S. HRG. 108–644

CRUDE OIL SUPPLY, GASOLINE DEMAND AND THE EFFECTS ON PRICES

HEARING

BEFORE THE

COMMITTEE ON ENERGY AND NATURAL RESOURCES UNITED STATES SENATE

ONE HUNDRED EIGHTH CONGRESS

SECOND SESSION

TO

RECEIVE TESTIMONY REGARDING CRUDE OIL SUPPLY, GASOLINE DEMAND AND THE EFFECTS ON PRICES

JUNE 15, 2004

Printed for the use of the
Committee on Energy and Natural Resources

U.S. GOVERNMENT PRINTING OFFICE

96–370 PDF WASHINGTON : 2004

For sale by the Superintendent of Documents, U.S. Government Printing Office
Internet: bookstore.gpo.gov Phone: toll free (866) 512–1800; DC area (202) 512–1800
Fax: (202) 512–2250 Mail: Stop SSOP, Washington, DC 20402–0001

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CRUDE OIL SUPPLY, GASOLINE DEMAND AND THE EFFECTS ON PRICES

TUESDAY, JUNE 15, 2004

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

The committee met, pursuant to notice, at 10:45 a.m., in room SD–366, Dirksen Senate Office Building, Hon. Pete V. Domenici, chairman, presiding.

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

The CHAIRMAN. The committee will come to order.

First, when I saw all of you and saw everybody down the line, Senator Bingaman, I thought maybe we were having a movie here today.

[Laughter.]

The CHAIRMAN. But we will try our best to give you something interesting at least.

Senators, it looks to me like everything is behind schedule and we have got witnesses that are ready. So what I propose—and I have checked it with Senator Bingaman—is that we move to the witnesses now and then, when they are finished, when we start, we will be able to use parts of our statement, put our statements in the record, and proceed in that manner. Otherwise, it would seem to me they are not going to testify and we brought them here for that. So I think we ought to proceed.

Let us go with Guy F. Caruso, Administrator of the Energy Information Administration, Department of Energy. We will then take Red Cavaney, president of the American Petroleum Institute, and then John Kilduff, senior vice president of the Energy Risk Management Group of Fimat USA.

Now, is David Berry coming?

He's making his way in. Okay.

Now, you heard me. So you're going to follow those instructions and proceed.

Mr. Caruso.

[The prepared statements of Senators Bunning, Burns, Feinstein and Smith follow:]

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

The price of energy has risen sharply during the last two years. The average price of gasoline has broken $2.00 per gallon. Natural gas prices and coal prices are also

up significantly. These high prices are hitting working Americans' pocketbooks hard just as our economic recovery is picking up steam.

It is time Congress acts to help Americans face these rising costs. We have been fortunate to see prices slip from their highs in recent weeks. But if Congress does nothing to encourage more production, Americans will continue to struggle financially and our economic recovery could evaporate.

The most important action we can take is to increase domestic energy production. As demand for energy increases in the summer months, we cannot afford to see energy prices skyrocket even more. Having a cheap, ready supply of energy is more crucial than ever to our economy.

Energy production is also a national security issue. Iraq and problems in the Middle East are on all of our minds. We have to recognize that continuing to rely on energy supplies from that part of the world is a threat to our national and economic security. We can't change that overnight, but we can start taking the first steps today.

Opening the Strategic Petroleum Reserve has become an issue lately. The Strategic Petroleum Reserve is an emergency reserve. I understand that to working Americans hit hard by the economic downturn of 2000, facing high energy prices is an emergency. and I will work hard to bring prices down, but not at the expense our nation's security. I am sure that all Americans would agree that saving a nickel on a gallon of gas is not worth the risk to our country and our men and women in uniform.

I thank the witnesses for appearing before the committee and testifying on this important topic.

Thank you, Mr. Chairman.

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

Thank you Mr. Chairman, for holding this important hearing, and thank you to our witnesses for testifying today. Gasoline and oil prices affect every one of us every day and in a time like this when fuel prices are climbing, we need to understand why it is happening and what we can do about it.

In Montana, we are affected by high fuel prices more than most. There-is a lot of ground to cover in Montana—we live in a big state with long distances between home and school or town to town. Additionally, Montana's economy is driven by agriculture. Farmers and ranchers are price-takers on both the input side and the production side. If the price of fuel or fertilizer goes up, it just cuts right into the bottom line.

When we look at the price at the pump, it is easy to understand the effect it has on each of us individually. It's also important to understand the costs high fuel prices have on this entire country. We are a nation built on our ability to move things and people and ideas. Fuel prices affect everything from the cost of airline tickets to the price of shipping merchandise by truck, just to name a few. In a time when we are welcoming steady economic expansion, these high fuel prices threaten to stop this growth in its tracks.

The first question is "why?" The second is "what can we do about it?"

We all know OPEC has a major role in determining the world price of oil. Because middle eastern oil is plentiful and relatively easy to reach, the OPEC nations will always be big players on the world oil market. However, competition from other sources can distribute the price influence to new regions, new players, and new markets. Russia, Central Asia and Western Africa all have large reserves of oil and natural gas. I just returned from a Kazakhstan where I learned a great deal about the resources they are discovering in the Caspian Basin and throughout Central Asia. We need to encourage these countries to treat the companies who work their fairly and the resource production will then encourage greater stability and even the spread of democracy. Most importantly, the more players there are in the world market for oil, the less a supply disturbance in one region will determine the world price.

We also have a responsibility to do what we can domestically to increase production and streamline those processes that increase the price of both oil and gasoline. We need to access our own reserves, and be wary of shutting off access to known reserves on public land.

When it comes to refining, we need to understand that our refineries are at 96% capacity and we are not building any new ones. "Boutique" fuels to comply with different local or regional requirements make markets even tighter. We need to be very

careful about regulations discourage the construction of new refineries and fuel mandates that will make prices climb for everyone.

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

Mr. Chairman, thank you for holding this hearing. Gas prices in California are almost 30 cents above the national average. They have climbed from $1.71 in January to $2.29 as of yesterday. If we have any hope to forestall even greater hikes, we must move rapidly to develop alternatives to the internal combustion engine.

For California and several other states that can produce gasoline that meets the requirements of the Clean Air Act without the use of oxygenates, we need to eliminate the 2% oxygenate requirement which forces refiners to use either MTBE or ethanol. In effect, this requirement is an unnecessary ethanol mandate for refiners in California that tightens gasoline supplies and causes upward pressure at the pump.

California, unlike other states, is a gasoline island—we use gasoline that is cleaner burning than any other gasoline in the nation and no refiner outside of California produces the gasoline the State needs.

Plus, the State's refining capacity has shrunk over the past 30 years from over 30 refineries to 13 during a time when our population has more than doubled. And with the closure of the Shell Bakersfield refinery in October, the number will drop to 12.

Refiners in California produce about 46 million gallons of gasoline per day, while Californians use up to 42 million gallons per day. And refineries are already running at maximum capacity.

The most important factor in determining the price at the pump is crude oil prices. While OPEC plays a large role in determining the price, the other issue is the global demand for oil, which we have seen increase considerably over the last few years. World demand for oil will continue to increase as countries like the China and India continue to grow.

In California alone, gasoline demand is expected to increase by 2.5 percent per year compounded according to the California Energy Commission. Globally, according to the latest Oil Market Report issued by the International Energy Agency, the average demand for oil will total 81.1 million barrels per day this year. That represents an increase of 2.3 million barrels per day over 2003.

At the same time that demand is increasing, the amount of oil the world is producing is estimated to peak within the next few decades. As a result, we need to start focusing on how we can use our oil supplies more efficiently.

One way is to close the SUV loophole. This small step will force SUVs to meet the same fuel efficiency standards as passenger cars. Currently, Model Year 2005 SUVs and light duty pickup trucks have a fuel economy standard of 21 miles per gallon. By Model Year 2007, that will increase to 22.2 miles per gallon.

I have proposed picking up where the Bush Administration's increase left off so that by 2011, SUVs would have to average 27.5 miles per gallon.

Closing the SUV loophole will:

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

We also need more hybrids on the road. Already, we have seen foreign auto makers like Toyota and Honda make huge strides regarding the implementation of hybrid technology in their vehicles. Auto-manufacturers need to add more hybrids to their vehicle mix.

The investment in fuel efficient technology is paying off for Toyota as the Prius was named the 2004 Motor Trend Car of the Year. Toyota has also announced it will soon be releasing the first luxury hybrid SUV this fall. I look forward to the introduction of the hybrid Ford Explorer, and hope that American auto makers will fully embrace the use of more fuel efficient technology rather than continue to let themselves fall behind in the development of fuel efficient vehicles.

I look forward to working with my colleagues to craft legislation that will impact the United States' demand for oil.

Thank you Mr. Chairman.

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

Mr. Chairman, I appreciate your willingness to convene this timely hearing to examine what drives fuel prices. As American consumers continue to empty their wallets to fill their tanks, we need a thorough vetting of the issues related to crude oil supplies, gasoline demand, and the impact on prices.

This is an issue that I have been following for some time in my role as Chairman of the Commerce Subcommittee on Competition, Foreign Commerce, and Infrastructure. On April 5, 2004, I wrote to the FTC asking that it provide that Subcommittee with information relating to any FTC investigations of the gasoline market since 1973. I would like to submit a copy of that letter for the record, and reiterate my hope that a response will be forthcoming.

I would also like to suggest that the FTC change the manner in which it handles such investigations. For some time, individual Members of Congress have requested that the FTC investigate increases in gasoline prices to determine if there has been any price or market manipulation. It is my understanding that the FTC has, in fact, investigated these issues several times. However, its findings are often not reported, which does little to improve consumer confidence in the face of historically high gasoline prices.

In addition, in 2000, I asked the General Accounting Office (GAO) to investigate issues affecting gasoline prices in Oregon, which are almost always higher than the national average. The GAO report outlined several factors contributing to high gas prices in Oregon. For example, Oregon state excise taxes on gasoline are among the highest in the nation. Oregon also prohibits self-service at gas stations, which may add as much as 5 cents to the cost of a gallon of gas.

Oregon has no refineries in the state. It also has the highest proportion of miles driven in rural areas of the three West Coast states. Both of these factors add to the transportation costs of getting gasoline to retail outlets throughout Oregon, and make the state vulnerable to any West Coast supply disruption.

We will hear from the witnesses today about global production, and global demand, which continues to increase. The United States is now more than 50 percent reliant on oil imports to meet its needs, and this dependency is projected to increase to almost 70 percent by 2025.

One thing is clear. While we can increase domestic production in less environmentally sensitive areas, the United States does not have the reserves to drill its way to energy independence.

That is one of the reasons why, in the 107th Congress, I joined with several of my colleagues on the Commerce Committee to cosponsor a bipartisan amendment to the national energy bill that would have increased the CAFE standard to 36 miles per gallon by 2015, without sacrificing passenger safety.

While the amendment was withdrawn, it was projected to save as much oil per day by 2025 as we currently import from the Persian Gulf.

There are still opportunities this Congress to enact measures that will, over time, reduce our dependence on imported oil. The stalled energy legislation contains provisions relating to hybrid and advanced technology vehicles, and the development of fuel cell technology.

In addition, the tax provisions currently included in the Senate-passed FSC/ETI bill provide tax incentives for alternative and electric vehicles, and for the installation of alternative fueling stations.

Some in this body have effectively blocked further consideration of even a scaled-back version of the energy bill. I would urge my colleagues not to make the perfect the enemy of the good. We need to move forward today to secure tomorrow's energy future for our nation.

I look forward to hearing from the witnesses today.

U.S. SENATE,
SUBCOMMITTEE ON COMPETITION, FOREIGN COMMERCE, AND INFRASTRUCTURE,
Washington, DC, April 5, 2004.

Hon. TIMOTHY J. MURIS,
Chairman, Federal Trade Commission, Washington, DC.

DEAR CHAIRMAN MURIS: In representing my constituents, and in my role as chairman of the Competition, Foreign Commerce, and Infrastructure Subcommittee of the Senate Committee on Commerce, Science, and Transportation, I am very concerned about the rapid increase in the cost of gasoline. Therefore, I am writing to request that the Federal Trade Commission (FTC), over which the Competition Sub-

committee has jurisdiction, provide the Subcommittee with information relating to any FTC investigations of the gasoline market since 1973.

As you are aware, for some time, individual Members of Congress have requested that the FTC investigate increases in gasoline prices to determine if there has been any price or market manipulation. It is my understanding that the FTC has, in fact, investigated the gasoline pricing issue numerous times in the past and has not found any evidence of wrongdoing. However, the FTC's findings are often not reported, which does little to improve consumer confidence in the face of rising gasoline prices.

Specifically, I request that you provide the Competition Subcommittee with a list of the gasoline pricing investigations that have been performed by the FTC during the past 30 years and a summary of the conclusions of each of these investigations. Please include those instances when the FTC made a preliminary investigation of allegations but eventually determined that the situation did not warrant a full-scale investigation.

If you have any questions concerning this request, please do not hesitate to contact me.

Sincerely,

GORDON H. SMITH,
Chairman.

STATEMENT OF GUY F. CARUSO, ADMINISTRATOR, ENERGY INFORMATION ADMINISTRATION, DEPARTMENT OF ENERGY

Mr. CARUSO. Thank you, Mr. Chairman, for this opportunity to present the Energy Information Administration's crude oil and gasoline outlook.

We have seen very strong price increases in both crude oil and gasoline this year with spikes as high as $42 for crude and a $2.06 a gallon national average on gasoline. But I am happy to say that the very latest data show that there is the beginning of a market turnaround. Retail gasoline prices have fallen by 8 cents a gallon during the last 3 weeks. Yesterday's number was $1.985 for average retail. More importantly, wholesale prices are down about 23 cents over the past several weeks, and if all goes well, we see the trend for retail prices to follow the wholesale prices down over the coming weeks.

Of course, much can happen that can change that, but we anticipate the second half average retail price of gasoline to be about $1.82 compared to the $1.98 where we are now. So there are hopeful signs and the market appears to be reacting to both forces of supply and demand and prices.

The CHAIRMAN. Mr. Caruso, we know that the price per gallon is very important to the American consumer, but most of us have been talking about price per barrel. Can you convert those? I assume the prices come down relatively speaking in that regard also, and could you convert that so we will understand it?

Mr. CARUSO. Sure. We now have crude oil prices at about $37.50 per barrel which is the price that NYMEX opened at, approximately, this morning. We see that trending downwards by the end of the year to about $35. So we also see crude oil prices trending down, which also passes through to the gasoline price that I mentioned.

Senator DORGAN. Mr. Chairman, on that point, could he tell us whether there is a direct relationship? I think that was the implication of your question.

The CHAIRMAN. Yes.

Mr. CARUSO. There is definitely a direct relationship between the crude oil going up, of course, early in the year, leading to gasoline

prices going up, among other things, and we see that trend now turning around and moving downward over the coming months.

Senator DORGAN. The same percentages, barrel versus gallon?

Mr. CARUSO. The crude oil price has probably contributed about 30 cents per gallon to the increase in gasoline prices. So the increased margins have also gone up and contributed to about another 30 cents. So the combination of crude oil prices and the tightness in the refinery situation in this country have each contributed to the run-up that got us to $2.06, and we see them both contributing to the decline as we move over the coming weeks and months.

The CHAIRMAN. Please proceed.

Mr. CARUSO. A key factor has been inventories. They have been low during 2003, continuing into 2004. The hopeful signs from OPEC over recent weeks, that they will increase production in Saudi Arabia in particular, do lead us to believe that crude oil imports will remain strong and that crude imports will lead to higher inventories and higher runs of gasoline. Gasoline inventories have also been low, and we do see some improvement in the gasoline inventory situation as well. So these are the main factors that contribute to this decline in the price that EIA sees coming over the coming weeks.

In conclusion, barring unexpected supply disruptions, EIA is cautiously optimistic that petroleum markets have turned the corner and that gasoline prices should continue to ease over the next weeks and months. Sustained levels of production of OPEC are making an important contribution to our strong imports and high refinery runs, allowing us to produce high levels of gasoline, as well as importing blending components for gasoline, as well as finished gasoline. So we are again optimistic that this decline will continue, and perhaps as important, that this high level of crude oil imports will allow our refiners to produce enough heating oil as we come out of the summer to prepare for the winter heating oil season.

So with that, Mr. Chairman, I will conclude and be happy to answer questions at the appropriate time.

[The prepared statement of Mr. Caruso follows:]

PREPARED STATEMENT OF GUY F. CARUSO, ADMINISTRATOR, ENERGY INFORMATION ADMINISTRATION, DEPARTMENT OF ENERGY

Mr. Chairman and Members of the Committee, I appreciate the opportunity to appear before you today to discuss what drives crude oil supply, gasoline demand and the effects on prices. The Energy Information Administration (EIA) is the independent statistical and analytical agency within the Department of Energy. We are charged with providing objective, timely, and relevant data, analysis, and projections for the Department of Energy, other government agencies, the U.S. Congress, and the public. We do not take positions on policy issues, but we do produce data and analysis reports that are meant to help policymakers determine energy policy. Because the Department of Energy Organization Act gives EIA an element of independence with respect to the analyses that we publish, our views are strictly those of EIA. They should not be construed as representing those of the Department of Energy or the Administration.

Prices for both crude oil and gasoline have risen steadily throughout 2004. At the end of May, the price of West Texas Intermediate (WTI) crude oil prices reached $42 per barrel, and national average retail price of regular gasoline was nearly $2.05 per gallon, more than 50-cents-per-gallon higher than prices at the beginning of this year or in May 2003 (Figure 1*). While gasoline prices in real, inflation-ad-

* Figures 1-5 have been retained in the committee files.

justed terms remain well below their historical peak level (gasoline prices in 1981 were closer to $3.00 per gallon in today's dollars), there is little doubt that the recent rapid run-up in prices constitutes a drain on disposable income and a challenge to planning for many businesses and consumers.

The very latest data show the beginnings of a price adjustment. Retail gasoline prices fell by three cents per gallon from May 24 through June 7. More significantly, wholesale gasoline prices fell by 23 cents per gallon from their peak on May 19 through June 7, which should result in further reductions in retail prices in coming weeks. Crude oil prices were also down significantly ($2.89) over the same time period.

So, what next? Let me begin by stating the obvious—any projection of oil markets is highly uncertain given the present situation of tight crude oil and product inventories at a time when recent attacks in Saudi Arabia and Iraq have heightened concerns regarding the potential for unexpected disruptions. That said, however, EIA believes that, absent major disruptions, oil and gasoline markets may be turning a corner. The June 2004 Short-term Energy Outlook (STEO), released last week, lowers last month's projection for the average retail gasoline price in June by 3 cents per gallon, to just under 2.00 per gallon. Gasoline prices are expected to continue falling beyond June.

The revised gasoline price outlook reflects our view of an improved balance between supply and demand in gasoline markets as well as a lowering of our expectations for crude oil prices. Our STEO scenario projects that WTI prices will ease to the vicinity of $35 by year-end—a level significantly higher than the $30 at the start of the year, but significantly below recent peak prices. We expect that the additional crude oil production, which producers with excess capacity have recently committed to provide, would allow for building of oil and product inventories towards normal levels. Higher inventories can play an important role in reducing future volatility by providing a necessary cushion that can be drawn upon in response to unexpected supply or demand developments.

With that overview of the bottom line, the remainder of my testimony addresses the issues raised in your invitation—the driving forces behind crude oil supply and gasoline prices.

CRUDE OIL MARKETS

Crude oil markets are where today's situation began, and are a critical key to generating and sustaining price relief through the rest of this year and beyond.

A combination of rising world oil demand growth and oil supply restraint by the Organization of Petroleum Exporting Countries (OPEC) has kept oil supplies tight, as reflected in low petroleum inventories worldwide since early last year. The price of West Texas Intermediate (WTI) crude oil rose by more than $12 per barrel from early December 2003 to reach over $42 at the beginning of June. Since then, the WTI price has dropped to $38.50 per barrel as of June 4 as signs of increasing crude and gasoline supplies are emerging.

How did we get here? On the supply side, the Venezuelan strike at the end of 2002 removed about 3 million barrels per day of supply from world markets for a short time, and production still remains less than pre-strike levels. Other OPEC countries were slow to respond to the loss of supply, and world inventories were drawn down precipitously during this time. We had further losses from strife in Nigeria and the Iraq War as well. While OPEC increased production in 2003 and Venezuela and Iraq slowly recovered, the supply increases were not enough to allow world inventories to return to normal levels, given strong demand.

As world economies began recovering from the earlier downturn, world demand in 2003 grew about 1.3 million barrels per day, compared to the depressed 0.2 million barrel per day growth seen in 2002. This year, world demand is expected to increase 2.1 million barrels per day, with the U.S. and China making up half of that increase. Non-OPEC supply is expected to increase only about 1.2 million barrels per day, indicating OPEC must increase production at least 0.9 million barrels per day to just stay even and not allow for any inventory recovery.

World petroleum commercial inventories, which reflect the balance between production and demand and thus act as a good barometer of price pressure, have been at or below the bottom end of the normal range for most of 2003 and 2004 to date. The United States has followed world markets in this regard. For most of 2004, U.S. total petroleum inventories have been at the bottom of the normal range, at or below 2000 levels (Figure 2). With WTI prices significantly above those experienced during the 1998-2002 period, and above OPEC's stated target price band for half of 2003 and all of 2004 to date, the prevailing view has been that prices were bound to fall. This view that future prices will be lower (referred to as backwardation in

the futures market) has provided a disincentive for refiners to hold any more crude oil in storage than was absolutely necessary.

Fundamentals may not explain all of the current oil price. This year, concerns such as limited excess crude oil production capability, instability in the Middle East, and less available excess refining capacity than in the past may be contributing to higher prices. For example, if an abundance of excess crude oil production capacity were available, the level of inventories would be less critical, as new supply could be brought online quickly as needed. And with nearly all available excess capacity located in Saudi Arabia, markets are especially sensitive to unrest in that country. Still, fundamentals imply that extra crude oil production would both reduce price and help to replenish inventories, thereby creating a cushion to help withstand unexpected supply problems and thus reduce risk premiums that may be in the market.

GASOLINE MARKETS

When global crude markets tighten, product markets also tighten and prices increase. Between the most recent low point on December 1, 2003 and the peak spot gasoline price on May 19, 2004, the average spot gasoline price rose by 68 cents per gallon. Over the same time period, crude oil prices increased about 28 cents per gallon. .This implies that 40 cents per gallon of the increase in spot prices was related to developments in gasoline markets. Some of the increase reflects seasonal influences. Over 2000 through 2003, spot margins increased by an average of 15 cents per gallon between December and May, which leaves another 25 cents per gallon of the increase attributed to the especially tight gasoline market experienced this year.

As with crude oil inventories, gasoline inventories have been low this year (Figures 3 & 4), both due to strong demand and tight supply relative to demand. Gasoline demand January through May has grown about 2.8 % over the same period last year. Some of that strength reflects relatively low first half demand in 2003 due both to weak economic growth and bad weather that likely interfered with driving. Despite high prices, growth in vehicle miles traveled continued to push gasoline demand higher.

While over 90 percent of U.S. gasoline is produced domestically, gasoline imports play an important role in meeting demand. Although demand is higher this year, imports are lower so far, with total gasoline imports averaging 830 thousand barrels per day compared to 874 thousand barrels per day last year. Although U.S. gasoline sulfur content was reduced this year under the Tier 2/Gasoline Sulfur regulations, the reduction in imports are likely due more to world market conditions than U.S. requirements for higher-valued cleaner products. With high world demand and competition for gasoline driving up both prices and freight rates, imports would be less economic even if our sulfur requirements had remained unchanged. We are seeing less imports from regions like Latin America where many refineries cannot produce our low sulfur gasoline, while imports increased from regions like Western Europe, which have similar sulfur specifications to those in the U.S. This has occurred even though European inventories are also low, and implies extra premiums must be paid to attract those extra volumes.

Through May 28, U.S. gasoline production has averaged 8.53 million barrels per day in 2004, an increase of 3.4 percent over the same period last year. As we move into the summer driving season, refineries have emerged from their spring maintenance programs and are increasing gasoline production towards maximum levels, averaging about 8.9 million barrels per day in May.

With strong demand relative to supply keeping inventories low, the. gasoline crack spread (the difference between wholesale spot gasoline and crude oil prices) has increased, as has been the case in previous tight spring gasoline markets such as occurred in 2000, 2001, and 2003. But this year, the tight balance and high margin situation has been sustained rather than occurring in a shorter price spike, and the increase is nationwide, with regional supply problems playing less of a role than they have in recent years. Spring maintenance, which prevents refiners from running at maximum utilization, and higher than expected demand worked to keep gasoline markets tight. Gasoline inventories have been low and showed no signs of recovery to more normal levels.

Crude oil market conditions and strong demand have both played key roles in keeping gasoline inventories low. The tightening crude oil market created incentives for refiners everywhere to buy only crude that is needed immediately and to draw down their product inventories. When markets tighten, the current prices and current crack spread widens, but expectations for prices in future months are typically lower. While a large current crack spread works to encourage refiners to produce

as much product as possible for immediate sale, the expectation for future declining prices discourages inventory accumulation. Strong worldwide demand also has made it difficult for refiners to generate extra gasoline inventory that could enter the international market.

With U.S. gasoline demand increasing for the summer, domestic market tightness will only ease with a supply surge to both add to inventories and relieve near-term prices. Even with domestic refining already operating at high capacity utilization (95 per cent in May), refiners may ultimately be able to produce more gasoline, assuming minimal refinery problems. Imports under any scenario are also an important source of extra volume.

Crude oil markets are a critical key to turning this cycle back down. With extra crude oil, recently occurring underlying backwardation eases, and refiners have incentives to produce more product than that needed for the near term, which could result in inventories moving closer to normal levels. With world demand being lower during the summer than the winter, refiners outside the U.S. can produce such product. Until recently, signs of any increases in supply (crude oil or gasoline) had not occurred.

LOOKING AHEAD

As noted at the start of my testimony, recent events show some promise of lower prices ahead. Saudi Arabia and several other suppliers have pledged significant increases in crude oil production, which is critical to breaking the upward price pressure. Increases in crude oil production would help put downward pressure on crude oil prices, which would help lower gasoline prices. Crude oil imports reported two weeks ago averaged 10.7 million barrels per day, the second largest weekly amount ever, with most of the increase in short-haul crude oil, notably from Mexico and Nigeria (the latter a provider of high quality crude oil). Last week, import volumes remained strong at 10.5 million barrels per day. These imports have helped to increase commercial crude oil inventories, even above the usual increase seen at this time of year. As of June 7, commercial crude oil inventories stood at 302.1 million barrels, just above the lower end of the normal range. While inventories are still relatively low, having them within the normal range, even if just barely, is an improvement over recent experience. Increases in imports from longer-haul crude oil import sources, such as Saudi Arabia, are more likely to appear next month, which would help offset seasonal downward pressure on commercial crude oil inventories, thus relieving some of the upward price pressure experienced over the last several months.

The U.S. gasoline market may also be beginning to reflect a shift from this high price cycle. Beyond the 3 cent fall in retail prices over the last two weeks, average spot gasoline prices have been falling for a couple of weeks now, dropping a total of 23 cents per gallon from May 19 through June 7. Since it takes about 1 to 2 weeks for changes in spot prices to begin being reflected in retail prices, last week's drop in retail prices may indicate the start of a decline in retail prices over the next couple of weeks.

Finally, U.S. gasoline inventories have risen, increasing by another 3.4 million barrels between May 21 and June 4. With imports averaging about 1 million barrels per day and production, including at gasoline blenders, averaging 8.9 million barrels per day in May, there continues to be enough supply to not only meet demand, but add to inventories as well. It should be noted that gasoline inventories typically increase in May, and that they still are significantly below the 5-year average. Again, the higher inventories are, the more flexibility is inherent in the system, thus relieving some price pressure.

Consumers should not expect retail prices to fall back to prices seen before the recent increases. While prices could drop below $2 per gallon over the next couple of weeks, and may continue to fall thereafter, present market conditions do not provide a reason to expect prices to return to their level at the start of this year anytime soon. Furthermore, with low inventories, regions in the United States are still subject to potential price spikes this summer.

EIA's latest Short Term Energy Outlook (STEO) is projecting crude oil prices to decline from the $40.30 average in May, perhaps dropping as much as $4.50 per barrel by the end of the summer (Figure 5). For the second half of 2004, gasoline demand growth is expected to slow from 2.8 percent growth in the first half to about 1.2 percent over last year. With improvement in underlying fundamentals for both crude oil and gasoline, retail gasoline prices should decline. While we expect the June average price to stay near $2.00, average prices could drop as much as 5-10 cents per gallon as early as July. These projections assume no further supply disruptions either in crude oil or gasoline markets.

CONCERNS OVER ABILITY OF PETROLEUM MARKETS TO REBALANCE

Several concerns about the world's ability to rebalance petroleum markets have been raised in the media and elsewhere related to the quality of incremental OPEC crude, refinery constraints, timing of supply, and the availability of spare crude oil production capacity. The remaining discussion describes why EIA believes these concerns will not stand in the way of market rebalancing and easing of prices.

Regarding OPEC production, additional crude oil would contribute to lower prices, particularly if the OPEC members maximize the incremental supply of light crude and provide terms that will enable potential buyers to commit to the purchase of more oil without undue risk.

On the issue of crude quality, concerns have been raised that additional supply of heavier, more sour crude oil (meaning crude oil with a higher sulfur content) may be more than the market needs right now in the heart of the U.S. gasoline season. The reasoning is that since this is not the ideal crude sought by the market, it is of little use. Not all refiners need high-quality crude oil, and while heavy, high sulfur crude oil is less desirable, added supplies can free up available high-quality crude oil for those who need it the most. In short, extra crude oil of any grade that is priced to sell will find buyers and help to alleviate current market tightness.

On the issue of refining capacity, concerns were mentioned that with U.S. refinery capacity utilization at 95-96 percent in recent weeks, there is little room for significant increases in gasoline production. This is inaccurate. There have been times in the past when weekly refinery utilization has even exceeded nameplate capacity. An increase in the utilization rate of 2 percent, which is possible when refineries are not experiencing unusual unplanned outages, equates to an increase in refinery production of about 340,000 barrels per day, and if half of that were gasoline, 170,000 barrels per day of additional gasoline would be available. This represents more than 5 million barrels in a month, a sizable increase in such a tight market. While such an increase might not remedy a particular regional problem that may occur, a boost of this size could offset the normal stock draw in July and August. Such a scenario is possible depending on how key OPEC producers implement their announcements to add more oil to the market and on whether other unexpected refining problems or supply disruptions can be avoided.

On the issue of rebalancing the U.S. petroleum market, extra crude oil should help even if inventories do not build substantially. At a time of year when crude oil inventories typically fall, if imports increase enough to keep inventories above 290 million barrels, they would be near the middle of the average range by as early as September. If crude oil imports average 10.3-10.5 million barrels per day during July and August, it would minimize the usual crude draw during these months while helping to rebuild all refined product inventories. While today's markets and news stories are focusing on gasoline, inventories across all petroleum products, as well as crude oil need to improve to insure more flexibility in the system, thus reducing price pressures. Higher production now would also help to reduce the prospects for volatility in heating fuel markets this winter.

Concerns have also been raised on the ability of Middle East crude oil, which is 40 days away, to help ease U.S. markets. Oil produced in early June can begin to start reaching U.S. refineries by mid to late July, provided refiners find the terms attractive. Furthermore, Middle Eastern oil could be used in refineries closer to the Middle East, such as those in Europe, freeing up Atlantic Basin crude oil for U.S. refineries. And, of course, knowing that more crude oil was on the way, refiners would be more willing to draw from their limited crude oil and gasoline inventories in the interim, thus improving the supply situation even before the crude oil arrives.

Finally, it has been suggested that any increase in global crude oil production would reduce the limited global spare production capacity that already exists. Using capacity that would otherwise be idle over the next several months provides the market with additional supply now, and does not lessen the future capacity. Also, Saudi Arabia will still have considerable additional capacity. If the Persian Gulf War from 1990-91 is any indication, Saudi Arabia may actually be able to produce more than what common wisdom suggests, at least on a surge capacity basis. Regardless, even if spare production capacity were reduced, strategic inventories in consuming countries would still be available should a real supply emergency occur.

CONCLUSION

In conclusion, subject to the important caveat that no significant unanticipated disruptions occur, EIA is cautiously optimistic that petroleum markets may be beginning to turn the corner and that gasoline prices should continue to ease. Since the industry will likely focus on gasoline at the expense of distillate this summer, we may enter the winter season this year with low heating oil inventories, increas-

ing the potential for high heating fuel bills for consumers this winter. Sustained high levels of OPEC crude oil production, making continued high U.S. imports of both crude oil and products possible, would be helpful both in addressing the current situation in gasoline markets and ameliorating prospects for tight heating oil supplies during the upcoming winter.

Thank you for the opportunity to testify before the committee today.

The CHAIRMAN. Could I clarify? This is not a substantive question. When you say that you are the Energy Information Administration, and you are the Administrator of that, you work for the Federal Government. You fill a niche that was created by Congress. Is that correct?

Mr. CARUSO. That is correct, Senator.

The CHAIRMAN. Now let us go to you, please.

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

Mr. CAVANEY. Thank you, Mr. Chairman, members of the committee. I am pleased to present the U.S. oil and natural gas industry's views on gasoline prices. We welcome your interest and hope that it encourages policies that address the root causes behind these recent price spikes.

Higher crude oil prices, as you have just heard, set on international markets, reflect rapidly growing world demand and have driven most of the recent increases. The EIA says economic expansion is fueling the biggest increase in world oil demand in 16 years. Supplies have been insufficient to keep prices moderated due to several factors, including earlier OPEC production cuts, as well as domestic policies that prevent development of promising U.S. oil fields.

For years, government and private energy analysts have predicted substantial increases in the demand for crude oil. EIA estimated that in 2020, it would take new oil production capacity equal to eight times Saudi Arabia's current output to replace lost supply from declining fields and to satisfy new growth in world demand.

The other principal contributor to the rise in gasoline prices is the tightness in our Nation's gasoline markets. With our economy improving, Americans are consuming markedly more gasoline. While U.S. refiners are producing record amounts, strong demand and a reduction in gasoline imports have tightened supply, putting upward pressure on prices. Less gasoline has been imported due, at least in part, to the roll out of low sulfur gasoline and much broader use of ethanol. With refineries running flat out, gasoline inventories have remained below average.

Higher gasoline prices have improved profits, but average profit margins were below those of other industries in the first quarter, as reported last month in *Business Week* magazine. The U.S. oil and gas industry earned 6.9 cents on the dollar. The all-industry average was 7.5 cents. In percentage terms, our profits are small. In dollars, they are large due to the massive scale needed to compete in the world's largest industry. A new competitive scale refinery will cost between $2 billion and $3 billion, and over the last decade, companies have spent almost $5 billion per year on environmental compliance on refinery and fuels regulations alone. While significantly improving air quality, these investments help explain the low percentage return on refinery investment, 5.5 per-

cent over the same period, an amount that is less than half the 12.7 percent average return for the Standard & Poor's industrials.

Today's oil and gas industry is highly competitive. Some suggest past mergers are responsible for higher prices. The data do not support such claims. There are almost 60 refining companies in the United States, hundreds of wholesale and marketing companies, and more than 165,000 retail outlets. The biggest refiner accounts for only about 13 percent of the Nation's refining capacity and the large integrated companies own only about 10 percent of all the retail outlets.

The Federal Trade Commission thoroughly evaluates every one of our industry's merger proposals, holds those mergers to the highest standards, and subjects the industry to a higher level of ongoing scrutiny. For decades, investigations by a number of sources at the Federal and State level of price spikes have consistently exonerated the industry of any wrongdoing.

We do not know what prices will be in the future. We do know that we as an industry will continue working hard to increase supplies of crude oil and gasoline and that better energy policy is essential in order for us to meet that goal. We need action on many fronts: more conventional energy and supplies, expanded alternatives, and greater energy efficiency. To have a positive impact, energy legislation needs to be comprehensive, not piecemeal, and it needs to be enacted in this Congress given the long-term nature of investment in the industry.

Companies and virtually all energy analysts realize that oil and natural gas will continue to provide the world with most of its energy for many more decades. EIA projects that the United States still expects to consume 44 percent more oil and 38 percent more natural gas in 2025 than in the year 2002.

Consumers are frustrated by today's higher prices. They rely on gasoline to go to work, to school, for errands, and vacations, and to realize an improved quality of life. Taking into account inflation, prices are not the highest they have ever been, but they are far higher than the nonsustainable lows of 1998 and 1999.

Oil and gas is a long-term, massive scale, large investment business. Few tools are available for providing substantial short-term relief for gasoline consumers. The best way to help is to subscribe to the "do no harm" rule and work together, government and industry. For the longer term, we do have workable options and we look forward to working with Congress and all interested stakeholders in moving to implement these ideas.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Cavaney follows:]

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

I'm pleased to present the U.S. oil and natural gas industry's views on gasoline prices. We welcome your interest and hope it encourages policies that address the root causes behind these most recent spikes.

Higher crude oil prices, set on international markets, have driven most of the increases. When prices crested above $42 a barrel not too long ago, refiners were paying more than $1.00 for each gallon of crude oil used to make a gallon of gasoline. Higher crude oil prices reflect rapidly growing world demand relative to slower growing supply.

The International Energy Agency (EIA) says economic expansion is fueling the biggest increase in world oil demand in 16 years. In the U.S., oil demand is up 2.8 percent over a year ago. International demand is projected to be up 2.9 percent this year, with a 23-percent year-on year increase in China during the second quarter. China's crude oil imports grew 36 percent last year, making China the second largest importer of crude oil in the world. There has also been strong demand growth in India and other Asian countries.

World supplies have been insufficient to keep prices moderate because of several factors, including OPEC production cuts, the aftermath of strikes and political turmoil in Venezuela, troubles in Nigeria, and domestic policies that prevent development of promising U.S. oil fields.

Based on last week's gasoline prices, the cost of crude oil to refiners accounted for about 43 percent of the price at the pump. Taxes accounted for 21 percent. The remaining 36 percent represented the cost of refining, marketing and distribution as well as profits.

Today's tight crude market—and the resulting higher crude costs—couldn't be predicted although we've known that demand was rising. For years, government and private energy analysts have talked about this. A few years ago, the U.S. Energy Information Administration (EIA) estimated that in 2020 it would take new oil production capacity equal to eight times Saudi Arabia's current output to replace lost supply from declining fields and to satisfy new growth in world demand. We've known we would need to bring substantial new production on line, but until the last six months, weaker economic conditions, which restrained growth in demand for crude oil, has masked the problem we've been facing.

The other principal contributor to the rise in gasoline prices is tightness in our nation's gasoline markets. With our economy improving, Americans are consuming markedly more gasoline, up three percent compared with last year. While U.S. refiners are producing record amounts, strong demand and a reduction in gasoline imports have tightened supply, putting upward pressure on prices. Less gasoline has been imported, due—at least in part—to new low sulfur gasoline requirements and much broader use of ethanol. Even with refineries running flat out, strong demand has kept inventories below average. Refiners have been operating at an average utilization rate of about 95 percent over the past few months. To put this in perspective, peak utilization rates for other manufacturers average about 82 percent.

Regulations targeting industry have made it hard for refiners to expand capacity and for distributors to move supplies around when localized refinery and distribution problems occur. Both have contributed to tighter markets and higher gasoline prices. Four years ago, the National Petroleum Council (NPC), an industry advisory group to the U.S. Department of Energy, noted that the industry would be "significantly challenged to meet the increasing domestic light petroleum product demand with the substantial changes in fuel quality specifications recently promulgated and currently being considered." Some of these changes are now being implemented including gasoline sulfur reductions and the removal of MTBE from part of the gasoline pool.

Nationwide, the amount of sulfur in gasoline was reduced from 300 parts per million (ppm) to a corporate average of 120 ppm effective January 1, 2004, giving refiners an additional challenge in both the manufacture and distribution of fuel. Equally significant, California, New York and Connecticut bans on use of MTBE went into effect January 1. This is a major change affecting one-sixth of the nation's gasoline market. Where MTBE was used as an oxygenate in reformulated gasoline (RFG), it accounted for as much as 11 percent of RFG supply at its peak, and substitution of ethanol for MTBE does not replace all of the volume lost by removing MTBE. (Ethanol's properties generally cause it to replace only about 50 percent of the volume lost when MTBE is removed.) The missing volume must be supplied by additional gasoline or gasoline blendstocks.

Many of the policy adjustments recommended by the NPC to mitigate the impacts on markets of these and other fuel changes have not been not adopted by our government.

Higher gasoline prices have improved profits, but average profit margins were below those of other industries in the first quarter, as reported last month in Business Week magazine. The U.S. oil-and gas industry earned 6.9 cents on the dollar. The all-industry average was 7.5 cents. Our profits in percentages are small. In dollars, they are large due to the massive scale needed to compete in the world's largest industry. A new competitive-scale refinery will cost $2 to $3 billion. And, over the last decade, companies spent about $5 billion per year on environmental compliance with refinery and fuels regulations. While significantly improving air quality, these investments also help explain the low percentage return on refinery investment—5.5 percent—over that same period: an amount less than half the average

return—12.7 percent—for the S&P industrials. Yes, our revenues can be in the billions, but so, too, are our costs.

Today's oil and gas industry is highly competitive. Some suggest past mergers are responsible for higher prices. The data do not support such claims. In fact, companies have become more efficient and continue to fiercely compete. There are almost 60 refining companies in the U.S., hundreds of wholesale and marketing companies, and more than 165,000 retail outlets. The biggest refiner accounts for only about 13 percent of the nation's total refining capacity; and the large, integrated companies own and operate only about 10 percent of the retail outlets. The Federal Trade Commission (FTC) thoroughly evaluates every one of our merger proposals, holds those mergers to the highest standards, and subjects the industry to a higher level of ongoing scrutiny. For decades, investigations of price spikes have consistently exonerated the industry of any wrongdoing.

A recent U.S. General Accounting Office (GAO) report raised the issue of the impact of mergers. It concluded that they raised average wholesale gasoline prices by one-half cent per gallon. However, even this modest increase deserves serious questioning. FTC chairman Timothy J. Muris has strongly criticized the reliability of the GAO report: "In 30 years as an antitrust enforcer, academic, and consultant on antitrust issues, I have rarely seen a report so fundamentally flawed as the GAO study of several oil mergers that the Federal Trade Commission investigated under my predecessor, Robert Pitofsky. As the Commission unanimously said in its August 2003 letter to the GAO, this report has major methodological mistakes that make its quantitative analyses wholly unreliable; relies on critical factual assumptions that are both unstated and unjustified; and presents conclusions that lack any quantitative foundation. As a result, the report does not meet GAO's own high standards of ,accountability, integrity, and reliability' that one expects from its reports and publications."

Other evidence further undermines the GAO's conclusions. For example, a comparison of U.S. Energy Information Administration price data for the six years before the mergers, 1990-1996, and a similar period after, 1997-2003, shows that retail prices were on average five cents per gallon less in the latter period. A price breakdown shows that four cents of the decline resulted from lower costs to manufacture, market and distribute gasoline.

Critics of the mergers sometimes suggest that the industry is able to manipulate prices because it has become much more concentrated, with a handful of companies controlling most of the market. This is untrue. According to data compiled by the U.S. Department of Commerce and by Public Citizen, in 2003 the four largest U.S. refining companies controlled a little more than 40 percent of the nation's refining capacity. In contrast, the top four companies in the auto manufacturing, brewing, tobacco, floor coverings and breakfast cereals industries controlled between 80 percent and 90 percent of the market.

We don't know what prices will do in the future. We do know we will continue working hard to increase supplies of crude oil and gasoline. High prices are strong incentive, and companies value their reputations as reliable providers of petroleum products. Today, we have fewer than half the refineries and 90 percent of the capacity of the early 1980s—the last period of extended price spikes. As for building new refineries—the last was in 1976—investors will need to believe the return on investment will be adequate and that refiners will be able to obtain the necessary permits. For years, getting permission to build a new refinery in the United States has been extremely difficult, if not impossible.

Over the long run, better energy policy is essential. Enacting the comprehensive energy bill conference report to H.R. 6 is an important first step to addressing obstacles contributing to today's higher gasoline prices. Improved land access policies, adjustments in refinery tax rules, and reform of new source review regulations are examples of other important changes needed to help ease constraints on crude oil and gasoline supplies. Such changes could also benefit other energy markets. When crude oil prices are high, some fuel switching occurs, increasing demand—and prices—for natural gas and coal.

We need action on many fronts: more conventional energy supplies, expanded alternatives and greater energy efficiency. To have an impact, energy legislation needs to be fully comprehensive—not piecemeal. In addition to oil and gas, our companies already have a large presence in alternatives—hydrogen, fuel cell technology and solar, to name a few. And, we take a back seat to no one in increasing energy efficiency.

However, companies, and virtually all energy analysts, realize that oil and natural gas will continue to provide the world with most of its energy for many more decades. EIA projects that consumption of renewables in the U.S. will rise at a far faster rate than consumption of oil and gas. Nevertheless, the U.S. still expects to

consume 44 percent more oil and 38 percent more natural gas in 2025 than in 2002. That's about 3.2 billion barrels more oil on top of the 7.3 billion we'll consume this year.

People are frustrated by today's higher prices. They rely on gasoline to go to work, to school, for errands and vacations, and to realize an improved quality of life. Taking into account inflation, prices aren't the highest they've ever been, but they are far higher than the nonsustainable lows of 1998 and 1999.

Oil and gas is a long-term, massive scale, large investment business. Few tools are available for providing substantial short-term relief for gasoline consumers. The best way to help is to subscribe to the "do no harm" rule and work together—government and industry. For the long-term, we have workable options, and we look forward to working with Congress and all interested stakeholders in moving to implementation.

The CHAIRMAN. Thank you very much.

I received a note here. I thought my opening remarks were quite clear, but maybe they were not, that we were going to take the witnesses and then ask questions. I did not think it was take a witness and then proceed. I thought it was all of them.

Let us proceed with you, Mr. Kilduff.

STATEMENT OF JOHN P. KILDUFF, SENIOR VICE PRESIDENT, ENERGY RISK MANAGEMENT GROUP, FIMAT USA, INC.

Mr. KILDUFF. Thank you, Mr. Chairman, as well and members of the committee. It is a privilege to be here.

The recent record high prices for crude oil have captured the attention of consuming and producing countries around the world, and both constituencies are justly concerned about this fact. Consuming countries face a considerable drag on economic growth, and producing countries face the potential for reduced demand for their product and increased competition in the world market as new production is brought on line and then stays on line to compete for market share.

There has been some debate over the economic impact of high crude oil prices, but as a senior Chinese government official whose country is terribly reliant on imported crude oil said, security of energy supply is a dilemma that must be addressed or we risk jeopardizing economic growth. If there is an energy crisis in the future, it will be an oil crisis.

The vulnerability of crude oil supplies to the United States and the world is the central theme of my testimony. Based on recent data, nearly 50 percent of the crude oil imported into the United States is sourced from countries that have experienced civil or labor strife, acts of terrorism or war in the past year and a half. These countries include Saudi Arabia, Venezuela, Nigeria, and Iraq. Globally 20 percent of all crude supplies are sourced from these and other trouble spots. This adds up to a tremendous vulnerability for the United States and its economy.

Prices right now are very much reflecting these future vulnerabilities rather than actual supply shortages. The continued attacks on Iraq's oil infrastructure and, more importantly, terrorist attacks in Saudi Arabia have put the market on notice that crude oil is squarely in the cross hairs, adding as much as $12 to the benchmark price of crude oil in the United States.

The high crude oil prices have, however, evoked a response from OPEC and Saudi Arabia in particular. Saudi Arabia rose to meet the challenge of an oil price it saw as deleterious to its own inter-

ests. It has raised production by nearly 1 million barrels a day recently from 8 million to 9 million barrels. Some have doubted the ability of Saudi Arabia to continue to produce at this higher level. They should not. Saudi production approached 9 million barrels just last year during the first 3 months of the war in Iraq.

Crude oil prices have risen steadily actually since November 2001, as the country and global economies recovered from the attacks of September 11. During this period, China has experienced double-digit demand growth, along with strong demand from other emerging economies such as India and Brazil.

The steady price rise was helped along by a litany of supply concerns within producing countries. In addition, OPEC sought to cut production several times in an effort to avoid what it viewed as a potential over-supply of crude oil.

Of all the factors that determine crude oil prices, none is more inversely correlative than the prices and the level of U.S. crude oil inventories. Back in January of this year, these inventories hit a 30-year low and record prices ensued. While inventories have since rebounded to levels consistent with historical norms, the previously mentioned security concerns and the failure of producing countries to strongly commit to ensuring adequate supplies have, until just recently, trumped this fundamental factor.

The energy markets have also attracted the attention of the investment community overall. It appears that oil is increasingly serving as a proxy for inflation, terrorism, and other concerns in a role traditionally filled by gold or other investments.

As consumers at the pump are very much aware, very expensive crude oil is being refined into very expensive gasoline, and gasoline prices have been affected to an even greater degree by two other factors: first, demand that has not only increased over the years, but is now sustained throughout the year. The so-called driving season is really almost no more.

The decision by two of the largest States, in addition to mandated change in their gasoline formulation, resulted in an isolation of supplies on the east and west coasts from neighboring States and really the rest of the country. Specifically, New York, along with Connecticut and California, mandated that the additive MTBE no longer be used as the oxygenation component in their gasoline. In the case of California, there it has for some time been an isolated State from neighboring States due to its more rigorous pollution control regimen, but the decision by New York and Connecticut especially roiled the gasoline market because it had the effect of cutting available supplies in New York Harbor in half, as New Jersey continued to allow MTBE.

The situation is magnified and resonated across the country because New York Harbor is the delivery point for the NYMEX unleaded gasoline futures contract and is the seminal pricing point for gasoline nationally. This resulted in a concern for the potential of outright shortages of gasoline in the market, which manifested itself in record prices on the futures exchange and at the pump.

Looking ahead overall, the best case scenario for consumers envisions demand growth that proves to be manageable, coupled with growing supplies from OPEC and promising increases in production from eastern Europe and western Africa.

The worst case scenario, though, is not necessarily the flip of that scenario. We are only a supply disruption event away from even higher prices that we have just experienced, as capacity on all fronts is strained.

And the worst, if you will allow me, of the worst case scenarios involves potential for regime change in Saudi Arabia or merely a successful attack on that country's oil infrastructure. The power to control oil prices has never been so concentrated nor dependent on a single country.

Thank you.

[The prepared statement of Mr. Kilduff follows:]

PREPARED STATEMENT OF JOHN P. KILDUFF, SENIOR VICE PRESIDENT, ENERGY RISK MANAGEMENT GROUP, FIMAT USA, INC.

WHAT DRIVES CRUDE OIL AND GASOLINE PRICES?

John P. Kilduff is Senior Vice President of the Energy Risk Management Group of Fimat USA, Inc. The opinions expressed in this testimony are those of the author and do not necessarily reflect the views of Fimat USA, Inc.

The recent record high prices for crude oil and gasoline have captured the attention of consumers and producers. Both constituencies are justly concerned: consumers face significantly increased expenditures on virtually all aspects of their lives and businesses at a time when the global economy seems to be experiencing a renewed robustness. Producers are also concerned that prices have risen too high as well, threatening their future prospects. A reduction in economic activity will reduce demand for their product. In addition, high prices attract further exploration and production, while increasing competition and reducing their ability to maintain a level of control over crude oil production and prices.

There are several key factors driving crude oil and gasoline prices:

1. The basic relationship between supply and demand is the principal determinant of the price of these globally traded commodities. While that premise is most basic, the factors that determine the sufficiency and perception of both are more complex.

2. Currently, the greatest factor determining prices is the perceived uncertainty or vulnerability of future crude oil and gasoline supplies.

3. This sentiment is driven by the fact that approximately 50 percent of the crude oil imported into the United States and one-fifth of the global supply comes from countries that have experienced instability, civil strife, terrorist attacks, or war.

4. Demand for crude oil has grown consistently over the past decade. Global consumption is currently running in excess of 80 million barrels per day, up approximately seven percent from 2000 and roughly 17 percent since 1995. The greatest rate of increase of late has come mainly from emerging economies in Asia, especially China and India.

5. The recent high prices have evoked a response from the Organization of Petroleum Exporting Countries ("OPEC"), with Saudi Arabia taking the lead by providing the market with upwards of one million barrels per day of additional crude oil.

6. Historically, there has been a highly inverse correlation between the level of crude oil held in commercial inventories in the United States and price. The United States has experienced historically low crude oil prices when inventories have been above average (and high prices when inventories have been lower). Domestic crude oil inventories hit a 28-year low in January and record crude oil prices ensued.

7. The transparency provided by the energy markets has attracted the attention of speculative interests, who appear to view oil as a safe haven or proxy for terrorism concerns in the way gold used to be a haven in prior eras of uncertainty or rising inflation.

8. Crude oil is the principal manufacturing component in gasoline production. Every dollar in the price of crude oil translates directly into 2.4 cents per gallon of gasoline on the breakdown of the barrel.

9. The decision by New York and Connecticut to proscribe the use of the gasoline additive methyl tertiary butyl ether ("MTBE"), as part of their clean-air rule attainment regimen, and the decision by New Jersey and other east coast states to continue its use, roiled the gasoline market, as supplies became bifurcated in New York Harbor, which is the principal trading point for gasoline nationally. California's decision to eliminate MTBE also served to further isolate its supply from neighboring

states which has resulted in extreme price spikes on even the slightest reported refining problems, due to the feared impact on available supplies.

10. Gasoline demand has grown steadily, straining refiners' abilities to manufacture sufficient supplies.

11. The refining industry has contracted over the past 15 years because of a consistently poor operating environment. Besides the challenging economics, permitting issues appear to be formidable and make it unlikely any new refineries will be built in the United States in the future.

The chart, above (and below)*, shows the relationship between commercial crude oil inventory levels and the weekly closing price of West Texas Intermediate crude oil as reported by the New York Mercantile Exchange ("NYMEX"). Low crude oil inventories in 1996-1997, which occurred because of the advent of more efficient inventory management processes by major oil companies, coincided with a significant rise in crude oil prices. Prices fell considerably during 1998 as inventories built up, due, in part, to a lack of production discipline with OPEC that led to an over supply of crude oil globally.

In 2000, prices rose throughout the year as inventories fell. Renewed compliance by OPEC with production restraints, as well as fears within the market that producers lacked the capacity to meet demand, fostered the rally. Producers, however, met the challenge and prices responded. The terrorist attacks of September 11, 2001 furthered the price decline, initially, as concerns for the global economy predominated market sentiment. The build up to war in Iraq and falling crude oil inventories set the foundation for the current rally, which dates back to November of 2001. Commercial inventories fell to their lowest level in 28 years in January 2004, as crude oil rose to its highest price level ever on the NYMEX. Since then, inventories have rebounded and we are now beginning to see prices ease, as this fundamental factor begins to overwhelm supply fears.

SUPPLY VULNERABILITIES

Recently, many market observers, including myself, have characterized current crude oil prices as being comprised of a security premium, constituting as much as $15 per barrel. This is a function of various problems within a near plenary of oil producing countries. Based upon crude oil import data for December 2003, 52 percent of imports were sourced from countries that experienced either civil unrest, labor unrest, terrorism, or war within the past year. Of the five largest suppliers of crude oil to the United States: Canada, Saudi Arabia, Nigeria, Venezuela, and Iraq; only Canada is currently seen as a secure source of supply.

Nigerian oil workers and the indigenous population engage in labor stoppages and other forms of protest against Western oil companies that operate in the country with some regularity. In effect halting, to varying degrees, the supply of oil. Nigerian oil, due to its chemical composition, is particularly well suited to the manufacturing of gasoline. As a result, these disruptions have an exaggerated effect on gasoline prices when they occur.

In Venezuela, the ascendancy of Hugo Chavez as President has had one of the largest impacts of all on the global crude oil marketplace. At his direction, Venezuela renewed its commitment to OPEC production quotas. Mr. Chavez, however, faces considerable opposition within Venezuela—he was briefly ousted in a coup d'etat, but returned to office within three days. Venezuela's state-owned oil company fired many of its workers after a strike in early 2003, which was undertaken to protest government policies. Venezuela's output still has not returned to pre-strike levels.

The war in Iraq was an extremely significant event in the oil market, due to its obvious importance as a major source of oil. Not very well known, however, was that Iraq was an important source of crude oil for the United States prior to the war. During the years before United States and British troops went into the country, Iraq, under the oil-for-food program, exported between 500,000 and one million barrels per day of oil to the United States, according to API import statistics. The recovery in Iraqi oil exports has been impressive, with almost two million barrels a day of production being generated by Iraq's southern oil fields. Operations in the northern oil fields have been beset by attacks on the miles of exposed, highly vulnerable, pipelines. The northern oil assets represent upwards of 700,000 barrels per day of additional production that, if added to the current output, would rival prewar levels.

The recent terrorist attacks in Saudi Arabia and the continuing attacks on oil infrastructure in Iraq are largely responsible for the extant security premium in crude

*NOTE: All charts have been retained in the committee files.

oil prices. Historically, Saudi Arabia has been the stalwart in terms of being able to fill production gaps when they have occurred. The mere idea that the Kingdom may be the source of a supply disruption has caused available crude oil to become even more valuable in the face of such an uncertainty.

DEMAND FACTOR

Increased energy consumption by China has been a leading factor in driving crude oil prices higher. China's voracious appetite for raw materials has engendered a macro commodity price rally that has been well chronicled, during the past year. Recently, China surpassed Japan to become the second largest consumer of crude oil, behind the United States, and the country continues to set new records for consumption month after month. China's reported GDP growth is approaching 10% per annum and is forecasted by some to reach 11%, validating its projected demand growth for crude oil, which has risen at an astounding year-on-year pace of 30%.

Despite high crude oil and refined product prices, demand remains strong in the United States and is expected to continue to grow at approximately 2.0% per year for the foreseeable future, consistent with the overall growth rate of 1.5% to 2.5% per year for industrialized countries. As referenced above, Asian demand, including China, is expected to grow by double the rate for industrialized countries.

OPEC RESPONSE

Officials within OPEC have publicly questioned whether or not a true supply shortage actually exists; and they have blamed high crude oil prices on speculators and the gasoline supply situation in the United States. However, Saudi Arabia has clearly identified $40 per barrel as a line in the sand. In mid-May, Saudi Arabia undertook steps to increase exports in June. In order to maintain unity among fellow producers within OPEC, the idea of a formal increase in the group's quotas was discussed and finally agreed to on June 3rd.

In my view, the final pronouncement, which disappointed the market to a small degree, was not important. Saudi Arabia and the United Arab Emirates stepped forward to quell an oil price that was viewed as too high and have put upwards of one million additional barrels of crude oil on the market. During the past several weeks, United States crude oil imports have exceeded 10 million barrels per day, well above the five-year average of just over nine million barrels per day. Increased Saudi production appears to account for some of the increase.

Institutions that may have traditionally focused on equity and fixed income markets appear to have gained a growing sophistication, regarding the energy markets. The last leg of the rally in crude oil prices, which dates from September 2003, has been accompanied by a significant participation by non-commercial market participants. This moniker is typically associated with hedge funds or companies that are not in the oil business. Commodity Futures Trading Commission ("CFTC") reporting requirements makes their position well known to the market; and the crude oil market's depth and liquidity appear to have attracted these investors. As a result, it appears crude oil is increasingly serving as a proxy for inflation, terrorism, or other concerns in a role traditionally filled by gold or other precious metals.

Gasoline implied demand has increased virtually every year for each of the past six years. In 1998, implied demand averaged 8.5 million barrels per day. During the first five months of 2004, implied demand has risen to over nine million barrels per day. With five-year average production at 8.3 million barrels per day and five-year imports averaging 695,000 barrels per day, it is relatively easy to see how even slight refinery problems, shipping disruptions, and demand spikes combine to cause a volatile gasoline price environment.

As stated previously, crude oil is the principal component from which gasoline is manufactured. One barrel of crude oil produces 42 gallons of gasoline. And every one-dollar rise in the price of a barrel of oil translates into a 2.4 cent per gallon increase in the cost of gasoline. The approximate $26 rise in crude oil prices, since their low in November 2001 to the highs reached in May, translates into a 60 cent per gallon price rise in gasoline. Gasoline prices can rise in greater amounts, independent of the price of crude oil, due to other factors unique to it. The availability of blending components, refinery operations, barge and pipeline shipping constraints are among the determining factors.

The decision this past year by California, New York, and Connecticut to proscribe the use of the additive MTBE in favor of ethanol for the oxygenation component for gasoline, while neighboring states maintained its use, has roiled the gasoline market. These three states represent one-sixth of total gasoline sales in the United States and 45% of all nationwide reformulated gasoline sales. California had previously isolated itself, in terms of supply, due to its enhanced pollution requirements

for gasoline. The decision by New York and Connecticut has had a pronounced effect on prices because a major consumption area was basically bifurcated as New Jersey and surrounding states could not readily share supplies with New York and Connecticut, straining the entire system.

The effect on prices was particularly transparent as New York Harbor, situated between New York and New Jersey, is the delivery point for the gasoline futures contract traded on the NYMEX and acts as the seminal gasoline pricing point for most of the country.

Now that the summer driving season is upon us, gasoline supplies appear adequate. Refiners raised operating rates to near record levels during the second quarter of this year; and total motor gasoline imports also rose during this time period. Of particular note, Venezuela's state oil company, Petroleos de Venezuela S.A., initiated the export of gasoline suitable for blending with ethanol for the New York and Connecticut market.

The chart above is representation of the operating environment for refiners, dating back nearly ten years. The relationship between crude oil futures and oil product futures (gasoline and heating oil) is referred to as the "crack spread." This term has its origin in the refining process, in which a barrel of crude oil is refined or cracked into its component parts. While there are several ratios available to measure the relationship, the referenced spread measures the relationship of the sum of two parts gasoline and one part heating oil against three parts crude, reflective of the breakdown of the barrel.

The chart shows that, with the exception of three brief periods during the past several years, the profitability of refining a barrel of crude has remained stagnant and the overall operating environment has not been very profitable. During the illustrated time period, the spread or profit averaged slightly less than five dollars per barrel with considerable operating periods of less than four dollars per barrel profitability. The economics of the industry have not rationalized the necessity of building a new refinery for quite some time.

During the second quarter, refiner profitability, as measured by the crack spread, has increased markedly and refiners increased their operating rates in order to capitalize on the profitable environment. The effect of this has been increased supplies rapidly coming to market and total motor gasoline inventories exceeding their five-year average, recovering from near-record low levels experienced as recently as last November.

Senator CAMPBELL [presiding]. Mr. Berry.

STATEMENT OF DAVID BERRY, VICE PRESIDENT, SWIFT TRANSPORTATION COMPANY, ON BEHALF OF THE AMERICAN TRUCKING ASSOCIATIONS, INC.

Mr. BERRY. Thank you, Mr. Chairman. Mr. Chairman and members of the committee, thank you for the opportunity to appear today to discuss the issue of what drives fuel prices. I am with Swift Transportation, vice president of that company. Swift has over 18,000 trucks. We employ 21,000 good, safe working people and have over 3,000 owner-operators.

Fuel is very important to Swift. We use 900,000 gallons of diesel fuel every single day. 900,000 gallons every single day. Needless to say, we pay very close attention to the price, the supply, and the demand for diesel fuel.

I am here today also representing the American Trucking Association, ATA, and speak on behalf of our industry as well.

Our industry uses over 32 billion gallons of diesel fuel every year. 32 billion gallons.

To maintain the health of the trucking industry, we need one national diesel fuel. One. Today we have two diesel fuels. In California, we have a special formula put together by the California Air Resources Board and affectionately referred to as "CARB" diesel. And then we have our national standard. We are headed down the slippery slope of four diesel fuels in use to fuel the movement of goods across the United States. We have, as I mentioned, the na-

tional and California standards, and next year in 2005, Texas has come up with their own unique blend for diesel fuel, as has the State of Minnesota.

Why the exceptions to the one national standard? Section 211 of the Clean Air Act mandated that there be one national diesel fuel standard. However, it provided exceptions that the States could ask for in order to reach attainment of the clean air standards. So States and cities and counties with the worst problems, faced with very difficult choices, have searched out a silver bullet, and over the years that silver bullet has come in the form of boutique fuels, or their own special formulation for clean air in their own particular city or county.

I know what these States and counties and cities are up against because in Phoenix, Arizona in Maricopa County, I serve on the technical advisory committee that is faced with making many of these difficult and tough choices in terms of what control measures to use.

Now for my experience with boutique fuels as a trucker and as a user. Last week the average price of CARB diesel, which again is the California diesel, was $2.12 a gallon. That compared to the national average of diesel fuel of $1.73. That is a 39 cent difference, or California diesel was 39 cents more expensive than the national average.

Why? What kind of impact does that have on the user of the fuels and the movements of our Nation's goods? The experts tell me that 4 to 5 cents of that 39 cent difference comes from the cost of production of the fuel, the special formulation. In California, the fuel tax is 12 cents a gallon higher than the national average for the fuel tax. So you add the 12 and the 4 to 5 cents in manufacturing, and that leaves a 22 cent per gallon difference.

Why? Why is it 22 cents more in California for making that special fuel? I have explained the cost of production and the tax component. Well, that just leads me to conclude that when you have a boutique fuel, that you have less competition. There are only a few people, a few refiners that end up making that fuel. And that less competition sets up the potential for severe impacts due to supply disruptions and it creates an uneven playing field for the trucking industry and the truckers.

Now, you may ask why is Swift concerned about an uneven playing field. As I mentioned, I am here representing the trucking industry today as well. So with my trucking industry hat on, it is simply very, very difficult for the small carriers and the small truckers to have the knowledge and the information to show them where the lowest and highest fuel prices are. They get stuck fueling in California, paying those very high prices.

Mr. Chairman, in summary, one national fuel is the answer, and I would urge this committee and this Congress to seriously consider eliminating the exemptions that allow the EPA to create and to approve these boutique fuels.

Thank you, Mr. Chairman.

[The prepared statement of Mr. Berry follows:]

PREPARED STATEMENT OF DAVE BERRY, VICE PRESIDENT, SWIFT TRANSPORTATION COMPANY, ON BEHALF OF THE AMERICAN TRUCKING ASSOCIATIONS, INC. (ATA)

Mr. Chairman and members of the Committee, thank you for the opportunity to appear today to discuss the issue of diesel supply and the impact of recent price spikes upon the nation's trucking industry. My name is Dave Berry, and I am the Vice President of Swift Transportation Company. Swift is on of the largest truckload carriers in the nation and is headquartered in Phoenix, Arizona. We employee over 21,000 individuals and utilize the services of an additional 3,700 owner/operators. In providing these transportation services, Swift consumes more than 900,000 gallons of diesel fuel each day.

I am also appearing today on behalf of the American Trucking Associations. ATA is the national trade association of the trucking industry. Through its affiliated state trucking associations, affiliated conferences and other organizations, ATA represents more than 30,000 trucking companies throughout these United States.

The trucking industry is the backbone of this nation's economy accounting for 68% of the total freight tonnage transported and employing more than 10 million hard-working Americans. Over 80% of all communities in the United States are serviced exclusively by trucks. We are an extremely competitive industry comprised largely of small businesses. Roughly 87% of all interstate motor carriers operate 6 or fewer trucks and 96% operate 20 or fewer trucks.

Diesel fuel is the lifeblood of the trucking industry. For many companies diesel fuel the second highest operating expense after labor, equaling between 10 and 20 percent of total operating expenses. Each year, the trucking industry consumes over 32 billion gallons of diesel fuel. This means that a one-cent increase in the price of diesel costs the trucking industry an additional $320 million in fuel expenses. Today the national average price of diesel fuel is $1.73, nearly 31 cents higher compared to the same period in 2003. So far this year, the national average price of diesel is 11 cents more than last year. If that spread remains at 11 cents, then the trucking industry will pay about $3.5 billion more for diesel fuel this year compared to last year.

Against this background, we greatly appreciate the opportunity to discuss the factors that impact diesel fuel prices. Our remarks highlight the need for a national diesel fuel standard.

A. BOUTIQUE DIESEL FUELS

We believe that Congress should amend section 211 of the Clean Air Act to restore a single national diesel fuel standard and remove EPA's discretion to approve boutique fuel formulations. A single national diesel fuel standard is critical to limiting the duration and magnitude of fuel price spikes, which are devastating to the economic health of the trucking industry. Varying state fuel requirements ("boutique fuels") typically result in fuel price differentials and prevent diesel fuel from simply being transported from one jurisdiction to another in times of shortage. Boutique fuels, due to their limited markets, are produced by only a handful of refineries, which results in less competition and higher fuel prices. California, which requires a boutique diesel fuel, provides a perfect example of this principle. The state's CARB-diesel is a specially formulated diesel fuel with a higher octane index and lower aromatic content than the diesel fuel sold in the rest of the country. Last week, the average retail price of CARB diesel was $2.12 per gallon, which is 39 cents higher than the $1.73 national average for diesel fuel. The cost of manufacturing CARB-diesel adds 4—5 cents extra per gallon. The difference in state fuel taxes adds another 12 cents per gallon. This leaves a 22 cent difference that can only be explained by higher distribution costs and the oligopolistic pricing associated with boutique fuels.

The price disparity that results from state-mandated boutique fuel blends and potential fuel shortages hurts the trucking industry by creating an uneven playing field and causing damaging fuel price spikes. Due to the competitive nature of the trucking industry with operating margins of only two to four percent, a sudden increase in the price of diesel fuel turns a marginally profitable truck route into an unprofitable obligation. Moreover, the companies located within the boutique fuel jurisdiction have an economic incentive to refuel their trucks outside the jurisdiction, resulting in additional vehicle miles traveled, additional fuel consumed, and additional air emissions.

The Clean Air Act provides for a national diesel fuel standard and prohibits states (except California) from requiring fuel formulations that differ from the standard established by the EPA. EPA, however, may grant states a waiver to adopt a unique fuel formulation where the state demonstrates that the boutique fuel is necessary

to achieve compliance with the National Ambient Air Quality Standards and that other pollution control measures are either unreasonable or impracticable.

In addition to California's boutique diesel fuel (i.e., CARB diesel), EPA has granted a diesel fuel waiver to the state of Texas. Beginning in 2005, Texas will require the sale of a boutique fuel that is similar to CARB diesel. Minnesota also will adopt a boutique biodiesel fuel in 2005; however, the state has not applied to EPA for a waiver under the Clean Air Act.

ATA strongly supports a single national diesel fuel standard. We have seen how a myriad of reformulated gasoline blends result in localized fuel shortages and are apprehensive that EPA will allow a proliferation of boutique diesel fuels. If EPA believes there is an alternate diesel fuel formulation that will reduce emissions and not create operational problems for the existing fleet, then that fuel formulation should be mandated nationally.

We believe that the restoration of a single national diesel fuel standard will prevent localized supply shortages and price spikes and request that this Committee consider amending section 211 of the Clean Air Act to achieve this goal.

B. PROPOSED RENEWABLE FUEL MANDATE

The renewable fuel mandate contained in both the Senate and House energy bills has the potential to increase the price of diesel fuel. The reason for this is that biodiesel is significantly more expensive to produce than petroleum-based diesel. In addition, because biodiesel is unlikely to move by pipeline, its distribution costs will be higher than ordinary diesel fuel.

Putting the drastic price differential aside for the moment, the trucking industry also has operational concerns with the use of biodiesel. These concerns include poor cold weather performance at higher blend rates, reduced fuel economy, engine warranty issues, and storage difficulties.

- Biodiesel tends to gel in cold weather, whereas No. 2 diesel typically gels at $-9°$C, soy-based biodiesel gels at $0°$C, and biodiesel derived from animal fat gels at $20°$C. Anti-gelling products, heating systems for fuel tanks and blending with No. 1 diesel fuel have been used to prevent gelling, but each of these options adds to operating costs.
- Biodiesel fuels contain residual alcohol, which can remove deposits from fuel tanks and cause filter plugging. As a result, more frequent fuel filter changes are anticipated, which will increase maintenance costs. In addition, biodiesel is an excellent medium for microbial growth, which could increase fuel system corrosion and premature filter plugging.
- In comparison to No. 2 diesel, biodiesel has a lower energy value. One gallon of No. 2 diesel has 129,000 BTUs, while one gallon of biodiesel has only 118,000 BTUs. This lower energy value may result in less power produced by the engine and a corresponding need to burn additional fuel to produce an equivalent amount of work.

Proponents of biodiesel cite its environmental benefits. These benefits, however, have been drastically overstated. Unless added at high levels, biodiesel has minimal impact on emissions reductions. While evidence exists that certain blends of biodiesel can lower particulate matter emissions, studies show that biodiesel also increases nitrogen oxide emissions, which are a significant problem for most major metropolitan regions and could frustrate compliance with the Clean Air Act's ozone standards

We also must point out the fallacy surrounding the energy security argument. We share policymakers' concerns over our nation's energy security and our dependence upon oil imports; however, biodiesel is not the answer. In fact, if you consider the entire lifecycle analysis of biodiesel production, including the fuel necessary to grow and transport the raw materials, it takes more energy to produce a gallon of biodiesel than the energy released from a gallon of biodiesel.

A biodiesel mandate is merely a transfer of wealth from the trucking industry to the farmers that grow the raw materials. Moreover, the mandate will only serve to increase the demand for these raw materials, which will in turn increase their price, making biodiesel even more expensive to produce in the future. This is a vicious circle that will harm the trucking industry and American consumers. If farm subsidies are necessary, then provide money to the farmers, but please do not force our industry to use a fuel that is dramatically more expensive and will cause unnecessary operational challenges.

C. THE RELATIONSHIP BETWEEN DIESEL ENGINE EMISSION REDUCTIONS AND DIESEL FUEL CONSUMPTION

The U.S. Environmental Protection Agency (EPA) rulemakings have consistently required new on-road heavy-duty diesel engines to emit fewer and fewer pollutants. The most recent revisions to the emissions standards have resulted in significant fuel economy penalties. In fact, the technologies used to comply with EPA's 2004 heavy-duty diesel engine emission standards have resulted in an average fuel economy penalty of between 2% and 5%, depending upon application. EPA's 2007 heavy-duty diesel emission standards will require engine manufacturers to further reduce nitrogen oxide and particulate matter emissions. To comply with these 2007 standards, engine manufacturers have indicated that they will need to use after-treatment devices, such as particulate matter traps. These devices will consume additional fuel during their regeneration cycles. Thus, we are anticipating an additional fuel economy penalty to be associated with EPA's 2007 emissions standards. These fuel economy penalties result in increased demand for diesel fuel, which places additional pressure on diesel fuel prices.

D. REFINERY CAPACITY

While I am confident that other panelists will address the issue of refinery capacity in greater detail, one of the largest culprits of price spikes for refined petroleum products is the lack of capacity. The fact that no new U.S. refineries have been built in over 25 years has resulted in a precarious situation where an upset condition at even one refinery will cause a significant supply disruption that will result in a dramatic price spike. We feel strongly that the construction of additional refining capacity in the United States is long overdue and we support boosting refining capacity in the U.S. in an environmentally safe fashion.

CONCLUSION

The trucking industry thanks the Chairman for holding this hearing and looks forward to continuing to work with this Committee to address these important issues. I would be pleased to answer any questions raised by our testimony.

The CHAIRMAN [presiding]. Thank you very much.

Senators, because I have not been here for a while and you all have, I think I will move to one Democrat and one Republican. Is that satisfactory?

Senator Bingaman.

Senator BINGAMAN. Thank you very much, Mr. Chairman. As I understand it, we have 7 minutes.

Let me just start right into questions. I think we all understand the seriousness of this, particularly the high price of gasoline that consumers are facing.

I wanted to ask Mr. Caruso, first of all, do you have a calculation as to the impacts that these higher fuel prices are having on the average consumer?

Mr. CARUSO. On average, we are expecting an increase in the average cost of gasoline, of about $300 per family.

Senator BINGAMAN. $300 per year?

Mr. CARUSO. Yes, sir.

Senator BINGAMAN. So that would be during this calendar year, you would expect there would be a $300 additional cost to the average family. Is this just gasoline or does this also include higher natural gas prices?

Mr. CARUSO. That is based on the average consumption of gasoline and the average miles driven per car.

Senator BINGAMAN. So it is just gasoline prices. Okay.

The CHAIRMAN. Could you ask at what price?

Senator BINGAMAN. The price is the one that you mentioned. It has been at $2.06 per gallon.

Mr. CARUSO. Yes. The annual average, in our latest estimates, will be about $1.90.

Senator BINGAMAN. Let me ask about boutique fuels. This is an issue that was raised when Vice President Cheney issued the Energy Policy Report back in 2001, and that report, among its recommendations, called upon the Environmental Protection Agency to "study opportunities to maintain or improve the environmental benefits of State and local boutique fuel clean fuel programs while exploring ways to increase the flexibility of the fuels distribution infrastructure, improve fungibility and provide added gasoline markets liquidity."

As far as I know, we have not seen any action out of EPA on any of that. Are you aware of anything, Mr. Caruso?

Mr. CARUSO. I am not aware of any, Senator.

Senator BINGAMAN. I have written to the President and also to the head of EPA and the Secretary of Energy urging that the President direct the Administrator of EPA, with technical assistance as needed from the Secretary of Energy, to require revisions of State implementation plans—these are the implementation plans for the Clean Air Act—to reduce the overall number of fuel specifications by at least a factor of 5 and preferably a factor of 10. We have about 110 different specifications for fuels nationwide now, which seems excessive I think to anybody.

I would ask, Mr. Cavaney, do you think that kind of an action by EPA would be helpful in dealing with this boutique fuel situation?

Mr. CAVANEY. Yes, sir. Senator, I have two points. No. 1, as long as we understand it is not a silver bullet for the current situation, I do think it is part of a solution over the longer term to try and get more efficiency, more flexibility into the system.

One of the things we need to be cautioned about is in this year we are going through very dramatic changes in the fuel slate that we provide. No. 1, we rolled in the new low sulfur gasoline, and No. 2, a significant increase in the amount of ethanol that is being used in place of MTBE. Both of those will change the emission characteristics and properties to a significant amount.

And we would agree with you. What would make sense would be to do a study and look at what could be done, but we need to stabilize generally this massive change that is going on right now and then understand what we have. Then that would be the appropriate time to look at suggestions such as you have outlined.

Senator BINGAMAN. The letter I did to the head of EPA and to Secretary Abraham urged that they come up with what we called a fuels harmonization options paper, which would try to eliminate some of these differences and tell us how we could get there.

Mr. Berry, you made a big point about the increased price that truckers are having to pay as a result of boutique fuels in the diesel area. Are you aware of any action that is going on to bring some harmony or resolution of this issue, or do you think this proposal makes sense?

Mr. BERRY. Senator, yes, I think the proposal makes sense. No, I'm not aware of any action, and the situation is getting worse and not better.

Senator BINGAMAN. Let me ask about another issue that I also wrote the President on, and that is on the issue of additional refining capacity. I think, Mr. Caruso, you said that part of the increase in the price of gas at the pump that people are seeing is a result of tightness of refining capacity. Is that a correct interpretation of what you said or not?

Mr. CARUSO. I think it is a combination of capacity and the whole distribution system, which includes, of course, imports and transportation. We are operating at about 96 percent of operable capacity right now at the refineries. It is a contributing factor. I would not put it at the top of the list.

Senator BINGAMAN. Well, let me just indicate another recommendation that I made to the President in this same earlier letter, and that was that we develop a national fuel strategy which would look at this issue of refining capacity and try to bring together industry representatives, along with regulators, consumer representatives, and others, to find out what the obstacles or barriers are to building additional refining capacity that could actually be dealt with. Is this something you think makes sense, Mr. Cavaney?

Mr. CAVANEY. Senator, we definitely need additional capacity. The last time we built a grassroots refinery in this country was 1976, and the reason is twofold. No. 1, the returns, as I have mentioned to you in my statement—and I have more data, if you would like, for the record—are just terrible on the refinery sector and have been historically going back decades. So No. 1, in this market where you compete for capital, that has to be dealt with.

The second is the permitting process, particularly at the local level, which is an open-ended process, and the NIMBY phenomenon and other things are a huge discouragement to put a grassroots. So if the focus were on trying to increase the capacity within existing refineries, I think there is a quicker payoff. I think it has an opportunity to make more sense and we would like to recommend that we concentrate on doing that.

The new source review, when those were being discussed in the late 1990's, we saw basically it froze the industry in its tracks because we were uncertain of the outcome. And if you will look at capacity additions, they have stopped for the last 4 or 5 years because there has not been a full resolution of that issue.

So there are things that we can deal with and they should be dealt with because the demand is certainly there and we in the industry want to be able to provide the product to our customers.

Senator BINGAMAN. My time is up, Mr. Chairman.

The CHAIRMAN. Thank you very much, Senator.

Let us stay on that subject for a minute. How long would it take, based on current law and construction time, in your opinion and anybody else's opinion, to construct a refinery in the United States today? A major refinery, not a little, tiny one.

Mr. CAVANEY. A major refinery, as I said, is probably going to run between $2 billion and $3 billion. Probably from the time you actually were able to start the construction until you could actually deliver product, it is about 4 years. But the big uncertainty is the permitting process, the part that is up front and tying up all that

capital and distraction if in fact it does not go through. So that is really where the attention needs to be, as well as the return.

The CHAIRMAN. I want to ask you one additional question. Do you have any reason to believe that those who objected in the past because we have a major problem would stop objecting now?

Mr. CAVANEY. We have no feeling that that is the case. We might do a parallel. Our industry also produces natural gas, and there has been a great effort to try and increase the amount of LNG, liquified natural gas, which is also a permitting problem. We find, as much as people prefer environmentally natural gas, at the local community, a great deal of objection to the siting, the same problem we encounter with the refineries.

The CHAIRMAN. I walked out for a minute and it was not for pleasure. The Minister of Oil from Qatar was out there, and obviously they are pretty important to us. In talking with him, as in talking with most ministers, they all say they want to be friends of the United States and keep the price of oil down, but that has not happened other than in the last month or so.

What is your opinion, any of you, as to the risk factor that is built into oil today? And let me explain what I think is a risk factor. I think risk factor is what happens in the marketplace when those who sell and buy oil are frightened or are scared of the fact that there may be a major interruption as they look at the world. Is that correct? Is that what it means?

Mr. CARUSO. Yes.

Mr. CAVANEY. Yes.

The CHAIRMAN. What is the risk factor now?

Mr. CARUSO. Well, there is a definite difference of opinion among analysts on this particular issue. EIA happens to be of the view that the fundamentals are the main driving force that got us to $30-plus crude oil. Now, right now we are at, as I mentioned, $37.50. Our models would indicate that just supply and demand factors alone probably would get us to between $32 and $35. So you could say that there are several dollars of a "risk premium," but I would say that our main view is that the very strong demand, tightness in crude oil supply, and the refining situation are far more important, but the long positions of the commodity index funds that Mr. Kilduff mentioned in his testimony are certainly putting some upward pressure on price.

The CHAIRMAN. Does anybody else have an opinion?

Mr. KILDUFF. Yes, Mr. Chairman. In my statement actually I referenced this——

The CHAIRMAN. I am sorry. I did not hear it.

Mr. CAVANEY. That is quite all right.

But no, basically depending what side of the fence you are sitting on, what has happened in the global supply picture has really been a parade of horribles over the past 2 years. Most of the major producing countries have had some problem of some sort whether it is the war in Iraq, the terrorism in Saudi Arabia, the Venezuelan situation with the new president there and a major oil worker strike. This has affected supply and has really made the oil markets quite nervous. I think there is a lot of air in the price right now as a result of these troubles around the world.

When I look at U.S. inventories, they are within their 5 and 10-year averages. Granted, demand has gotten a lot stronger and they could be under pressure, but we are seeing real strong imports that tell me that it is going to take some time for that supply fundamental to overwhelm the security fears.

The CHAIRMAN. Well, I wonder as we saw the Saudi Arabian helicopter come down, it looked just like an American helicopter, built by us or by somebody that builds like it, and out the back end came all the paratroopers just like we have. They stormed the building which had all the people in it. That incident caused the price of oil to go up, did it not?

Mr. KILDUFF. Yes, it did, Mr. Chairman. We are reacting to almost daily reports, even the most recent kidnapping certainly, when we hear statements, just advisories from the State Department, for the oil workers to exit the country. What will happen if there is an attack on the infrastructure? We wonder who is there to fix it.

The CHAIRMAN. It seems to me for those sitting at the table to say there is no risk factor when that kind of an incident causes oil prices to go up, what is that? It seems to me that all the countries that are not even involved in that problem all get involved in raising prices. Is that not true, Mr. Cavaney?

Mr. CAVANEY. Mr. Chairman, I think there is no question there is a risk factor involved, but everybody defines risk to themselves in a slightly different manner. The one phenomenon to watch very closely—I want to assign myself with Guy Caruso's remarks earlier. The closer supply and demand are, the more volatility you get because calculating risk then becomes much more volatile and can move literally on one dynamic. When there is a spread that there is ample supply to serve demand, the volatility of the risk gets reduced significantly and it does not go so much. Basically right now our situation is I think most people were surprised by the growth in worldwide demand, and that put the floor under the kind of risk assignment that you have cited.

The CHAIRMAN. Well, there is nothing we can do about the enormous market involvement by China. China is out there buying everything. If they cannot get oil, they buy oil fields. If they cannot get steel, I think they are buying steel mills. And the price of steel in America is going up. So we cannot do anything about that.

Let me close by saying that I think we need an energy bill. I do not think we can necessarily do anything about oil directly, but I think it is important that we do something about a wide array of energy issues. There are some who say the bill is dead. I say they are dead wrong. I think we still have a chance. I hope we can work something out.

I want to close by saying the United States of America can be brought to its knees by terrorists without them ever setting a foot in the United States. If we are waiting around for terrorists who are going to do something here, they do not have to do that. If they are halfway smart—and we seem to think they are—all they have to do is cause an oil disruption of significance and you will see what will happen. How much was the Iranian—when they held up on supply? Do you any of you remember what it was, Mr. Caruso?

Mr. CARUSO. Yes. The Iranian production went from 6 million barrels a day down to 1.5 million barrels a day within 3 months.

The CHAIRMAN. And that was for the whole world market.

Mr. CARUSO. Yes, sir.

The CHAIRMAN. And what happened to America?

Mr. CARUSO. Well, we were fortunate in that we were getting most of our oil from the western hemisphere at that time and others stepped up. So the price doubled. That is basically what happened.

The CHAIRMAN. And there were short supplies.

Mr. CARUSO. There were short supplies.

The CHAIRMAN. Do you remember in Brooklyn somebody shot a driver who drove around to get an advantage and somebody pulled a pistol and shot him at 5 o'clock in the morning? Think what would happen if we had a supply disruption three or four times that because of terrorists.

Thank you very much to all of you. I am probably going to have to leave, but I am going to move in order. Senator Wyden, you are next.

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

Mr. Caruso, the west coast gasoline market is not seeing the relief that you described. Today my constituents are paying $2.23 a gallon. Over the weekend, Californians were paying more than $2.30 a gallon. It is clear to me there are a lot of reasons why gasoline prices are going up: worldwide demand, the shenanigans of OPEC.

But you repeatedly come here and advocate policies that hammer my constituents. I am going to take another crack at seeing if I can understand why.

The administration has created a strategic reserve of petroleum products in Iraq for the purpose of keeping the price of gasoline low for Iraqis at a cost of $150 million to the U.S. taxpayer. Iraqis now pay 5 cents per gallon for their gas, while on the west coast people are getting clobbered, as I have described.

How is it that you can advocate not taking even modest steps with respect to the Strategic Petroleum Reserve? Let us just say holding off on some deliveries. It is 94 percent full. How is it that you can advocate not even taking modest steps that can provide some pricing relief for people on the west coast when they are getting hit this way?

Mr. CARUSO. Well, just for the record, the Energy Information Administration does not advocate any policy. We are a policy-neutral organization.

You may be referring to the analysis that I mentioned previously, that we thought that deferring deliveries into the SPR would have a minimal impact on the oil market. We still believe that the amount of oil going in there is so small that it would have little or no effect if it were stopped.

Senator WYDEN. Let me give you a memo to make clear what you are advocating. I am going to have the staff put it in your hands while we talk.

On February 6 of this year, you wrote a memo to the Secretary of Energy, Secretary Abraham, saying that the impact of taking 200,000 barrels per day of oil from the private market would be to

increase oil prices by up to $1 per barrel. Using your own calculations, did the administration's decision to increase the SPR fill rate from the average rate of 120,000 barrels per day to 300,000 barrels per day not increase prices by nearly $1 per barrel?

Mr. CARUSO. The decision to increase the fill rate I think had nothing to do with this analysis. That was already in the cards.

This analysis is based on the assumption that for every 100,000 barrels a day on the market, it could lead to as much as, I think it says, 60 cents to $1, if everything else were unchanged. It also says in the memo that we do not necessarily agree with the assumption that other things would be unchanged. For example, if OPEC saw the U.S. deferring fill or using its SPR, it certainly could take actions to counter that very quickly.

Senator WYDEN. Mr. Kilduff, I gather you feel that SPR deliveries are contributing to some of the pricing problems people are seeing, but I would like to get you to state your position on the record.

Mr. KILDUFF. Yes, I do, Senator. A fill rate of 100,000 represents, obviously, 700,000 barrels for a week. At 300,000 it is 2.1 million barrels. A 2.1 million barrel increase in U.S. commercial crude oil inventory in a particular weekly report would be a big build for the particular week and would help with downward pressure on crude oil prices.

I disagreed with, I guess, Secretary Abraham that this is an insignificant amount of oil. I do not think it is. I think it has been a contributing factor and I think in some weeks, when the market has been disappointed with the commercial inventory rises—or sometimes they have even been negative in spite of our forecasting of them rising—the numbers have jibed with what has gone on to the SPR. And if that oil had been on the open market, it might have been a different story.

Senator WYDEN. I am going to leave this subject, but it is clear to me we have got a Strategic Petroleum Reserve for the Iraqis. They are paying 5 cents a gallon for their gas while people on the west coast are being hammered. Using your own math, Mr. Caruso, it contributed to a huge increase of the per-barrel cost, and that has just been confirmed by Mr. Kilduff. So I hope on one of your upcoming visits here, the administration will support policies that at least do not inflict the level of pain that those policies are inflicting on my constituents.

The second area I want to ask about involves you, Mr. Cavaney. Here is what the two largest refiners said in their first quarter 2004 reports. These come from the companies.

ExxonMobil reported—and I quote—"U.S. gasoline prices help give the world's largest publicly traded oil producer its biggest first quarter refining profit in 13 years."

Now, Chevron Texaco said—and I quote here—"U.S. refining, marketing, and transportation earnings of $276 million improved $206 million from last year, a 300 percent increase. The primary reasons for the improvement were an increase in average refined product margins, higher sales volumes, and lower operating expenses."

Isn't the industry using these current high oil prices as another vehicle to hit the consumers when you are adding on huge refining

profits? Those come from industry publications. They are not made up. Those are the industry's figures. I would like to hear your reaction to the industry reports about these huge refinery profits.

Mr. CAVANEY. I can speak, Senator, for the industry, not for individual companies, which you have cited.

The data from multiple sources is really quite clear on what the profit margins are. I will be glad to enter it for the record. Here is data from the Department of Energy that goes back over 25 years and will show that consistently over the cycles the refining part of the business earned significantly less than the industry in total and significantly less than the Standard & Poor's industrials. We are a highly cyclical industry and companies make individual investment decisions when to bring on extra capacity and when not to. So you will get large swings in an individual company, but it is important to stay focused on the overall industry.

As I mentioned in my statement, the first quarter of this year, the overall industry's profit margin was 6.9 percent. The all-industry average—that is all industries together—was 7.5. There were a number like pharmaceuticals, biotech, financials that were at 19, 18 percent. So we do not earn a profit margin that is even up to the all-industry average, let alone to be at the higher levels. And Wall Street reflects that in their investment in it.

Senator WYDEN. The two largest refineries in the quarter had huge profits. They come from SEC figures, Exxon and Chevron. The record is different than what you have described.

Let me ask you about one other area because my light is on. Refinery capacity is so critical. Why is it that Shell is shutting down its Bakersfield refinery? The west coast market again is very, very tight, as we talked about. It has been documented that there is a lot of oil in the San Joaquin Valley. There is, for example, significant evidence that the refinery there has been very profitable. It just seems to me that it is bizarre that not a single oil company has come forward to buy the Bakersfield refinery. Given how important refinery capacity is to the west coast, given the huge profit margins of refineries that I have just documented, how is it that nobody is interested?

Mr. CAVANEY. I cannot comment specifically on all of the details, but some public information that Shell did make available to everyone—basically the documents that they prepared, in order to be able to invite buyers to come and look at the potential for investment here, were released by someone into the public. What those documents clearly show is that refinery lost money in 2001, lost money in 2002, and it is projected to lose money in 2004.

Shell also, in that same public release, indicated that there were sufficient declines in their source of crude oil and that they are a landlocked refinery. Therefore, they wanted to sell the refinery. They are open to all credible buyers to come and see them, sit down and visit, and try and see if an opportunity can be arranged.

So it is a decision. A final chapter has not be written on it yet. They said that they announced well in advance to provide an opportunity for people to come and look at the opportunity and decide for themselves whether they wanted to make the investment.

Senator WYDEN. My time is up, but the valley produces 650,000 barrels per day. Only half of it is being used at refineries in the

area. Again, the public record does not reflect what you are telling us, Mr. Cavaney, and it starts with those profits that I have cited, that are documented in SEC filings.

I gather we have temporarily lost our chairman, with Senator Campbell acting. Mr. Chairman, I would ask unanimous consent to enter into the record a report that I am releasing today that we have spent a number of months working on that documents the campaign of inaction that is being waged by people like Mr. Caruso that I think contributes mightily to the problems we are seeing on the west coast of the United States.*

Senator CAMPBELL [presiding]. Without objection, that will be included in the record.

Senator WYDEN. Thank you.

Senator CAMPBELL. Now I would like to ask a couple of questions too. Also, I do not know if everybody can see this light or not from where you sit, but I would ask you to observe that light, if you can.

We have been talking in broader terms. I would like to focus a little more about what I call where the rubber hits the ground, what the increased costs are doing in terms of jobs. So I would like to ask most of my questions to Mr. Berry who represents ATA and Swift.

First of all, the trucking industry probably carries 98 percent or more of just everything we use in daily life. What is the profit per mile of a trucking company on average? I understand it is like 2 cents a mile or something, very, very small. Is that correct?

Mr. BERRY. Mr. Chairman, that is correct and that is the average for all companies. It is a very slim margin.

Senator CAMPBELL. The industry is somewhat divided. The OOIDA, which represents a lot of independent drivers, has been pushing Congress through a bill that was introduced in the House side by Chairman Rahall to have a surcharge on shippers for trucking to offset these spikes that we are facing in the cost of diesel. What is ATA's position or Swift's?

Mr. BERRY. Mr. Chairman, I believe that ATA's position on that is—well, let me just check here. It is neutral, just like in the truck, you know, neutral.

Senator CAMPBELL. I know where that is.

[Laughter.]

Mr. BERRY. Mr. Chairman, I think the issue on the fuel surcharge—and that, so the committee knows, is a formula based on prices published by the U.S. Government, Department of Energy, that would automatically trigger price increases to the customers. I think the industry is split as to whether or not they want to start down that path toward economic regulation.

Senator CAMPBELL. You may not know the answer to this, but maybe Mr. Caruso does. Do you know what percent of our trade deficit is imported oil?

Mr. CARUSO. I do not have that offhand, but I could certainly supply it for the record.

[The information follows:]

In 2003, 22.8 percent of the total merchandise trade deficit was from net imports of crude oil and petroleum products. For the year 2003, the U.S. merchandise trade

*The report has been retained in the committee files.

deficit was $535.5 billion. Of that amount, net imports of crude oil and petroleum products amounted to $122.3 billion.

Senator CAMPBELL. Could you get that for the committee? I have heard numbers going from 20 percent up to a third of our trade deficit has something to do with imported oil. I think most of the committee members would like to know that.

Back to Mr. Berry. Did I understand you to say that your company Swift pays 22 percent more per gallon in California than Arizona for fuel?

Mr. BERRY. Mr. Chairman, the example that I used was 39 cents per gallon more, and when you took out the cost of taxes because California's tax rate on fuel is higher than most States, so that accounted for 12 cents. And then the cost of production for the special formula, the CARB diesel fuel, was about 4 to 5 cents. And that left 22 cents that was unexplained.

Senator CAMPBELL. You are Phoenix based. Can a California trucking company that may be in Barstow, right across the border from Arizona—they are paying more per gallon in California than Arizona. If they had a yard or a tank or something in Arizona, can they come over and get fuel and fill up in Arizona and avoid that extra charge in California without any penalty?

Mr. BERRY. Mr. Chairman, that is correct. They can and they do do that. Swift has extensive operations in California all up and down the coast, and we purchase—I am estimating now—about 100,000 gallons of diesel fuel per day in California.

Senator CAMPBELL. I mention that because years ago when I was in the State legislature Colorado passed an increased cost to diesel fuel and we found truckers fueling up in Senator Thomas' State and Senator Bingaman's State and just going right through Colorado not buying any fuel at all because ours was more. And we defeated the purpose of trying to raise more revenue for the State by taxing ourselves right out of business.

Mr. BERRY. Mr. Chairman, the market sometimes can be a very cruel judge. In truck stops, you will see the fuel vendors popping up on the State lines to take advantage of those situations.

Senator CAMPBELL. Thank you. Well, my time is up but maybe just a personal note, if I might have my colleagues' indulgence. I have a CDL. I got through college by driving years ago and still drive. A couple of years ago I wanted to know more about what are called Rocky Mountain doubles and triples, which are combinations of trailers that we use in some interstates. So I went to a refresher school, and right after I got out of the refresher school, I got a call from Swift wanting to know if I wanted a job. I did not know that the big companies now recruit out of trucking schools. I wanted to thank you, but I respectfully declined that offer then. I declined it then. I am retiring now. I may be interested now.

[Laughter.]

Senator CAMPBELL. On the list here, I believe it is Senator Dorgan.

Senator DORGAN. Mr. Chairman, thank you very much. Mr. Chairman, you know and others know that in rural States we have almost twice the burden of these increased prices as they do in urban States. I mean, in Wyoming and Montana and Colorado and North Dakota, Alaska, it is not a big deal to drive 100 miles or 200

miles to pick up parts, to go to a social event, do things like that. On the east coast, they will pack an emergency kit to go 40 miles to see a long lost aunt or uncle. For example, North Dakotans use almost twice as much gasoline per capita as do New Yorkers. So when you see these price spikes in gasoline, it has a much higher burden on consumers in rural States.

I used to teach some economics in college. I understand when the price of a barrel of oil rises, spikes up, it is going to have an impact on the price at the pumps. I understand that. I understand, given the circumstances and what has happened in the world price, it is expected that you would see a higher price at the pump.

But I want the witnesses to understand and others to understand that there is a healthy skepticism here on Capitol Hill for a couple of reasons about what happens when you see price spikes. I chaired some hearings with respect to the price spikes in electricity in California, and we were told by Enron executives and others, well, this was the market system. The market caused these prices to increase. We now know from criminal indictments that it was, in fact, not the market at all. Big enterprises took advantage of consumers, perhaps to the tune of $10 billion. They stole from them. So there is a healthy skepticism here on Capitol Hill about some who would use price spikes to their own purpose and actually cause price spikes to increase margins.

I think we are choked by excessive reliance on production outside of our country, particularly from troubled parts of the world, particularly from the OPEC region. We are choked by increased concentration from the oil industry, which I think is unhealthy for this country. It has been relentless in the last several decades. I think that there is a healthy skepticism about what has happened here on the part of consumers, but not just consumers, on the part of those of us in Congress as well, and we want answers.

Let me go back to this question of the fill rate to SPR. Again, it just seems logical to me that if you reduce the supply of oil at a time when we are in short supply and therefore prices are rising, it is just illogical. Why would you do that if you had the opportunity not to do it?

Mr. Caruso, you and Mr. Kilduff seem to be at odds on that, and yet your February 6 memorandum, Mr. Caruso, says in the second bullet point, that you have a rule of thumb for assessing the effect of unexpected disruptions to commercial oil supply. Applying this rule at 200,000 barrels per day, it would have a price impact of 60 cents to $1 per barrel. It seems to me that Mr. Kilduff is right and your previous memo is right and your testimony today seems at odds with it all.

If you simply short the supply by putting oil in the ground at a time when your supplies are short anyway, you are going to exacerbate the problem. Is that not the case?

Mr. CARUSO. Let me clarify. The memo said that if you had an unexpected either increase or decrease in the supply of oil and there were no offsetting factors, that the rule of thumb indicates that 200,000 barrels a day would lead to between 60 cents and $1 a barrel, which is about 2 to 2.5 cents a gallon. Now, further on in the memo, it explains that our assumption would be that if, in-

deed, the fill rate were stopped, that OPEC production would just be reduced.

Senator DORGAN. I understand all that.

Mr. CARUSO. So that is the rationale behind the memo.

Senator DORGAN. Anytime someone is asked for advice and you give advice, it is other things being equal. Perhaps any number of cataclysmic events occur. But the point is you indicate that another 200,000 barrels per day of supply on the market would have a price impact that would be beneficial.

I make the point that I think Mr. Kilduff made. At a time of short supply, it just seems illogical to me to be exacerbating that short supply by putting oil in the ground. I understand this is not the major part of the price spike, but nonetheless, it is part of that decision making that we have some control of, and I do not think it makes sense to continue putting this in the ground, especially given the percentage of SPR that is involved. You said 94. I think it is 96 or somewhere in that neighborhood.

I think we have a lot to learn about what has contributed to all of these price variations. I am particularly interested in the increased margins that exist, Mr. Cavaney. We just have to track this down. It took us months and months and months of hearings in the Commerce Committee to finally understand that behind it all there was something more than just the market. There was not much of a market in electricity in California or on the west coast. That turned out not to be a free market at all.

Frankly, there is not much of a free market for oil. I know there are spot trading and there is a lot of shallow breathing and that sort of thing that goes on with traders, but there is really not much of a free market regrettably in my judgment because we are held hostage, on the one hand, by the OPEC supply and, on the other hand, by increased concentration in the oil industry.

We will learn as much as we can. I think this hearing is productive.

Senator CAMPBELL. Senator Burns.

Senator BURNS. Mr. Chairman, I will relinquish my time to the Senator from Wyoming because he has other activities that he must attend.

Senator CAMPBELL. We were going back and forth here. I believe Senator Cantwell is next.

Senator BURNS. No. He can have my turn.

Senator CAMPBELL. Yes, that is fine.

Senator BURNS. Or I was going to reclaim my time.

[Laughter.]

Senator THOMAS. Thank you very much. I do have to run.

Obviously, something we can do immediately is on everybody's mind and we need to talk about that. We need to try and do something. Obviously, it seems to me that the real challenge is clearly consumption is moving ahead much faster than is production, and we have got a very difficult long-term problem that we have failed to move on over the last 2 or 3 years that we could have done something here.

But specifically, Mr. Caruso, we had SPR release before several years ago. What kind of an impact did that release have?

Mr. CARUSO. Well, there is a disagreement among analysts on that as well, but it did have a short-term decrease in the price, but prices then rose again within a number of weeks. So there was a short-term reduction in the price but then it increased.

Senator THOMAS. A fairly insignificant impact, however, it is fair to say.

Mr. Berry, you advocated a single diesel fuel standard. I presume under the circumstances we operate under that would be a pretty high standard. Would that increase over the country or have an decrease, as you suggest?

Mr. BERRY. Senator, I think that working with the States and EPA we could come up with the right formula. I do not think it would be a minor tweak to the national formula that exists today, but I think that standard would be one that would allow us to achieve all of our clean air goals and objectives and not burden the rural States with excessive costs.

Senator THOMAS. Come up and help us a little bit with some of the environmental issues on clean air, will you?

Mr. Cavaney, what do you think it would take to have significant incentives for increased refining capacity?

Mr. CAVANEY. I think No. 1, really the heart of this goes to the permitting issues, as I mentioned. The New Source Review project which has transcended two administrations now—it started in the mid-1990's—has yet to be fully clear about what the consequences are of increasing capacity on your refinery while you are doing these other environmental improvements. Therefore, it has had a very chilling effect, which is why capacity has not been done.

So the extent to which the administration has put on the table a series of things that they feel should be considered, I would like to encourage people to take a look at those because the sooner we can resolve that, you are going to bring certainty to the investment climate and people are going to know if they put money in for capacity, they will, in fact, get product out. So there is that.

Plus, working more closely on making sure that there is a timely response to the permitting and that they do not get tied up in an endless circle within the local community or in jurisdictional battles between different parts within the executive branch and the like. So permitting is probably the best answer.

The biggest problem besides permitting is the return. Despite what some people have said here, the return by any standard over time has not been attractive enough to bring in surplus capital. There are other places people can put their money.

So we need to get efficient, be able to provide more product, more certainty. That, in turn, I think will help attract some of the capital and improve the situation there as well.

Senator THOMAS. It is my understanding over time we have had not had any new facilities, but we have had increased capacity in some of the older facilities. But the requirements have been less severe to do upgrading than to build new plants. Is that correct?

Mr. CAVANEY. It is easier in the permitting process. There are many less jurisdictions that need to be involved and there is less of a sensitivity because the facility already exists. As I mentioned, by and large, while reduced by over 50 percent the number of refineries from the high point in 1981, we still produce about 90 percent

of the volumes that we did then. So we have had some creep up, and we were doing just fine until about the last 3 years of the 1990's and here where we hit this New Source Review confusion, which basically sort of stopped capacity expansion in its tracks.

Senator THOMAS. I thank you and thank all of you. But I sure hope we can continue to focus on conservation, on alternatives, on efficiency because clearly if we continue to go as we are in terms of our usage, we are going to far beyond our capacity to produce. Thank you very much.

Senator CAMPBELL. Senator Cantwell.

Senator CANTWELL. Thank you, Mr. Chairman.

Mr. Cavaney, thank you for being here. I would be glad to hear from the other panelists, but my questions are specific to you and the American Petroleum Institute.

The west coast, California, Washington, and Oregon, have traditionally had higher gasoline prices than the rest of the country and some people say that this is because of the unique fuel blends and the lack of refinery capacity. For us in Washington State, since we have five refineries, that is a little hard to understand.

But my question today is more specific. The West has been gouged by market manipulation on electricity. How do we convince the public that the same market manipulation is not happening with gasoline prices? I guess my question is in regard to this article that was recently in the oil price information services that speculates on the number of exports of U.S. distillate product abroad, that basically says, "Even as the U.S. markets have advanced to some of their highest wholesale and retail levels on record, the trading departments of multinational companies have been actively sending cargos of low and high sulfur fuel abroad."

In fact, it mentions one company, BPA, which has popped up on ships and charter lists shipping out a lot of cargo and basically that there is nothing illegal about this. It is usually counterbalanced by the number of imports that we have, but marketers are bristling over having watched the spot prices and the refining margins move to record levels because of these exports.

So I want to ask you specifically about that. I do not know if you want to comment on that, but I have some specific questions. I know we are limited in time.

But my first question is, is there currently a system in place to track the disbursing of refined petroleum products from a particular refinery?

Mr. CAVANEY. One of the categories that people become concerned about is the subcategory of distillate, which is diesel fuel. We do not collect data in sufficient amount of detail to be able to track diesel fuel per se. We track the category "distillate," which you referred to. We are a very minor exporter of distillate compared to the amount that we import. It would be literally a drop in the bucket there.

So distillate data is tracked. We collect it on a weekly basis. EIA does. It is reported. It is readily available to everyone.

The principal cost pressures there are many of the same things we have with gasoline. It is made from crude oil, which on the world markets tracks up highly, and it also is in great demand.

The capacity of the refineries essentially is so tight that it succumbs to some of the same kind of concerns.

One of the points you mentioned in the beginning was the confidence that people should have about what we have to say in fighting the problem that occurred with the electric situation in California. I would like to ask and would be glad to provide you and enter for the record, if you would like—ours is the other way. I have here a record of over 30 years of major investigations by the Department of Justice for many, many different kinds of administrations, by States Attorneys Generals, by local areas and all, looking into the subject of gouging, collusion, price spikes and everything like that. Every single one of these studies has publicly exonerated the industry from any wrongdoing. We do not have the huge market shares or the controls that other industry has. We are not concentrated to the extent that they are and, therefore, do not have the sort of market power that people oftentimes talk about that is not substantiable from the data.

Senator CANTWELL. So is there a current system on the books to track the disbursement of refined petroleum? Do most refineries have that? They have books that show that?

Mr. CAVANEY. And they report data on a weekly basis to our association, and they also report it to EIA.

Senator CANTWELL. So the American Petroleum Institute would open their books, either to the public or to Federal investigators, to look at those books.

Mr. CAVANEY. That data is not available to the public. Obviously, if there is an investigation of some kind, it is available under those kind of circumstances. But it is proprietary information for the companies.

Senator CANTWELL. Well, given this crisis and the perception of price gouging that is going on, would you not want to have some Federal oversight come in and say we have looked at the books and we know that there is not an export problem causing this issue or moving around to increase shortages or increase demand in certain areas?

Mr. CAVANEY. They have been looked at, and the Attorney General from Florida is also looking at our companies. So this process of investigation goes on frequently whenever you have a situation where price spikes go up. It is one of the responses public officials can do, and so it is occurring and that look is being done by people in responsible elected positions.

Senator CANTWELL. So, the American Petroleum Institute members are currently being investigated by Department of Justice?

Mr. CAVANEY. No. I said the Attorney General in the State of Florida has contacted our companies. This is an occurrence, as I said, that oftentimes happens whenever you have price spikes. Public officials would like to have a chance to look into these matters, and it does occur. As I said, I have here, going back, dozens and dozens of investigations over 30 years, all of which have exonerated the industry.

Senator CANTWELL. But right now we have price spikes in the West, and so is there a Federal investigation going on now?

Mr. CAVANEY. Not that I am aware of.

Senator CAMPBELL. The Senator's time is expired.

Senator CANTWELL. Okay, thank you, Mr. Chairman.

If I could just follow up with you later, Mr. Cavaney, about whether the West and those refineries—I do not know if you are inviting a Washington State investigation of that to get the information. But maybe we can follow up with you on that.

Senator WYDEN. Just a procedural question, Mr. Chairman. After our colleagues have finished their first round, would it be possible for those of us to ask some additional questions on a second round?

Senator CAMPBELL. Yes. I understand we have a vote at 12:15. So if you want to stick around, that would be fine.

Senator WYDEN. I very much would like to, including coming back after the vote. This is the most important pocketbook issue to my constituents, and I would very much like to come back, Mr. Chairman.

Senator CAMPBELL. A 12:15 vote and the conference is at 12:30.

Senator WYDEN. I appreciate your thoughtfulness.

Senator CAMPBELL. Senator Murkowski.

Senator MURKOWSKI. Senator Burns was first.

Senator BURNS. May I have my turn now?

Senator CAMPBELL. Senator Burns.

Senator BURNS. And it will not take very long.

Senator CAMPBELL. I was going to skip you, but I guess I will not.

Senator BURNS. I am getting misused and abused.

[Laughter.]

Senator CAMPBELL. Senator Burns.

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

I just want to go back on this SPR thing because I do not think a lot of Americans understand what the SPR is and how it affects our market. Could you just answer real quickly? What is the capacity of SPR? How much oil can we hold?

Mr. CARUSO. 700 million barrels, Senator.

Senator BURNS. How much do we have now?

Mr. CARUSO. The last number I saw was 661 million barrels.

Senator BURNS. What kind of a daily fill rate are we in right now?

Mr. CARUSO. In June, I believe the fill rate was about 30,000 barrels a day. It is much reduced from what it had been.

Senator BURNS. From what source?

Mr. CARUSO. Mostly from royalty-in-kind oil that is produced in the United States.

Senator BURNS. I looked at this thing too because I have got Interior Appropriations. What if we just did not fill during these high times? Maybe we just didn't fill. We didn't release any oil. We held what we had and we put our in-kind oil on the market and took the money for the Government.

Mr. CARUSO. That is correct, Senator. The memorandum that Senator Wyden referred to earlier was produced when the EIA was asked by the Secretary of Energy to answer the question, what would happen. As was pointed out, it said that if you applied the rule of thumb and all other things were equal, it could add about 60 cents to $1 per barrel to the price of crude oil.

Senator BURNS. Well, I wanted to clear that up on SPR.

As far as Montana is concerned, I am kind of like Senator Dorgan. Sure, we drive long distances, but we also have a double-bedded edge too. We have had estimates right now on high energy costs for this crop year. It is going to cost us about 25 to 30 percent of our farm income. That is a big hit. That is really a big hit, getting the crop in and getting it out.

We are not in a position to put anything on the price of our product because our products travel on the open market and I bet you will not see they will pay any more for wheat this year at the elevator or the five companies that buy grain this year will not give you any more just because your energy costs were higher. So we are following this very closely.

I am interested in the situation at Bakersfield. I am familiar with Kern County and its production down there. So we should take a look at that.

But I just think if we want to beat up on the refineries and we want to beat up on people who are trying to find bigger reserves, then let us really beat up on them and put them out of business. Then we will see how high this gasoline can go. We should be working together on this thing.

I am not so much concerned about crude oil as I am about natural gas. Has anybody looked at the gas prices? You are going to look at your electrical rates. Are all of our utilities going to be in front of their public utilities commissions this fall and say, my gosh, we cannot produce this electricity at this rate and hold the rates to the consumer?

And when you apply transportation costs, electricity costs, we are in for a big bounce here. What we ought to be doing, we ought to be working together, rather than trying to find somebody who is gouging the market, and finding larger supplies and taking a look at some of the rules and regulations that we put on production. We should be really looking at that seriously instead of giving it lip service because I am concerned about my farmers. But putting a refinery out of business is not the way to get it done. We have got to start looking for supply, especially local supply.

Senator CAMPBELL. The Senator's time is up.

Senator BURNS. We cleared up SPR, and thank you very much for those answers. I appreciate it because I chair that Interior Appropriations, and do not think we have not been looking at that situation. Thank you for your answers.

Senator CAMPBELL. Senator Murkowski.

Senator MURKOWSKI. Thank you, Mr. Chairman.

Senator Burns, I appreciate your talking about looking to the local supply and looking to the domestic sources. Of course, you all know what I am going to talk about.

Alaska is in no different position than any of the other States in terms of what we are paying at the pump. Our urban communities are paying what you are seeing on the west coast, but I have some outlying areas, most of the State, where we are pushing 5 bucks a gallon for gasoline. I have some 40 villages that are faced with the real possibility of not being able to afford fuel for the winter season. They have to commit to it this summer at this summer's prices so they can get it on the barge before the rivers freeze up. We have a real situation in my State.

And it is ironic that we have more oil, we have more natural gas sitting up there than anywhere else in the country, and yet we cannot get to it. If we had ANWR on line, when President Clinton chose to veto this in 1995, we would have a million more barrels a day coming into this country. It is not the silver bullet. It does not make us energy independent, but it sure helps at a time like this. I know that that is long-term.

But to hear you say that in looking at the supply, we look to OPEC, we look to eastern Europe, we look to west Africa, but we really do not look domestically. It is important that we continue to encourage that domestic reserve.

Talking about the risk factors, this is an area that I have been very keenly focused on, the fact that the more we are reliant on outside sources, foreign sources of oil, the more risk there is. I appreciated your statement, I think it was Mr. Cavaney, when you said that the closer that the supply and demand is, the greater volatility in terms of this risk factor.

Mr. Kilduff, when you were talking about SPR and whether or not it was a good idea, bad idea, whether it really did help the price factor, you have indicated that you feel it might, but what does that do insofar as the balance to the risk? We have not really talked about the increased risk to this country if we do for short-term gain—because we are admitting that it is short-term gain here—if we draw down from that reserve. This is a concern that I have and I have not really heard much discussion about the balancing of the risk against the short-term price gain.

Just very quickly, in terms of the conversation that I believe Senator Cantwell brought up about what the API has in terms of its information, does the EIA get the same reported information as the API?

Mr. CARUSO. That is correct, Senator.

Mr. CAVANEY. They actually get more.

Mr. CARUSO. Actually in a little more detail.

Senator MURKOWSKI. So that information is available. It is out there.

Mr. CARUSO. Yes.

Senator MURKOWSKI. Mr. Caruso, on April 8, the EIA had issued a forecast that the national average price for a gallon of gas would be $1.76. On May 26, the national average peaked at $2.05. You were correct, of course, in noting that it was going to go up, but you were obviously off the mark in terms of how much it was going to go up.

Can you speak to whether or not there could be anything else out there that could make it worse than you have already predicted, than we are already seeing? What else can happen out there? I guess if we have got to prepare for the worst, what should we do?

Mr. CARUSO. That is correct. Our current estimate is that the national average for 2004 will be $1.91, which, as you pointed out, is about 15 cents more than it was in April. But the risk on the upside certainly remains, and I think Mr. Kilduff in his statement enumerated a number of those. So clearly ours is based on the expectation that the production that has been announced by OPEC and others would continue, there would be no further disruptions,

and that there are no industrial accidents, some of which have contributed to the spikes in gasoline in particular.

Senator MURKOWSKI. So your numbers are assuming basically best case, given what we have right now.

Mr. CARUSO. I would say prudently optimistic, yes.

Senator CAMPBELL. The Senator's time is expired.

Senator Talent.

Senator TALENT. Thank you, Mr. Chairman.

Mr. Caruso, let me ask you this. I have heard some people here arguing that if we just released some supplies from the Strategic Petroleum Reserve, why that would drive down the price of oil. And yet, many of the same folks are saying that the price of oil is high because of gouging in the industry or suggesting that that may be the case. That is kind of an inconsistent argument, is it not?

Mr. CARUSO. Yes, sir.

Senator TALENT. Because if the gouging is what is causing it, why, then increasing supply should not make any difference, should it?

How many barrels a day, roughly, do the Saudis put on the world market?

Mr. CARUSO. Their current production is about 9 million barrels per day and they are consuming domestically a little over 1 million. So roughly 8 million of crude oil is exported from Saudi Arabia per day.

Senator TALENT. Does anybody on the panel believe that if the Saudis announced credibly that they were going to increase the amount they were putting on the world market by, let us say, 2 million a day for the foreseeable future, that that would not have a downward influence on gasoline prices? I mean, we all believe that if 2 million more barrels a day, let us say, were to appear on the world market, that would tend to decrease prices, would it not?

Mr. KILDUFF. In fact, Senator, we have already seen that. A July futures contract has fallen some 30 cents already from its high back in March.

Senator TALENT. And largely because OPEC has stepped forward.

Mr. KILDUFF. I would argue it is almost a direct result from the Saudis stepping up to the plate and putting a million barrels on now, and we have already been informed and we know that they have increased supply to the United States in June and they are going to increase it further in July.

Senator TALENT. Not necessarily the pinch hitter we would all like to rely on, but they have stepped up to the plate and increased.

Conversely, if they were to retreat from the on-deck circle and say we are going to reduce the amount of oil we are putting on the market by 2 million barrels a day, why, that would certainly have an upward influence, would it not? We all agree on that. Right?

Mr. KILDUFF. Yes.

Senator TALENT. So basically we are all in agreement here that supply and demand, along with factors like refinery capability, which is just another way of stating supply and demand, is what is determining the price of gasoline because this really is a market. Right?

Mr. KILDUFF. Yes.

Senator TALENT. So would it not follow that anything we could do here to increase the market's confidence that we were going to increase supply in the future would tend to have a downward impact on gasoline prices? Does anybody disagree with that?

Mr. CARUSO. No.

Senator TALENT. So things like making it easier to explore in marginal wells or to explore for oil in Alaska, which my friend from Alaska just talked about, or building pipelines to make it easier to get from one place to another, or increasing regulatory certainty so we could build more refineries, that would all tend to have a downward increase on gasoline prices. We are all pretty much in agreement.

Mr. Chairman, it sounds to me like the energy bill which we have been trying to pass here for about a year and which the chairman talked about because that is what we were trying to do in that bill. It just amazes me that we tried to pass this bill just in my time in the Congress, since I came in in the Senate, for the last year and a half, those of us who have been for this bill have argued against left and right that opposed it, that all the objections raised to that bill were nothing as compared to what was going to happen to this economy and our security when the market doubted the supply of different kinds of energy, and now it is coming true and we cannot seem to turn around and pass this energy bill or some energy bill like it.

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

Senator CAMPBELL. That was the first call to vote. We have a few more minutes. Senator Domenici does not want to come back after the lunch break. Senator Wyden had another couple questions. Did you, Senator Bingaman?

Senator BINGAMAN. I did have a couple of questions.

Senator CAMPBELL. Senator Bingaman.

Senator BINGAMAN. Thank you very much.

Let me ask Mr. Berry a couple of questions. We have all agreed, and I think everyone here, all witnesses and all Senators, has made the statement that there is no silver bullet, but there is a whole range of specific incremental actions that might help.

One of the issues that would be involved with trying to conserve a little fuel, diesel fuel in particular, would be to reduce the idling of heavy-duty vehicles. This is information I have and you can contradict this if I am wrong, but my information is that an average heavy-duty vehicle, a large truck consumes more than 1,200 gallons of fuel per truck per year just idling at truck stops or whatever. Usually that is done, as I understand it, to keep the refrigeration unit going on the truck so that whatever is being transported will not be damaged.

We have put a provision in this tax package that has now passed the Senate a couple of times and is in this fisc bill to provide a small credit to encourage more use of these auxiliary power units so that a truck could turn off the engine, save the fuel there, and turn on an auxiliary power unit to keep the refrigeration unit going. Do you support that? Is that something that you think would be helpful? Does the ATA support that?

Mr. BERRY. Senator, I do not think I can speak for the ATA on this issue. I am not sure what the policy is, but I will get maybe—Senator, yes, ATA supports it.

At Swift Transportation, to be more specific, we have for 10 years been using the computer that controls the engine to automatically shut off our truck after a specified period of time to fight and to reduce idling. Furthermore, the manufacturers have a rheostat you can now put in the cab of your truck much like a rheostat in your home that turns your heat or air conditioner on and off as the temperature dictates, and it does that with the truck engine.

There are many ways to combat idling. The one that you mentioned is a good one, and there is a good company in New Mexico that manufactures them, as I recall.

Senator BINGAMAN. Yes. We want to encourage everyone to buy one of their units.

[Laughter.]

Senator BINGAMAN. Mr. Kilduff, let me ask you. This is a fairly abstruse issue but an important one I believe. The International Energy Agency has a methodology that they use for calculating certain figures they put in their oil market report each month. It is my belief that that methodology is flawed, and accordingly, the report that they issue causes producing countries to undershoot what they ought to be producing on a fairly systematic basis.

As I understand it, IEA uses a method to calculate monthly demand that essentially assumes that there is always going to be the same amount in inventory. They do not take into account differences in inventory levels. Accordingly, when inventories are low, there is a bias against OPEC nations in particular producing as much as they should.

Is this an issue that you have focused on and is it one that you have an opinion on?

Mr. KILDUFF. Well, I know that the OPEC producers themselves formulate their own report for their own call, and we do find that the IEA numbers tend to lag the real picture. There are constant revisions upward and downward based upon what is going on there, but it is an all-important report for the market.

So I guess we take it, to a relative degree, for what it is worth. It is certainly a sound indicator. It is certainly something we look to, but it is one of a myriad of factors that we sort of put into the mix to figure out what real demand is going to be, including our own U.S. demand in particular, because we are obviously the No. 1 consumer. What has really snuck up on the market is the demand in China which I think has been somewhat under-reported.

So with that, the inventory numbers for the OECD countries in that report seem to be fairly represented and they do seem to fluctuate up and down. From there the call on OPEC is something of—I guess they do the best they can.

Senator BINGAMAN. Mr. Chairman, I know Senator Schumer has arrived. He might want to ask a question before the vote. So I will stop with that. Thank you.

Senator CAMPBELL. Senator Schumer, you will have the last 4 minutes. Senator Wyden, I apologize. You are going to have to submit your questions I suppose in writing because the chairman does not want to reconvene.

Senator WYDEN. Mr. Chairman, if my colleague takes his full time, I can still have a couple of minutes, which is what I thought we were going to do.

Senator CAMPBELL. Senator Schumer.

Senator SCHUMER. Yes, I need about 4 or 5 minutes and that is it.

Senator WYDEN. I would be grateful if I could have a few more. We could still be able to make the vote and wrap up at 12:30.

Senator CAMPBELL. We will try it. We will play it by ear.

Senator SCHUMER. Thank you, Mr. Chairman.

As everyone on this panel knows, I have been advocating use of SPR since 2000. So I have a question on that and then I have a question on the ethanol and the specialty fuels.

On the SPR, everyone looks at a basic supply and demand analysis, another million barrels out on the market. I think they are missing a second point, and I would ask each of you to comment on that. And that is, we are in a psychological warfare game with OPEC and when our Secretary of Energy said that they are not going to use the SPR, they basically told OPEC you can do whatever you want. We are not going to counter you. Whereas, if first we said we might use it and then, second, we actually used it, I think what would happen—and I think history shows this to some extent—is that OPEC would be chastened over the next year or 2 far beyond a million barrels of oil a day for 30 days or 60 days, which my resolution, which I know many of my colleagues, Senator Wyden and many others on the committee, have cosponsored.

So my first question to you all—and certainly I would like Mr. Kilduff's and Mr. Caruso's opinion on this—is are we not beyond just simple supply and demand numbers? Because OPEC, being a cartel and trying to figure out how they can control the market, if there was another intangible out there that they could not figure out what we are going to do, would have an effect on prices beyond supply and demand.

Second on ethanol. Some of you have said that the requirement that we use ethanol has raised prices of gasoline. No question about it, particularly on the east and west coasts. So my question is a very simple one. What is your opinion of granting States that are far away from the middle western cornfields—that is what makes ethanol expensive. It is not the production of it, but the transportation. It is an extremely volatile substance and there is no pipeline, so you have got to send it by barge and truck and everything else. What about a waiver for States like New York, like California, perhaps Oregon—I do not know the details there—where the costs are unduly large?

Those are my two questions and maybe I will begin with Mr. Kilduff, then Mr. Caruso, and then everybody else.

Mr. KILDUFF. Thank you, Senator. I have believed for a long time that certainly the SPR is a lever for the United States, that it certainly can be used. I think in 2000, when there was a release, as somebody from the markets now, it had the effect of being a momentum killer for the price rally. Even just the talk of it can certainly send the crude oil prices down on the futures market and kill the momentum of the rally.

I have disagreed that it is an insignificant amount of oil going into the SPR right now as well. I did not say it earlier and I am sorry Senator Murkowski is not here now. I do, however, respect wholly the national security issue that surrounds filling it. There is no question about that.

But, yes, I think it is a lever for the United States to use against the sources of foreign crude oil that are out there.

Senator SCHUMER. Mr. Caruso.

Mr. CARUSO. As an analyst, one thing that I would be concerned about would be if the Government gets into using a commodity surplus to try to manipulate the market; it would be a game. It would be market manipulation.

Senator SCHUMER. Is OPEC not doing that right now?

Mr. CARUSO. Yes.

Senator SCHUMER. You are saying we should not do it even though OPEC is doing it? I would agree in a free market you do not want to do that. My argument is when you have one manipulator, somebody else who says I have an ace in the hole, I may play it, I may not, but you better be careful with your manipulation, it is the very point that OPEC is manipulating the market that leads you to the conclusion that using the SPR will have an effect beyond supply and demand.

Mr. CARUSO. Clearly it is a game. You would have to make sure you would win before you get into it. That is my caution.

Senator SCHUMER. Well, I understand but we have some pretty smart people. We can figure out game theory and all of that.

Let me ask if any others want to comment on the SPR issue beyond what you have said already.

Mr. Cavaney.

Mr. CAVANEY. Senator, I would just make a point. Back in the year 2000, we had an instance where we did release some gasoline——

Senator SCHUMER. Yes, I was very involved.

Mr. CAVANEY. But what happened, referring to Mr. Caruso's report earlier about his memo, is there were consequences because what OPEC did is OPEC cut production by 44 million barrels and prices returned back to where they were. So there was a temporary relief during the time when we took the initial action, but then eventually it reverted back.

Senator SCHUMER. Let me tell you, sir, my view is OPEC was chastened. I understand they did that immediately, but I think it had an effect on them over the next several years, and it really was not until about 8 months ago, a year ago—when the Saudis cut back a million in the spring, that is what sent the thing way up. That alone would not have done it, but that with the increased demand with China and India, sent things skyrocketing.

Senator CAMPBELL. Senator, we are going to really run out of time.

Senator SCHUMER. Can I just ask people to answer my second question just if they think that a waiver from ethanol would make sense for the States far away from ethanol? I apologize.

Mr. CAVANEY. Senator, one of the big problems that is included in the bill that the Senate had an opportunity to vote on last Thanksgiving and then here again not too long ago was the re-

moval of the oxygenate requirement, and were that eliminated—we have proven that we can make gasoline to meet any spec without having to have that in. There is an EPA process where States can go and request the waiver, and API and its member companies support the States having the right.

Senator SCHUMER. You do. Okay, good. I am glad to hear that.

Anyone else on that issue? Then I will defer to my colleague.

Senator CAMPBELL. Go ahead and finish up within a couple minutes, if we can.

Senator WYDEN. Thanks very much.

Mr. Caruso, you always say you never advocate anything in spite of the fact that you nod every time you agree with something. My last question almost sums up the hearing. When you and others disagree with us about the Strategic Petroleum Reserve or the record refinery profits that I have been pointing out, you always say pass the administration's energy bill. Let me just read you what you said in February 2004.

"On a fuel-specific basis, changes to production, consumption, import and prices are negligible." Is it not correct that you are formally on record—I would like to enter this document in the record, Mr. Chairman—as saying that that energy bill will not do anything about gasoline prices that we have been concerned about?

Mr. CARUSO. We did not analyze the full energy bill. We analyzed those components of the energy bill that we could address in our National Energy Modeling System. Your quote is accurate.

Senator WYDEN. Mr. Chairman, I think that sums it up. You have been exceptionally kind. He has said the administration's position is on a fuel-specific basis, the energy bill would have essentially no impact on prices or production or consumption.

Senator CAMPBELL. With that, we appreciate the panel appearing today. The record will remain open for any additional comments, and the committee is adjourned.

[Whereupon, at 12:28 p.m., the hearing was adjourned.]

[The following statement was received for the record:]

STATEMENT OF JOHN C. TOBIN, EXECUTIVE DIRECTOR, ENERGY LITERACY PROJECT

INTRODUCTION

Mr. Chairman and Members of the Committee, on behalf of the Energy LITERACY Project, I want to thank you for accepting this testimony and respectfully request that this statement be part of the hearing record.

My name is John Tobin. I am the Executive Director of the Energy LITERACY Project (ELP), a non-profit 501(c)(3) corporation, whose goal is to achieve a cultural change in how members of society view the role energy plays in their daily lives. For more information about the ELP, our participants and plans, see our web site at *www.energy-literacy.org*.

In order to achieve this goal, we realize that a broad-based national energy education program will be necessary. Therefore, the ELP is teaming with the Colorado School of Mines, the National Science Teachers Association and others to promote such a national program.

We firmly believe in the need for and the benefits of a long-term national program for energy information and education. However, it is especially important today to educate the public about the realities of the energy markets and prices to mitigate the emotional reaction to these prices. The primary interim means to address concerns about energy and in particular gasoline prices is for the public to understand the factors affecting these prices. Then, and only then, can the public support appropriate governmental actions addressing those factors.

In introducing the energy bill in the Senate last year, Sen. Domenici said, "Energy is one of the most fundamental underpinnings of the U.S. economy. Its price and

availability affect all subsequent prices in the U.S. market and without adequate, affordable supplies, our economy and standard of living would collapse."

The American public, and, indeed, the global society, has come to rely on cheap and abundant energy to fuel the global economy. For many, this reliance is perceived as almost a *Constitutional Right*, because the public at large lacks the understanding of the realities of the energy industry's ability to supply this commodity.

Yet, only when energy prices spike up, or there is a perceived shortage of supply, does the public act concerned about energy. Even Federal Reserve Chairman Greenspan's remarks to both the House and Senate committees in 2003 on the natural gas crisis noted that energy is a pocketbook issue. While Congress and the media have picked up on this economic fact, the emotional reaction to the current level of gasoline prices suggests that the public does not fully understand the economics of energy.

GASOLINE PRICE

The following discussion is a composite view of energy prices held by experts who are supporting the ELP's efforts at bringing more literacy on energy to the public. These observations are given in the form of probability distributions because we believe that this approach is intellectually honest, maximizes information, and minimizes unwarranted detail.

Energy prices, just like any other commodity, are generally cyclical. They are not mean reverting but tend to swing about a long-term mean or average value. However, the timing of these cycles and the degree of the swings are not truly predictable. It is only the relative degree that price is away from its mean and current or short-term fundamentals that trigger the next correction.

In addition, all commodity prices also tend to decrease in constant dollar terms (adjusted for inflation) and in terms of purchasing power over time. This benefit to the economy comes from efficiencies in the production of and the consumption of these basic commodities. Nevertheless, it is today's price that stimulates current concerns and is the reason an explanation of the facts must be communicated to the public.

To explain our views on gasoline I will decompose the prices of this critical commodity into three basic components.

- Raw Material (Crude Oil)
- Normal Profit Margins
- Costs mandated by "We the People"

Crude Oil

Since 1890, oil prices have ranged from a low of about $8 per barrel to a high of about $65 per barrel expressed in 2003 dollars. There have been different drivers over the past 114 years beginning with the Standard Oil Trust, followed by a period of free markets. This was followed by a period of "legislated stability" controlled essentially by the Railroad Commission of Texas, then by the "Seven Sisters", followed by the OPEC era. Since the mid 80s the oil markets have been once again relatively free. Today the energy markets in general and the oil market in particular are responding to the "Global Market". This global market no longer respects political borders, and represents a world where the US may still be the biggest kid on the block, but there are many other large players such as the EU, China and other emerged economies. While oil has averaged $20.23/bbl over this time, we see a future that is very volatile and that will average $25 to $28/bbl.

The current price of $38.00/bbl results from many short-term forces that pull up and push down oil prices from this average.

	Per bbl
Upward Forces:	
Fears over terror and unrest in the Middle East	$1 to $5
Concerns over production capabilities in Iraq, Venezuela, etc.	$1 to $3
Competing Governmental demand (Strategic Petroleum Reserve)	$2 to $4
OPEC discipline	$0 to $1
Near term concerns over weather (Inventory)	$0 to $1
Weak US Dollar	$0 to $2
Lowering Forces:	
Cheating within OPEC	−$1 to −$2
Non-OPEC production	−$2 to −$3
Substitution to other forms of energy	−$1 to −$3

There are many other players in this tug of war. While energy analysts can assign different ranges to these factors, this forecast suggests that there is an 80% confidence that oil prices will be within a range of a low of $23 to a high of $37/bbl, with an average in the high 20s to low 30s for 2004. In exceptional times there is a 10% chance that oil could trade below $23/bbl and 10% of the time oil could trade above $37/bbl (as seen today). However, the current bias is to the high side of the components impacting oil prices.

In summary, the raw material, crude oil, is a fungible commodity that is traded globally. It is a very delicate balance. While OPEC tries to control the price of oil, in the long run it is only one player and the price must reflect global market economics of supply and demand.

It should also be noted that it is in OPEC's best interest to keep oil prices in a "reasonable" range to maintain global economic growth and to discourage competition that would cut into its market share. It is our belief that recent OPEC actions reflect this reality.

Crude oil is usually the predominant cost factor seen in gasoline prices. Futures prices for gasoline on the NYMEX and crude prices track very closely ($R^2 = 0.894$). Retail gasoline prices also track this trend ($R^2 = 0.795$ with respect to oil).

The result is a range of raw material costs in gasoline for 2004 of $0.60 to $1.00 per gallon.

Normal Profit Margins

	Per gallon
Refining Margin	*20¢ to 65¢
Transportation	5¢ to 10¢
Gas station profit margin	5¢ to 10¢

*Note: Volatile prices, especially at the high end of the range, encourage financial players to participate in the futures market. Financial hedging and speculation of up to 10¢/gal or more is seen in the net NYMEX Unleaded Gasoline price of 80¢ to $1.75/gal. At the time of preparing this testimony, crude oil was trading at about $38/bbl and NYMEX unleaded gasoline at about $1.20/gal.

Profit margins in the transportation and local retailing segments do not include any potential for local market discontinuities or even local market manipulation.

This results in a cost on top of the raw material of between 30¢ to 85¢ per gallon.

"We, The People"

However, the retail consumer sees many more costs as he fills up his SUV.

Refining costs shown above are also somewhat influenced by "We, The People" who have indicated through our votes regarding environmental and other regulations that we are discouraging the building of any new refineries in the US. While incremental refining expansions have been seen at existing facilities, there has been no new refinery built in this country in the past quarter century. There is some incremental supply of gasoline imported if it can meet local blend requirements.

In addition we have mandated:

Federal Taxes	18.4¢
State and local taxes	*24¢

*Typical

Again, the electorate has decided to fund our highways and other governmental activities with these added costs. While this 35¢ to 50¢ can represent about 25% of the retail price of gasoline in "normal" times, it pales in comparison to taxes seen by European drivers that can be over $4.00/gal in gasoline taxes.

The public has also mandated some 20 specific blends of gasoline that we want in various markets for environmental reasons, which can add up 20¢ per gallon. This does not include the tax credit all the nation's taxpayers transfer to the ethanol producer from our other taxes we pay the government. The net costs that the public *has mandated and must pay for* can be between 40¢ and $1.00 per gallon.

Summary

As with the analysis of crude oil above, these ranges represent an 80% confidence. With these ranges in mind, there should be little surprise to expect gasoline prices to be very volatile in the 2004 energy environment and range from as low as $1.30/gal to as high as $3.40/gal in some markets for a period of time.

Note: In a relatively high price, high cost scenario the components of regular unleaded self service gasoline prices could be as high as:

	Per gallon
Crude Oil at $40/bbl	$1.00
Refining Costs of Operation	0.30
Normal Profit Margins	0.30
We, The People	
Taxes	0.50
Refining Capacity Constraints	0.20
Boutique Fuels	0.30
Financial Hedging	0.20
Net retail price	$2.80

While pre-Memorial Day gasoline prices have begun to decline, the primary source of uncertainty is geopolitical. Further issues that cloud the picture of future supply are the narrow reporting restrictions allowed by the SEC and the lack of good data globally as seen by the different inventory reports from the DOE and the API, etc.

Overall, this analysis is basic economic. High demand (improving global economy and the "right" to drive SUVs) and tight supplies and tight refining capacity are pulling up prices for all energy. In an ever-expanding global economy any additional BTU helps. US efforts to increase domestic supply are limited by geology, but should be encouraged rather than restricted. As noted in the discussion of crude oil prices, the gasoline commodity must also obey the laws of supply and demand, especially in the segmented markets we see in this country today.

EDUCATION

This and similar hearings are generating a great deal of very valuable factual information from many experts regarding a number of factors affecting energy in general and fuel prices in particular, including those factors deemed important safeguards or priorities by the voting public. However, most of the general public remains uninformed about these different elements and can quickly react to single issues without understanding the complexity and the tradeoffs of the full situation.

We suggest that follow up efforts looking into solutions to these concerns over energy include a very strong initiative for a broad based public energy education and information program.

In May of 2001 the President of the United States' National Energy Policy Development (NEPD) Group made the following recommendation in Chapter 2 of the proposed National Energy Policy.

> "The NEPD Group recommends that the President direct the Secretary of Energy to explore potential opportunities to develop educational programs related to energy development and use. This should include possible legislation to create public education awareness programs about energy. Such programs should be long-term in nature, should be funded and managed by the respective energy industries, and should include information on energy's compatibility with a clean environment."

We believe that this statement recognizes the need for a national energy education program in the broadest sense, to support a stable and sustainable energy policy. We urge the Congress to adopt the President's recommendation in the NEPD and direct the Department of Energy to make such a program, which improves the energy LITERACY of the nation, an immediate priority.

Thank you again for the opportunity to provide this testimony.

APPENDIX

RESPONSES TO ADDITIONAL QUESTIONS

FIMAT USA, INC.,
New York, NY, August 2, 2004.

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

DEAR MR. CHAIRMAN: Enclosed herewith are my responses to the questions submitted to me for the record.

I thank you, again, for the opportunity to appear before the Senate Committee on Energy and Natural Resources and give testimony regarding what drives crude oil supply, gasoline demand and the effect on prices.

If I can be of any further assistance to you or the other members of the committee or your respective staff, please contact me.

Very truly yours,

JOHN P. KILDUFF,
Senior Vice President,
Energy Risk Management.

[Enclosure.]

ANSWERS OF JOHN P. KILDUFF TO QUESTIONS SUBMITTED FOR THE RECORD

MINIMUM INVENTORY OPERATING LEVELS—SENATOR BINGAMAN

The latest data from the Energy Information Administration show that commercial crude oil inventories consisted of 303 million barrels, slightly above the five-year average of 296 million barrels. The perspective provided by the five-year average, and even the ten-year average, remains valid. As with any analysis dealing with probability, the greater the number of observable events the higher confidence one can have in predicting an outcome.

Many factors drive prices, at a particular moment in time. I can recall when "just-in-time" inventory management came into vogue in the oil industry and was cited as a major factor for higher prices that were, supposedly, here to stay. That was in 1996, and, in 1998, a global supply glut caused prices to crash. Strong demand in 2000, that appeared to be insatiable and was quelled by a release of oil from the Strategic Petroleum Reserve ("SPR"), was followed, again, by a steep price decline in 2001, as the global economy slowed and the events of September 11, 2001 further dampened the expectation for future crude oil demand. Subsequently, a series of production cutbacks by Oil Producing Exporting Countries ("OPEC") and the run-up to Iraq war, among other factors, fostered a rally in prices that we are continuing to experience.

In the context of the current rally, inventories for the past two years have averaged 285 million barrels and 295 million barrels for the past two years. This is one million and eleven million barrels below the five-year average, respectively. Currently, inventories are 18 million barrels above the two-year average and eight million barrels above the three-year average, which, for now, argues for the utility of the five-year average, due to where prices are in relation to each of these measures.

As we have both noted, the low point for inventories occurred in January of 2004 and coincided with some of the highest nominal prices on record. There are myriad factors that determine crude oil prices, at any one time; however, the inverse correlation between inventories levels and prices is most compelling, most of the time. Currently, prices are continuing to approach their nominal price highs, even with inventories indicating adequate supply levels, on any multi-year measure, proving that no one measure dictates prices. Hence, there is no absolute rule-of-thumb, and

we use all measurement tools available to us, in order to provide as reliable a forecast as possible.

NPC STUDY ON INVENTORY DYNAMIC—SENATOR BINGAMAN

For the record, I am not completely familiar with the NPC study. However, as with any study, it's conclusions appear to be driven by factors being observed at the time of publication. Certainly, neither the NPC nor just about anyone else could have foreseen the supply glut and energy price crash experienced in late 1998. Accordingly, in the intervening time frame, the various political events that have occurred were difficult to predict. What has occurred is tremendous strain on crude oil production and refined product output. Demand for petroleum products has been growing steadily, over the past several years, and production has not kept pace. Refiners must, basically run at full capacity, year-round, in order to meet demand. For example, in 1998 gasoline demand averaged 8.5 million barrels per day, and it now averages over 9.0 million barrels per day, with record setting weeks, approaching 10 million barrels per day, occurring with some frequency. China's voracious appetite for energy has been well chronicled as a recent phenomenon. In the fifteen years prior to 1994, China's energy consumption doubled and is expected to double again by 2006. This borne out by more recent data which show that in the first six months of the 2004, crude oil imports into China have soared, setting a record in June, and are 39% higher than the first six months of last year.

For the time being, as exhibited by the price spikes of the past several years, I believe the highly volatile market state remains extant. The marketplace is extremely vulnerable to even the slightest refinery outages, and transportation and storage constraints also add to this vulnerability. The current price environment has made refining an extremely profitable venture for the first time in many years. This environment has caught the attention of foreign refiners who have attempted to supply gasoline and other refined products to the U.S. in increasing amounts. Increased reliance on foreign source refined products and crude oil is hardly an ideal situation, however. Similarly, it appears to be a tremendous challenge to increase refinery capacity within the United States given the perceived public resistance to such an undertaking. The simple answer to your question of what can be done is that we need to increase supply and/or reduce demand, in order to lower prices. This declaration leads us to consider much harder questions about how these ends are achieved. A combination of allowing the existing refineries to expand their capacity and stretching each and every B.T.U. consumed, in terms of increased efficiencies, would logically serve both of these ends, until such time as other fuel sources can effectively compete with traditional fossil fuels.

Regarding this last point, we cannot change our fuel supply infrastructure overnight. I also don't believe anyone is unwelcoming of clean, renewable fuel sources, in the future. There appears to be a readily identifiable middle-ground, where the acceptance of dirty or even dirtier fuels are accepted by all sides in the short run, as long as a real commitment to transitioning out of these fuels in the long run is secured.

QUESTIONS ON C.A.F.E.—SENATOR FEINSTEIN

As I cited in my opening remarks, China is keenly aware of the problems presented by their dependence on foreign oil. I have been extremely impressed with their foresight and concern in this area. We cannot stabilize gasoline prices without managing our demand for oil. While we are in a situation where every available barrel of oil counts, it is hard to envision the United States being able to substantially increase production of either crude oil or refined products given a lack of proven reserves and community opposition to new or expanded refineries.

It would appear counter-intuitive that the government would be encouraging the purchase of less-fuel efficient Sport Utility Vehicles ("SUV"), based solely on the energy challenge facing the country and the world. Different policy choices could attempt to correct this situation, but other disruptive side effects could ensue, requiring additional policy considerations. For example, changing the treatment of SUVs and lessening their purchase may adversely affect the profitability of the domestic auto industry, which could result in further contraction and a loss of jobs. The weighing of these factors and the ultimate decisions are—to use a popular Washington expression—above my pay grade, however.

We would certainly do ourselves a tremendous favor to encourage and succeed in increasing automobile fuel efficiencies. With all the technological advances of the past thirty years, it is hard to understand why fuel efficiencies are not extraordinarily higher than they are at present. Each mile per gallon of increase fuel efficiency results in a reduction of almost 750,000 barrels of crude oil per day. Encour-

aging the purchase of more fuel efficient vehicles would seem to be a terrific approach toward managing demand and encouraging the types of technological breakthroughs that seem too long in coming.

GASOLINE INVENTORIES—SENATOR FEINSTEIN

A common thread of my testimony has been the inverse correlation between inventories and prices. Certainly, anything that can be done to increase inventories and have a steady and stable stream of supply will help keep prices low. The idea of requiring a minimum amount of gasoline in storage might not assist in achieving this goal. If I understand the proposal correctly, this prescription may result in refiners being forced to keep gasoline off the market, in order to meet the minimum requirements. A slightly different approach may be to create a gasoline reserve, just as we have the SPR for crude oil and the Northeast heating oil reserve. I remain of the opinion that the SPR provides a relatively effective lever for the United States, in balancing against the sometimes-divergent interests of oil producing countries. A gasoline reserve, built up, slowly, over time, with a clearly defined mechanism for triggering releases may help to quell price spikes, when they occur. There would be many challenges, including the need for the reserve to be regional in nature, in order to allow for gasoline that can quickly reach the marketplace and meet the specific grade and formulation of the affected area.

HYDROGEN ECONOMY—SENATOR FEINSTEIN

Regarding this topic, I regret that I am able to offer only a few limited insights.

From my research, it appears a viable and reliable hydrogen fuel infrastructure is, unfortunately, 20-30 years in the future. The principal problem centers on the price competitiveness of hydrogen fuels, as fossil fuels remain the cheapest form of energy by far, even in today's high crude oil and natural gas marketplace.

In the short-run, hybrid implementations appear to hold the most promise. By this, I am referring to technologies that utilize fuel cell technologies that are powered by hydrogen, derived from fossil fuels. This appears to be the most practical approach, which also serves to introduce hydrogen technology to the public and further its acceptance. The increased fuel efficiencies generated from these implementations in passenger cars has been impressive, if not extraordinary. For example, the Toyota Prius hybrid vehicle achieves 60 miles per gallon, and it is competitively priced at around $20,000. As referenced above, regarding fuel efficiency standards, it does not take very much, in terms of increased efficiencies, to displace the need for millions of barrels of crude oil.

I have not conducted an independent analysis of the cost to develop a hydrogen fuel infrastructure. The costs that I have seen put forward by others seem extraordinary and, if accurate, would appear to present a significant barrier to implementation. However, as the committee is aware, there is a great deal of research and development being undertaken in this area, and I would not be surprised to see a significant breakthrough in the next ten to fifteen years. It is clear that hydrogen fuel cell technology is on the verge of becoming commercially viable, and its appeal is furthered by its use of existing infrastructure, due to its combination with traditional fuel sources. If this approach is continued, a transition to a more complete hydrogen future should be smoothed.

DEPARTMENT OF ENERGY,
CONGRESSIONAL AND INTERGOVERNMENTAL AFFAIRS,
Washington, DC, August 20, 2004.

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

DEAR MR. CHAIRMAN: On June 15, 2004, Guy F. Caruso, Administrator, Energy Information Administration, testified regarding what drives crude oil supply, gasoline demand and the effect on prices.

Enclosed are the answers to three questions that were submitted by Senators Bingaman and Cantwell for the hearing record. The remaining answers are being prepared and will be forwarded to you as soon as possible.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

RICK A. DEARBORN,
Assistant Secretary.

[Enclosures.]

QUESTION FROM SENATOR BINGAMAN

Question. Energy experts tell us that the method IEA uses to calculate monthly demand and supply figures is flawed, and that it encourages OPEC to "undershoot" the market in terms of the amount of crude oil it supplies to the world market. The IEA market report treats stocks of oil in the major consuming countries as a fixed, invariable amount. But this treatment of stocks is not realistic, and its effect on IEA's models is to bias them towards understating the amount of oil that OPEC needs to produce for the world market—the so-called "Call on OPEC." A revision to the strategic stock calculation methodology could fix this. Will you comment on how you interpret the statistic and what could be done to improve its computation?

Answer. The IEA does not actually forecast OPEC oil production in its monthly *Oil Market Report*. Instead, it reports a memo item in its world oil supply and demand outlook called the "call on OPEC crude oil plus stock change". It is essentially a balancing item that is calculated as the difference between world oil demand and the supply of oil from all sources other than OPEC crude oil production. Because it is a balancing item, by definition it reflects any judgments in the IEA's estimates of world oil supply and demand.

While the statistic has been commonly used as a proxy for an estimate for the need for OPEC crude oil, this usage is misleading because, as the IEA says in its monthly report, it also includes stock change. Unless the stock change was assumed to be zero, the statistic would not, by definition, be equivalent to the need for OPEC crude oil.

EIA does not follow the IEA's approach. Our customers have found it useful to have a breakout of both OPEC production and stock change. In addition, providing this breakout also serves as a useful check to see whether the analysis behind EIA's oil market forecast makes sense; that is, would a given forecast for OPEC oil production result in the kind of stock change that our forecast implies?

QUESTIONS FROM SENATOR CANTWELL

Question 1. Has the EIA ever analyzed how the fuel mix from a certain refinery is calibrated to meet, or avoid meeting, the supply needs of a particular region?

Answer. No. EIA does not generally analyze how individual refineries are calibrated, but rather how supply responds to changing market conditions on an aggregate basis, using individual refinery data for more in-depth understanding. There are several reasons for this approach.

First, the data we collect from refiners is not detailed enough to allow us to fully evaluate refinery operating options.

Second, companies generally plan their supply from a system perspective, including both refinery supply from all of their refineries as well as purchasing supplies. For example, if they know one refinery needs to undergo some maintenance, they would typically alter production at their other refineries and their purchases to make up for that one refinery's downtime. Thus, what an individual refinery is doing may not be revealing. Furthermore, we do not know which markets a particular refinery's supply may be serving.

Third, EIA is unable to separate planned operations from operational changes made in response to unexpected market shifts. A refinery may not be able to adjust its operations quickly for unexpected needs. Refinery planning for crude runs and product production requires long lead times in many cases. Refineries may use crude oil that can require months to contract and deliver. Product from refineries on the Gulf Coast may need to be produced 21 days ahead of when it is needed so that it can travel up a pipeline to the market area where it will be consumed. While a particular refinery may have little or no discretionary volume that can respond to short-term market signals, other refineries may have some discretion in changing crude oil inputs or adjusting the mix of products they are getting from that crude oil. Because changing operations can be complex, such diversions from planned operations would not be expected to be made until market signals were clear.

For the reasons outlined above, EIA does not focus on individual refinery data in analyzing regional markets. However, several recent analyses, including studies of gasoline price spikes in 1977 and 2000, have used such data to provide additional insights.[1]

[1] Energy Information Administration, Supply of Chicago-Milwaukee Gasoline Spring 2000, *http://www.eia.doe.gov/pub/oil__gas/petroleum/presentations/2000/supply__of__chicago__milwaukee__gasoline__spring__2000/cmsupply2000.htm*.

Question 2. Mr. Caruso, do you agree that the EIA analysis of the H.R. 6 conference report requested of Mr. Sununu, which states "on a fuel-specific basis, changes to production, consumption, imports, and prices are negligible," confirms that H.R. 6 would have negligible impact on gasoline prices?

Answer. In EIA's *Summary Impacts of Modeled Provisions of the 2003 Conference Energy Bill* (February 2004), the Conference Energy Bill (CEB, or H.R. 6) Case projects an increase of 0.3 cents per gallon (0.2 percent) in the average gasoline price and an increase of 0.4 cents per gallon (0.26 percent) in the average reformulated gasoline (RFG) price compared to the Reference Case in 2010. These estimated price increases result mainly from the renewable fuels standard (RFS) which would lead to additional ethanol blended into conventional gasoline.

By 2015, the CEB Case projects an increase of 3.0 cents per gallon (2.0 percent) in the average gasoline price and 8.1 cents per gallon (5.3 percent) in the average RFG price, relative to the Reference Case. Included in this price is the elimination of the ethanol tax credit in 2011, which is expected to increase the gasoline price by the amount of ethanol blended, about 1.2 cents per gallon for all gasoline and 2.7 cents per gallon for all RFG. The remaining cost increases result from the phase-out of MTBE use by 2015. Therefore, the CEB would have the most impact on RFG price when fully implemented in 2015.

The fuel ethanol consumption in 2003 was 2.81 billion gallons. By 2015 when MTBE would be completely phased out, the CEB Case projects the fuel ethanol consumption of 5.57 billion gallons, almost doubling the current consumption level and an increase of 1.81 billion gallons over the Reference Case of 3.76 billion gallons for projected fuel ethanol consumption in 2015.

The EIA study only simulated major CEB provisions that could be modeled, such as the RFS, a nationwide MTBE ban, and termination of the ethanol tax credit. Other petroleum fuel-related provisions such as repealing the motor fuel tax for railroad and inland waterway transportation, small ethanol producer credit, credit for ultra-low-sulfur diesel production, etc. were not modeled. These other provisions were not expected to have a significant impact on gasoline prices even they had been included in the CEB study.

DEPARTMENT OF ENERGY,
CONGRESSIONAL AND INTERGOVERNMENTAL AFFAIRS,
Washington, DC, September 7, 2004.

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

DEAR MR. CHAIRMAN: On June 15, 2004, Guy F. Caruso, Administrator, Energy Information Administration, testified regarding what drives crude oil supply and gasoline demand, and the effect on prices. On August 20, 2004, we sent you the answers to three questions for this hearing.

Enclosed are the answers to three remaining questions that were submitted by Senator Feinstein to complete the hearing record.

If we can be of further assistance, please have your staff contact our Congressional Hearing Coordinator, Lillian Owen, at (202) 586-2031.

Sincerely,

RICK A. DEARBORN,
Assistant Secretary.

[Enclosures.]

QUESTIONS FROM SENATOR FEINSTEIN

Question 1a. Given both rising gasoline prices and geopolitical concerns, do you believe that we can stabilize gasoline prices without managing demand for oil?

Answer. Given the strong growth in both the U.S. and the rest of the world in gasoline demand, the increasingly stringent specifications for gasoline to meet environmental requirements, the difficultly of building new refining capacity in the U.S., and our need to import more gasoline to meet rising demand stabilization of gasoline prices in the long term will require both an increase in efficiency and an increase in production of gasoline and a delivery infrastructure that operates with minimal upsets. With respect to fuel efficiency, the Bush Administration is committed to improving vehicle fuel economy while saving lives and saving American jobs. This Administration has led the effort to improve fuel economy by urging the Congress in 2001 to lift the prohibition against the National Highway Traffic Safety Administration (NHTSA) studying CAFE. The Administration has finalized an in-

crease in the CAFE standard for new light trucks and SUVs, announced options to reform CAFE to achieve all of its goals (including greater fuel economy) more effectively, implemented tough new emissions controls on fuel-efficient diesel engines and fuels, and committed $1.7 billion over 5 years for a visionary hydrogen vehicle program to substantially reduce our need for petroleum products in the future.

EIA analyzed the impact of the new light truck CAFE standards on imports of petroleum products. The new light truck CAFE standard requires an average fuel economy of 21.0 miles per gallon (mpg) in 2005, 21.6 mpg in 2006, and 22.2 mpg in 2007 and beyond. Results of the analysis show that the increased fuel economy standard will save approximately 52 billion gallons of gasoline over 10 years and will reduce imports of petroleum products are reduced 0.25 million barrels per day by 2020.

Question 1b. To follow up, do you believe that the first step we should take is to close the SUV loophole?

Answer. The term "SUV loophole" is a misnomer. By statute, vehicles with certain capability—SUV's—are subject to the average fuel economy standards for light trucks, as opposed to those of smaller, passenger vehicles. Incidentally, the Bush Administration has raised the CAFE standard on light trucks by 1.5 mpg-more than the increases in the previous 20 years combined.

Question 2. One of the factors given as a cause for the increase in gasoline prices is the fact that refineries have had low gasoline inventories for much of the spring. By February 27th, California reformulated gasoline inventories stood at 11.5 million barrels—about 800,000 barrels below last year's inventory low of 12.3 million barrels. As a result, during times of unexpected outages, the refineries have not been able to make up lost volume. Nationwide, US crude oil inventories are currently 11.8 million barrels less than the 5-year average for this time of year. Given that, do you believe that Congress should enact a minimum requirement for gasoline inventories in order to keep gasoline prices more stable in time of unexpected outages?

Answer. The Secretary recently requested that the National Petroleum Council reexamine its 1998 advice on lower operational inventory levels for crude oil and petroleum products. This work will build on a previous NPC petroleum product reports: *U.S. Petroleum Product Supply—Inventory Dynamics*, December 1998. This report provided important advice on the interrelationships between product inventories and retail prices and suggested lower operating inventory levels for crude oil, gasoline, distillate, and kerosene jet fuel.

The advice of the NPC will be valuable in considering any potential actions needed to address inventory holdings and their effect on price. . However, we believe that statutorily mandated gasoline inventories would likely add inflexibility to an increasingly dynamic and 'just-in-time' crude and product delivery system and may increase overall prices to consumers.

As a supporter of the development of fuel-cell technology, I have followed the news concerning the development of this alternative fuel technology closely. I am concerned that advocates of this technology have created a misperception as to when this technology will be readily available for everyday use in the United States.

Recent studies, such as the National Academy of Sciences (NAS) recent report entitled *The Hydrogen Economy: Opportunities, Costs, Barriers, and R & D needs*, suggest that while hydrogen is a potential long-term energy approach for the nation, the government should keep a balanced portfolio of research and development efforts to enhance U.S. energy efficiency and develop alternative energy sources.

Question 3. When do you foresee the U.S. having a reliable hydrogen fuel infrastructure? How much will it cost to develop this infrastructure?

Answer. If the Department meets the performance and cost targets for hydrogen and fuel cell technology established through the President's Hydrogen Fuel Initiative and the FreedomCAR Partnership, industry will be able to make a commercialization decision in 2015.

Assuming this decision is positive, our planning indicates that by 2020, industry will be able to install manufacturing capability for fuel cell vehicles and a limited number of hydrogen stations to serve initial market penetration. If hydrogen fuel cell vehicles are a market success, a fully reliable, national infrastructure could be installed by 2035.

More information on the timeline for the hydrogen economy can be found in the Posture Plan, which is available at *http://www.eere.energy.gov*.

The President's Hydrogen Fuel Initiative is focused on research to overcome the barriers related to the hydrogen production and delivery infrastructure. Except for "learning" demonstrations to identify "realworld" operating issues and to help guide the research, the Initiative does not include installing the infrastructure.

Because many hydrogen production and delivery technologies are immature, cost estimates for building the hydrogen infrastructure vary greatly. General Motors has

estimated $10-15 billion to provide the necessary hydrogen refueling station infrastructure for about 70% of the U.S. light duty vehicle market. (Source: GM presentation by T. Vail at the U.C. Davis ITS Hydrogen Demand Workshop, June 21, 2004). Argonne National Laboratory has estimated $600 billion for a full production, delivery, and refueling infrastructure over a 35 year time frame for U.S. light duty vehicles based on a specific hydrogen production scenario. (Source: M. Mintz, et al, First International Workshop, American Institute of Physics, Newport News, VA, Nov. 2002).

It should be noted that investment to maintain today's petroleum fuel infrastructure is about $40 billion per year (Source: 2002 Oil and Gas Journal Capital Expenditures Survey). However, it is rate of return on investment, i.e. the viability of the business case, which is the deciding factor for fuel infrastructure investment, rather than the absolute investment required.

During the transition to a hydrogen economy, distributed natural gas and electrolysis systems located at the retail fueling station could negate any immediate need for a centralized hydrogen infrastructure. This approach could enable time to ensure consumer acceptance of hydrogen fuel cell vehicles before large investments are made in developing a centralized, national infrastructure, thereby minimizing the investment risk.

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