supplies and ultra-low oil stocks.

Until oil prices surged above \$30, most of our oil problems had been largely ignored. What people considered "high" oil prices were blamed on the threat of an imminent war with Iraq. Few industry observers or executives paid sufficient attention to a record plunge in U.S. oil stocks that had steadily occurred over the past eight months.

Today, the U.S. and the world are facing an extremely tight oil system. This tightness has been brought on by a renewed surge in demand, triggered by the first normal winter the Northern Hemisphere has seen in several years, together with a flattening of daily global supply, long before Venezuela's oil system began shutting down due to Venezuela's internal political strife. Now, we are likely to test exactly how much excess capacity the world really has, how well our global tanker industry can shift to a radically different global oil flow and even how well the U.S. Strategic Petroleum Reserve—the SPR—really works.

Oil prices have returned to the high levels last seen in late September 2000. But, U.S. and OECD oil stocks are much lower than they were in the fall of 2000. Three years of oil prices far higher than anyone expected has failed to bring on any significant supply increases, other than a reported spurt in supplies from the Former Soviet Union (FSU) and this surge is now over due to limits to Russia's export capacity.

Tanker rates have risen five to ten-fold in the past four months. Many observers assumed this spike in tanker rates was due to record levels of oil at sea. Instead, it appears to be due to unusually long periods with no spot tankers available to lift oil from the Middle East for delivery to the Far East or the Gulf Coast.

These high oil prices serve as an important reminder of how critical oil is to our economy. The U.S. remains the single largest user of petroleum in the world today, with daily consumption still almost four times the two second largest oil consumers: Japan and China. Ironically, the U.S. is still the third largest producer of oil, but we are also the world's single largest oil importer by a factor of almost double the next largest importer, Japan. When our gross finished oil product imports are added to our daily imports of crude oil, we now average 10.5-11 million barrels a day of imported oil. This amounts to an import cost of almost \$500 million each day or over \$180 billion annually.

Ever since oil prices collapsed in 1982, most Americans assumed any future problems in our oil supplies were over. The only interruption to this oil tranquility occurred during the build-up to Desert Storm, but a speedy defeat instantly brought oil prices back to low levels.

In the Fall of 1996, oil prices rose above \$25 for the first time (absent the Gulf War spike) in two decades. At the time, most industry observers assumed this rise was temporary and would obviously soon lead to surging new supplies. Indeed, the price rise was temporary as fears of the "Asian Flu" in mid-1997 created a widely held belief that the world had a massive oil glut. The weaker oil prices got, the greater most people erroneously assumed this oil glut had grown.

By early 1999, oil prices had suffered their biggest collapse in 50 years. Drilling new wells in both the U.S. and around the globe plummeted. Massive downsizings occurred in all U.S. oil and gas companies. Project after project was delayed or cancelled.

Throughout this painful collapse, there was never any official accounting of this presumed glut. It failed to show up in any recorded OECD oil stocks. With the benefit of hindsight, the glut was imaginary and our global oil markets were probably in a comfortable balance with any real "glut" representing only a handful of extra days' supply.

In early March 1999, a justifiably panicked group of OPEC countries engineered a 2 million barrel per day cut in OPEC output in an effort to raise oil prices as

not a single OPEC producer could avoid massive budget deficits with oil selling for even \$20 a barrel, let alone \$10. This cut sent oil prices spiraling upward and within 18 months oil prices had crossed \$30 for only the second time in twenty years. Oil prices stayed in this \$26 to \$32 band through the first half of 2001.

In late June 2001, oil prices began to weaken based on fears that the economies of the OECD were slowing down. While many economists blamed this slowdown on high oil prices, the real culprit was a sudden halt in the rapid growth of the population of Dot.com companies and the end of the aggressive expansion of the telecommunications industry. Neither had anything to do with high oil prices.

Until 9/11, oil prices stayed above \$25. Post 9/11, oil prices plunged to below \$20 for the first time in several years, although these prices were accompanied by a record level of speculators shorting crude oil contracts in our NYMEX commodity exchanges. Once these speculators began to lighten up on heavy shorting, oil prices began to rebound. By last summer, they were back to the levels seen throughout 2000 and the first half of 2001.

Once oil prices reached a \$27 to \$29 range, industry observers quickly ascribed these "abnormal prices" to "a war premium." Moreover, almost all forecasters assumed that this premium would soon vanish.

What went almost unobserved at the time was a rapid fall in U.S. petroleum stocks. By the end of the 3rd quarter of 2002, crude oil stocks were at levels rarely seen at this time of the year when stocks typically build to insure steady winter demand.

Much of this drop in crude oil stocks correlated with a similar drop in U.S. imports of Iraqi crude. Why so much Iraqi crude ever found its way to U.S. shores is a mystery to me. No other Middle East crude grade, other than Saudi Arabia, can tolerate the transportation charge to come so far.

With U.S. petroleum stock already low, two back-to-back hurricanes then caused a further jolt to our crude imports, because of the interruption to tanker traffic into the Gulf of Mexico. Refiners took advantage of these low stocks to minimize Fall refinery runs. Thus, product stocks began to fall.

Once these two hurricanes had passed, U.S. oil stocks were uncomfortably low. A growing number of industry analysts finally began to question whether high oil prices were the result of a war premium, or merely a reflection of how tight petroleum stocks had actually become. These low stocks did not occur overnight. They were the cumulative result of a series of unplanned events. These unfortunate series of events then began to compound at a spiraling pace.

A tighter restriction on tanker traffic through the Bosphorus began crimping what had been a steady growth in Russian exports to the OECD. Japan suddenly discovered unreported cracks in their nuclear plants, causing a shut-down of many nuclear plants that will last through this Spring. As a substitute, Japan needed higher levels of oil imports than it had in years. Then came the sinking of the tanker, Prestige. In the aftermath of this awful environmental tragedy, other older single-hull tankers were banned from many ports.

These events led to a skyrocketing of tanker rates. As tanker rates soared, many analysts assumed OPEC was putting record levels of oil on the high seas. Instead, just the opposite was probably happening.

In the midst of a rapidly tightening oil market, came the surprise no one could have imagined. Venezuela, OPEC's most reliable oil supplier to the U.S., suddenly saw its oil system shut down, similar to what happened in Iran 24 years ago.

Venezuelan oil and finished petroleum refined from Venezuelan oil makes up 1.5 to 1.7 million barrels per day of normal U.S. oil supply. For the first few weeks of the Venezuela "strike", U.S. oil supplies were spared any dramatic impact, but this probably was simply a result of a liquidation of excess stocks in both the U.S. and throughout the Caribbean.

Over the past few weeks, U.S. oil stocks have finally felt the full brunt of Venezuela's oil shut-down. In almost every category of oil stocks, we are now at record lows. Total U.S. oil supplies are now almost 120 million barrels lower than they were a year ago. On a day's supply basis, U.S. oil stocks are far lower than when we last had a nasty oil shock in 1979. We have lost virtually all forms of any oil cushion.

Other OECD stocks are not much better. Japan and Korea apparently liquidated any spare oil stocks when their refinery margins were break-even or negative, leaving Pacific Basin stocks far too low even before all the turmoil. European stocks have fared better. But, on the whole, they have barely grown over the past year while the rest of OECD stocks have shrunk.

This turmoil raises a series of troubling questions:

- How serious are the record low levels of US and OECD stocks?

- How quickly can these stocks be re-built?
- Why has oil supply been so stagnant over the past few years?
- Will Gulf of Mexico Deep water production increases be high enough to offset decline rates from elsewhere in the Gulf?
- How reliable are the surging exports from the Former Soviet Union? Why is other non-OPEC supply so small?
- How long will Venezuela's oil exports be in such turmoil?
- What is OPEC's real immediate excess capacity?
- Does the world have sufficient tanker capacity to substitute the transport of oil over the water from a 6 to 8 day trip to tanker travel from the Middle East which takes between 40 to 45 days?
- How good is the U.S. oil data collection system?
- Do we even know (with any degree of accuracy) how much the U.S. is now producing, let alone what we can reliably expect domestic production to be?
- Are there sufficient drilling rigs and trained crews for U.S. oil supplies to suddenly reverse their long-term decline?
- Is the controversial ANWR, or the even larger Wildlife Reserve to the west of Prudhoe Bay a viable solution to this temporary supply squeeze?
- How destructive to the economy is \$30 to \$35 oil? Economists tell us almost every day that \$30 oil has almost always lead to U.S. recessions. Are we sure this is true?

It is far easier to raise these serious questions than it is to answer any of them. Let me begin by addressing the grave nature of our low oil stocks. It is hard to precisely know how dangerous these low stocks really are. The industry has not physically tested what constitutes Minimum Operating Levels of stocks since 1988. Most likely, crude stocks are at or below Minimum Operating Level estimates in most parts of the country. Many of our finished stocks must also be below the same minimum operating levels.

Falling below this critical level does not automatically trigger shortages, but the system has zero flexibility or cushion left. All the reported U.S. stock data is subject to revisions. The report also only measures "primary stocks," which are deemed to be any petroleum storage in excess of 50 thousand barrels. There are merely anecdotal guesses of where secondary and tertiary stocks now are. But it is hard for me to believe we could have record drops in primary stocks and not have simultaneous liquidation of secondary and tertiary stocks occurring further down the supply chain. Unfortunately, no one really knows how fragile total U.S. oil stocks might be. We have no good data on non-primary stocks nor do we have any precise measure of what stock levels constitute minimum operating levels.

The EIA has best energy data collection in the world, but these numbers are simply manually completed forms. All of them are subject to human error. Most of the reported U.S. oil production data is also simply an educated guess.

With no real-time production reports and no measurement of non-primary stocks, and no strong sense what minimum operating levels of stocks actually are, there is no "central air traffic control system" that would even alert us when stocks dropped too low, until it was too late and physical shortages began to appear.

How does the U.S. back itself out of this box? It is unlikely that U.S. oil production will suddenly turn around. While there are massive deepwater developments underway today, only a handful will come on-stream in 2003. More deepwater projects are scheduled for 2004, but the biggest surge of new deepwater projects will happen in 2005 and beyond. Will these be large enough to offset production declines in the shallow part of the Gulf and the Lower 48 states? Some assume the answer is "Yes." Others argue the production declines in Alaska, the lower 48 states and the shallow waters of the Gulf of Mexico are still accelerating and will merely offset all the new deepwater production. What everyone needs to appreciate is that many of these massive new deepwater oil projects also reach peak production rates fast and then begin relatively steep declines.

Is the U.S. the only country where supply increases are slim? No. Total non-OPEC, non-Former Soviet Union, oil supplies grew from 29.1 million barrels per day in 1990 to 34.2 million barrels per day in 1995, an increase of 5.1 million barrels per day. Canada, the U.K. and Norway were responsible for more than half of this surge.

But, in the next six years, from 1995 through 2001, this same global non-OPEC non-FSU supply only grew by 2.2 million barrels per day, less than half the growth of the prior five years. Four countries were the primary contributors to this far smaller growth: Mexico (+440,000 barrels per day,) Canada (+330,000 barrels per day,) Norway (+500,000 barrels per day) and Brazil (+610,000 barrels per day.) Three of these four countries now have oil production probably entering a long-term

decline. The oil from almost twenty other meaningful oil producers managed a cumulative gain of a modest 280,000 barrels per day over six long years. For the first time in years, spiking oil prices failed to create any surge supply.

This flattening of supply is not for a lack of E&P spending. The top five publicly-held oil and gas companies will have spent about \$150 billion on E&P costs over the past four years and their overall oil and gas production barely grew.

There are still many published forecasts that anticipate a surge in oil production for the 4th quarter of 2002 and a further surge in the 3rd and 4th quarters of 2003. But these are merely forecasts and could easily be wrong. They all ignore the concept of decline rates. Sadly for U.S. and global oil and gas, depletion or decline rates is not a theory. It is as basic to the physical flow of oil as gravity is to the earth.

There are growing signs that many parts of the global oil scene are peaking and beginning to decline, just as happened in the U.S. in 1970. Generally, once this occurs, even if drilling grows exponentially, it moderates the natural rate of production decline.

The former Soviet Union turned out to be the only really positive oil supply growth in the past several years, assuming all its reported oil output expansion is real. But report after report now shows that Russia's physical ability to grow its oil exports is maxed out. So this surprise surge has now ended until new ports and pipelines can be built.

OPEC is still the giant source of the world's incremental oil. Any surge needs or any emergency supply additions to replace lost production from places like Venezuela can only come from one place: The Middle East. And within the Middle East, only one country has any sizeable extra capacity: Saudi Arabia.

Fortunately, Saudi Arabia has been a constant and reliable supplier to the U.S. for over 60 years. Aside from a single occasion in late 1973 when 5% of their oil was embargoed from coming to the U.S. for about 65 days, Saudi Arabia has always insured its oil supply is ready when needed. Saudi Arabia is also the only global oil producer to spend billions of dollars in an effort to continually maintain spare productive capacity. All the other OPEC producers, as a group, probably have small amounts of spare capacity they could hopefully add, but collectively, this capacity does not total anything remotely enough to replace lost exports just to the U.S. from Venezuela.

Saudi Arabia has steadfastly assured the OECD that it can increase its production from around 8 million barrels per day today to as high as 10.5 million barrels per day. But they also openly acknowledge that in order to sustain this surge rate, new wells need to be drilled. As of last week, such an increase in drilling had yet to occur. Saudi Arabia has just begun processing the paperwork necessary to import the additional rigs needed to sustain any increase in its oil production.

Saudi Arabia, like the entire Middle East, has a handful of giant oilfields which anchor a very high percent of their daily output. With only one exception, all the Middle East fields are old.

In an excellent technical presentation I attended last week at the Exploration and Development Research Center in Saudi Arabia which is perched atop Ghawar, the world's single largest field, the Saudi-Aramco technicians were very candid about Saudi's three-fold oil challenges:

- the age of their fields;
- the growing amount of water coming out of these world class reservoirs; and
- the tight, complex formations they are now dealing with to keep production stable and growing.

None of these oil challenges suggest that there is an easy way to increase Saudi's oil output rapidly.

Saudi Arabia is, without question, our most reliable supplier and can develop increased oil production more economically than probably anywhere else in the world. But Saudi Arabia's cost to create new oil production is also high; it is simply relatively less expensive than anywhere else.

It is extremely important for anyone contemplating the price Saudi Arabia should ask for its oil to also understand the severe social pressures this government faces. Its population is exploding. 30 years ago, Saudi had 6 million people. Riyadh was a tiny village of 25,000 Bedouins. Today, Saudi's population has mushroomed to almost 25 million people, when 7 million non-Saudis are included. The country has rarely been able to balance its budget even during the past three years of high oil prices. It struggles to expand its electricity grid and desalinated water supplies to keep pace with its population growth. Both are essential for any society that wants to avoid poverty, hatred and internal strife. Both are costly and extremely energy intensive. Gone are the days when Saudi was a cheap energy provider. And when

the country's social costs are added to its wellhead costs, a barrel of Saudi oil is no more or less expensive than most other parts of the globe.

I have serious doubts about Saudi Arabia's ability to sustain 10.5 million barrels per day of oil production. It might be hard to even approach this production level. It has been over 20 years since Saudi Arabian oilfields produced a greater amount of oil than they do now.

Hopefully, Saudi Arabia and the Middle East still have ample spare productive oil capacity. But, all this excess might be moot because a severe limit in the world's tanker fleet might make this extra capacity undeliverable in time to meet any country's emergency use. There are clear signs that the world's spare tanker capacity has now been used up.

Charter rates for most types of tankers have risen to 20 year highs since last October. These high rates have so far only dropped when only a handful of rusty tankers are available for any Middle East liftings. Thus far, after every dip, the rates seem to creep ever higher.

The math involved in making up Venezuela's 2.4 million steady flow of oil exports by simply shifting this export burden to the Middle East shows how daunting this task would be.

It takes a steady flow of 13 to 16 medium to small tankers to export Venezuela's 2.4 million barrels of oil a day. Some of these exports are to Caribbean refineries only two or three days away. Tankers coming from Lake Maracibo to our Gulf Coast take 6 to 8 days.

To substitute even one million barrels each day of lost Venezuela supply from the Arabian Gulf for the Gulf Coast takes over 40 VLCC (Very Large Crude Carriers.) Prior to the Prestige sinking, the world probably had less than 20 spare tankers of this size, so the logistics to safely substitute lost Venezuelan exports are non-existent. And no country relied on these exports more than the U.S.

Since we still have 46 days of winter weather remaining, U.S. oil demand is likely to stay high, exceeding our ability to keep stocks at these low levels. Thus, oil stocks will probably continue to fall. At some point, it is likely that our SPR will need to be drawn. But it is also critical that this is not done prematurely (i.e. merely to dampen high prices.) The minute the U.S. announces it is using the SPR, many planned imports of oil from other producers will likely turn away to other parts of the world. This could make a tight market even tighter. And we have never genuinely tested our SPR for any sustained period.

Once winter is over, and if the SPR has been tapped, the U.S. will still have to struggle to find a way to replenish the SPR and also rebuild our badly depleted oil stocks. There does not seem to be any simple way out of the box we find ourselves in. There is no reliable computer model to help the U.S. rebuild the oil cushion it squandered over the past decade or two.

In my opinion, there is no short term remedy for the tight oil situation we presently face. The problem took too long to create for a quick fix to remedy the situation.

Creating access to areas where significant quantities of added oil might be found probably does not work in the lower 48 states or the shallow waters of the western and central Gulf of Mexico.

The only regions that could add meaningful domestic oil are in Alaska and the OCS waters of the Atlantic and the Pacific. But, much of this territory is still under strict drilling bans.

It is also hard to alleviate these problems through voluntary conservation efforts, although every effort to save oil helps. In reality, our nation's enormous oil consumption comes not through waste but through the physical size of our country, our enchantment with suburbia, two career families, lack of mass transportation and traffic congestion. All of these are hard to change or fix. What energy conservation needs is more dramatic changes like brand new types of engines, but these take decades to implement. In the meantime, America ought to pay close attention to the new generation of diesel engines now being used throughout Europe which apparently have 30 to 50% better fuel economy than gasoline engines of similar performance.

Let me end these remarks by addressing the impact of \$30-\$35 oil on our economy. Do these prices automatically trigger a recession? In the minds of many economists, the answer is "Yes."

Since oil prices are unpredictable and hard to control, and since it seems likely we are headed into a new era where higher prices are a necessity to insure a steady supply, it is important that we really understand what "high prices" really mean.

\$35 oil in 2003 dollars would be about \$15.25 in 1974 terms. \$1.50 motor gasoline is still one of the least expensive liquids anyone can buy in any convenience store.

Higher prices clearly cost the American consumer more, but they also generate a far higher revenue to the government in both royalty income and increased corporate income taxes. And, unlike some other parts of the economy, almost every cent of this increased revenue gets plowed back to keep the world's energy supply from declining.

Thank you for the opportunity to address the oil supply problems we face. These are serious issues.

The CHAIRMAN. Thank you very much.

I note three Senators have arrived and we welcome all three of them. We welcome you, Senator. It is nice to have you here from Alaska, and a good friend who has been relieving me in the chair from Wyoming, thank you for joining.

Senator you are going to be conducting the hearings on forests, and thank you for coming and joining us today. I look forward to meeting with you on your forest hearings in advance of them. If you can help brief me and get me ready so I will know a little bit.

Senator CRAIG. We will do it.

The CHAIRMAN. We thank you very much. I wanted to comment on when I said you should slow up so I could understand you. I do thank you for the presentation you made today and for coming by my office and showing me in detail some of your in-depth analysis in particular of the natural gas situation, which you are not testifying about today. But I note your last forecasts on natural gas, among many, were pretty close to being right. You have a little bit less optimistic viewpoint on natural gas, but I think it is urgent that we hear that series of views at some point also.

Mr. Ebel, would you please proceed?

STATEMENT OF ROBERT E. EBEL, DIRECTOR, ENERGY PROGRAM, CENTER FOR STRATEGIC AND INTERNATIONAL STUDIES

Mr. EBEL. Thank you, Mr. Chairman. Thank you for the opportunity to contribute to a better understanding of world oil supplies and the prices that consumers pay for these supplies.

Mr. Chairman, I wish I could inform you that the future for oil exporters and oil importers looked promising. Unfortunately, I cannot. Energy demand in the developing countries of the world is likely to exceed energy demand in the developed countries by the end of the next decade if not sooner. Where will the supplies come from to meet that growth in demand? The growth in demand is going to be met by expanded production in the developing world, and these circumstances to me do not offer a comforting future.

Because oil has become a truly international commodity, the United States, as other oil consuming countries in the world, stands vulnerable to any event anywhere anytime that would affect energy supply and demand. These events can come in any form. Witness the Asian financial crisis of the late 1990's which sent oil prices plunging. Today high oil prices reflect the impact of the Venezuelan crisis and the psychological impact of the anticipated military intervention in Iraq.

Mr. Chairman, our vulnerability is not necessarily found in the volumes of oil we import. Rather it is the price that we pay for the oil we consume, whether secured through imports or from our own oil fields.

Well, what surprise lies next beyond the horizon? Will it be Mexico where continued failure to develop oil reserves might lead to a decline in its ability to export? Might it be an expanded war in Nigeria encompassing the offshore oil fields? Might it be Saudi Arabia, as Mr. Simmons alluded to, the question of health of certain of that country's major oil fields?

In my judgment, we are not likely to face any physical shortages of oil in the coming years if you set aside natural or manmade interferences in the timely and adequate access to these supplies. Indeed, this is the decade for growth in production and exports by non-OPEC countries. OPEC understands that and may patiently wait for the next decade when non-OPEC growth diminishes and OPEC can then regain whatever market share it has lost, for the future of oil is not determined by current levels of production. Rather, the future is defined by reserves in the ground. And where are these reserves? Saudi Arabia, Iraq, Iran, and I would add Russia.

But let us suppose that OPEC is not content to wait, not content to stand idly by watching its market share declining. Prices in turn would decline, helpful to importers but damaging politically and financial to exporters.

Mr. Chairman, this development would only underscore that there is no oil-related scenario I might describe for you does not lead to instability somewhere.

Technology has allowed us the quicker and cheaper discovery and development of oil and gas under conditions unthinkable a decade ago. But these advantages have a down side, for that technology allows fields to be depleted faster. That in turn translates into the need to find and develop oil and gas reserves in volumes greater than ever before, a challenge where success is more and more difficult.

Mr. Chairman, we often speak of energy independence, but that energy independence can only come when there is a political will to take meaningful action. The political will to establish our Strategic Petroleum Reserve and to set CAFE standards came out of the 1973-74 oil crisis. Because of that political will, we are far better prepared today to respond to oil supply interruptions.

That raises the unthinkable. Might military intervention in Iraq play out in a way where our worst case scenario is realized; that is, where Iraqi oil is off the market for months and where the abilities of Kuwait and Saudi Arabia to export oil have been damaged by sabotage? Would the resultant high prices, physical shortages, and probable economic recession once again give this Nation the political will to embark on an energy program of substance and impact? Is that what it will take?

Mr. Chairman, late last year we at CSIS prepared a set of four scenarios describing the possible impact on supply and prices following an attack on Iraq. One of our scenarios, our worst case scenario, I have just described for you. I would ask your permission to submit these four scenarios for the record.

The CHAIRMAN. They will be admitted and made part of the record. Thank you very much.

Mr. EBEL. Thank you, Mr. Chairman, for my oral testimony, and I look forward to any questions you or members of your committee may have. Thank you.

[The scenario submitted by Mr. Ebel follows:]

AFTER AN ATTACK ON IRAQ: THE ECONOMIC CONSEQUENCES

THE NO-WAR SCENARIO

- Saddam capitulates, and stays.
- Oil volumes unchanged.

or

- Saddam replaced.
- Production and export expand.
- Prices decline to \$20/bbl for the whole of 2004.

THE BENIGN CASE

Iraqi oil production ceases for three months. It is resumed slowly in the second quarter and reaches two-plus million barrels per day (mbd) by the third quarter. Other OPEC countries make up for most of the lost Iraqi oil. The U.S. announces intent to use the strategic petroleum reserve (SPR), calming the oil market.

In the end, no drawdown of strategic oil reserves is deemed necessary. Even so, there is limited panic buying on the oil market. Oil prices therefore spike at the initiation of hostilities. But continued high OPEC production and incremental non-OPEC production allow prices to fall to the low \$20s by the third quarter.

THE INTERMEDIATE CASE

- Iraqi oil is off the market for six months.
- Popular sentiment prevents Gulf Cooperation Council countries from increasing production.
- Fear of oil shortages results in stock building.
- The U.S. government releases one mbd of SPR oil.
- OECD allies do likewise.
- Nevertheless, global stocks remain tight through 2003.
- Lower global growth and hence demand for oil, higher non-OPEC production, and some easing in the Middle East oil production cause prices to fall to an average of \$30 in 2004.

THE WORSE CASE SCENARIO

- The Republican Guard sets most oil wells in Iraq on fire.
- As a result, Iraq oil is off the market for all of 2003.
- Acts of sabotage reduce oil exports in other Middle East oil producing countries.
- There is discussion of the use of oil as a political weapon against the U.S.
- There is a major oil supply disruption of five to six mbd.
- There is a quick release of two mbd from SPR and one mbd from other International Energy Agency strategic stocks.
- Consumer hoarding further exacerbates the situation.
- Oil prices spike to \$80 per barrel in the first quarter.
- The oil supply-demand situation improves over time, but slowly, with prices falling to an average of \$40 in 2004.

The CHAIRMAN. Thank you.

You are next, Red. Please proceed.

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

Mr. CAVANEY. Thank you, Mr. Chairman, members of the committee. I am Red Cavaney from the American Petroleum Institute.

I am pleased to present API's views on what can be done to keep our Nation's oil and natural gas supplies ample, affordable, and secure. This is an enormous challenge, not totally within the industry's control. Government also has an important role to play. A se-

cure energy future for our Nation will depend greatly on how well we work together.

Today, oil and natural gas provides 62 percent of our Nation's energy, sourced both domestically and from abroad. Diverse, multiple sources of supply clearly enhance our Nation's energy security.

The U.S. Energy Information Administration, EIA, projects that between 1999 and 2020, oil consumption in the United States will increase by 2.5 billion barrels annually and by 16 billion barrels globally. Natural gas consumption will increase 47 percent in the United States and 92 percent globally. According to EIA, meeting this new worldwide demand for oil alone will require additional production capacity equal to eight times Saudi Arabia's current output, at an investment cost that would exceed \$1 trillion.

Our companies must look both at home as well as abroad if we are to have secure energy supplies. At home this means to Federal lands which Congress had earlier set aside for energy development and other important uses. According to the U.S. Geological Survey and the U.S. Minerals Management Service, Federal lands contain 77 percent of our Nation's estimated undiscovered oil and 59 percent of its estimated undiscovered natural gas. Almost all of these resources lie in Alaska, on the Outer Continental Shelf, and in the mountain West. These volumes amount to almost 100 billion barrels of technically recoverable oil, or 47 years at current domestic production rates, and 577 trillion cubic feet of technically recoverable natural gas, or the equivalent of 30 years of current production.

Much of the oil and gas on these lands cannot now be developed. A recent study prepared by three U.S. cabinet agencies noted that more than one-third of Federal land in the mountain West is unavailable for energy development leasing.

Importantly, that number does not reflect the full range of restrictions limiting development. Existing policies forbid leasing on Federal lands on most parts of the Outer Continental Shelf, in the Arctic National Wildlife Refuge, and in many other areas. In some places land that could be leased is not, or leasing restrictions such as prohibitions on any surface activity make it impossible to develop. These factors have effectively put off limits 33 percent of estimated undiscovered oil resources and 40 percent of estimated undiscovered natural gas resources located on Federal lands.

In addition to these limitations, complicated bureaucratic procedures and numerous lawsuits remove yet additional resources. Time is money in our business, and permitting and related delays measured in years drive away necessary investment capital and production interest. We welcome the Government's plan to evaluate post-leasing obstacles to developing vitally needed resources on these lands.

All too often access is denied in the name of the environment. However, extensive Government oversight, careful timing of development, and environmentally proactive and protective new techniques such as 3-D seismic imaging and directional drilling have greatly reduced any potential harm.

We urge the Government to work with us to find ways to make more of the oil and gas on Federal lands available to American consumers.

Government can also help by decreasing reliance on unilateral trade sanctions that do not prevent development abroad but do keep U.S. firms from participating by promoting fair tax policies that allow U.S. energy companies to operate on a level playing field internationally and by doing a better job in coordinating the myriad new and old regulations that affect all sectors of our industry.

This hearing and the work of the House and Senate last year on energy legislation demonstrate your understanding of the challenges we all face. Massive amounts of oil and natural gas will be needed to provide the economic growth necessary to enhance the quality of people's lives in the years ahead. Industry has the know-how, technology, and access to capital to provide this energy, but farsighted and comprehensive energy policies are also critical. For that, your help is absolutely essential. Only by working together can we provide for a more secure energy future and a better life for your constituents, our neighbors.

Thank you.

[The prepared statement of Mr. Cavaney follows:]

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

Thank you Mr. Chairman and members of the Committee. I am Red Cavaney, President and CEO of the American Petroleum Institute, a trade association representing over 400 companies from all sectors of the oil and natural gas industry.

Joining API in this statement are the Domestic Petroleum Council, the International Association of Drilling Contractors, the Independent Petroleum Association of America, the National Ocean Industries Association, the Natural Gas Supply Association, and the U.S. Oil and Gas Association, which together represent hundreds of oil and natural gas companies.

I'm pleased to be here to talk about what can be done to keep the nation's oil and natural gas supplies ample, affordable and secure. Recent tightness in world crude oil supplies and higher oil and natural gas prices make this an especially timely subject.

Our nation depends on oil and natural gas for the lion's share of its energy, and for more than a century, U.S. oil and natural gas companies have dependably provided them.

Reliable and affordable oil and gas have helped raise living standards dramatically for most Americans and made us the most mobile society in history. Oil and gas have provided the raw materials for a vast array of goods that enhance modern life, everything from cell phones to computers to artificial heart valves.

Our member companies have gone to nearly every state and around the world to ensure America has the oil and gas it needs. Our diverse sources of supply have increased the nation's energy security.

Thanks to ever improving technology, our companies have also learned to operate with less energy and far less environmental impact.

In tomorrow's world, our society will require more energy than today, including more oil and gas. To meet that rising demand, U.S. companies must remain on the cutting edge of technology, continue to enhance environmental performance, and pursue energy development where the economic, environmental and political challenges are greater than ever before.

Our companies also must continue to develop alternative forms of energy. Oil and gas are versatile, affordable and indispensable for the foreseeable future, but time brings change. No one can be certain how the nation's energy future will unfold. We want to be in the forefront when new directions are taken.

Our goal is to remain America's principal fuel providers. However, the challenge of providing tomorrow's Americans with the energy they must have is not completely within industry's control. Government has a critical role to play, and our future success will greatly depend on how well you in government and we in industry work together.

FACTS ABOUT OIL AND NATURAL GAS IN AMERICA

Oil and natural gas provide most of the nation's energy and are principal engines driving our economy. We consume almost 20 million barrels of oil per day and more than 57 billion cubic feet of natural gas per day.

Oil provides nearly 40 percent of total U.S. energy; natural gas provides about 22 percent. Oil provides almost all of the fuel for our cars, trucks, trains, jets, and ships. It powers construction equipment. It heats millions of homes.

Clean-burning natural gas fuels virtually all new electric power generation. It heats more homes than oil. It also could become an essential energy source for providing hydrogen for tomorrow's fuel cells.

U.S. companies provide about 85 percent of the nation's natural gas. Most of the rest is imported from Canada. We consume about half of Canada's total natural gas production.

U.S. oil fields provide about 42 percent of the nation's oil. The remaining 58 percent is imported from many different parts of the world. Almost 10 percent of the oil we consume comes from Canada. Some 11.4 percent comes from Persian Gulf countries, most from Saudi Arabia. Other important suppliers include Mexico, West Africa, the United Kingdom, Norway and Venezuela.

International companies, including some based in the United States, have played a critical role developing oil fields. Our diverse suppliers help reduce problems that could occur if supplies are disrupted from a single country or region and make it harder for a group of suppliers to control supplies and drive up prices.

DEMAND FOR OIL AND GAS WILL GROW

Demand for energy, including oil and gas, will experience strong growth in the U.S. and even stronger growth worldwide. For example, the U.S. Energy Information Administration (EIA) projects that between 1999 and 2020 oil consumption will increase 39 percent in the U.S. and 58 percent globally. In the developing nations alone, oil consumption will double. EIA estimates natural gas consumption will increase 47 percent in the U.S., 92 percent globally, and 197 percent in the developing nations.

These projections assume moderate energy prices, more conservation and aggressive expansion of alternative energy.

The stakes are high. If less than adequate new supplies are brought on line globally, prices could increase, slowing trade and economic growth. Living standards could stagnate or rise more slowly. Fewer people would be lifted from poverty. Fewer resources would be available for health care, education and housing.

The volumes of oil and gas that must be developed over the next few decades are massive, partly because of rising demand and partly because many existing reservoirs are in decline. This is especially true in the United States. EIA estimates that meeting the increase in world demand will necessitate developing new oil production capacity equal to eight times Saudi Arabia's current output. The investment to achieve this could exceed one trillion dollars.

FINDING ENERGY TO MEET OUR FUTURE NEEDS

Meeting U.S. future energy needs means we will have to continue importing substantial amounts of oil and gas and develop more resources at home. Both strategies are necessary to ensure adequate supplies and diverse suppliers. They are also necessary to keep the cost of energy as reasonable as possible.

An added benefit of new domestic development is more U.S. jobs—jobs producing energy, jobs in equipment supply and facility construction, and jobs outside the industry created when industry workers spend their salaries. Also, when domestic production occurs on federal lands, companies pay substantial royalties to the U.S. treasury.

The Middle East may contain the bulk of the world's remaining oil resources, but promising resources remain to be developed in Russia, in the Caspian region, in Africa, in Latin America and in the United States.

FEDERAL LANDS PROVIDE MOST DOMESTIC OPPORTUNITIES

Producing more energy at home means looking to multiple-use federal lands, which Congress set aside to help provide energy to the nation. They comprise about 31 percent of total U.S. land area and a large part of the Outer Continental Shelf. They contain far more estimated undiscovered oil and natural gas than state and private lands, which have traditionally provided most domestic oil and gas.

According to data supplied by the U.S. Geological Survey and the U.S. Minerals Management Service, federal lands contain about 77 percent of the nation's oil and

59 percent of its natural gas. Almost all of the federal lands holding these resources lie in frontier areas, mostly in Alaska, on the Outer Continental Shelf, and in the Rocky Mountain states.

These resource numbers translate to 99.4 billion barrels of undiscovered oil (47 years worth at current domestic production rates) and 577 trillion cubic feet of undiscovered natural gas (30 years worth at current domestic production rates). Both are amounts recoverable using existing technology, so those numbers may prove conservative.

We already produce substantial amounts of oil and natural gas on federal lands, and, between 1980 and 2000, their share of total production rose significantly. By 2000, about one third of domestic oil and nearly 38 percent of domestic gas were produced on federal land.

However, a growing U.S. economy required far more additional energy than growth in production on federal lands provided. For example, between 1980 and 2000, the increase in U.S. consumption of oil products was more than ten times greater than growth in oil production from federal lands. Unsurprisingly, during this same period, the nation's reliance on imported oil grew from 37 percent to 53 percent.

Moreover, the nation did not take advantage of rising estimates of potential oil and natural gas resources on federal lands which reflect advances in oil and natural gas exploration and extraction technologies. This expanding potential has far outstripped increases in production from federal lands.

GOVERNMENT HELP NEEDED TO MAKE FEDERAL LANDS ENERGY AVAILABLE

Government action is necessary to ensure sufficient access to oil and gas resources on federal lands. Too many of the best oil and gas prospects are now officially or unofficially off limits. They include resources in northern Alaska, in areas off our coasts, and in the Rocky Mountain region.

Government policy forbids development in most parts of the Outer Continental Shelf and in the Arctic National Wildlife Refuge. In other areas, leasable land isn't leased. For example, within the Rocky Mountain region, about 600,000 acres of the 3.2 million acre Bridger-Teton National Forest in Wyoming are legally available for oil and gas leasing, having cleared the environmental review process. However, forest managers have taken no action on 132 applications seeking lease bidding on a portion of that acreage. Some of these applications are now more than seven years old.

In addition, leasing restrictions, such as prohibitions on any surface activity, make it impossible to develop leased areas. These various factors have put about 35 percent of estimated undiscovered oil resources and 53 percent of estimated undiscovered natural gas resources on federal lands effectively off limits.

Unfortunately, that is not the full extent of the access problem. Complicated bureaucratic procedures and numerous lawsuits have produced indefinite delays during permitting of leased lands. Companies unsuccessfully pursue development for years and give up. Many conclude it is more productive and fairer to stockholders to invest capital abroad.

Many of these problems exist in the Rocky Mountain area, the subject of a recent U.S. inter-agency study mandated by the Energy Policy and Conservation Act amendments. The study says that federal lands holding most of the undiscovered oil and gas resources in the Rocky Mountain area are available for leasing. But the study fails to assess all of the factors that can stop development, especially post-leasing roadblocks.

We encourage the committee to support evaluation of all restrictions on federal lands development.

ENVIRONMENT IS PROTECTED

Restrictions on access are said to protect the environment. However, all too often access is denied in the name of the environment when significant harm is extremely unlikely. Extensive government oversight, timing of development activities, and cutting-edge technology have reduced impacts to a bare minimum. The law mandates cleanup of sites when operations are completed.

Our companies' cutting-edge technology includes 3-D seismic technology to "see" underground to help determine the location of recoverable oil and gas before drilling begins, dramatically improving the exploration success rate and reducing cost and environmental impacts. The technology involves computers that process sound wave data to provide a visualization of the subsurface environment.

Companies also frequently employ sophisticated directional drilling to reduce environmental impacts and increase well productivity. Directional drilling allows wells

to be drilled that reach long horizontal distances from the drilling site. For example, on Alaska's North Slope the Alpine field (containing some 429 million barrels of proved reserves) uses two drilling pads to produce oil from formations beneath some 40,000 acres of land. The pads and interconnecting road occupy only 94 acres or two tenths of one percent of the field area.

Because technology constantly improves, environmental risks are steadily reduced. A good example of the latest technology for use in Alaska is a lightweight, modular drilling and production platform with temperature-controlled legs that help minimize impacts on the tundra. Like much other Arctic equipment, the platform can be flown in by helicopter avoiding the need to build roads across wild terrain.

OTHER WAYS GOVERNMENT CAN HELP

Government can help ensure the nation has adequate energy supplies in other ways. They include decreasing reliance on unproductive unilateral trade sanctions that hamper development internationally; promoting fair tax policies that encourage investment in domestic and international exploration and production; and doing a better job of coordinating the myriad of new and old regulations that affect all sectors of the industry.

Less reliance on unilateral trade sanctions which do almost nothing to change the behavior of targeted countries would expand development opportunities for U.S. international oil and natural gas companies while increasing and diversifying global energy supplies.

Fair tax policies would also encourage more development. While not the sole answer to ensuring adequate oil and gas supplies, tax measures such as the expensing of geological and geophysical costs and delaying rental payments will promote greater domestic exploration and production. Shortening the depreciation life for refinery assets from ten to five years will reduce the cost of capital and remove the current bias in the tax code against needed refinery capacity expansion.

One of the most serious threats to the foreign operations of U.S. tax-paying oil and natural gas companies is the risk that the income earned from those operations will be taxed twice. Such tax policy places U.S. companies in an uncompetitive position that could mean foregoing foreign exploration and development projects. Because the United States must import much of its energy for many years to come, it is in our interest that U.S. companies be involved in finding and producing energy around the world.

Finally, more sensible and carefully coordinated regulations would strengthen the ability of the industry to continue meeting U.S. energy demand. An example is motor fuel regulations. Government motor fuel regulations have been steadily reducing vehicle emissions, and new rules will soon continue this trend. However, some old rules, such as the Clean Air Act oxygenate requirement for reformulated gasoline, make it harder to keep customers supplied with clean, affordable fuel. Moreover, poor timing of new rules, which are requiring massive capital investments, could unnecessarily diminish the ability of industry to maintain a steady flow of supply to consumers.

CONCLUSION

Throughout history, no energy source has contributed more to society than oil and natural gas. These energy sources make us all better off and always have been there when needed. However, in the next few decades, demand for both will substantially increase in the United States and around the world. Ample future supply is essential to continued economic growth and rising living standards.

This hearing and the work that was done in the House and Senate last year on energy legislation are evidence of your understanding of the challenges ahead and what is at stake. We in the U.S. industry have the know-how, technology, capital and dedication to help provide the energy our citizens need, but success meeting our goals also depends on your help enacting more enlightened energy policies.

We look forward to working with you for a more secure energy future for America.

The CHAIRMAN. Thank you very much.

Mr. May, would you please proceed? Your statement is already in the record.

**STATEMENT OF JAMES C. MAY, PRESIDENT AND CEO,
AIR TRANSPORT ASSOCIATION OF AMERICA**

Mr. MAY. Thank you, Mr. Chairman. I am going to provide the committee with a somewhat different perspective this morning. I certainly would not want to compete with the experts to my left on the long-term problems of energy, but I think I can offer some short-term perspective of some of the problems that high energy prices are creating.

The airlines are in perilous financial condition. Two major airlines representing more than 20 percent of the industry are in bankruptcy. Others are on the brink. Industry debt exceeds \$100 billion. The industry lost over \$10 billion last year, and cash reserves and ability to borrow are nearly extinct. With the prospect of war on the horizon, the picture is obviously bleak.

Although we aggressively reduce costs where possible, stubbornly high fuel prices and escalating security and insurance costs, among others, have combined with a particular vengeance in this underperforming economy. Now, to address this perfect storm of adversity, we have embarked on an unprecedented program of self-help which includes annual savings of over \$10 billion in operating expenses, more draconian steps. Our cost savings include initiatives on conservation. Today's fleet is three times more fuel efficient than it was in the 1970's. We are achieving what amounts to a 40 mile per passenger gallon rate on efficiency in our aircraft compared to 26 with the average automobile in the United States.

But with all of this and additional cost savings measures, fuel prices are in fact beyond our ability to battle alone. In the past 12 months, February 2002 to the beginning of this week, we have seen in excess of a 100 percent increase in spot fuel prices that have ranged from 57 cents to a buck 20.

We have not seen price increases of this magnitude since the Gulf War buildup in 1990. Then we had cash resources and borrowing power to cushion the blow. Today we do not.

Increases in fuel prices affect the airlines in two different ways. First, the cost of fuel has a direct impact on the cost of operations. Second, fuel cost increases have repeatedly triggered economic recession which in turn results in a substantial decline in demand for travel.

Now, fuel costs constitute 15 percent of our operating expenses today. A little fact: every penny increase in the price of jet fuel costs our industry \$180 million a year. So should the current 25 cent per gallon premium we are paying remain in place, it is going to add \$4.5 billion in annual cost to the airlines industry. Now, in the absence of pricing power, the ability to pass these costs along in the form of higher airfares, these increases come right from our bottom line.

My written testimony contains two charts prepared by the ATA economics team. Taken together, they make two points. First, since the early 1970's every significant spike in fuel prices has led to a recessionary period in our economy. And second, with every one of those recessions, airline profit margins dive into the red.

So why should this committee or others care about the plight of the airlines? I think the answer is that the combined economic impact of civil aviation on the U.S. economy exceeds \$900 billion, and

we account for over 11 million American jobs. Sadly, fully half the jobs lost in the United States since 9/11 have been in travel and tourism. That is over 460,000 jobs that we have lost. Now, in short, the economic health of the airlines directly impacts the health of the U.S. economy.

Mr. Chairman, we recommend several actions to alleviate the situation short term and reduce the cost burden that falls so heavily on oil-dependent consumers.

First, we urge this Congress to press the administration to implement releases of at least a million barrels per day from the Strategic Petroleum Reserve until supplies or inventory return to more normal levels. We believe these releases, whether in the form of loans to refiners or sales, will have an immediate short-term impact on crude and refined product prices, significantly reducing the so-called "war premium" currently hanging over the oil markets and, hopefully, will help stave off further economic dislocation.

Second, as a modest demonstration of a national commitment to bringing oil prices down, the 4.3 cents per gallon jet fuel tax adopted in 1993 originally as a deficit reduction measure, which currently feeds a \$12 billion aviation trust fund, would, if eliminated, cut \$600 million annually from our fuel cost burdens.

Mr. Chairman, I know that there are strongly held views regarding releases from the SPR. In fact, many on this committee have got strong views on it. But these difficult times require difficult choices, and as Mr. Simmons said a minute ago, it is probably the only short-term solution that is available to us.

Bringing down per-gallon prices by just 1 penny I talked about saves us \$180 million a year. That same 1 penny decline will save home heating oil consumers some \$70 million a year, and at the gas pump that same penny means \$750 million to motorists. So it is an action that could benefit the entire community.

Let me note in closing that in the past the SPR relief has come too late to help. I hope, if you agree, this committee will urge the administration to act quickly.

Thank you for the opportunity to appear today.

[The prepared statement of Mr. May follows:]

PREPARED STATEMENT OF JAMES C. MAY, PRESIDENT AND CEO, AIR TRANSPORT
ASSOCIATION OF AMERICA

Mr. Chairman and members of the Committee, I am James C. May, president and chief executive officer of the Air Transport Association of America. I appreciate the opportunity to appear before you today to discuss the impact of current oil supply and price issues affecting the airline industry and its customers.

By way of background, ATA's member airlines¹ collectively account for approximately 95 percent of the revenue passenger miles and freight ton-miles flown in the United States. With fuel representing our second largest item of expense, the recent fuel price run-up is a particular cause of concern for the future of the airline industry.

¹ATA member airlines include: Airborne Express, Alaska Airlines, Aloha Airlines, America West Airlines, American Airlines, American Trans Air, Atlas Air, Continental Airlines, Delta Air Lines, DHL Airways, Emery Worldwide, Evergreen International Airlines, FedEx, Hawaiian Airlines, JetBlue Airways, Midwest Express Airlines, Northwest Airlines, Polar Air Cargo, Southwest Airlines, United Airlines, United Parcel Service Airlines, and US Airways. Associate members include: Aeromexico, AirCanada, Air Jamaica, KLM Royal Dutch Airlines and Mexicana.

STATE OF THE INDUSTRY

The airlines are in perilous financial condition. Two major airlines, representing more than twenty percent of the industry, are in bankruptcy. Passenger carriers have reported over \$10 billion in 2002 net losses. Industry debt now exceeds \$100 billion, while the industry's \$15 billion total market capitalization continues to decline. Our ability to borrow to support continuing losses is evaporating. The few airlines that have been able to achieve a profit are doing so under tremendous adversity—and with the prospect of war on the horizon, the overall picture is bleak.

The reasons for the imperiled condition of the industry are clear. Revenue has declined sharply following the 9/11 attack on America. Although carriers are aggressively reducing costs where possible, stubbornly high fuel prices and escalating security and insurance costs, among other things, have combined with a particular vengeance in an under-performing economy. We have embarked on an unprecedented program of self-help to address this “perfect storm” of adversity: The industry has already achieved annual savings of over \$10 billion in capital and operating expenses, and efforts are well underway to remove billions more in costs. Issues such as fuel prices, however, are obviously beyond our ability to battle alone. That is why today's hearing and the interest of the Committee in taking action are so important.

The industry was suffering from the softening economy in early 2001. The events of 9/11, however, drove losses that year to \$7.7 billion, despite the \$5 billion in government compensation for the costs of the terrorist shutdown of our aviation system. Last year the picture darkened when despite industry cutbacks in spending, losses topped \$10 billion. And analysts predict that the industry will lose another \$4 to 6 billion this year, meaning that airlines are on target to lose about \$25 billion in the 2001 to 2003 period.

CURRENT FUEL PRICE TRENDS

In the first eleven months of 2002, our fuel prices increased by 27%. Even more alarmingly, since the beginning of December, this rate of increase has grown to 55%. This run-up is being fueled by conditions in the U.S., where oil futures have soared on high demand combined with weak supplies and war jitters. As a result, Jet A spot fuel prices have increased 100% in just one year.

We have not experienced price increases of this magnitude since the Gulf War buildup in the fall of 1990. However, the circumstances the industry finds itself in today are vastly different. The current fuel price increase is taking place against a backdrop of economic chaos in the airline industry. There is no cash cushion, no borrowing capacity, and no apparent relief in sight.

On the surface, the sources of our current fuel price problems are Venezuela, the weather, and the Middle East situation. Since the beginning of the general strike in Venezuela in December, we have seen a significant reduction in our crude oil stocks and refined product inventories. At the same time, the more severe winter weather we have been experiencing in the home heating oil belt, has resulted in a steep decline in home heating oil inventories.

Added to the reduction in supply, the tensions and uncertainties surrounding availability of Middle Eastern supplies has resulted in the price of crude oil being bid up. Moreover, Iraq is currently exporting 2.3 million barrels per day. In a scenario that includes a complete shutdown of Iraqi oil, and with Venezuela remaining out of the picture, demand would exceed OPEC's capacity by a substantial margin. Under such a scenario, prices are likely to continue to rise.

IMPACT OF FUEL COST INCREASES ON AIRLINES AND CONSUMERS

Increases in fuel prices affect the airlines in two ways; the cost of fuel has an obvious and direct impact on the cost of operation, and fuel cost increases have repeatedly triggered economic recessions, which in turn result in a substantial decline in demand for air travel and air cargo.

Fuel price increases have a particularly adverse impact on airlines because even in good time fuel costs constitute roughly 10-12% of our operating expense. Every penny increase in the price of jet fuel costs the airline industry \$180 million a year. In the absence of pricing power—the ability to pass these costs along in the form of higher airfares—these increases come right off the bottom line.

An even more pernicious aspect of the fuel price increase is the relationship between the economy and air travel. The link between fuel prices and the health of the economy is clear. Three of the major recessions of the past thirty years can, in large measure, be attributed to the steep increases in fuel prices that accompanied the 1973 Middle East oil embargo, the 1980 Iran Crisis, and the 1990-91 Gulf War.

(See Chart I below) The airline industry is inextricably tied to the overall economy—even minor recessions result in reduced demand and increased sensitivity to prices for leisure as well as business travelers.

Chart I: Oil Shocks Trigger Recessions

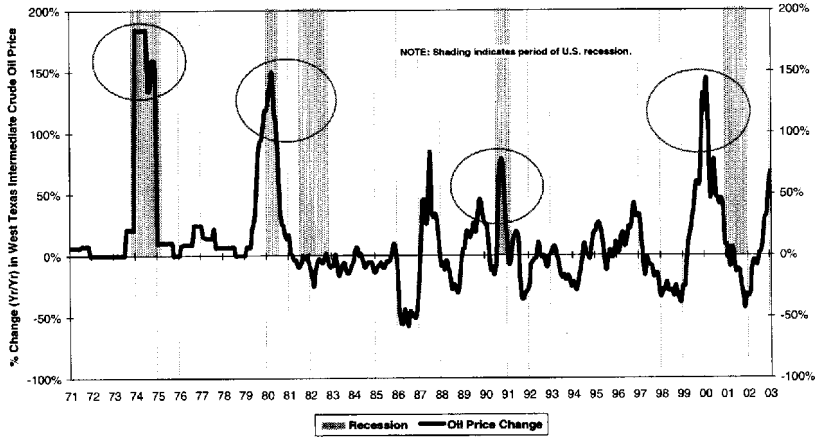
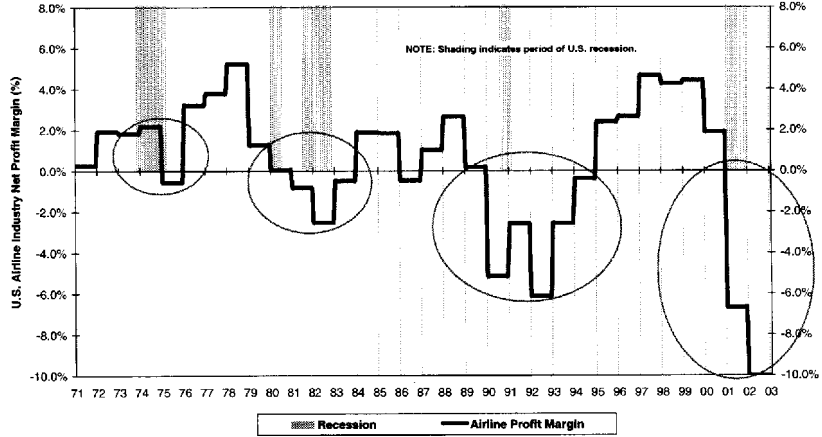


Chart II: Airline Losses Linked to Recessions and Higher Oil Prices



Past fuel spikes and attendant recessions have brought about widespread hardship in the airline industry. As Chart II shows, airline profitability suffers as a direct consequence of a weakening economy. During the first Gulf War, almost half of the major airlines filed for protection under Chapter 11 of the Bankruptcy Code, long-standing airlines went out of business, more than 100,000 airline employees lost jobs, and the industry went into a financial tailspin from which it took years to recover.

We all have much at stake—it is not simply a matter of airline finances; it is the national economy. Civil aviation has a profound impact on the U.S. economy. A recently completed analysis performed by DRI-WEFA found that in calendar 2000:

- Civil aviation's total impact on the U.S. economy amounted to 9 percent of GDP.
- \$343 billion and 4.2 million jobs were produced in civil aviation or in industries related to civil aviation such as travel and tourism.
- Combined direct, indirect, and induced economic impact of civil aviation totaled \$904 billion and 11.2 million jobs.

Unquestionably, the financial situation of the airlines has had a negative effect on the U.S. economy. Of the jobs lost in the United States since 9/11, fully half 462,000 jobs according to the Bureau of Labor Statistics have been in the travel and tourism sector. As airline pain spreads, communities across the country are rapidly affected. Forced contraction in the industry means less service or no service to some communities, increasingly isolating them from the economic mainstream. The adverse impact on consumers and the broader economy is extensive.

CONSERVATION MEASURES

The airlines are doing everything they can to conserve fuel. Throughout the history of commercial aviation, airlines have insisted upon the most fuel-efficient aircraft possible and have worked with airframe and engine manufacturers to reduce fuel consumption. Today's fleet is nearly three times more fuel-efficient than the fleet we were operating at the time of the first OPEC fuel crisis. In fact, our fuel conservation efforts have resulted in a fuel consumption rate of almost 40 passenger miles per gallon in today's aircraft—a rate that compares favorably with the most fuel-efficient automobiles.

Changes in cruise speed, use of flight simulators, sophisticated flight planning systems, increasing load factors and the introduction of newer, more aerodynamic aircraft designs combined with modern engine technology, are all recent success stories. Airlines continue to look at every possible facet of their operations to further improve fuel efficiency through measures like taxiing on one engine, delaying start-up and push back, removing all discretionary weight, and using ground power instead of on-board auxiliary power units while at the gate. These and similar measures are increasingly being used where commensurate with safety considerations to save fuel and, not incidentally, to reduce emissions. However, as of today our options for further dramatic improvements on the order of what we have been able to achieve over the past few decades are limited.

RECOMMENDED ACTIONS

ATA recommends several actions to alleviate the situation and reduce the cost burden that falls so heavily on oil-dependent consumers like the U.S. airline industry.

First, we urge the Congress to press the Administration to implement releases of at least one million barrels per day from the Strategic Petroleum Reserve (SPR) until the arrival of the Middle East oil expected as a result of the OPEC quota increase to offset Venezuelan sources. We believe that these releases—whether in the form of loans to refiners or sales—will have an immediate impact on crude and refined product prices, significantly reduce the so-called “war premium” currently hanging over oil markets, and help stave off further economic dislocation.

Secondly, as a modest demonstration of a national commitment to bringing oil prices down, the 4.3 cents per gallon jet fuel tax adopted in 1993 must be repealed. Repeal of this tax, which currently adds about \$600 million annually to the airlines' fuel cost burden will have an immediate benefit on cash flow at a time when air carriers are running low on cash.

The Strategic Petroleum Reserve was established to compensate for times of supply disruption. Based on both inventory and price data, we are currently suffering a supply disruption. While some people suggest that the SPR is like a rainy day fund and should be tapped only during the most adverse circumstances, the fact is, Mr. Chairman, we are in a storm. The higher oil prices we are experiencing are devastating to the airlines, the travel and tourism sector, and the overall economy. A

1 million-barrel per day release from the strategic petroleum reserves would be the equivalent of major tax relief at no cost to the U.S. Treasury. It would provide a huge boost to our struggling economy.

In the absence of a crude oil infusion, the high prices we are seeing today will spread as the spring refinery turn-around season commences. The continuing strain on inventories will linger into the summer driving season with the attendant high prices and further dampening effect on the U.S. economy. Thus, we believe that the entire economy will significantly benefit were the administration to begin releases from the strategic petroleum reserves. Instead of refined product drawdowns we would have the opportunity to keep our refineries running full out, and the summer season gasoline stock build could begin on schedule.

A release from the SPR will have an immediate impact on the prices paid for jet fuel, home heating oil and other consumer fuels. Remember that every penny the price drops for jet fuel is a cost saving of \$180 million to the airline industry, \$70 million to the home heating oil consumer, and \$750 million to motorists. Previous releases have demonstrated the salutary effect on oil market, but more often than not these previous releases have been a too small and too late—like taking an over-the-counter remedy for an infection that has been allowed to fester for weeks. We can not wait until the effects of higher fuel prices have spread throughout the economy—we need an immediate infusion of relief.

CONCLUSION

Mr. Chairman, the national economy has much riding on the outcome of our engagement with Iraq. Even before we enter the fray, however, the Congress and the administration can take steps in the area of energy policy to control the runaway price spiral currently underway. We urge you to repeal the 4.3 cents per gallon jet fuel tax now and to call upon the administration to release crude oil from the strategic petroleum reserves in order to deliver some short term economic relief for the industry and ultimately our customers.

The problems facing the airline industry have a direct and substantial effect on the overall economy. By the same token, the prescription we propose will have broad benefits for all of our citizens during this period of economic uncertainty. When the economy benefits, the airlines, our employees and our customers benefit as well.

The CHAIRMAN. Thank you very much.

We are going to proceed recognizing the Senators in the order that they arrived, if that is all right. If somebody has an emergency and arrived late but must go ahead of schedule, just let me know and we will try to move you up.

Let me welcome the Senator from Louisiana. Thank you very much for coming. Delighted that you are serving on this committee, and I happen to be its chairman this year.

Senator LANDRIEU. Thank you, Mr. Chairman. I have enjoyed working with you on these important issues.

The CHAIRMAN. Thank you very much.

Rather than ask each witness a few questions, let me concentrate some questions on Mr. Cavaney. Let me talk with you about your testimony with reference to available land, publicly owned lands or properties, for development of oil and gas.

First, would you go back and tell us, based on testimony you have given us, how much of the Federal lands are available for oil and how much for natural gas? You used 33 percent and 40. Tell us what that means. What is your definition there of that?

Mr. CAVANEY. There are two items here. The first is the one we want to characterize which is that it is technically recoverable, and that means using the technology we have today, that is the amount of oil or natural gas that could be recovered based on the analysis by the USGS and MMS.

Now, why this is referred to as undiscovered is because these are estimates based on their analysis of the topography, the geology, the seismic that has been done, but it has not been tested by actual

drilling. So that is why there is a difference between those numbers and the approximate 22 billion barrels of known reserves.

Most of the production the industry has produced over the last century has come from private lands, and that is why at this stage we have about run out of opportunities on private lands, and the really big remaining deposits and resources, looked at on a scale of about 5 to 1, if you will, rest on these public lands, and that is why the emphasis on those.

One other point I would make—

The CHAIRMAN. Wait, now. When you say Federal lands, what Federal lands are included? Is this offshore lands also?

Mr. CAVANEY. This is principally in Alaska, Outer Continental Shelf, east and west coasts, as well as Alaska and down in the Gulf, and a bit in the Mountain States.

The CHAIRMAN. So when this number is used, can you break it down a little further? What percentage is Alaska and what percentage is Outer Continental Shelf and what is continental America?

Mr. CAVANEY. The percentages are large. We would be glad to provide them for the record. Principally both of the two coasts, in which there has been very little activity at all, would be the most significant if you added the two of them together.

The CHAIRMAN. So while you are not here to suggest what we ought to do, it is implied that if something were done with the current off-limits policy of the Nation regarding offshore, that what would be available? 33 percent for oil and 40 percent of natural gas. But what is that related to? Current use?

Mr. CAVANEY. That is the total amount of land that is available. That amount would be not available. So the remainder would be.

But one of the concerns that we have is that Congress authorized and the administration—it started back in the Clinton administration and was finished by the current administration—under EPCA did an analysis of the leasing stipulations in five basins in the mountain West. They came out with some figures saying that about 70 percent of the land was available.

But the point we want to make is that that study was incomplete from the standpoint of the industry because just having a lease does not give you the right to go ahead and drill and produce natural gas or crude oil. What you also have to do is you have to deal with all the other Federal laws that impact it. You have to deal with the permitting within the area which is complex. You also have to deal with the local situation in the case where there are citizen situations that have to be dealt with and the like.

And what happens there is these things have a history, and we will submit for the record a number of cases where these go on for years and years and years after you have the lease. So what is increasingly happening is people in the oil and gas industry are saying I have got to put good money down, wait several years without the assurance of knowing whether I can ever even drill a well. So what we are finding is the amount of drilling activity is not increasing at levels that is necessary given the amount of depletion we have and given the amount of demand that we have.

And the resources are there, and we are just asking that we work with the Congress and the administration to looking at an analysis exactly where these needs are, what is worth doing be-

cause all of the land that is included here does not all have oil and gas under it, but they know that there are certain portions and there may be areas that are not environmentally sensitive that make good sense where there is a significant amount of resources, and those should be the things that should be considered for development to the benefit of the American consumer and energy security.

The CHAIRMAN. The last question on this and I will then yield to our ranking member, Senator Bingaman.

When you refer to inland now—I am not talking about off the continent—are there two kinds of governmental steps? One is permitting and the other is post-permitting?

Mr. CAVANEY. The first is leasing. There is some pre-leasing work, but then after the lease is granted, then there is the permitting, all the post-lease work which is permitting and the whole chain that follows. This is where the obstacles are and this is the concern as to why we are not getting the access, not because of the leases in and of themselves. We agree with the finding that the leases can be given and granted, but just having a lease, as I mentioned, is not sufficient to allow you to be able to explore and openly produce oil and natural gas.

The CHAIRMAN. So are you quibbling with the conclusions, or are you asking that we go beyond them?

Mr. CAVANEY. I am asking that they go beyond because the conclusions, while accurate, are incomplete and do not give you, the Congress, or the administration the tools to look at the issue.

The CHAIRMAN. Senator Bingaman.

Senator BINGAMAN. Thank you, Mr. Chairman.

Let me just follow on this same line of questioning, Mr. Cavaney. The Bureau of Land Management issued its summary of this study that you are talking about, the scientific inventory of onshore Federal lands oil and gas resources and reserves. It also looked at the extent and nature of restrictions or impediments to their development. The summary is as follows.

“An estimated 57 percent of oil and 63 percent of gas are available under standard stipulations. Only 15 percent of oil and 12 percent of gas are totally unavailable. The remaining oil and gas are available with increased restrictions on development. Land that is closed to development contains comparatively little oil and gas potential.”

Do you agree with that summary?

Mr. CAVANEY. It is fairly general to agree with all of it because the sort of non-standard stipulation covers a wide, wide range, as you can appreciate, and it tends to be very basin-specific and you have to look at the individual situations.

We are not asking for broad authority to do various kinds of things. What we are asking for is there something here that we think Congress and the administration and the industry could work together and identify things that make sense, not in areas that are pristine and do not involve work and efforts, but we ought to look at it given the concerns about energy security and the demand that lies ahead.

Senator BINGAMAN. Let me shift to a few questions about the Strategic Petroleum Reserve. You have all indicated various views

as to whether it is appropriate to use it at this particular point. If we actually proceed to military conflict with Iraq, is it your view—does it make sense? I would just like each of you to respond as to whether you think at that point it is appropriate for us to use the Strategic Petroleum Reserve. Mr. Simmons, do you have a view on that?

Mr. SIMMONS. Given how tight oil inventories are throughout the OECD and the improbable nature of oil inventories outside the OECD, because we do not have any way to measure them, I think that there is a very serious danger in a premature use of the Strategic Petroleum Reserve until we absolutely know we have a crisis because the minute we use it, market forces will drive oil elsewhere. I think it is likely, unfortunately, we are going to have to use the SPR this year, but I think if we prematurely use it, then it could accidentally really backfire on us.

I also think that since we have never really had a serious fire drill of the SPR since we developed it in 1974 and since our need for imports is so much higher, that it would really behoove the Government to start running simulations to just make sure it all physically works because if we had an oil shortage, for instance, in New England or the upper Midwest, you are a long day's away from the use of the SPR. So in the meantime while we are not using it, we can at least run simulations to make sure that it works as well as we hope it does.

Senator BINGAMAN. Let me just add, before you answer there, Mr. Ebel, that my information is the International Energy Agency has announced that member countries will release oil from their strategic reserves in the event of an attack on Iraq in order to calm markets.

Our administration has not acted to articulate any policy with regard to the SPR oil. Some have argued that this has added to the uncertainty surrounding the oil and that we should at least do what the International Energy Agency has done and that is state our intention if in fact military action is required.

Do you have a view on this?

Mr. EBEL. I do. I would think that a calming statement is in order. We should be prepared to release the oil. We do so in coordination with Europe and Japan. We can put 12 million barrels a day on the market at full force.

But it depends, Senator, on which scenario plays out. If we have a quick, decisive victory in Iraq, a calming statement would be sufficient. But if there is some reaction by Saddam Hussein where his oil is off the market for, let us say, 6 months, then we need to tap into the SPR probably to the tune of about a million barrels of oil a day, again in coordination with other OECD member countries.

In our worst case scenario, which I described briefly in my oral presentation, we probably would have to take 2 million barrels a day off the market. At a max we can take 4 out of the SPR and put it into the market at a max. But I do not think we would do that because we would not know how long that worst case scenario is going to last. It is just human nature to be careful and not to tap into the SPR to the fullest extent right from the beginning.

But I support the use of the SPR in the event of a severe supply emergency. That is its intended purpose. Keep in mind the value

per barrel in the Strategic Petroleum Reserve. What is the imputed value of each barrel in the reserve? Is it \$50, \$75, \$100? So you could end up replacing lower cost oil with higher cost oil.

Senator BINGAMAN. Mr. Cavaney, did you have a response?

Mr. CAVANEY. Yes, Senator. I would like to speak to the point about the International Energy Administration. We, the United States, and many other countries right after the first oil shock signed a treaty, and the treaty gave the power to the IEA that in the event of some emergency where 7 percent of the world's oil was taken out of circulation, they had the power, without even really asking the permission of the individual countries who had signed that, to develop an allocation system and force the SPR in our case and other countries to move their reserves onto the market. That was intended to be a very stabilizing effect. That is in place. We have to comply with it.

What I might say is during the Gulf War that we had, the IEA actually did that. They did a small amount. It is sort of like the test that has been talked about. It went out there. It had a calming effect and it complied.

But we have a different situation. In the Gulf War, when you added together the Iraqi volumes—they were about 3 million on a 66 million a day demand—and the Kuwaiti volumes, they were over that hurdle. Today when you look at Iraq, Iraq's production is down significantly, about 3 percent of the world market, not the 7 that is required. So there would have to be some other act before that actually came into play. So that is one factor.

I tend to agree very much with the other statements here, that the President has the authority on the SPR. He should exercise it when he feels it is appropriate, and that should not be to manipulate or move around price. It ought to be in the case where there is a supply crisis of some kind and the determination made, and then it is appropriate to release it. But to do so prematurely may have unintended consequences, and the need may be greater, so you ought to watch it very carefully.

Senator BINGAMAN. Mr. May.

Mr. MAY. Senator, our views are clear. We think that there ought to be a million barrel a day short-term release. We think that the consequences are significant. We have outlined for you the economic consequences to this industry, and we also have made the point I think that it is fine to wait till the appropriate time. But history has shown that frequently the release has been made too late in the cycle, and I think we do not want to make that mistake again.

Senator BINGAMAN. Thank you.

The CHAIRMAN. Thank you very much, Senator Bingaman.

Senator Wyden.

Senator WYDEN. Thank you, Mr. Chairman.

I want to continue on this tack with respect to the Strategic Petroleum Reserve. I strongly favor release of oil now. I think the test, frankly, is met just with Venezuela. Mr. Ebel, you and I have talked about this. The test is 7 percent disruption. I think it is met.

Look at the *Wall Street Journal*, not exactly a left wing organ. They are advocating what you are talking about, Mr. Ebel.

I think the question that I would ask of you and maybe some of the other panelists is it seems to me that the lack of a policy, the lack of a clear policy, from this administration or any administration in this kind of climate contributes to the uncertainty that is generating this premium on oil and that we badly need a clear policy articulated. The *Wall Street Journal* advocated one approach that I would favor. I am on board. I think that is a good basis for common ground.

What do you think, Mr. Ebel? Is the absence of a policy contributing to uncertainty that is contributing to this problem?

Mr. EBEL. Mr. Cavaney, mentioned the 7 percent trigger that the OECD member countries would follow. I had the privilege of writing that particular program about 20 some years ago, and if I recall correctly, we made it so difficult, it was almost impossible to put it to use today.

But the 7 percent today translates into 5.5 million barrels of oil. That is a lot and that is more than you would get certainly even under our intermediate case scenario where you would have the loss of Iraqi oil plus the loss of Venezuelan oil, but oil of OPEC members, Kuwait and Saudi Arabia, still flowing.

The problem that I see is not here in this country; it is in Saudi Arabia. Saudi Arabia might say, well, if you are going to tap into your Strategic Petroleum Reserve, then we do not need to put any more oil onto the market. We will just sit tight.

Senator WYDEN. So you do not think we need to have a policy articulated? You are not there with the *Wall Street Journal*.

Mr. EBEL. I think we do have a policy. We have not put it into effect yet.

Senator WYDEN. I think there are two pieces to the puzzle. One was discussed with Senator Bingaman. That is the actual release. I happen to favor that. Reasonable people can differ. What I do not think is a close call is making it clear that we are prepared to do it. I think it is unfortunate.

I mentioned Senator Domenici has worked so hard in a bipartisan way on all of these issues, and I think the administration is being AWOL on this hearing at a time when we are faced with the prospect of war. I mean, consumers are spending \$100 million more per day on energy now than they were a year ago. That is a fact. What is also a fact are those 50 percent increases in profits that I mentioned of two companies. And I think we need a policy, and I think we need the administration making it clear where we stand.

You agree, I gather, Mr. Ebel?

Mr. EBEL. I do. I truly think that the American people need to be informed exactly what the policy is. And is it in play now or is it going to in play when the oil loss reaches a certain level, or do you put it into play today to try to mitigate prices which is, unfortunately, not the original intent of the Strategic Petroleum Reserve.

Senator WYDEN. I think my time is about up. I know Mr. Cavaney has a difference of opinion. I would only say in response to something that you mentioned, Mr. Cavaney, is the *Wall Street Journal* also argues that this situation is pretty much analogous to

the Gulf War situation that we faced at the beginning of the 1990's. So there are differences of opinion. I think we need a policy.

Thank you, Mr. Chairman.

The CHAIRMAN. Do you have the *Wall Street Journal* there?

Senator WYDEN. I am going to make it available to all my colleagues.

The CHAIRMAN. Maybe we should read it. It is not that I question you. It is just I would like to see it.

Senator WYDEN. Would you like me to read from it?

The CHAIRMAN. I will wait until I get it.

Senator WYDEN. Okay.

The CHAIRMAN. Let us see. Who is next?

Senator Bunning.

Senator BUNNING. Thank you, Mr. Chairman.

Most of you have touched on this. Given the fact that we have not even begun to open up exploration in our domestic sources offshore, both the west coast and the east coast, Florida—the only place that we drill off the coast is off Louisiana and Texas. Given the fact that we know that there is a huge source of oil reserves in Alaska, not only oil but probably a very large reserve of natural gas, are any of you advocating that the policy of this United States of America—and we need an overall oil and energy policy—that we should explore in those areas? Anybody. It is a toss-up. Anybody can take the ball.

Mr. SIMMONS. I would be delighted to start. This happens to be a subject I addressed last night at Duke University's Environmental Center, and I think tragically what we have done in the United States for well-intentioned purposes is gone out of our way to shut down a lot of the offshore areas that might or might not have been able to produce significant amounts of domestic energy. In doing so, we basically exponentially increase the amount of imported oil by maritime transportation.

The fact of the matter is that the danger of oil spills is exponential, a magnitude of many, many manifold, by doing the latter versus the former. We are now basically desperately hoping that Maritime Area in Canada can basically find natural gas and find oil to help us out of our problem. There is a certain amount of hypocrisy of hoping that Canada can do what we are not able to do as a country.

So I really think that if we have the serious problems that we are probably going to have this year, that it is a wake-up call for America to get serious about how important domestic energy is and how important it is to protecting a vital environment versus the opposite of continuing to use more and more and bringing it in over tankers that are getting older and older. And preventing tanker spills is like preventing car accidents. You cannot do it. So I think it is an unbelievably important thing. It is too bad we waited so late.

Senator BUNNING. Others?

Mr. EBEL. Senator, we have all known individuals of great potential who, for a variety of reasons, have never been able to live up to that potential. And we say, what a loss, what a shame. Nations are very much the same. We know of nations that have had great potential but for a variety of reasons have never lived up to that

potential. The United States has a still unused resource potential. What a shame if that resource potential were not put to work.

Mr. CAVANEY. Senator, there is one axiom I think most everyone agrees with, and that is, energy security is a function of diversification of multiple sources. And the extent to which we stop relying on the United States to provide our oil—the demand is going to continue. There are no substitutable energy forms that are going to come on in the next decade or 2 that are significantly going to curb the demand for fossil fuels, both crude oil and natural gas. So what we ought to be doing is looking to those, hold us to the highest possible standards, but go ahead and explore and produce where it makes sense and not in areas where it should not be, and that will then enhance our energy security.

The oil and natural gas is there. Let us take advantage of it. Whether we decide to actually drill it or know it is there and have the capacity to use it when we want is yet another thing that can be considered, but it would be again a shame if we did not do any of that.

Right now the projections are that within the period of 2020, we are going to be in a position, if continue on the current course, where we will be importing 80 percent of our oil, and if you look at natural gas and some of the issues that are there, we may end up actually going down the exact same path on natural gas where we end up importing LNG, but that is a topic for another hearing, Mr. Chairman.

Senator BUNNING. Mr. May, I know that it would mean cheaper oil for the airline industry and therefore the cost of flying and things would go down.

Mr. MAY. Senator Bunning, ATA actually has had a longstanding position that the United States should do everything it can to develop its oil resources.

Senator BUNNING. Last question, because none of you touched on it. I spent about a week in Russia. In talking with the leadership of Russia and the natural resources Russia has in regards to crude oil—and they are significant, whether you know that or not. You probably do. The United States is genuinely helping with pipelines and everything in Russia to bring their crude oil to port, thus I hope eliminating the problems that we have in the Middle East because of the instability in the Middle East.

Do you all think that Russia can play a significant part in alleviating not our demand so much for importing, because that would still be importing, but the instability of the Middle East? Go right ahead.

Mr. CAVANEY. As an industry, we have had a number of discussions with the Russians, the counterparts, both the government as well as the CEO's and the technical experts in many of the large Russian companies. They do have scaleable reserves there that they could bring to market. They are very interested in serving our market. The difficulty they have at the present moment is they are essentially landlocked with much of what they have got, so they need to develop pipelines and other sources, whether it is deep water ports.

We will see in some measure of time Sakhalin Island and everything on the Pacific side has great, great potential for serving the

Far East as well as our west coast. And there is already active work underway out there by U.S. companies and also other major oil companies. So we see great promise in the development of Russia.

But let us also consider the Caspian, West Africa. These are the diversification things that we think enhance the security and ought to be encouraged, and we are trying to do all we can as an industry to get those supplies.

Senator BUNNING. Thank you, Mr. Chairman.

The CHAIRMAN. Thank you, Senator Bunning.

Senator Murkowski.

Senator MURKOWSKI. I want to thank you, Senator, for asking the question and getting all you gentlemen on record in support of exploration and drilling in ANWR, hopefully opening up our resources that we know are so substantial and in recognizing that we can achieve those goals in terms of national security issues, the diversification.

Speaking to the environment—and I appreciate, Mr. Simmons, your comments with regard to the tankers. One of the things about ANWR that we get hit with is that somehow we are going to be despoiling the environment, and I think people need to look at the whole picture here. You are absolutely right on point when you say that it is far more dangerous, you are far more apt to have an accident when you have single-hulled tankers going up and down the west coast carrying foreign oil. If we are carrying our domestic product, we have got double-hulled tankers. We have got Americans that are building those tankers, so we are providing the jobs. We have got economic security, and we have got environmental security.

I believe, Mr. Cavaney, you have mentioned we look to Russia, we look to the Caspian, we look to other places. If I recall what is happening in Russia, they are certainly making great strides and advancements, but they have had some terrible environmental problems with their pipelines over there. When you look at what is happening in Alaska and how we do the job, how we transport that oil, we do it safely, we do it in an environmentally sound manner. We feel we do it better in Alaska than they do anywhere else in the world, and we would like to be able to continue that. As you all know, our pipeline is half full and we have got room to do a little bit better.

Also, talking about the environment and the advances that have been made, our pipeline is 30 years old. We have got some technology that has come on in the past 30 years that, as you had pointed out as well, is substantial in terms of how we do the job, do it better, do it safer, the seismic technology, the 3-D, the directional drilling. Also, the new, almost a Lego type of a system where you are able to put an elevated platform so you are not harming the tundra, you are not causing any damage, again going back to we can do it better and safer than anywhere else in the country.

I am kind of getting off on my soapbox rather than asking any specific questions.

I wanted also to make a comment, just personalizing as it relates to the airlines. We have talked to folks with Alaska Airlines and are told that with a 1 penny increase in the price of aviation fuel,

it is \$4 million to Alaska Airlines. In my State, if we are not able to fly around, nothing much happens. So we are very cognizant of what these price increases are going to do within the aviation area.

Mr. MAY. Senator, if I might.

Senator MURKOWSKI. Please.

Mr. MAY. All of the States that I see represented on the dais today have significant small market operations, and they are fed in many ways by this hub and spoke system that we have. The health of service to those small markets is very, very much dependent on the health of the big carriers. And we are in a perilous financial condition, and the energy costs are contributing to that. So it is very much in everyone's interest to do whatever they can to keep these airlines healthy and in particular those for small markets because they are going to be the first routes to go in a significant restructuring.

Senator MURKOWSKI. Well, anything that you all can do within your industry to help us make the production available domestically is going to be greatly appreciated, and as you all point out, the sooner we can have it happen, the better off we are as a country.

Thank you, Mr. Chairman.

The CHAIRMAN. Thank you very much, Senator.

Senator THOMAS.

Senator THOMAS. Thank you, Mr. Chairman.

To the extent that the Government has a role in doing something here—and obviously there is a role—it seems to me we need an overall energy policy. We worked at it very hard last time. Put yourself in our place and each of you tell me what would be your first priority for an energy policy for the United States.

Mr. SIMMONS. I think you have to start, as fuzzy as this sounds, with some ability to convince Americans right up and down the ladder that, like it or not, energy is the single most important thing in our society. It creates water. It creates food. And if we basically blind ourselves to basically not liking energy and wanting to go someplace else, we have an unsustainable economy. If you could ever figure out a way to make that breakthrough and get people to understand how real this is and what realistic cost needs to be, I think all sorts of other things start unraveling and become doable. But I think until we have a wake-up as to how unbelievably vital energy is, I think all the other things tend to be band aids or things that are possible but not politically acceptable. So I think you all have your work cut out for you.

Mr. EBEL. The core of our energy policy for a number of years now has been to encourage U.S. companies to search for oil outside the United States but away from the Persian Gulf. That should be continued because security of supply comes through a diversity of supply.

But where is the political will, as I tried to get across in my oral comments, to make substantial changes in our policy, to get the Americans to understand the role that energy plays in our day-to-day economy?

The average American consumer has two concerns only: price and availability. He does not care where his oil comes from. It does not bother him in the least. Energy independence does not cross his

mind when he pulls into his favorite filling station. But what stares him in the face is that little price that he sees, and that is what he remembers. It is the change, the size of the change, and the suddenness of the change.

He has only three options when it comes to energy and to make better use of the energy that he consumes. He has his light switch. He has his thermostat, and he has his car keys. And that is all he can do when it comes to at least his management of energy.

I think what we need is an energy primer for the American people to get them to understand how that electricity gets to the switch on the wall or how does the gasoline get to their favorite filling station. Until they really understand the complexities of the situation, they will remain concerned only with price and availability.

Senator THOMAS. They understood in California a while back I believe.

Mr. EBEL. Price.

Senator THOMAS. Yes, sir.

Mr. CAVANEY. Senator, in one word, comprehensive. If you look at energy policy over the last several decades, it has been done in an ad hoc manner. We dealt with one entity, then another entity, and we never looked at the entire picture. What has happened with technology is these things actually touch up against one another and there is interchangeability. So, if we are going to get off this very precarious position we have placed ourselves in as a country and with regard to our energy, we need to have a comprehensive solution that looks at all of the elements and tries to do the best rationalization that we can.

I thought Congress made a good start, both in the House and the Senate, last year, but as you noted, we did not get it all the way there. I hope this will be the beginning of that discussion again for this Congress and that we can come up with a comprehensive policy.

Mr. MAY. Senator, I will be parochial. We are paying \$600 million a year in a tax that was enacted in 1993 in the name of deficit reduction. It is specific to jet fuel. And I think it is inappropriate, and repealing that tax as quickly as possible would have a marvelous short-term impact on the health of our industry.

Senator THOMAS. On airlines, not on the energy.

Mr. MAY. That is correct, but it is an energy tax that was imposed in the name of deficit reduction, and I do not think it—

Senator THOMAS. How about the energy tax on highways?

Mr. MAY. I do not represent the trucking industry and I would not pretend to.

Senator THOMAS. I got you, okay. Well, thank you, gentlemen. I appreciate it.

The CHAIRMAN. Thank you very much.

Senator Landrieu, do you have any questions?

Senator LANDRIEU. Yes, thank you, Mr. Chairman. First of all, let me thank you, Mr. Chairman, for your leadership and also our ranking member. You have both worked very hard over many years to fashion a policy that makes sense for our Nation and the world and try to balance the environment with our needs of our industry. Particularly you, Mr. Chairman, and your focus on revitalizing our

nuclear industry and trying to be mindful of land conservation issues, as well as promoting domestic drilling. I want to thank you for that.

Just a few points. One, while I agree with my colleague, the Senator from Oregon, about the possibility of a release from the SPR being something that might help—and of course, several of you testified about the treaty that is in place that will trigger that automatically in the event that we hit that certain level—I want to just remind everyone for the record that there are only 600 million barrels of oil in the SPR. We consume 7 billion a year. So we would have basically a 30-day supply of oil in the SPR.

Now, I am not saying that we do not have the capacity to increase those reserves, but at some cost as the value now rises to do that, but just to put this in perspective. I realize that there are some people that might think this war could last a few days or a week or 2 weeks, but if you get 30 days or 60 days, I do not want people to think that there is enough reserve. Now, that is our SPR. I know there are other reserves in the world which leads us to thinking that that might be part of a solution. But ultimately it is going to be, I think, more domestic drilling, more conservation measures, a combination. That is one.

My second point is this. I wanted to call to the committee's attention, because I was very confused, Mr. Chairman, about this when I first got here because, as you know, most of the OCS production takes place off the coast of Louisiana and Texas—and I have said 100 times we are pleased to host that production. We are learning how to do it in an environmentally sensitive way.

And Mr. Simmons, I agree with you the dangers to our environment are far exceeded by tankers plying our waters than by the pipelines that we lay to retrieve that gas and oil.

But I was perplexed when the staff handed me a chart, which I will show for the record, Mr. Chairman, that says that off the coast of Texas and Louisiana, which is the western Gulf, there are approximately 37 billion barrels of reserve, according to the national assessment. This is our national assessment. Yet, on the Florida side of the line, there were only 2.7 billion barrels. I was wondering if just the geologic formation stopped at the line between Louisiana and Mississippi. I am not a geologist, but it just did not make sense.

And then I was told the reason for the great difference is because on one side of the line, we are actively exploring and looking; on the other side of the line, we are prevented from looking. So when they give an estimate of how much is there, they tell you there are 2 billion, but actually if you wanted to just guess and since their section is a little bit larger than our section—I know this map is not very large—but I would estimate that it would be about 50 billion barrels, I mean, just a rough guess, if the formations were the same. 50 billion barrels, not 2 billion.

So part of it is that we have got to work off the right figures, and the bottom line, whether you are talking about Alaska or Florida or California, there are huge, huge untapped reserves. Let me say if we really got into a bad situation and needed Louisiana to produce enough oil for everyone, we could do it for 5 years. That is how much oil is off the coast of just Louisiana alone to keep this

country operating for 5 years. Now, I do not think that is what we should do, but that is how much is there.

I agree with you that part of it is just accepting that fact, not trying to bury your head and saying, well, it is just not there. It is not true. There is lots and lots of oil and gas.

The answer is: A, you do not have to drill everywhere because you do not need to because there is a lot of oil and gas in places that, if you could just open them up and have a reasonable drilling policy, we could get them.

But my question is this. What I do not understand is now that our imports are pretty much diverse in the sense of 40 percent we produce and consume ourselves, we get 21 percent from Canada, 18 percent from Mexico, 16 from Venezuela, our supply is more diverse than it used to be. I think we used to get most or everything from Saudi Arabia. Would it lower the price if we produced more? And if so, by how much? And how much would we have to produce by? Does the domestic production have a direct impact on keeping that price lower?

Because the real problem is, whether it is for the airlines or for the 4.5 million people who live in my State, or for the chemical producers, the petrochemical producers, my farmers, my small business people, they cannot sustain this increase in price. They just cannot sustain it, Mr. Chairman. Our economy is so weak now if we do not figure out some sort of appropriate solution to keep this price stable and relatively low, this economy is going to be hurt and even much worse than it is now. And our small business people are hanging on. Our farmers are barely hanging on. Our airline industry is barely hanging on.

While I am for more production, my question is, does more production help or do we need other market mechanisms to try to keep this price stable or keep it low to get through the war and try to strengthen our economy? Would you each take a chance at that?

Mr. SIMMONS. Senator, I worry that in fact we basically fooled ourselves over the last 20 years with prices that did not work. They created pathetic returns throughout every sector of the energy business, and perhaps we basically got accustomed to prices that were just false because at some point prices have to be high enough to sustain readily available energy. And there is no evidence that domestic energy is cheaper than anyplace else. Unfortunately, that is not necessarily a panacea.

However, there is an unbelievably important element. I mentioned briefly that there are a lot of signs we are now out of tanker capacity. Tanker rates basically in the third quarter of last year were about \$5,000 to \$10,000 a day for very large crude carriers, VLCC's, and by the middle of October, they were \$40,000 a day, and by early January, they were \$100,000 a day. That basically creates a transportation cost on top of oil from the Arabian Gulf of about \$3.50 a barrel. So there is your advantage.

Now, unfortunately, it might be \$35 here and \$3.50 on top of that. So I think it would be wrong for anyone to think that domestic energy is cheap, but when transportation becomes really expensive and probably constrains the availability, then in fact domestic energy wins hands down. So I think that you are absolutely right in your concern.

Senator LANDRIEU. Mr. Ebel.

Mr. EBEL. Let me try to put the Strategic Petroleum Reserve in a slightly better perspective. You are absolutely correct that we have about 600 million barrels in it. Relate that, though, not to what we consume but what we import, and then look at where the oil comes from. We import, let us say, 11.3 million barrels of oil a day. Take out Canada and then take out other sources. And every reliable supply that you take out, it adds to the amount of days that that SPR can be used to offset losses of oil from unreliable sources. So we are much better off than what many people think.

Second, in my oral remarks I made the point that the United States does not stand in isolation from the world oil market. We stand vulnerable to any event anywhere anytime that impacts on supply and demand which, in turn, impacts on prices. So because of that, we cannot be protected from price increases that would result from an event disrupting supply over which we would have no control. So we are vulnerable to price volatility. The price goes up, we are vulnerable; the price goes down, we are vulnerable.

Mr. CAVANEY. I think your instincts are exactly right. While it would maybe not have a direct effect on a barrel-per-barrel basis, like any commodity this is traded globally. It is very transparent. And the extent to which you have excess capacity in both the United States as well as in other foreign countries, and the capacity far exceeds the amount of demand at the time, you are going to get the classic case of supply and demand working. Like when you go into a grocery market and find out there are plenty of choices there, usually the price is less.

But more importantly besides that is the security and the knowledge to know, just to the point that Mr. Ebel made, is if we have a problem where some of our external supplies are cut off, we have more options and we have to rely less on people who maybe are not the reliable supplier that we would like. So there is both a premium that comes from the law of supply and demand, and there is also an opportunity for more security.

Senator LANDRIEU. Let me just insert this one, Mr. Chairman. I know my time is up. Normally I think the mechanics of the market work in normal times. But what you just said, when the demand goes up, the price goes up—the whole world is at sort of a low economic level right now. In the United States, our economy is very, very soft. There are very few places in the world, except for China, that are very robust. So you would think because the demand was lower, the price would be lower, but the price is going higher. And I know it is the uncertainty with the war.

But are there any market mechanisms that could be put in place besides just the expression of a policy, the threat to release from SPR that could help stabilize prices or keep people from hoarding in a sense that is not appropriate? And I am not talking about interfering. I am talking about mechanisms that might help to stabilize the price. Or do you think that the benefit is just to keep it rising? That is just the natural course and it should not be interrupted in any way.

Mr. EBEL. One approach, of course, would be to encourage the development of as many sources of supply that you can, and that is one reason why the world is so attracted to Russia. Here is a

player that in the middle of the 1980's was the leading producer of oil in the world. Then the bottom fell out and now they are returning to their days of past glory. It is a slow return. But last year they produced about 7.6 million barrels of oil a day, of which about 5 was put on the market.

It does not make me any difference whether we ever see a drop of oil from Russia in this country. That is not the concern. The concern is how much oil can Russia put on the market, period. That is what is going to count. And that is why we are helping develop oil in Azerbaijan and Kazakhstan and the Caspian Sea, to give importers around the world another major choice.

Senator LANDRIEU. And we have more choices and more supply and then the price will drop.

Mr. EBEL. That is how security comes about.

The CHAIRMAN. Thank you very much, Senator.

Senator LANDRIEU. Thank you.

The CHAIRMAN. Senator Alexander.

Senator ALEXANDER. Senator Thomas asked you to put yourself in his shoes and help him think about what priorities should be for an energy policy. Let me ask a similar question. Assuming we are trying to create a comprehensive energy policy and one section of that should have to do with research and development, what would your priorities be for energy research and development in a comprehensive energy policy?

Mr. EBEL. I was attracted very much by a line in the President's State of the Union message where he said that he hoped that an American born that day would be able to drive a hydrogen fuel cell car, the first car that he would drive.

I think eventually our demand for oil will decline before physical supply becomes a problem. I think a hydrogen based economy is the future not only for the United States but for almost all oil-consuming countries.

How quickly can we get to that future? What stands in the way? Saudi Arabia, Iran, Iraq, Kuwait, the oil producers of the Persian Gulf, because all they have is oil, and they are going to work that oil in a way to reduce incentives to go to a hydrogen fuel based economy to develop alternative forms of energy, always make oil just a bit more attractive than other forms. Once the demand for oil is replaced by something else, what future do they have? Would we be any longer interested in them? Absolutely not.

Mr. SIMMONS. I would think, Senator, that there are some very long-term things that are going to take an awful lot of R&D from someone. The role of nanotechnology in future sources of energy could be phenomenal, but sometime your committee should invite Dr. Smalley from Rice who is a Nobel Laureate in nanotechnology. He has some phenomenal ideas, but he is very specific. They are going to take 30 years. That is a long bridge.

I think in the meantime we could basically do some better work on things like the diesel engine. Europe has had some radical breakthroughs in the diesel engine: 30 to 50 percent more fuel efficiency apparently. It is not something that needs to be developed. But there are some technical issues of incorporating that here.

I think part of the issue in the R&D we are going to have to spend in the next 10 or 15 or 20 years is making sure we are focus-

ing on the right things and not throwing too much money at things that might not make a big difference and throwing the money at the things that are real long-term and you have to start today or real short-term that do not have monumental barriers before they make an impact.

Senator ALEXANDER. Thank you.

Mr. CAVANEY. Senator, I think to follow on to what Matt had said, Government has a very important role to play in the pre-competitive nature, the kinds of things that have the long terms that require the big bucks. Hydrogen is certainly an area where they can do that.

But importantly, Government should stay active and look at all the alternative energy forms because anybody who has looked at this thing comprehensively says essentially we need all the energy we can get efficiently from wherever we can get it. So there is going to be an increasing role for solar, for wind, for some of the other alternatives, but we are now, on some of those, starting to get into the competitive nature where Government's role may be less sitting there and doing basic research and more working to educate people and remove barriers and the like.

Mr. MAY. Senator, from the perspective of the airlines, we look at it as where we can do R&D to be more efficient. And I think that is as big an improvement as we can make. As I said in my testimony, the fleet today is three times more energy efficient than it was in 1970. The newest of the aircraft that are out today are substantially more efficient than that, and I think the more we can do to fly efficiently, to have engines that are more efficient, that is where we can, from an R&D perspective, contribute to this issue.

Senator ALEXANDER. Thank you for your comments.

We have a chairman and a ranking member with long-term horizons. So I would invite you, after the hearings, if you think of any further answers to that question about energy R&D and specifically the names of one or two persons from whom this committee ought to hear, such as the doctor from Rice, I would like to have them, and I imagine other members of the committee would too. So I would invite you to send them to me.

Thank you very much.

The CHAIRMAN. Thank you, Senator. Were you finished?

Senator ALEXANDER. I am.

The CHAIRMAN. I have a few more follow-ups and then I will yield to Senator Bingaman.

First, Senator Alexander, I have spoken to the chief of staff on our side about your interest in science and the future, and we are going to arrange a panel and a day's hearing on science and technology changes that would move us towards that day when the squeeze of oil and natural gas would not have such a profound negative impact on the American people. And we will do that.

I would just say one thought comes to my mind. In starting to learn about what we are doing, I found a most interesting flow graph about energy and its starting point in the United States and its terminal point when it is delivered for use. And it is phenomenal. Only 40 percent gets to the end where people use it. So 60 percent of the energy that is produced is lost before we use it, which

leads me to think that whatever superconductivity research we are doing is probably inadequate and probably behind schedule.

The first superconductivity centers were set up in the waning days of Ronald Reagan. The reason I remember is one was set up in one of our laboratories. It was about \$3 million or \$4 million. That laboratory was one of the laboratories that sparked the idea that perhaps we would get to the day when if you cooled the source of conductivity around the conduction to a low enough degree, you could move it with no friction and consequently no loss. It is kind of exciting. I would think we ought to perhaps hear from somebody on that.

Let me just talk about SPR for a minute and say to all the Senators who participated in the SPR discussion, I think a hearing like this in the United States just has to bring forth a discussion on SPR. I would hope that you all understand that we are not moving toward an energy bill that has as a cornerstone for our future SPR. Obviously, it is nothing more than an emergency, gap-filling measure that came about only when the United States had that huge supply interruption when the Shah of Iran went down. We decided we ought to put a little bit of it in the ground.

We have even been worried from time to time whether we could get out. We are so used to doing things in a grandiose way only to find at the end they do not work. I have been checking, and I do think it will work. We have been told the engineers can get the oil out of the ground and move it around where we need it.

But I would suggest that the administration may be wiser than we think in not announcing a SPR policy, the *Wall Street Journal* notwithstanding. There are going to be plenty of opportunities in the ensuing months to declare the kind of emergency that brings on the need for SPR, and whenever it is going to be—it is not here yet. We have had these prices of oil already before in the United States, and we did not have them with Venezuela going down the drain. It was other reasons that caused it since we put SPR into operation. So I would think the more we keep everybody guessing as to whether we are going to do that, the better we are off as a Nation and the more apt we are not to get supplies in any way predicated upon SPR or non-SPR built into this huge, huge oil supply equation, which SPR will just be a little dribble however it is used.

I did get the statement of the EIA and the 7 percent trigger that was mentioned, and it does not say anywhere in here that the United States has agreed to that. Are we a partner to such an agreement?

Mr. CAVANEY. We signed a treaty which obligates us to do that, and I will provide—

The CHAIRMAN. We will get it. It is a little bit vague as to what you will do in response to the crisis as described as 7 percent. It says you will do a bunch of conservation things. It does not necessarily say SPR would be released. Is that not right?

Mr. CAVANEY. You are absolutely right. It says a number of measures and it is really left up to them.

The CHAIRMAN. Let me just say to all of you it is interesting that we sit here all wondering who is going to finally come up with an American energy policy, and you are wondering when we are going

to educate the people, and we are wondering whether we are going to educate you and everything else. I think we are all educated enough. The problem is we have got to go do it, and it is not as easy anyone would think. Maybe it would be easier if the population was better educated. You may be suggesting that.

But there are not any simple answers. Supply is not an answer all by itself either. On the other hand, it does seem to me that supply and conservation are, just right up front, two very natural things. They ought to be a brother and a sister when it comes to this program, this attempt to put a policy together. It does not seem yet that Americans are sufficiently concerned about supply to do anything even close to making some common sense decisions about supply. We seem to be convinced that supply just ought to be held up because some of it is a bit risky.

I do not know when the time will be that we will be in sufficient risk for some who have created barriers to domestic production. We will conclude that maybe they are wrong, whether it be Alaska or offshore or whatever or the inlands of the United States. Everything is a balancing of risks and we are here, concerned about supply of either natural gas or crude oil.

We will have a hearing on natural gas soon. The same kind of concern will be in the air, although we will not be quite as worried about domestic supply. We will be talking about something a little different, whether we are now all piling up on natural gas because it would appear to be here in abundance. So that is the great new energy of choice now. So we are busy making sure that we use every bit of that choice we can.

But essentially between producing more and conserving and long term figuring out how there is diversity, it is pretty obvious that we know where we ought to go. How we get there is not going to be so easy.

We do plan a trip to Russia as soon as we have a significant lapse here and see if the committee wants to go take a look at the Russian fields in a few of the former Russian republics. It is interesting to note that there is plenty of oil. The question is will they get it out and will they get it to market or will they be tied up internally. They have got some enormous internal problems.

Having said that, I want to ask is there anything that any of you would like to comment on in the last few moments here that would help us in your opinion with reference to our job? Yes, Mr. Cavanaugh.

Mr. CAVANEY. Mr. Chairman, we have collected a number of suggestions that we think will help, and I would like to be able to submit them for the record for consideration, opportunities to look at where we can expedite, speed up the processes that are underway and look at some new processes and the like.

The CHAIRMAN. Thank you. Do you have some that have to do with permitting and post-permitting costs on public lands?

Mr. CAVANEY. Yes, absolutely.

The CHAIRMAN. Will you submit those?

Mr. CAVANEY. We will provide those.

The CHAIRMAN. Do you any of you have anything else? Yes.

Mr. EBEL. Mr. Chairman, as you think about Russia and your forthcoming trip, keep in mind that over the years we have been

wrong three times about Russia and now we are offered the opportunity to be wrong again.

Mr. SIMMONS. Senator, I would like to come back to where I started on our very alarming low petroleum inventories or stocks and suggest that the Energy Information Administration, which is the only depository of data, needs a lot of beefing up and a lot of help. We really need to know where minimum operating levels are, and it is a regional issue. We really need to know something about secondary and tertiary stocks because if we basically go over the edge, it is really a disaster. So that is an area your committee could be of some real help in.

Mr. MAY. Mr. Chairman, while the long-term solutions are critical and everyone can agree, even if they do not have the answers, I hope we do not overlook the short-term crisis either.

The CHAIRMAN. We can report to your newest clientele that you are right on with concern about them. You have not volunteered any information. It is their cause. That is all that you have talked about, and we understand that and thank you.

Senator Bingaman.

Senator BINGAMAN. Thank you, Mr. Chairman.

Let me ask two somewhat related questions. Mr. May, it seems to me in the past when we have seen substantial increases in the price of jet fuel, that many of the airlines put surcharges on their tickets or the price of their tickets. Has that happened? Is there a reason why that does not happen to take some of the financial pressure off? I know you lose a few customers when you do that, but you do not lose most of them.

Mr. MAY. One of the unfortunate byproducts of the weak economy, Senator, and the reality of the airline business today is an almost total lack of pricing power. We wish we had the opportunity to pass through a lot of the costs that we are incurring. As a simple example, I have one member company that has gone into the capital markets to borrow in excess of \$1.2 billion over 2 years simply to pay the taxes and other obligations imposed by the Federal Government. That does not begin to touch the increase in fuel prices. If we could pass it through, it would be a wonderful day for us. But we do not have the pricing power now to be able to do that.

Senator BINGAMAN. Mr. Cavaney, let me ask you. There is an article in *Energy Daily* today that notes that API is pledging a 10 percent improvement in the efficiency of its member oil refineries by 2012 and the introduction of a new system for measuring and aggregating emissions across the oil and natural gas industries. I was interested in whether that new system will also estimate the effect of emissions from gas venting and flaring.

Mr. CAVANEY. Senator, that is a project we have been working on for 2 years so that our companies which have far-flung enterprise could basically call a shot. And yes, it will take care of measuring of venting and flaring among all the activities that the industry does, upstream, downstream, and transportation distribution.

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

The CHAIRMAN. Thank you. We stand in recess. Thank you.

[Whereupon, at 4:13 p.m., the hearing was adjourned.]

APPENDIXES

RESPONSES TO ADDITIONAL QUESTIONS

AIR TRANSPORT ASSOCIATION,
Washington, DC, February 25, 2003.

Hon. PETE V. DOMENICI,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: I would like to thank you for offering me the opportunity to appear before your committee on February 13 to provide testimony regarding oil supply and prices. On the attached pages I have responded to the questions submitted for the hearing record. If there is any further information you require, I would be pleased to provide it to you or your staff.

Once again, my deepest appreciation for permitting me to appear before the Committee on behalf of the Air Transport Association.

Sincerely,

JAMES C. MAY,
President and CEO.

RESPONSES TO QUESTIONS FROM SENATOR DOMENICI

Question 1. You have heard from the other witnesses regarding the outlook for global oil markets. The projections show increasing supply pressure as demand growth in the developing world accelerates. You have outlined a couple of short-term solutions, such as tapping the SPR. Does your association support specific initiatives to increase domestic production in order to diversify U.S. supplies?

Answer. Yes. ATA vigorously supports creating environmental and financial incentives for domestic oil exploration, production and refining. Accessing every incremental portion of our untapped reserves lessens the ability of foreign sources to maintain a potential stranglehold on the U.S. economy. ATA has been a member of the Energy Stewardship Alliance, and we specifically support opening the Coastal Plain of the Arctic National Wildlife Refuge to oil and gas development.

Question 2. Are you aware of the recent announcement by OPEC to reduce production targets in the 2nd quarter of this year due to returning production from Venezuela? Does this concern your members or do you believe that OPEC is justified in reducing production to prevent a glut in oil.

Answer. We are concerned with the reduction proposed by OPEC. OPEC has established a benchmark price for the so-called "basked of crudes" that has been exceeded for months, yet OPEC has not responded by increasing production sufficiently to bring prices down to the levels its benchmark. OPEC's proposed second quarter action is further support for decreasing U.S. reliance on overseas sources of petroleum and increasing domestic production.

Question 3. Your association represents a number of foreign carriers. Are you aware of any other countries releasing supplies from their strategic reserves to relieve the pressure on crude oil prices as you have advocated today? If so, which countries and what percentage of their overall oil supplies are imported?

Answer. None of our foreign members' home countries has released supplies from their strategic reserves. However, both the nature of those countries and the nature of civil aviation in those countries is considerably different than in the United States. The U.S. is an importer of petroleum, and U.S. civil aviation constitutes approximately 40% of the world's commercial air transportation system and consumes almost 10% of U.S. refined product. Two of the countries in which ATA's foreign member carriers are domiciled—Canada and Mexico—are petroleum exporters. In the other two countries—the Netherlands and Jamaica—civil aviation is a very

small part of their overall transportation system and utilizes a very small part of the countries' petroleum demand.

Question 4. I understand that, as a result of past price increases, airlines adopted a fuel surtax. When was this charge implemented and where is it being applied? In light of the significant increase in fuel prices, do you believe it is likely that such a charge will be applied to all flights?

Answer. ATA has never maintained information on airfare initiatives taken by our members. However, we were able to obtain this information from UBS Warburg (attached).^{*} "Their information covers fare initiatives taken from January 1997 through October 2002. During that time there were three occasions when airlines introduced or eliminated fuel surcharges. Twice airlines introduced fuel surcharges that were widely adopted and they once eliminated the surcharge but increased fares by an equal amount. The surcharges were introduced in 2000 when jet fuel prices were rapidly increasing. This was also a time of increasing demand for air travel making it possible to increase prices.

The situation airlines face today is one of sharply increasing jet fuel prices but a very weak passenger demand environment. This weak demand has resulted in sharp fare decreases, rather than increases and no successful initiatives with respect to a fuel surcharge. As of Friday, February 21, four airlines had introduced a modest fuel surcharge that other airlines had not yet matched.

RESPONSES TO QUESTIONS FROM SENATOR FEINSTEIN

Question 1. What is your opinion on increasing CAFE standards or at least closing the SUV loophole so fuel standards of passenger cars and SUVs and light trucks are aligned?

Answer. As an organization representing airlines, ATA has not addressed CAFE standards. Therefore we take no opinion on the matter.

Question 2. What is your opinion on allowing a governor of a state to waive the 2 percent oxygenate requirement?

Answer. Oxygenate requirements do not apply directly to jet fuel, and we have not focused on its impact, if any, on the supply of jet fuel.

CENTER FOR STRATEGIC & INTERNATIONAL STUDIES,
Washington, DC, February 25, 2003.

Hon. PETE V. DOMENICI,
U.S. Senate, Washington, DC.

DEAR SENATOR DOMENICI: I appreciated very much the opportunity to testify before the Senate Committee on Energy And Natural Resources on February 13, 2003 and to offer my thoughts on oil supply and pricing. If I can be of further assistance to you and to your Committee, please let me know.

Enclosed are my responses to questions that have been submitted for the record. I would be pleased to provide any additional information that might be required.

Sincerely yours,

ROBERT E. EBEL,
Director, Energy Program.

[Enclosure]

RESPONSES TO QUESTIONS FROM SENATOR DOMENICI

Question 1. You have provided the Committee a copy of a report you co-authored entitled "After an Attack on Iraq: the Economic Consequences." This study outlines for possible outcomes of a war with Iraq and the impact each would have on oil supplies and the corresponding impact on price. Please briefly summarize that study for the Committee.

Answer. CSIS first developed four scenarios with regard to military intervention in Iraq and then anticipated the impact each would have on oil supplies and in turn on oil prices.

Under the first or No-War Scenario, Saddam stays and oil volumes remain unchanged. Prices would decline, as a war premium largely disappears. Or, Saddam is replaced, possibly by a coup. Production and exports expand, and prices begin to decline, averaging perhaps \$20 per barrel for the whole of 2004.

Under the second or Benign Scenario, military intervention ends in a quick, decisive victory and Iraqi oil is off the market for three months. Other OPEC countries,

^{*} Retained in committee files.

as promised, make up for most of the lost Iraqi oil. An intent to use the SPR is announced, but nothing more. Prices do spike at the initiation of hostilities, but quickly begin to decline, to low \$20s within nine months, and to \$20 per barrel during 2004.

Under the third or Intermediate Scenario, Iraqi oil is off the market for six months, OPEC sits tight, 1 million barrels per day is released from the SPR, and other IEA member-countries do likewise. But supplies are tight. Prices spike to the low \$40s, then begin a gradual decline, reflecting lower demand, higher non-OPEC supplies. Prices average \$30 for all of 2004.

The last scenario is the Worse Case Scenario. Saddam reacts violently to the intervention. Iraqi oil is lost for twelve months. There is sabotage inside Kuwait and Saudi Arabia, resulting in a major supply disruption of five to six million barrels per day. The United States releases 2 million barrels per day from our SPR. Other IEA members provide 1 million barrels per day, all partly offset by consumer hoarding. Prices spike to \$80 per barrel at the beginning of hostilities. A decline eventually sets in, but to just an average of \$40 per barrel for all of 2004.

Question 2. You noted in your testimony that the outlook for global supply and demand for oil doesn't look good based on the fact that demand in developing countries will grow significantly. Could you be more specific regarding the time frame and price outlook under this scenario?

Answer. My point is this. By the end of the next decade, that is by 2020, or possibly even earlier, the consumption of energy by the developing nations of the world will exceed the amounts of energy consumed by the developed world. That change will carry political, economic, and environmental considerations. For example, where will the oil come from to meet expanding demand? From countries thought not to be wholly reliable: Angola and Nigeria in West Africa; from Kazakhstan, Azerbaijan and Russia. Moreover, it is thought that Libya, Iraq, and Iran will have to be producing and exporting at or very near capacity if projected world oil demand is to be fully satisfied. With regard to consumers among the developing world, India and China will lead the way in terms of growth in oil demand, and will become major importers. Relationships between these importers and the exporting countries may mean political linkages not necessarily in the interests of the United States. It is, in sum a world to be defined by growth in demand in unstable areas, to be supplied by imports from unstable areas.

Future prices will be determined by the pace of world economic growth, the willingness of oil exporting countries to attract investment and expand export capabilities, the efforts of these exporters to control prices by controlling export volumes, and of course by an event or series of events that might intrude on supply and/or demand levels. So many factors come into play that attempting to forecast future price levels is an exercise in futility.

Question 3. You also noted that you expect non-OPEC developing countries to provide a greater percentage of global supply. Please identify those countries you see as providing the most significant supplies and a brief description of their political stability.

Answer. Based on what we know today, Russia, Kazakhstan and Azerbaijan would fall into that category, as would Angola. Civil war continues in Angola and there is always the prospect that the oil sector could be involved. Angolan production and exports are scheduled to increase substantially this decade, and interference with that growth could strain other suppliers.

Russia, Azerbaijan, and Kazakhstan have been the subjects of heavy media attention for months now. A good portion of the media coverage has been misleading, and these three countries together, let alone individually, are not going to replace OPEC. But they will be offering importers another choice and that is important for security of supply.

Azerbaijan and Kazakhstan are vulnerable on several accounts. First, these countries are where they are today because of their strong leaders. That is their strength. But that is also their weakness. No political opposition, even a loyal opposition, is allowed. Thus, an unexpected void at the top, for whatever the reason, could easily lead to civil unrest. Moreover, oil from both countries must transit through others to reach ports of export. Transit pipelines should never be regarded as completely reliable, and are often viewed as targets of opportunity.

Nonetheless, I would think that Azerbaijan and Kazakhstan might be providing some 3 percent or so of world oil supply by the end of this decade. Not pivotal, but important at the margin.

Russia clearly has the potential to export the equivalent of 7 percent to 8 percent of world oil supply by the year 2010, if investment conditions are sufficiently attractive.

Question 4. What is your outlook on Russia's ability to develop and transport its vast oil and gas resources? What are Russia's biggest challenges to becoming a bigger player in the world oil market?

Answer. I have two crystal balls on my desk at CSIS—one for pessimists, the other for optimists. Looking into the crystal ball set aside for pessimists, we see a Russian oil industry with certain of the same characteristics today that caused the CIA to render its 1977 prediction of troubles ahead.

- A declining reserves-to-production ratio. I should note however that the oil companies did succeed last year in replacing volumes produced, but barely. For the past handful of years, they have not been successful in doing so.
- A poor quality reserve base.
- Emphasis of developmental drilling over exploratory.
- Overproduction and water encroachment at existing fields.
- No major new discoveries to build on, at least in the near-term, if not longer.

What do we find if we look into the crystal ball set aside for optimists? Are there answers to the questions, can the growth in oil production be sustained beyond the near term? Could Russian oil be restored to its glory days of the 1980s?

- The geologic potential is there, although much of this remaining potential is found in very inhospitable areas.
- Ray Leonard, a Yukos official, and an American with good international credentials, following considerable investigation, has placed Russian proven reserves at between 90 to 110 billion barrels, roughly double that level generally accepted and matching those of Iraq.
- The answer is yes, if Russian oil companies do not repeat the mistakes of their Soviet predecessors.
- The answer is yes, the past could return, if Russia, the European Union, and the United States want it to happen.
- The answer is yes, if Russia improves its investment climate, and that means "the rule of law" must be firmly in place.
- The answer is yes, if foreign oil investors respond, and that means the world oil market must be of sufficient attraction to offset the risks of doing business in Russia.
- Equally important, the state of relations between Russia and the United States will have much to say about the presence in Russia of foreign oil companies and in turn the acceptance by Russia of these investors.
- The last, remaining hurdle is the Russian "we can do it ourselves" attitude. That attitude could work to keep its oil potential from any early realization.

The challenge facing Russia today is to provide the means to move the exportable surpluses of oil to foreign markets. Pipeline carrying capacity is being utilized at or very close to its limit. Thus, major new pipelines, eastward to serve the growth markets in the Far East, and pipelines and ports aimed at the U.S. market, will be required. But, there is an internal struggle going on. Who will own these new pipelines, the government or the companies?

The oil companies seek private ownership because that would provide the needed access to pipeline capacity and additionally the right to set pipeline tariffs. Conversely, the government determines access to state-owned pipelines and sets the tariff for the use of these pipelines.

Finally, there seems to be growing concern among several senior officials of the government that too much reliability is being placed on the income earned from oil and gas exports, that the country needs a more diversified economic base. Might this attitude have some impact on future production and export levels? Possibly, but it is too early to tell.

Question 5. You served as the Director over the CSIS study entitled "The Geopolitics of Energy in the 21st Century." This report indicates, as does your testimony today, that we are likely to face continued geopolitical uncertainty in many of current and future oil producing states. Do you think that this will be a deterrent to new investment and development of these oil fields and therefore limit or delay the addition of new supplies to market?

Answer. No, I do not. There have been, and continue to be, political uncertainties in virtually every oil producing and exporting country. Companies attempt to identify the degree of risk, and compare that level of risk with the indicated return on investment. If the risk compares unfavorably with the investment return, then a commitment is at least postponed.

Oil companies have the major challenge of replacing every barrel they produce, if they want to stay in business. In an expanding market, they must do even better, and must find more oil than they sold. So, when new promising regions open up

to investment, all companies will take a long hard look. Moreover, keep in mind that it takes 5 to 7 years on average to bring a new discovery into play and, for the major companies, world-class opportunities are hard to come by, and cannot be ignored, regardless of the politics.

Investment may be slowed from time to time, but that often is more a reflection of developments in the market place, that is, when demand is down, when low current oil prices cause companies to cut back on their oil and gas field exploration and development budgets.

An attractive price will always bring supplies onto the market. But supplies are reduced when price levels do not offer sufficient incentive. That is the way the market works.

Question 6. Would you agree that the U.S. should be braced for more supply disruptions and price spikes, unless we are able to better utilize our own existing oil and gas supplies?

Answer. Yes, I would agree that we should better utilize our own existing oil and gas supplies, but that by itself is not going to protect us from the impact of more supply disruptions and price spikes. Because oil is truly an international commodity, we are vulnerable to events anywhere, anytime that would impact on oil supplies. A disruption outside the United States that interrupts world oil supply will cause prices to rise, everywhere. Similarly, a reduction in demand somewhere would pressure world oil prices downward, including prices in the United States. We would have to have price controls in effect if we wanted to negate outside influences, and I hope we can avoid that.

There are more players than ever in the world oil market, and that simply means more opportunities for supply disruptions, for whatever the reason. Supply disruptions and price spikes are here to stay, unfortunately, and we cannot stand in isolation.

RESPONSES TO QUESTIONS FROM SENATOR FEINSTEIN

Question 1. What is your opinion on increasing CAFE standards or at least closing the SUV loophole so fuel standards of passenger cars and SUVs and light trucks are aligned?

Answer. Both steps should have been taken long ago.

Question 2. What is your opinion on allowing a governor of a state to waive the 2 percent oxygenate requirement?

Answer. Presumably the governor would have good reason to do so, that is, he is reflecting the needs of his state and the position of his constituents.

Question 3. You indicated that your organization has constructed alternative scenarios for near-term oil prices in view of the potential war with Iraq. Can you tell me which scenario you see unfolding at the moment?

Answer. Initially, I had thought that our Benign Scenario would play out, that is, a quick and decisive victory by coalition forces, prices would temporarily spike, but then start to decline and that decline would continue next year. I have briefed a considerable number of audiences on our scenarios. At the end I ask the audience, which scenario do they vote for? Most general audiences, that is, with little or no oil background, vote for the Benign Scenario. But, I have to ask, is this more wishful thinking on their part? Those audiences of individuals very familiar with the oil industry normally vote for the Intermediate Scenario, that is, Iraqi oil is off the market for months, prices spike, we tap into our Strategic Petroleum Reserve, and prices begin to decline, but slowly.

The market consensus seems to be that oil prices will be considerably lower next year than what they are today, which implies the Benign Scenario is realized. But I always worry when there is a consensus in the oil industry.

Let's stick with the Benign Scenario, but prepare for the worse.

Question 4. How concerned should Californians be about the expected rise in gas prices this summer, since more than 8 percent of California's fuel comes from Iraq? What should Californians be doing to prepare for the summer?

Answer. Iraqi oil will be lost following military intervention, but that loss will not be directed to the Californian market. Iraqi oil will be lost to the world market, and prices will go up everywhere. Saudi Arabia and other OPEC member-countries have promised that they will increase production to make up for any loss of Iraqi oil, and we will hold them to that promise, but it takes 40 to 50 days to move an oil tanker from the Persian Gulf to the United States. Suppliers like Saudi Arabia have considerable volumes in storage in the Caribbean that can be drawn upon. And we always have our Strategic Petroleum Reserve to draw upon, if conditions warrant.

There really isn't much the individual Californian consumer can do. Californian consumers and other consumers across the country should not, upon the first TV

report that the military intervention has begun, rush out and top off their gas tanks. That most likely would cause an immediate shortage of gasoline. But it is difficult to control human emotions.

AMERICAN PETROLEUM INSTITUTE,
Washington, DC, February 27, 2003.

Hon. PETE DOMENICI,
Chairman, Committee on Energy and Natural Resources, U.S. Senate, Washington, DC.

DEAR MR. CHAIRMAN: Attached are the American Petroleum Institute's responses to questions submitted for the record to the Senate Energy and Natural Resources Committee February 13, 2003 hearing on oil supply and prices.

Sincerely,

RED CAVENEY,
President and CEO.

[Enclosure]

RESPONSES TO QUESTIONS FROM SENATOR DOMENICI

Question 1. I was very interested to read your comments on the energy resources available under multiple-use designated federal lands. As you probably know, this Committee will hold a hearing on that issue on Feb. 27. I have spoken to a number of producers and they tell me that access to federal lands is very difficult. Do you have any recommendations as to how we might improve the regulatory process to ensure that responsible exploration is permitted using the best technology available?

Answer. As referenced in our testimony, here are suggestions to improve leasing and permitting on federal lands:

- Mandate an Energy Policy and Conservation Act (EPCA) Phase II study assessing post-leasing impediments to development in five resource basins addressed in 2003 report.
- Initiate EPCA evaluation of resources and both pre- and post-lease impediments to development for other federal lands, including the Outer Continental Shelf.
- Require DOI to timely complete all outstanding resource management plans needed to allow thousands of permitting decisions to proceed.
- Provide specific oil and gas leasing and permitting reform measures as identified by the federal government's Applications for Permits to Drill (APD) Project Team.
- Direct funds to agencies involved in public lands development, requiring timely preparation of necessary environmental documentation for such activities.
- Fund MMS/BLM permitting/management activities from bonus bid/royalty stream.
- Codify Executive Orders (EO 13212 and EO 13211) to expedite increased energy supply and availability to the nation by (1) considering the affect of federal regulations on the nation's energy supply, distribution and use, and (2) ensuring "energy accountability" within federal resource management agencies. Accountability may include requiring internal agency audits to establish performance measures and benchmarks for addressing permit backlogs and Resource Management Plan updates.
- Provide support for pending CEQ-led administration pilot program, Northern Rocky Mountain Energy Policy Program, to foster early collaboration of federal and state decision-making and effective management of energy policy issues on public lands in the northern Rocky Mountains.

Question 2. Mr. Simmons and Mr. Ebel both testified to the fact that our existing production domestically was facing significant decline in yields. In fact, we are producing the same level of crude oil as we did in the 1950s. Please give the committee a sense for the status of U.S. production.

Answer. U.S. production of oil remains relatively flat. Production increased in 2002 by 0.7 percent. Increases in Alaska were offset by declines in lower 48 production. The deepwater Gulf of Mexico remains a bright prospect as technological progress has enabled development of oil reservoirs in thousands of feet of water. Unfortunately, these resources are relatively expensive to develop as a deepwater platform can cost a billion dollars.

Question 3. Despite the rising prices and low petroleum stocks, we have yet to see significant increase in oil supplies. To what do you attribute this lack of investment and activity?

Answer. Due to limited access in the U.S., investment activity has focused abroad. The companies have invested billions of dollars in areas such as Nigeria, the Caspian and Russia. Production is rising in these areas and as soon as pipelines are built in many of these areas, oil will flow in greater volume.

Question 4. You heard the testimony of Mr. May, who advocated the release of 1 million barrels of oil per day from the Strategic Petroleum Reserve (SPR) to relieve prices. Do you support this proposal?

Do you believe it is a wise precedent to have the President release oil from the SPR as a means of temporarily relieving price pressure? What message will this send to producers?

Answer. The SPR was set up to deal with supply emergencies such as we felt during the first oil embargo. It was not intended to be used to manipulate price. Second, the oil released from the SPR eventually must be returned. This has the effect of driving up prices.

RESPONSES TO QUESTIONS FROM SENATOR FEINSTEIN

Question 1. What is your opinion on increasing CAFE standards, or at least closing the SUV loophole so fuel standards of passenger cars and SUVs and light trucks are aligned?

Answer. While our industry would be impacted by more stringent CAFE standards in the longterm, the primary impact would be to restrict the types of vehicles that the automobile industry can market and consumers can purchase. We have generally deferred to the automobile manufacturers and others the task of assessing how changes CAFE changes would impact manufacturers and consumers. API generally opposes inefficient government policies that seek to limit consumer choices, but we have not taken a position on increases in CAFE.

Question 2. What is your opinion on allowing a governor of a state to waive the 2 percent oxygenate requirement?

Answer. API has worked for several years to obtain repeal of the federal 2% oxygen requirement for reformulated gasoline. Absent federal legislation repealing this requirement, API would support state petitions to waive the 2% requirement. API filed an amicus letter in support of California's suit against EPA, which the state filed upon disapproval of its waiver request.

However, a federal solution would provide more certainty to the fuels system. Without a federal solution, consumers will be subject to the costs of uncoordinated state actions. Individual states are banning the use of MTBE, but they cannot change the federal RFG oxygen requirement. Thus, they will be forced to use ethanol to fulfill the 2% requirement. The distribution of gasoline would be made more complex, leading to potential supply problems and increased market volatility if some areas have repealed the 2% requirement and some have not.

Question 3. Last year, your organization supported the fuels provisions in the Energy Bill passed by the Senate. I believe you and your members also had a role in crafting the fuels provisions. What percentage of refineries in the United States does API represent? Can you tell me what the current position of API is with regard to federal fuels legislation and an ethanol mandate? Does this position differ from the rest of the refineries in the U.S.?

Answer. The companies belonging to API operate 60% of the U.S. refinery capacity.

API strongly supports comprehensive fuels legislation that will eliminate the 2% oxygenate requirement for RFG, phase down the use of MTBE, and include a safe harbor provision that will eliminate a manufacturer's or distributor's liability for a defective product claim arising out of the addition of a government-mandated additive to gasoline. API also recognizes the desire of many in Congress and the Administration to provide a market for renewable fuels and supports a requirement to use up to 5 billion gallons of renewables in U.S. gasoline at the end of a phase-in period, providing that the legislation includes banking and trading provisions, which would allow these fuels to be used in an economically efficient manner.

API's position opposing the 2% oxygenate requirement for RFG is shared by virtually all U.S. refineries. However, some refineries—particularly those that have not been required to use MTBE in RFG—are opposed to the renewables requirement passed by the Senate last year. While API cannot speak for these refineries, they have stated their principled opposition to government fuel mandates and pointed to the additional consumer costs (less than 1 cent per gallon according to the DOE) that could result.

Question 4. Does ethanol really allow this nation to import less foreign oil? How much less? Are the costs of production and the costs to consumers worth this extra cost?

Answer. Increased ethanol use alone will not significantly reduce oil imports. It is important to understand that ethanol, as it is produced today, requires the use of significant amounts of fossil fuel. Also, in some circumstances, other gasoline components must be taken out of gasoline before ethanol can be blended. Therefore, a gallon of ethanol displaces only a fraction of a gallon of gasoline.

That being said, it is important to note that there are circumstances where the use of ethanol makes sense. The fuels legislation currently being considered by the 108th Congress would eliminate the federal RFG oxygen requirement, phase out the use of MTBE and establish a renewable fuels mandate with a banking and trading program. These fuels provisions would allow ethanol to be blended where it makes the most economic sense, and would provide needed octane and volume to gasoline markets. With respect to cost impacts, a recent study by MathPro, Inc., a nationally recognized economic consulting firm, showed that the cost to consumers of this fuels proposal (inclusive of a renewable fuels mandate with banking and trading) was less than the cost to consumers of what will happen under the status-quo of state-by-state MTBE bans and a continuation of the federal RFG oxygen requirement.

Question 5. Can refineries make gasoline that meets the requirements under the Clean Air Act? If so, is there any justification for not repealing the 2% oxygenate requirement?

Answer. Refiners have been saying for years that they can produce gasoline meeting clean-burning fuels and the federal reformulated gasoline (RFG) requirements without the use of oxygenates. Therefore, the federal oxygen requirement for reformulated gasoline (RFG) should be repealed, as it forces oxygenates in each gallon of RFG, which can create supply and market inefficiencies.

In the early- to mid-1990s, the Auto/Oil Air Quality Improvement Program conducted testing on fuels meeting California reformulated gasoline (CaRFG) requirements with and without oxygenates. There were no significant differences in exhaust emissions or total air toxics emissions with or without oxygenates. In fact, in several non-federal RFG markets in California, the industry produces gasoline that meets the more stringent California RFG standards without using oxygenates. In addition, reformulated blendstocks—the base gasoline in which oxygenates are added—typically meet RFG performance requirements before oxygenates are added. These facts demonstrate that oxygenates are not needed to make cleaner burning fuels and that the federal oxygen content requirement should be repealed.

RESPONSES TO QUESTIONS FROM SENATOR CAMPBELL

Question 1. At the end of 1998, the composite price of crude oil was around \$9.81; it was \$24.44 in 1999. Currently, the prices are inching toward \$35.00. What precautions were taken in the past to try and stop this trend, especially from 1998 to 1999? What is being done now?

Answer. In 1998 and 1999, we warned that the crude oil prices were so low as to cause a severe depression in our industry. Over 60,000 workers lost their jobs as firms were forced out of business. We noted that these very low prices set the stage for future price volatility. We noted that there was a severe need for national energy legislation that addressed the needs of a growing economy. We are struggling to meet the needs of consumers under outmoded and conflicting regulations that prevent our industry from expanding production, refining and distribution facilities. Our industry is running its refineries at very high levels of utilization and importing as much crude oil and petroleum products as possible, but without legislation that corrects fundamental flaws in our tax and regulatory system, we will be unable to easily meet the needs of consumers.

Question 2. Long distance drivers buy 200 to 400 gallons of diesel every 24 hours on some hauls. Add to that truck payments, permits, insurance, upkeep and road fees and many of the independent operators are barely scraping by. No wonder the fuel price increase is putting so many of them out of business. Since 98 percent of all things that are bought and used are shipped by truck, what has been proposed to help truckers?

Answer. We recognize that the trucking, farming and travel communities have been severely affected by the higher prices. Refined product prices, such as diesel fuel, are determined by world crude oil prices. These prices are very high because of the strike in Venezuela, the cold winter, nervousness about Iraq, a potential strike in Nigeria and increased demand of a growing economy. Our industry has experienced very low profit rates over the past year. We are forced to pass a share of crude oil cost increases on to our customers or we would be unprofitable. Over the past three months, crude oil prices have increased by about 29 cents per gallon and diesel prices have increased by about 29 cents per gallon. No one in the refining and marketing industry is making excess profits.

Question 3. Gasoline is delivered to Colorado and other Rocky Mountain states mainly from gulf state refineries. Are there any pipeline bottlenecks in the delivery system that could cause price spikes similar to those experienced in the mid-west either through rupture or anti-competitive behavior?

Answer. Colorado and the other Rocky Mountain states are about in rough balance with regard to gasoline. According to the EIA Petroleum Supply Annual 2001, the Rocky Mountain states (PADD IV) imported about 23 MB/D of gasoline from the Midwest (PADD II) and about 9 MB/D from the Gulf Coast (PADD III) and exported about 21 MB/D to the West Coast (PADD V). Therefore, net imports into PADD IV equaled about 11 MB/D. Total gasoline consumption in PADD IV in 2001 was about 270 MB/D, so net imports represented less than 4 percent of demand.

Since the Rocky Mountain states' net gasoline imports are a relatively small percentage of total demand, problems on pipelines going into the region should not be a major risk. However, significant supply shortages from whatever the cause can cause price spikes. History has shown that when price spikes occur, market forces work to even out supply and demand. The higher prices result in additional product going to the region with the price spike.

It is important to note that government investigations into price spikes in the Midwest and elsewhere have never attributed price volatility to anti-competitive behavior.

It is also important to note that PADD IV is a unique market with many logistical challenges that come from its low population density, its low demand concentration and its geography. In fact, EPA has recognized the unique characteristics of the market in applying special phase-in provisions to the region under both the gasoline and diesel sulfur rules. The industry has constructed its facilities to efficiently serve this region. With a logistical system that must run like clockwork, anything that makes the system less flexible, such as unique fuel requirements, presents a potential for price spikes. Fuel mandates, for instance, were a significant contributing factor to the price spikes in the Midwest in the spring of 2000.

Question 4. You mention in your statement that federal lands contain about 77 percent of the nation's oil and 59 percent of its natural gas. However, leaseable, energy-rich areas are not being leased, despite having cleared the environmental review process; this is particularly true in the Rocky Mountain West. For those involved, this seems to be a win-win situation. Money would go into the treasury for those resources extracted while increasing our domestic supplies of oil and natural gas. Why, in your opinion, are these lands not being leased? What can be done to help ease the roadblocks that are holding up this process?

Answer. The recent EPCA study outlines some of the reasons federal lands are not being leased. Some lands are not leased because of Congressional or Presidential action witness restrictions on most offshore areas except Central/Western Gulf of Mexico. Other lands are not leased because requisite federal land use planning or NEPA analysis has not been undertaken or completed. Additionally, many areas are leased but with very restrictive stipulations such as "No Surface Occupancy" or very limited timeframes allowed for operations.

However, restricted leasing of public lands is only part of the access problem. After a company obtains a BLM lease, it must obtain a wide variety of approvals and permits before drilling can commence. The first step is usually to obtain BLM approval of the "Application for Permit to Drill" or APD. In order to obtain approval, an applicant must first obtain other permits, reviews, and approvals. For example, the applicant very likely will have to conduct an Environmental Impact Study, a Cultural Survey, and an Endangered Species Survey. The applicant will also likely have to obtain a Private Landowner Agreement and a Right of Way permit.

The Bureau of Land Management (BLM) CANNOT always approve an APD, regardless of its merits. For example, in Wyoming's Powder River Basin development of 39,400 wells and approximately 8.2 Tcf of natural gas (43% of the natural gas in the Powder River Basin, according to the EPCA study) is on hold because coal bed natural gas (CBNG) development was not included in the area's original Resource Management Plan (RMP). Until the RMP specifically addresses CBNG development, the BLM cannot approve CBNG APDs. Moreover, the problem of out-dated Resource Management Plans is not isolated to the Powder River Basin. According to the National BLM Wilderness Campaign, over 50% of the BLM's management plans are over 15 years old, and over 75% are over ten years old. Updating a Resource Management Plan is a long, slow process, although the agency in the last 2 years has increased planning resources to address at least 9 time sensitive plans that impact oil and gas development. Increased staffing of BLM field offices could help this further.

The BLM DOES NOT always approve APDs in a timely manner. Currently, there is a backlog of over 2,800 applications. Quick development is essential for onshore

projects to be economic. Drilling permits are required to be issued within 30 days, but a recent study by IPAMS found that it took an average of 84 days for an APD to be approved. Several groups have suggested ways the permit approval process could be improved. These include the federal APD Task Force, Public Lands Advocacy, and the Independent Petroleum Association of Mountain States. Few, if any, of the recommendations have been adopted.

BLM's permitting problems also affect oil and gas development on private lands. Companies frequently need BLM approval for roads and, more importantly, pipelines to cross BLM lands. Once again, if a Resource Management Plan does not address pipelines, getting Right of Way approval can involve significant delays and hurdles. Williams, Questar, and Kern River have all proposed pipelines that have had to go through this process.

Even when BLM does issue a drilling permit, a company still needs other federal, state, county, and local permits. Obtaining them can be equally difficult. For example, Montana has a temporary moratorium on approving APDs (drilling permits) for coal bed natural gas, preventing the development of up to 17.7 TCF of natural gas. Even counties can create roadblocks. For example, Delta County in Colorado has attempted to deny a gas drilling proposal there, effectively preempting jurisdiction over the existing state approval process.

Additionally, while approval of the APD is in some ways the most important step, without other permits it is useless. Examples of other permits are air permits to run compressors and water permits to discharge water. Failure to secure these permits can scuttle a project as surely as failing to obtain a lease.

Question 5. What can be done to help ease the roadblocks that are holding up this process?

Answer. There are several actions that can be taken to improve the situation.

- Mandate an Energy Policy and Conservation Act (EPCA) Phase II study assessing post-leasing impediments to development in five resource basins addressed in 2003 report.
- Initiate EPCA evaluation of resources and both pre- and post-lease impediments to development for other federal lands, including the Outer Continental Shelf.
- Require DOI to timely complete all outstanding resource management plans needed to allow thousands of permitting decisions to proceed.
- Provide specific oil and gas leasing and permitting reform measures as identified by the federal government's APD Project Team.
- Direct funds to agencies involved in public lands development, requiring timely preparation of necessary environmental documentation for such activities.
- Fund MMS/BLM permitting/management activities from bonus bid/royalty stream.
- Codify Executive Orders (EO 13212 and EO 13211) to expedite increased energy supply and availability to the nation by (1) considering the affect of federal regulations on the nation's energy supply, distribution and use, and (2) ensuring "energy accountability" within federal resource management agencies. Accountability may include requiring internal agency audits to establish performance measures and benchmarks for addressing permit backlogs and Resource Management Plan updates.
- Provide support for pending CEQ-led Administration pilot program to foster early collaboration of federal and state decision-making and effective management of energy policy issues on public lands in the northern Rocky Mountains.

RESPONSES TO QUESTIONS FROM SENATOR DOMENICI

Question 1. You noted in your testimony that prices have gone up, supplies are limited, and reserves are way down—but these factors have failed to stimulate significant new exploration and development. What must happen before additional production is installed? And what action by the federal government do you believe would be effective in boosting domestic production?

Answer. The biggest reason increased U.S. oil production is not occurring is that the natural declines taking place in most U.S. basins are too steep to be replaced by simply drilling more wells from the same basins. Adding to this problem is an extremely low level of oil exploration in the U.S. There were times over the past year when as few as ten drilling rigs were listed as exploring for oil anywhere in the U.S.—including the deepwater acreage of the Gulf of Mexico. At such low exploration levels, U.S. oil production will continue to decline for the foreseeable future.

This problem is unlikely to be corrected (if it can be corrected at all) until virgin acreage is opened up to exploration. Unfortunately, the only remaining prospective virgin areas where sizeable oil resources are likely to be found all happen to be in places now mostly banned from any drilling activity, including ANWR, the offshore

waters of the Pacific Ocean, the Atlantic Outer Continental Shelf and the eastern portion of the Gulf of Mexico. Since the prospect of oil exploration in any of these regions has been so remote for so long, it is not clear how plentiful the commercially available reserves of either oil or natural gas even are, but by shutting down any efforts, we insure none ever get developed.

The federal government has the ability to open these long-banned areas. If we fail to do this, we virtually insure a continued decline of domestic oil and natural gas.

Question 2. I understand that OPEC has announced its intention to cut supply targets in the 2nd quarter due to easing supply pressures worldwide. Do you think this action is wise?

Answer. OPEC's announced intention to cut supplies in the 2nd quarter would be a terrible mistake. But OPEC oil ministers reached this decision after being repeatedly warned by many prominent energy analysts that oil prices would likely collapse once spring begins and winter demand ends. Each OPEC country faces enormous spending pressures to cope with rapidly expanding populations and the urgent need for simple basics like electricity and water. A price collapse is so damaging and painful to these countries that they might end up cutting production at the worst possible time for already low OECD stocks.

Question 3. The EIA, in its Annual Energy Outlook, projected oil prices to remain in the \$25–\$26 per barrel range through 2025. Yet, they expected U.S. production to continue to decline over that same time period. Do you believe these estimates are accurate?

I have no confidence in such estimates. The EIA has been notoriously wrong in its predictions of energy prices for as long as I have been tracking their predictions, which goes back over a decade. I vividly remember serving as a co-panelist with Jay Hawkes, former EIA head, at an energy conference held in November 1998, moderated by Senator Bennett Johnston. He was asked by Senator Johnston how sure he was about the EIA's prediction that it would take at least 7 years before oil prices would climb back from \$10 to \$17.50. He confidently defended this price forecast as very reasonable. Obviously, this was one of the many EIA pricing forecasts that was very wrong.

In reality, predicting future energy prices has been a treacherous job for anyone, since prices are now set in commodity exchanges and volatility has become increasingly higher. The EIA's more solid prediction is that U.S. oil production will decline.

Question 4. EIA has indicated that there is a surplus capacity between 2 million to 2.5 million barrels per day, primarily located in OPEC countries that can be brought online if needed. Do you believe this capacity actually exists? If so, how long will it take to bring it to market?

Answer. Estimating OPEC's surplus capacity is a sheer guessing game since no one has any factual information, including the EIA. A year ago, most experts were sure OPEC's excess capacity was around 5 to 7 million barrels a day. Today, almost no one assumes the excess capacity could be over 3 to 3.5 million barrels per day.

I have vocally challenged the assumption of OPEC having even 2 million barrels per day of capacity that could be immediately brought to market. But I also lack the data to know whether I am right in this view.

Some people who estimate OPEC's excess capacity include capacity that could be added by drilling more wells. When new events such as drilling additional wells are added to this number, the time this takes can easily stretch to six months or even a year. Thus, this "theoretical addition" should never be classified as spare capacity.

Whatever spare capacity there is throughout the global oil industry only exists in OPEC. Within OPEC, only two countries could possibly have over 100,000 to 200,000 barrels per day of real spare capacity; the UAE and Saudi Arabia. The UAE's spare capacity is unlikely to exceed 250,000 barrels per day. Saudi Arabia publicly declares they could increase their capacity at a surge rate of about 2 million barrels per day, but it also acknowledges that more wells would have to be drilled to sustain this rate. In either country, it takes close to 70 days from when a tanker is first chartered, then loaded to the time oil would finally arrive either on the east coast or the Gulf of Mexico. Given the current tightness in the global tanker market, even this time line might be too optimistic.

Question 5. Under the current growth estimates produced by EIA, significant amounts of oil and gas will be shipped worldwide. Do you believe that the United States has adequate shipping and pipeline capacity to meet the growing demand?

Answer. The logistics to supply the U.S. with 19 to 20 million barrels per day of petroleum is extremely complex and most of the key parts of our supply chain are quite old. The global tanker fleet of Very Large Crude Carriers (VLCCs) is less than 390 vessels—none of which can make more than four trips a year from the Arabian Gulf to the U.S. The spare tanker capacity for vessels this large has rarely been more than 15 to 20 excess tankers. With simply the loss of the *Prestige* (an old sin-

gle-hull tanker which sunk off the Spanish coast last fall) probably took almost all of this excess off the market.

To merely replace 1 million barrels per day of supply from Venezuela by VLCCs coming from the Middle East would take an extra 30 to 32 VLCCs. This is far beyond the spare capacity of the global tanker fleet.

Once oil enters the U.S. supply system, it needs to travel through pipelines like the Capline System which takes over 1 million barrels per day from the Gulf Coast and Gulf of Mexico into the heartland of the U.S. Capline, like all our main energy pipelines is old and it needs to operate at full capacity to simply supply the current needs of PADD II.

Similar bottlenecks exist throughout our delivery system.

Question 6. I am troubled by the recent reports that crude stocks are at levels not seen since 1975. Obviously, further reductions could negatively impact our refining capacity and force prices higher on consumer products like heating oil, gasoline and diesel fuel.

- a. If OPEC follows through on its commitment to reduce production in the 2nd quarter, how will the U.S. build up our reserves in the future?
- b. Are other countries also facing a similar decline in reserve capacity?
- c. What are the best available options to increase our reserves in both the near term and long term?

Answer. Concerns about low U.S. oil stocks should be a matter of deep concern to any American citizen. Most people do not understand how much oil stock or inventory that is permanently needed for our oil logistics to keep a steady flow of crude oil to the refineries and finished products delivered to their final point of use.

Both crude oil and all finished products have minimum operating levels of stocks which vary by each region of the country. Today, we are below this level in many key regions with no early hope of rebuilding supplies, even if OPEC produces more oil.

The only way to create more permanent oil supplies that convert into stable and growing stocks with any certainty of near term availability is added supply from Canada, although Canada's pipeline capacity is almost full, or from Mexico, where a maximum of 100,000 barrels per day of extra supply probably exists. The real long-term solution lies in opening up U.S. frontier virgin regions as I have already addressed.

There is sadly little way to quickly create any relief to these low stocks. It took almost a decade to chew through what was once a reliable cushion of oil and petroleum finished product inventories, which moved the U.S. oil system steadily closer to "Just, Just in Time Supply."

Question 7. Many have called for release of supplies from the Strategic Petroleum Reserve (SPR). What message does this send to supplier if the U.S. taps the available reserves to reduce price pressure?

Answer. It would be a terrible mistake to begin using our SPR to manage supply shortages until physical shortages appear. Thus, using the SPR is essential but as its use begins, a careful assessment needs to be made of the nature of the shortages, how long they might last and where they are occurring so a proper decision can be made on how much SPR oil needs to be used.

It is easy for people to want to announce the use of the SPR or to actually begin draining these precious stocks to bring high prices under control which would simply be a temporary measure. But, the announcement, itself, would likely keep barrels of imported crude away from the U.S., thus creating a bigger problem than the use of the SPR was intended to correct.

I would like to add one final comment on the use of the SPR. As soon as the need for the emergency supply ends, the SPR needs to be immediately followed by a rapid restocking of this reserve which is now far below the levels originally created when the SPR was first designed.

Question 8. It is my understanding that producers are facing declining production yields. Could you elaborate on this trend?

Answer. Almost all key producers of oil and natural gas now face steady declines in most of their production. These rates of decline are also increasing. Oilfield technology created the ability to drain reserves from multiple layers in a new oil or gas field and recover greater amounts of oil than originally planned but this also created far more rapid decline rates than the industry had previously experienced.

Declines in excess of 20% per annum, before additional development wells are drilled to help offset such declines, are now becoming typical for almost all oil regions in both the U.S. and abroad. Declines in excess of 50% in the first year of production are now becoming typical for natural gas in both the U.S. and Canada.

It takes an enormous amount of drilling to merely fight this decline problem. The lack of any reliable data on what the natural rate of decline even is for most regions underlies the confusion about depletion (which is how I describe the whole decline issue.) Depletion issues are perhaps the most misunderstood aspect of the oil industry today by even the largest producers in the world.

RESPONSES TO QUESTIONS FROM SENATOR FEINSTEIN

Question 1. What is your opinion on increasing CAFE standards or at least closing the SUV loophole so fuel standards of passenger cars and SUV's and light trucks are aligned?

Answer. Increasing CAFE standards on all light trucks and SUV's to a parity with passenger cars is a sensible part of a good and balanced energy plan, assuming the safety of this important component of our U.S. vehicle fleet can be maintained, an issue I am not qualified to opine on. But it is extremely important that all stakeholders appreciate the precise amount of probable gasoline savings that this move can create and the lengthy time it takes to reach the full impact of this change.

The passenger car fleet has a long turnover. The light truck fleet, so far, has shown little signs of any turnover. Older light trucks seem to always find a use someplace. Thus, it would take a long time to implement meaningful energy savings through this change. In the short term, the only realistic energy savings will come from better efficiency of just the increment of new light trucks once these new CAFE standards are applied, unless a law banning the use of older, less efficient vehicles is also passed as new legislation. There is a precedent to banning older vehicle use in countries like Singapore, but I suspect this would be extremely unpopular in the U.S., though possibly a good long term energy conservation idea.

Once the entire existing fleet of light trucks has disappeared and is replaced by more fuel-efficient vehicles, it would save approximately 640,000 barrels per day. But it would take decades to achieve these energy savings. (According to the latest EIA data, the fuel consumption difference between light trucks and SUVs compared to passenger cars is 17.6 versus 22.1 miles per gallon or 4.5 miles per gallon. The average miles these light trucks travel total 11,140 miles per year. Thus, each vehicle would save 129 gallons a year. There are approximately 76 million light trucks in the U.S. today.)

Question 2. What is your opinion on allowing a governor of a state to waive the 2 percent oxygenate requirement?

Answer. It might make good policy to allow a governor of a state to waive RFG rules when supplies get too tight. But, any permanent waiver would create a far dirtier gasoline pool and probably trigger massive lawsuits from the beleaguered and financially strapped refinery industry which spent billions to comply with these EPA rules. I also think the whole effectiveness of RFG fuels needs to be reviewed now that the industry has had almost a decade of experience in dealing with the complex new suite of gasoline brands.

APPENDIX II

Additional Material Submitted for the Record

ARCTIC SLOPE REGIONAL CORP.,
Barrow, AK, February 13, 2003.

Hon. PETE V. DOMENICI,
*Chairman, Committee on Energy and Natural Resources, Dirksen Senate Office
Building, Washington, DC.*

DEAR MR. CHAIRMAN: On behalf of the Arctic Slope Regional Corporation (ASRC) and its 8000 Inupiat Eskimo shareholders, I want to thank you for holding a hearing before the Senate Energy and National Resources Committee on oil supply and prices. I would also like to submit testimony for the hearing record.

My submitted testimony was originally presented on July 11, 2002, before the House Committee on Resources on the then pending "Energy Security Act." The testimony provides ASRC's views on the provisions of that measure which would open the Coastal Plain of the Arctic National Wildlife Refuge (ANWR) to oil and gas exploration and development. As you know, the Coastal Plain is the nation's best prospect for major new oil discoveries. In addition, ASRC owns 92,160 acres of lands with the Coastal Plain, near Kaktovik, one of our eight remote Inupiat Villages on the North Slope. We are, however, not permitted to develop and have the economic benefit of these private lands until Congress acts to open the Coastal Plain to oil and gas leasing.

We strongly urge the Senate Energy and National Resources Committee to adopt legislation to open the Coastal Plain.

Sincerely,

RICHARD GLENN,
Vice President for Lands.

TESTIMONY OF RICHARD GLENN, VICE PRESIDENT, ARCTIC SLOPE REGIONAL CORPORATION

My name is Richard Glenn. I am the Vice President of Lands for Arctic Slope Regional Corporation (ASRC). I am here to offer testimony in support of the passage of the Energy Security Act (or, the "Act"), and wish to give specific support to Title V of the Act, which is titled, "The Arctic Coastal Plain Energy Security Act of 2001."

ASRC is the Alaska Native-owned regional corporation representing the Inupiat Eskimos of Alaska's North Slope. ASRC owns surface and subsurface title to certain Alaskan North Slope lands. This ownership stems from an earlier claim of aboriginal title—covering the entire Alaskan North Slope—that was eventually settled in part by the Alaska Native Claims Settlement Act of 1971 (ANCSA). Under the terms of ANCSA, ASRC's land selection rights, which amounted to a small fraction of what was originally claimed as aboriginal title, were further limited by what at that time were pre-existing state and federal withdrawals. ASRC's corporate mission is to enhance the cultural and economic freedoms of its shareholders.

With title to approximately 4.6 million acres of surface and subsurface estate, our regional corporation represents the biggest North Slope landowner outside of the federal government. ASRC lands include the subsurface estate to 92,160 acres of land within the Arctic National Wildlife Refuge (ANWR) Coastal Plain. The ASRC-owned ANWR subsurface estate lies under and adjacent to the Inupiat village of Kaktovik. The Kaktovik Native village corporation, KIC, holds the surface title to these same lands.

More than eight thousand Inupiat comprise the membership of ASRC, seventy-five percent of whom live in Arctic Slope communities scattered from the Canadian border in the east to the Chukchi Sea in the west, covering an area about the size of the state of Minnesota. We live close to the land and sea and depend on the resources they provide, including caribou, fish, seabirds and marine mammals. In ad-

dition, we also depend on jobs, because today's subsistence lifestyle demands a mix of financial resources and traditional resources. As a result, the values of our people and of our regional corporation reflect our recognition of the benefits of careful stewardship of the land and the need for gainful employment for our people. This blend of development and stewardship is reflected in a core value statement of our corporation, which states that we "shall develop our lands and resources by means that respect Inupiat subsistence values and ensure proper care of the environment, habitat and wildlife."

As owners of lands which we view as our traditional homeland, as subsistence hunters who have close ties to the land and sea and the resources they provide, and as village and North Slope community residents who have witnessed firsthand the exploration and development of Alaskan North Slope by the oil industry, we offer our support of the Arctic Coastal Plain Energy Security Act of 2001. In doing so, we have three main priorities: First, the protection of our subsistence way of life and the resources upon which we depend. Second, the opportunity for economic self-determination by allowing environmentally responsible exploration and development of Native-owned lands within ANWR. Third, the opening of the public lands of the Coastal Plain to responsible oil and gas exploration and development.

A BALANCE OF STEWARDSHIP AND RESPONSIBLE DEVELOPMENT

In our region we constantly balance the protection of the land with the need for environmentally sound exploration and development of natural resources. In our view, the Act provides this kind of balance, and it obligates the Secretary of the Interior to follow a method of careful stewardship regarding oil and gas exploration and development in the ANWR Coastal Plain. The method has proved itself with successful exploration and development of other federal North Slope lands—most recently in the National Petroleum Reserve in Alaska (NPR-A).

The Inupiat people have contributed to responsible North Slope oil and gas development. Thirty years ago, our people were strongly opposed to all forms of oil and gas development in our region. We feared it. With our regard for the environment in mind, we created strong permitting and zoning policies within our local borough government. We were not complacent with oil development, we were—and still remain—vigilant. In the face of strong local development ordinances, oil industry exploration and development methods have improved over the last twenty-five years. We have fought, argued, commented and complained, and on occasion we have said, "No"; and the industry has listened. As a result, today's oil industry on the North Slope is a far cry from the industry of the past. In fact, we believe that the North Slope oil and gas practices of today are the best examples of environmentally responsible development. Industry practices still are not perfect, and we remain vigilant, in an effort to continually improve industry's performance in our environment. We are confident that with the appropriate level of local consultation and control, the Coastal Plain of ANWR can be explored and developed in a way that protects natural resources for everyone.

The oil industry of today follows a strict local permitting and zoning process that protects areas warranting special designation. Our Inupiat people have a part in this process at all governmental levels. Today's drill rigs explore in the winter season, when a snow and ice cover has formed a protective layer between exploration equipment and the underlying tundra. Seismic acquisition is now conducted by vibrating vehicles rather than the shothole/dynamite methods of the past. Drilling practices are strongly regulated by state and federal agencies, and no drilling wastes or equipment are left onsite after an exploratory well is completed. Finally, production facilities are located only in acceptable areas, and occupy a small fraction of their former area. The advent of directional drilling and the streamlining of production methodology has allowed for the smaller footprint of infrastructure in Alaska's oil fields. Once in place, production facilities have little or no impact on local fish and wildlife resources of the area.

ECONOMIC SELF-DETERMINATION FOR ALASKA'S INUPIAT PEOPLE

In northern and northwestern Alaska, there is no industry except for resource extraction. The land is too cold for agriculture, and too remote for refined manufactured products. In addition, the way of life in our rural communities has with time become a combination of subsistence and cash economies. As a result, our people are needful of both a healthy natural environment and access to gainful employment. With the exception of a small amount of tourism and government service positions, our people can look only to resource development for jobs within our region. Hence, we have assisted with the development of the North Slope oil and gas resources through our own Native-owned oil field service company subsidiaries, which

has employed and developed the skills of our people. In addition, we have made efforts to seek title to subsurface and surface lands, including the KIC lands acreage, that hold natural resource potential, that we might benefit from the oil and gas industry as a resource owner of lands that have been traditionally used by our people. As it now stands, we are prevented from developing our Kaktovik-area lands due to Section 1003 of ANILCA. The exploration and development of the Coastal Plain of ANWR, including the KIC lands, then represents an issue of economic self-determination for our people.

In addition, our local government and village residents realize great benefit from the sustained presence of the oil and gas industry on the North Slope. Because of the practices developed over time on Alaska's North Slope, the residents of the North Slope Borough live in a land with few environmental hazards, and have begun to build in their communities what is often taken for granted in the rest of this country. Facilities for education, health care, police and fire protection, reliable power generation, and sanitation all have been initiated by the North Slope Borough, thanks to a revenue stream generated by the taxation of property including oilfield infrastructure. In the absence of new development such as the potential development of the Coastal Plain, the North Slope Borough revenues would see a sharp decline, due to the depreciation of the older Prudhoe Bay infrastructure. Our communities are cleaner and safer, our people are living longer, and our children no longer have to travel a thousand miles or more to get a primary and secondary education.

With Borough operating revenue as well as programs initiated by our Native organizations, we are building training programs to give our local workforce skills to participate anywhere in today's economy. For example, we have established an education foundation at ASRC that provides financial assistance to Inupiat members interested in obtaining a college degree or technical training. Finally, ASRC continues to incorporate into its business the Inupiat value of respecting and taking care of our elders. ASRC has established an elders benefit trust that provides elderly Inupiat members with a monthly stipend to offset the high cost of living in the region. Many of our elders do not have retirement funds as many did not work prior to the introduction of the oil industry within our region. The reason for this is simply because prior to the oil industry we did not have an economy, and thus no jobs for our elders to work at to save for a retirement fund.

IN THE NATIONAL INTEREST

Finally, we view the exploration and development of the ANWR Coastal Plain as in the nation's interest. This ANWR Coastal Plain marks the most significant on-shore area for potentially large accumulations of oil and gas in the nation. Even with conservation and assuming that the United States oil demand remains static, there needs to be new production to replace production from older declining fields. The super-giant Prudhoe Bay oil field, which once produced twenty percent of the nation's crude supply, has declined to less than half of its peak production. America needs a continuing source of domestically produced oil. The alternative, importing oil from countries of political instability, or from countries with less than acceptable environmental practices, will surely do more harm than good.

COMMENTS ON SPECIFIC PROVISIONS WITHIN TITLE V OF THE ACT

Section 503(d)—Relationship to State and Local Authority—ASRC strongly supports this provision, and the desire of the North Slope Borough to retain its broad governmental powers regarding development in the Coastal Plain. These powers, including planning, permitting, zoning, right-of-way determination, and taxation are the tools by which the residents of the North Slope become stakeholders in the development of Coastal Plain lands.

Section 503(e)—Special Areas—ASRC strongly supports the provision that mandates the participation of Kaktovik and the North Slope Borough in the selection of lands, if any, for designation of special areas worthy of special management or protection. The local residents have the most to offer in determining the special status of any lands, and should be consulted.

Section 506(a)(7)—ASRC strongly supports the provision that mandates lessees, agents and contractors of Coastal Plain exploration and development follow the terms of section 29 of the 1974 Federal Agreement and Grant of Right of Way for the Operation of the Trans-Alaska Pipeline, of employment and contracting for Alaska Natives and Alaska Native Corporations from throughout the State.

Section 507—Coastal Plain Environmental Protection—ASRC strongly encourages local consultation for all the terms of *Section 507 Parts a through f*. In light of the successful process adopted by the Department of the Interior for the exploration and

development of the northeastern part of the National Petroleum Reserve in Alaska, ASRC suggests that Interior adopt a similar framework to incorporate consideration of local input from the village of Kaktovik and from the North Slope Borough for environmental protection measures regarding the Coastal Plain of ANWR. Such input would include strong recommendations for siting of consolidated facilities where the local population desires, so that village residents can benefit from jobs, and the proposed facilities can benefit from existing infrastructure.

Section 507(d)—ASRC recommends strengthening this section to mandate that subsistence access is ensured.

Section 510—Conveyance—ASRC strongly supports the entirety of Section 510, which addresses the completion of conveyance of the surface title of the KIC lands to the Village Corporation and conveyance of the subsurface title of the same lands to ASRC, in the interest of removing any clouds on title.

Section 511—Impact Fund Assistance—ASRC strongly supports Section 511 of the Act, which provides for Impact Fund Assistance, following the model of the NPR-A impact fund assistance program. Although the positive impacts of development may often outweigh any negative ones, the negative impacts still do exist. The villages closest to the effects of oil and gas development are always in the most need of impact fund assistance to address some of the direct negative effects of development.

STATEMENT OF THE NATIONAL ASSOCIATION OF CONVENIENCE STORES
AND THE SOCIETY OF INDEPENDENT GASOLINE MARKETERS OF AMERICA

INTRODUCTION

Thank you, Chairman Domenici and Senator Bingaman, for the opportunity to submit these comments relating to the United States retail motor fuels market. The National Association of Convenience Stores (“NACS”) and the Society of Independent Gasoline Marketers of America (“SIGMA”) appreciate the opportunity to submit this statement for the hearing record.

The topic of today’s hearing is “Oil Supply and Prices.” It is axiomatic that local, national, and global developments that impact on crude oil supplies have a significant impact on the overall supplies of gasoline and diesel fuel and, consequently, on the retail price of gasoline and diesel fuel to consumers.

However, it is not as widely understood that, in addition to the volatility in crude oil supplies and prices, the systemic challenges facing the nation’s motor fuel refining and distribution industries have an equal, if not greater, long-term impact on the price motorists pay for motor fuel. These systemic challenges, which have been brought to the attention of this Committee for years, have not been addressed and have not abated.

Until these systemic challenges are addressed, any action this Committee takes on increasing or stabilizing crude oil supply will have a substantial impact only in the short-term on the retail prices motorists pay for gasoline and diesel fuel at the pump. It is only through addressing the systemic challenges that lasting and long-term reductions in motor fuel price volatility can be accomplished.

THE ASSOCIATIONS

NACS is an international trade association comprised of more than 1,700 retail member companies operating more than 100,000 stores. The convenience store industry as a whole sold 124.4 billion gallons of motor fuel in 2001 and employs 1.4 million workers across the nation.

SIGMA is an association of over 270 independent gasoline marketers operating in all 50 states. Last year, SIGMA members sold over 48 billion gallons of motor fuel, representing over 30 percent of all motor fuels sold in the United States in 2002. SIGMA members supply over 28,000 retail outlets across the nation and employ over 270,000 workers nationwide.

THE ROLE OF INDEPENDENT MOTOR FUEL MARKETERS

Collectively, the members of NACS and SIGMA sell approximately 80 percent of the gasoline consumed in the United States every year. However, the vast majority of NACS members and all SIGMA members do not “make” gasoline and diesel fuel. Instead, they are motor fuel marketers, purchasing gasoline and diesel fuel under contract or on the open market. As a result, NACS and SIGMA members are as exposed as are consumers to fluctuations in the overall supply, and to volatility in the price of crude oil and the impact this volatility has on wholesale and retail motor fuel prices.

In fact, independent motor fuel marketers represent the closest proxy for gasoline and diesel fuel consumers that exists in the nation's motor fuel refining and distribution industry today. Shortages in gasoline and diesel fuel supplies, caused by world events, low inventories, refinery or pipeline outages or turnarounds, or the simple, enduring stresses in the motor fuel distribution system, impact independent marketers first—before your offices begin to hear complaints from consumers and businesses about the retail price of gasoline and diesel fuel.

Consequently, any examination of “Oil Supply and Prices” would be incomplete without a discussion of how the crude oil supply picture impacts gasoline and diesel fuel supplies and the price marketers must pay for these products. In addition, any examination of the forces acting on retail motor fuel prices would be incomplete without an additional discussion of the challenges refiners and marketers face in turning this crude into refined products and delivering these products to consumers. In short, even if adequate and moderately priced supplies of crude oil can be assured, motor fuel price volatility cannot be addressed and alleviated until more systemic challenges to the nation's refining and distribution industries are resolved.

CONSIDERATIONS FOR A NATIONAL ENERGY POLICY

NACS and SIGMA believe that the Energy and Natural Resources Committee has a unique opportunity and a definitive responsibility, while crafting national energy policy legislation, to address the systemic challenges currently impacting the nation's motor fuel refining and distribution industries. Access to reliable supplies of crude oil, the primary focus of this hearing today, are vital for the United States. But it is equally vital for the Committee to recognize that ample supplies of domestic and imported crude oil are irrelevant to consumers if the nation's motor fuel refining and distribution industries are incapable of refining those barrels of crude oil into gasoline and diesel fuel and delivering these products to consumers in adequate supplies and at reasonable prices.

Our members submit that it is the loss of our nation's motor fuel refining and distribution systems' efficiency—caused by the imposition of overlapping federal, state and local fuel specifications—that has led to a loss of domestic refining capacity, regional supply shortages, and significant increases in wholesale and retail motor fuel price volatility across the nation. We encourage the Committee to consider, as part of its debate this year on national energy policy legislation, provisions that would harmonize the various levels of motor fuels regulations in an effort to accomplish four principle objectives:

- Preserve and, if possible, increase domestic refining capacity;
- Restore fungibility to the motor fuels supply and distribution system;
- Enhance the available supply of motor fuels; and
- Maintain or improve environmental quality.

These are not new principles for NACS or SIGMA, nor is this the first time we have urged this Committee to address these principles. In fact, Tom Robinson, Chief Executive Officer of Robinson Oil Company in San Jose, California, told this Committee in 1996 that the marketing community was concerned about the loss of motor fuel supply fungibility brought on by the imposition of non-coordinated fuel specifications and the impact this would have on gasoline and diesel fuel supplies and wholesale and retail price volatility. At that time, Mr. Robinson recommended that the Congress address this issue in a comprehensive manner.

Today, almost seven years later, we again call upon this Committee and this Congress to address these issues in a comprehensive manner. We have attached the testimony of Mr. Robinson to this statement (see Attachment 1) as an important point of reference. As the Committee reviews this prior testimony, it is striking to observe how accurate Mr. Robinson's predictions, made seven years ago, were, and how little has been accomplished since 1996 to prevent the fulfillment of these predictions. In fact, many would argue that, since 1996, our nation has moved in the exact opposite direction—towards more balkanization in our motor fuels markets and greater stresses on the nation's refining and distribution systems.

CURRENT PRESSURES ON MOTOR FUEL PRICE VOLATILITY

It is significant that the Committee will be considering an energy policy bill during a very challenging time for the motor fuels industry. Current supply and demand conditions, international events and the implementation of seasonal regulatory requirements will influence the market as the Committee proceeds over the next several months. Today, we would like to describe for the Committee the current market situation, the underlying factors contributing to the today's market, and an analysis of conditions that will impact the market in the near future. We

hope our comments will be useful to the Committee as it proceeds to develop a national energy policy over the next several weeks and months.

As of Wednesday, February 5, according to the U.S. Energy Information Administration (EIA), the national average retail price for regular gasoline was \$1.53 per gallon. Historically, the first week of February marks the lowest annual point for retail gasoline prices. The fact that retail prices are so high so early in the year should be worrisome for this Committee and for consumers. If history is any guide, high retail prices in mid-February portend even higher retail prices during the summer driving season, when gasoline demand is at its highest. There are several factors that have contributed to the current, abnormally high retail price level and there are several factors that have contributed historically to the annual increase during the spring months.

Many of the factors influencing today's relatively high gasoline and diesel fuel wholesale and retail prices will most likely be discussed during this hearing. Principle among them are the strikes in Venezuela and the potential military conflict in Iraq. In short, crude oil prices have increased from \$26.67 a barrel at the end of November (just before the Venezuelan strikes began) to over \$35.00 a barrel earlier this week. Meanwhile, crude oil stocks have dropped from 287 million barrels on hand to 269.8 million barrels. This is below the Lower Operational Inventory Level established by the National Petroleum Council and represents the lowest inventory level since October 1975. Over the past few months, America's refineries have pulled from their stored supplies of crude oil in order to maintain operations and satisfy consumer demand, resulting in the lower inventory levels we see today.

For this reason, the nation's gasoline inventory actually increased from 200 million barrels at the end of November to 209 million barrels at the end of January. However, the pressure on crude supplies and the increase in crude prices have started to pressure retail prices upwards. At the end of November, the average national retail prices for 87 octane gasoline was \$1.38 per gallon. This slowly increased to \$1.45 per gallon by mid-January and only recently moved above \$1.50 per gallon. During the same time period, the average uncontracted, wholesale, or "spot," market price (derived from the Energy Information Administration's report on conventional and reformulated gasoline spot prices in New York, Chicago, Los Angeles and the Gulf Coast) increased from 70 cents per gallon to \$1.00 per gallon.

There is a direct relationship between increases in spot prices and retail prices. A recent report issued by the Energy Information Administration, "Gasoline Price Pass-through," published in January 2003 (Attachment II) confirms this relationship. EIA's analysis describes the manner in which changes in overall supplies and prices in the spot gasoline market are reflected in the prices consumers pay at the pump. EIA has developed the capability to accurately predict the retail price of gasoline based upon movements at the spot market to an accuracy within a penny per gallon. Put another way, EIA's report concludes that retail gasoline price movements—upwards or downwards—can be accurately predicted by examining spot market prices. If spot, wholesale prices rise, it is likely that retail prices will reflect this movement. And if spot prices fall, retail prices generally fall by a like amount.

It is important to note that energy industry analysts, including the Energy Information Administration, have predicted that even if the Venezuelan strikes were to end immediately, it could take several months before Venezuelan production returns to normal. This means that the strikes could continue impacting the U.S. market for many weeks to come.

SUMMER TRANSITION WILL IMPACT THE MARKET DURING ENERGY BILL CONSIDERATION

In the shadow of these international events that impact overall crude oil supply in the United States, the motor fuels refining and distribution system is preparing for the summer driving season. Along with that comes the regulatory requirement to produce motor fuels that have lower emission standards than those required during the winter months. Each year, this has a direct impact on the price of gasoline at retail, simply because this summer gasoline is more expensive to produce. During the spring of each calendar year, the gasoline distribution system seeks to clear winter-grade product before bringing summer-time product to retail, which creates a temporary supply imbalance and agitates the price impact of the transition.

Last spring, the Environmental Protection Agency implemented minor regulatory changes to the environmental rules governing the winter-to-summer transition in an attempt to prevent the gasoline supply shortages and wholesale price volatility that the nation experienced during the 2000 and 2001 transition periods. During the spring of 2002, wholesale and retail gasoline prices remained fairly stable, leading EPA, along with many observers, to conclude that its minor regulatory changes had

been effective in smoothing the transition from winter to summer gasoline. However, a more detailed analysis of early 2002 reveals a different story.

The national average price of gasoline prior to the 2002 transition season was \$1.11 per gallon (week ending February 4). This February 2002 price was substantially lower than previous years (\$1.44 per gallon on February 5, 2001 and \$1.32 per gallon on February 7, 2000) due primarily to reduced gasoline demand and expanded gasoline supplies in the wake of the terrorist attacks of September 11, 2001.

During the transition period in 2002, national average gasoline prices increased to a high of \$1.41 per gallon on April 8. Compared to the previous two years where prices increased to highs of \$1.70 in 2001 and \$1.68 in 2000, many people viewed this as a significant accomplishment. But if one were to look at the rate of increase in each of the three years, it is evident that there was very little progress made. In fact, in 2002 prices increased during the transition period by 30 cents per gallon, compared to an increase of 26 cents per gallon in 2001 and 36 cents per gallon in 2000 (see Attachment III).

Based upon the previous three years' experience, it is understandable why some observers, including EIA, have forecast an increase in the wholesale and retail price of gasoline as the 2003 transition season begins. All of the current indicators point towards a rough transition to summer gasoline in 2003:

- Crude oil inventories are down;
- Crude supplies from Venezuela will not return to 2002 levels until late spring at the earliest;
- A potential Middle East conflict will impact negatively on crude shipments from the Persian Gulf;
- Even if crude supplies are adequate, our nation's refining capacity has not increased in 30 years;
- Much of the nation has experienced a cold winter, leading refiners to produce more home heating oil late into the season to meet demand and to delay increased gasoline production, to rebuild gasoline inventories as the summer driving season nears; and
- Wholesale and retail prices are already, prior to the transition season, at historically heightened levels.

CONCLUSION

The current condition of the petroleum marketplace is a direct result of the imbalance between supply and demand. The strikes in Venezuela led to the dramatic reduction in domestic supplies and the potential conflict in the Persian Gulf only exacerbates the uncertainty in the marketplace. Today's retail prices are abnormally high for this time of year, but there are identifiable and measurable factors that contributed to this abnormality.

As the Committee proceeds with its business to create a national energy policy, the members of NACS and SIGMA encourage the Committee to pay special attention not to current challenges leading to today's market conditions but to the systemic challenges that cause disruption and volatility in the marketplace on an ongoing basis. Today's market conditions will correct themselves in time. The systemic problems, however, demand congressional attention.

The members of NACS and SIGMA are prepared to assist the Committee in any manner possible as it addresses these important issues. Thank you again for the opportunity to provide these comments today.

ATTACHMENTS

[Note: These attachments have been retained in committee files.]

Attachment I—Testimony of Thomas L. Robinson, President, Robinson Oil Company, Inc., at a hearing of the Senate Committee on Energy and Natural Resources, May 9, 1996

Attachment II—"Gasoline Price Pass-through," U.S. Energy Information Administration, January 2003.

Attachment III—Crude Oil and Gasoline Stocks and Prices, 2000-2003. Tables Generated from Information provided by the U.S. Energy Information Administration