PETROLEUM REFINERIES: WILL RECORD PROFITS SPUR INVESTMENT IN NEW CAPACITY?

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND RESOURCES

OF THE

COMMITTEE ON GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

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PETROLEUM REFINERIES: WILL RECORD PROFITS SPUR INVESTMENT IN NEW CAPACITY?

WEDNESDAY, OCTOBER 19, 2005

HOUSE OF REPRESENTATIVES,
SUBCOMMITTEE ON ENERGY AND RESOURCES,
COMMITTEE ON GOVERNMENT REFORM,
Washington, DC.

The subcommittee met, pursuant to notice, at 2 p.m., in room 2203, Rayburn House Office Building, Hon. Darrell E. Issa (chairman of the subcommittee) presiding.

Present: Representatives Issa, Kucinich, Watson, and Higgins.

Staff present: Larry Brady, staff director; Lori Gavaghan, legislative clerk; Dave Solan, Ph.D., and Chase Huntley, professional staff members; Richard Butcher, minority professional staff member; and Jean Gosa, minority clerk.

Mr. ISSA. Good afternoon. By unanimous consent, we will consider that a working quorum exists until the ranking member arrives.

The United States has the largest, most sophisticated and most productive petroleum refining infrastructure in the world. The 148 refineries in 33 States are capable of processing about 17 million barrels of crude oil each day into a broad array of products, such as home heating oil, diesel fuel, gasoline, refined petroleum products—products that are essential to the U.S. economy.

The Nation's security and Americans' standard of living depend on petroleum. Petroleum refineries produce products for both industry and the average consumer that do not have easy short-term substitutes. For example, refined petroleum products account for over 98 percent of the fuel that drives the Nation's transportation sector, which means more than just gasoline. Businesses and communities depend on diesel-fueled trucking and transport that deliver food to supermarkets, equipment to manufacturers, and children to schools, which are immediately effected by supply disruptions.

Petroleum markets in the United States respond to supply and demand changes to price adjustments, that in turn create incentives to increase or decrease supply to correct any imbalance. However, decisions to expand existing capacity or construct new refineries will take years to complete, which leaves the United States skating on razor-thin margins for the foreseeable future.

Petroleum refiners have diligently minimized their working capital over the past 30 years. More than 100 smaller, inefficient refin-

eries have closed. Inventories of refined products have steadily shrunk, to emphasize just-in-time delivery.

The country hasn't seen a new refinery constructed since 1976. Nevertheless, U.S. consumers have enjoyed reliable supplies of fuel and relatively stable prices during that time. Existing refineries have updated their technology to improve environmental performance, while significantly increasing production.

Ultimately, efforts to keep petroleum supply costs low have spelled lower prices for consumers. However, optimizing business operations by shrinking inventories and wringing out slack refining capacity provides little cushion against an unexpected disruption of refined product supplies. Hurricanes Katrina and Rita dramatically illustrated this shortcoming. Damage to the Gulf Coast production and refining network upset a delicate, balanced U.S. refined product supply system.

The tight margins between refining capacity and demand enable price spikes to move quickly through the system, directly into the consumer's pocketbook. As with crude oil, we have turned to foreign sources of refined products, such as gasoline blendstocks and diesel fuel, to satisfy our growing appetite.

The country is as dependent on imported products as it was in the late 1970's. Foreign-produced refined products will continue to be a significant component of the U.S. short-term supply, and remain so as long as the economics of imports versus domestic refining favor offshore operations.

Once relatively insulated from global pressure, the U.S. refining sector is now inexorably intertwined with worldwide supply and demand for refined products; not just crude oil.

This hearing will examine the current state of the U.S. petroleum refining industry, the rationale for past and anticipated investments in new or expanded refining capacity, and the economic risks posed by the posture of the industry in a rapidly changing global market.

[The prepared statement of Hon. Darrell E. Issa follows:]

COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON ENERGY AND RESOURCES

OPENING STATEMENT OF
CHAIRMAN DARRELL ISSA

"Petroleum Refineries: Will Record Profits Spur Investment in New Capacity?"

OCTOBER 19, 2005

The U.S. has the largest, most sophisticated, and most productive petroleum refining infrastructure in the world. The 148 refineries in 33 states are capable of processing about 17 million barrels of crude oil each day into a broad array of products, such as heating oil, diesel fuel, and gasoline.

Refined petroleum products are essential to the U.S. economy, the nation's security, and Americans' standard of living. Petroleum refineries produce products for both industry and the average customer that do not have easy short term substitutes.

For example, refined petroleum products account for over 98% of the fuel that drives the nation's transportation sector—and that means more than just gasoline. Businesses and communities depend on diesel-fueled trucking and transport that deliver food to supermarkets, equipment to manufacturers and children to schools, and are immediately affected by supply disruptions.

Petroleum markets in the U.S. respond to supply and demand changes through price adjustments that, in turn, create incentives to increase or decrease supply to correct any imbalance. But decisions to expand existing capacity or construct new refineries will take years to be completed—which leaves the U.S. skating on razor thin margins for the foreseeable future.

Petroleum refiners have diligently minimized their working capital over the past 30 years. More than 100 smaller, inefficient refineries have been closed. Inventories of refined product have steadily shrunk to emphasize just-in-time delivery. The country hasn't seen a new refinery constructed since 1976.

Nevertheless, U.S. consumers have enjoyed reliable supplies of fuels at relatively stable prices during that time. Existing refineries have updated their technology to improve environmental performance while significantly increasing production. Ultimately, efforts to keep petroleum supply costs low have spelled lower prices for consumers.

However, optimizing business operations by shrinking inventories and wringing out slack refining capacity provides little cushion against an unexpected disruption of refined product supplies. Hurricanes Katrina and Rita dramatically illustrated this shortcoming. Damage to the Gulf Coast production and refinery network upset the delicately balanced U.S. refined product supply system.

The tight margins between refining capacity and demand enables price spikes to move quickly through the system directly into consumers' pocketbooks.
As with crude oil, we have turned to foreign sources of refined products, such as gasoline blendstock and diesel fuel, to satisfy our growing appetite. The country is as dependent on imported products as it was in the late 1970s. Foreign-produced refined product will continue to be a significant component of U.S. short-term supply, and remain so as long as the economics of imports versus domestic refining favor off-shore operations.

Once relatively insulated from global pressures, the U.S. refining sector is now inextricably intertwined with worldwide supply and demand of refined products—not just crude oil. This hearing will examine the current state of the U.S. petroleum refining industry, the rationale for past and anticipated investment in new or expanded refining capacity, and the economic risks posed by the posture of the industry in a rapidly changing global market.

We look forward to hearing from our distinguished panel.

Mr. ISSA. We look forward to hearing from our distinguished panel. We are pleased to have here today Bob Slaughter, who has served since 2002 as president of the National Petrochemical and Refiners Association, the Nation's leading trade association representing the petroleum refining and petrochemical manufacturing industry. Previously, he served as NPRA's general counsel and director of public policy for 3 years.

Paul Sankey is with Deutsche Bank's global oil and gas team, and is responsible for covering the oil majors. Previously, Mr. Sankey served as managing consultant of the consultancy Wood Mackenzie in Edinburgh, Scotland, and as a petroleum analyst at the International Energy Agency in Paris.

Tom O'Connor is project manager of ICF Consulting, in Fairfax, VA. Mr. O'Connor has extensive expertise in the energy area, having spent over 30 years with Mobil Oil.

Eric Schaeffer is director of the Environmental Integrity Project, a non-profit public interest group dedicated to improving enforcement of the Nation's environmental laws. Mr. Schaeffer previously served 5 years as Director of the Environmental Protection Agency Office of Regulatory Enforcement.

We look forward very much to all of your testimony. I now yield to the acting ranking member, the gentleman from Ohio, Mr. Kucinich, for his opening statement.

Mr. KUCINICH. I want to thank the Chair. Mr. Chairman, I have a markup going on at this moment, so I am going to make my statement and, with your indulgence, I am going to have to leave.

Mr. ISSA. Certainly.

Mr. KUCINICH. Thank you. I thank you for holding this hearing. I thank the panelists for being present.

"Will Record Profits Spur Investment in New Capacity?" That is the title of this hearing; and certainly, it is a title which necessitates a hearing. In a competitive market, the question would not be worth asking in Congress; there would be no doubt about the answer. But the petroleum refining industry is not a competitive market. Ten companies control 80 percent of the refining capacity, and just five companies control half of the Nation's capacity all by themselves.

Since 1981, the concentration of refining capacity supply has been going into fewer and fewer hands; and that concentration has increased. Mergers and acquisitions have fueled industry concentration. The result is astonishing. Operable capacity stopped rising as it had for the previous 30 years. Instead, it went into decline, before plateauing. For the past 20 years, capacity has been held relatively constant.

Now, "Economics 101" teaches that rising demand meets constant supply at higher and higher prices. We can be confident that the industry is familiar with that economics lesson, and they have profited handsomely as a result.

The real question that we could be addressing is: Why should the U.S. Government continue to permit an anti-competitive environment that enables a few companies to rein in supply and drive up record profits? I am sure we will hear from the industry a lot about onerous environmental regulations. They want the public to believe

that they would have built more refineries if only they had been allowed to do it. Not only is that not true, but it is a smokescreen.

The industry hasn't tried but once in 25 years to build a new refinery. Yet, between 1994 and 2004, they closed 30 refineries. On balance, they have been closing refineries; not trying to open up new ones. Closing refineries tightens supply; drives up prices when demand is rising. That is exactly what has happened, and they have made record profits.

Now, if there were no environmental regulations, the industry would have to invent them, or something equivalent, in order to disguise a corporate strategy to hold down supply. That is the real issue, and Americans are paying mightily for it.

Since 2001, according to Public Citizen, the largest five oil companies operating in the United States enjoyed after-tax profits of $254 billion. I want to read that again for appropriate emphasis. Since 2001, according to Public Citizen, the largest five oil companies operating in the United States enjoyed after-tax profits of $254 billion.

Well, there are things Congress can do. We could pass H.R. 2070, the Gas Price Spike Act of 2005. That bill, which I introduced with 39 co-sponsors, would implement a windfall profits tax on gasoline and diesel. Such a tax would be imposed on key oil industry profits above a reasonable rate of return.

If oil companies are collecting excessive profits on the backs of consumers, they should be subject to a stiff tax on those excessive profits. The threat of heavy taxation will send a clear signal to oil companies that price gouging and shorting supply will not pay.

In addition, H.R. 2070 will direct the revenue from windfall profits tax to Americans who buy ultra-efficient cars made in America. These individuals would receive a $6,000 tax credit. The credit would be phased in, and cars that achieved 65 miles per gallon would receive a full tax credit. Today, average cars get less than 30 miles per gallon. This tax credit would stimulate the market in ultra-efficient vehicles.

Last, the bill makes funding available to regional transit authorities to offset significantly reduced mass transit fares during times of gas price spikes. Providing low-cost transit will slow demand for gas and ease the price of gasoline, benefiting all Americans.

Mr. Chairman, thank you so much for holding this hearing.

Mr. ISSA. Thank you, Mr. Kucinich. And since there are no other Members to make an opening statement, it is a requirement of this committee that each person testifying be administered an oath, and so I would ask each witness to stand up and raise your right hand to take the oath together, if you would, please.

[Witnesses sworn.]

Mr. ISSA. OK. The clerk will note that we had an affirmative answer from everyone.

And since I have already introduced each of our witnesses, we will first go to Mr. Slaughter. We are allocating 10 minutes. And as you are aware, your entire testimony will be placed in the record. And I assure you, we will give each of you time to add, as you need to, for anything that doesn't get picked up in the questions. Thank you. Mr. Slaughter.

STATEMENTS OF BOB SLAUGHTER, PRESIDENT, NATIONAL PETROCHEMICAL AND REFINERS ASSOCIATION; PAUL SANKEY, SENIOR ENERGY ANALYST, DEUTSCHE BANK AG; THOMAS O'CONNOR, PROJECT MANAGER, ICF CONSULTING, LLC; AND ERIC SCHAEFFER, DIRECTOR, ENVIRONMENTAL INTEGRITY PROJECT

STATEMENT OF BOB SLAUGHTER

Mr. SLAUGHTER. Thank you, Mr. Chairman. I want to thank you for chairing this important hearing on the subject of refining capacity, which is of course of major interest to our members. My name is Bob Slaughter, and I am the president of the National Petrochemical and Refiners Association. Our members include virtually all U.S. refiners, plus also petrochemical manufacturers.

I believe the appropriate place to start is to again take note of the fact that, although we have had a very strong supply demand situation for all of this year, and hearings were contemplated on the basic nature of the gasoline marketplace, immediately after the August recess it immediately turned to the two natural disasters that affected really the energy heartland of the United States, Hurricanes Katrina and Rita.

I just wanted to say one word about that, and kind of give an update. We have been following the great progress that's been made in getting facilities back on-line down there. When it came to refining, we had nearly 5 million barrels a day of capacity—which is almost a third of U.S. capacity—out on September 23rd; which was the highest point for that. We now have all back except a little over, probably, 1.6 million barrels per day; which is just slightly less than 10 percent of U.S. capacity.

A lot of progress has been made in bringing these facilities on-line. Employees have been working day and night. Companies have been in many instances supplying temporary housing for workers who lost much, if not all, that they had in the disasters.

We are now at the point where we have two refineries in the Beaumont/Port Arthur area that are still down but are in the process of restarting, and we are very hopeful that they will be back on-line in the very near future. The Pascagoula, MS, refinery, which is the largest affected by Katrina, has been restarted, and Chevron is hopeful that it will be back to its normal producing rate by the end of the month.

That leaves three other refineries still out from Katrina. They did suffer more significant damage than any other refineries in either incident, and may still be out for a while. However, we think it is a significant success story that much damage has been done to the system and it has been brought back online so quickly. Again, we believe it is a testament to our employees, who put so much into bringing these facilities back on-line for the Nation's energy consumers.

We still are not out of the woods when it comes to energy impacts. We still have about 65 percent of the daily Gulf of Mexico oil production that is shut in as a result of the two hurricanes. And 53 percent of the daily gas production is still shut in. Progress is being made there, but it takes a while. They are down to fixing some of the more difficult damage.

The cumulative impact has been that we have lost 11 percent of the yearly Gulf of Mexico oil production, and we have lost 8½ percent of the yearly Gulf of Mexico gas production. Those are bigger than we lost with Hurricane Ivan, of course, a year ago, and we will have to see how that affects the system through the rest, particularly, of the winter period.

With that said, we also wanted to point out that we appreciated greatly the attention of the executive branch to things that needed to be done to get that situation resolved quickly. The decision to allow the SPR to be tapped helped refiners know that oil would be available when they needed it to refine during the critical time of outage.

Also, we had the Environmental Protection Agency that provided temporary fuel waivers that have made it easier to supply fuels to affected areas. Very important, and some of those are still ongoing waivers. We also had a waiver of the Jones Act that was temporary; the DOE was very good, as was the Department of Homeland Security. We appreciate those efforts.

As I mentioned, even before the hurricanes struck, we already had seen significant demand for gasoline this summer, and we were seeing relatively high gasoline prices. I wanted to point out the first chart, which does show that when it comes to gasoline prices the most important factors affecting both gasoline and distillate prices is the price of crude oil. The Federal Trade Commission——

Mr. ISSA. Excuse me for a second.

Mr. SLAUGHTER. Yes.

Mr. ISSA. If you could tilt that a little closer to everyone in the audience, because some of them do not have the benefit of printed slides they can read from. Thank you.

Mr. SLAUGHTER. OK. It does show, as the FTC has found, that the world price of oil is the most important factor in the price of gasoline over the last 20 years. Changes in crude oil prices have explained 85 percent of the changes in the price of U.S. gasoline.

As you can see by this, gasoline costs closely tracked the costs of crude oil. It accounts for 55 to 60 percent of the price of gasoline seen at the service station, and Federal and State taxes add another 19 percent, which means that under usual conditions, 74 to 79 percent of the total cost of a gallon of gasoline is predetermined before the crude is delivered to the refiner or manufacturer.

We also want to say that limited refining capacity also does affect the supply/demand balance and the price of refined fuels. U.S. refiners produce huge volumes of products, but continued strong demand has tightened supply. U.S. refiners operate at extremely high utilization rates that approach 98 percent sometimes during the summer driving season.

To put that in perspective, the peak rates for other manufacturers is about 82 percent. So domestic refineries do produce about 90 percent of gasoline supply; but 10 percent is imported, largely into the New England and New York area, where it accounts for 20 percent of the supply.

So you can see steadily increasing demand for gasoline, which has been the case over the last several years, can be met either by adding new domestic capacity or by relying on more gasoline im-

ports. Now, NPRA strongly thinks that we should rely to the extent we can on increasing domestic capacity to do that; but that is the prudent choice, but it is often discouraged by other priorities.

We think that national energy policy should continue to rely on market forces. In the aftermath of the hurricanes, there were policymakers who called for interventionist means to combat the rise in fuel prices. We strongly urge Congress to reject that advice.

We went through a system of price controls in the 1970's, which distorted the market; misallocated supplies; led to extra costs for consumers and great inconvenience. That was a lesson we think that we don't want to go through again. It took 10 years to eliminate the price control scheme that led to those bad impacts, even though they were widely recognized.

The Federal Trade Commission also, in its landmark study this summer, said that the Nation got rid of this price control system in 1981, and the FTC said that gasoline supply, demand, and competition produced relatively low and stable annual average real U.S. gasoline prices from 1984 until 2004; despite substantial increases in U.S. gasoline consumption. For most of the past 20 years, real annual average retail gasoline prices in the United States, including taxes, were lower than at any time since 1919.

A windfall profits tax has been mentioned this morning. I would say a windfall profits tax is merely another form of price control. We had a windfall profits tax through the late 1970's and part of the 1980's, and it siphoned $79 billion, according to the Congressional Research Service, away from what could have been invested in productive operations to increase the supply of energy in the United States. It would have much the same effect today.

Mr. ISSA. I might also mention that a 65-mile-per-gallon automobile threshold was mentioned, and the panel up here can't find a single vehicle that gets that mileage. So there were many things mentioned in that.

Mr. SLAUGHTER. We know that consumers are concerned with price volatility, particularly, and the sudden increase. We are very, very pleased to note that, where there were outages, they were isolated and for a very short period of time.

We understand that people are concerned about the level of prices. But we do believe that, in the long term, increased domestic refining capacity, combined with increased regulatory and operational flexibility, would promote greater price stability, which consumers would benefit from.

I must say that NPRA does not support proposals calling for the institution of a strategic gasoline or other refined product reserve. I realize that is something we may disagree on; but we are concerned that filling a product reserve could attract supply from the tight refined product market that already exists, putting upward pressure on price.

A refined product reserve has to be served more often—because gasoline deteriorates—than a crude oil reserve does. Also, we would have some problems with gasoline and deciding which products to store.

Again, we would say actual supply shortages have not occurred on any great scale. We also note that the California Energy Commission looked at this a couple of years ago, and decided not to go

ahead with a strategic fuel reserve concept, but we would be glad to answer more questions about that.

We would like to say refiners have overcome hurdles to add capacity in the last several years. Despite some comments that have been made here, refiners added in the United States 2 million barrels of capacity between 1995 and 2005, despite considerable hurdles.

One of the hurdles was the low return on investment in the industry. Basically, a return on investment in refining was basically running about 5½ percent; when the S&P industrials were averaging about 12½ percent. This is basically from about 1993 until 2003.

And at the same time, the industry was faced with almost $50 billion in investment for environmental requirements under the Clean Air Act amendments of 1990. There are only so much moneys available for investment; particularly in times in which profits are not anything to write home about.

However, it is significant that, even at that time, the industry was able to add 2 million barrels a day of capacity; although if you look at the numbers from 1980 to the current day, we are still down capacity. In 1981, we had 18.6 million barrels per day capacity, and we now have 17.1; but our demand has gone up by 20 percent. Many of those were inefficient refineries that were basically established to take subsidies under the price control regulation. But we still are not yet back to that level of refining capacity in the United States which we had in 1981.

Obviously, profitability and the cost of additional refining investments have a big impact on money that is available to invest in additional capacity. There is also a "NIMBY" factor, which I think we are all aware of, that people really don't like the idea of having heavy industrial facilities anywhere near their homes, so it becomes difficult to site these facilities.

We, however, do continue to have a very heavy load of environmental investment requirements in this industry. If I could have that next slide, it shows what we call the regulatory blizzard: 14 programs that affect both our fuels and our facilities with significant investment requirements in this one—essentially, 2000 to 2010—timeframe. They are extremely expensive. Money is money, and money that is spent on programs like this is often not available to be put into any capacity expansion.

We supported many of these rules, but we did usually ask for a smoothing out of the time, to make sure that, rather than maximizing their impact on supply, the supply impact was minimized as far as possible. This often didn't happen.

The National Petroleum Council also recommended that Congress consider taking a look at appropriate sequencing of these rules; but that did not happen. The rules basically are pancaked one on top of another, which definitely does affect the industry.

Mr. ISSA. Are you about to wrap up?

Mr. SLAUGHTER. Yes, I am. I have included, just because of that, a few suggestions for upcoming regulatory programs that will have a significant effect on gasoline and diesel supply in the written statement. I look forward to answering your questions, and just in closing, I want to restate that the experience with the hurricanes

really did demonstrate the commitment of this industry to serving U.S. consumers. I look forward to answering your questions. Thank you.

[The prepared statement of Mr. Slaughter follows:]

Written Statement of the
National Petrochemical & Refiners Association

delivered by
Bob Slaughter
President, NPRA

before the
House Committee on Government Reform Subcommittee on Energy and Resources

concerning
Petroleum Refineries: Will Record Profits Spur Investment in New Capacity?

October 19, 2005
Washington, DC

Mr. Chairman and members of the Subcommittee, thank you for the opportunity to appear today to discuss the current status and future prospects for the U.S. petroleum refining industry and the import of regulatory policy on domestic refining operations. My name is Bob Slaughter and I am President of NPRA, the National Petrochemical & Refiners Association. NPRA is a national trade association with 450 members, including those who own or operate virtually all U.S. refining capacity, and most U.S. petrochemical manufacturers.

RECOVERING FROM HURRICANES RITA AND KATRINA

Because of the recent events that have impacted our nation's Gulf Coast region, it seems both necessary and useful to report first on the status of energy infrastructure and production in the affected areas. The toll on victims and survivors of the storms as well as their families can perhaps never be fully quantified and NPRA offers our prayers and thoughts for all so tragically affected.

I will begin with the "upstream" operations, that is, production of crude oil and natural gas. Recovery and repair operations have been ongoing and definitive progress is being made. According to the Minerals Management Service (MMS), over 1 million barrels per day (b/d) of oil production and 5.6 billion cubic feet per day (bcf/d) of natural gas production remain shut-in as of October 14. This means that 67% of daily Gulf of Mexico (GOM) oil production and 56% of daily GOM gas production remains shut-in. Since August 26, 2005 57.6 million barrels of oil (10.5% of yearly GOM oil production) and 288.9 billion cubic feet of natural gas (7.9% of yearly GOM gas production) have been shut-in. While these figures are alarming and will have significant impacts, the progress in restoration of productive capacity should also be noted and appreciated. (See Attachment 1)

The refining industry was directly affected by the devastation. The industry faced unprecedented logistical, facility, and personnel complications with the impact of two major storms in rapid succession. Faced with shut-downs that at their peak on September 23rd accounted for nearly 5 million b/d of capacity, the refining industry reacted quickly and effectively. As of October 12, the Department of Energy reports that only a little over 1.6 million b/d remains offline. The dedicated employees of these facilities deserve most of the credit for the rapid return to service of so much capacity, as do their employers—the refining companies who in many cases have

provided for the shelter, safety and security of these workers and their families. Despite so great a loss of productive capacity in such a short time, it is important to note that the nation experienced only very isolated and short-lived transportation fuel shortages.

NPRA commends the federal government for acting quickly and decisively in the face of these supply outages. Several steps taken in the days and weeks following these storms helped refiners provide consumers with the products they need. The Administration released crude oil from the Strategic Petroleum Reserve (SPR) to assist refiners who were short crude supplies as a result of hurricane damage. NPRA applauds this appropriate utilization of the reserve in a time of crude-oil supply crisis. The decisive steps taken to judiciously use crude oil from the SPR during this emergency enabled several refineries, otherwise unaffected by the storms, to receive the crude oil required to keep the refineries in production.

NPRA also notes that the Environmental Protection Agency has provided temporary fuel waivers that make it easier to supply fuels to affected areas. The waivers pertain to both gasoline and diesel specifications. NPRA appreciates the efforts of EPA and commends the agency for its diligence in gathering the necessary information to protect both fuel supply and environmental concerns. The Department of Transportation also deserves recognition for temporarily lifting Jones Act requirements in order to allow non U.S. flagged vessels to transport much needed refined products from one U.S. port to another. These actions provided additional flexibility to the marketplace and have helped refiners to continue to meet demand.

The sheer magnitude of the total impacts of the storms dictates caution in any assessment of when the energy production, refining, distribution and related facilities will be back in service and conditions will return to normal. Clearly, our national energy infrastructure has suffered devastation from which it will take some time to fully recover.

CURRENT STATUS OF THE REFINED PRODUCT MARKETS: HIGH CRUDE PRICES; STRAINED CAPACITY

The most important factor affecting gasoline and distillate prices is the supply and price of crude oil. In June of this year the U.S. Federal Trade Commission released a landmark study titled: "Gasoline Price Changes: The Dynamic of Supply, Demand and Competition." To quote from the FTC's

findings: "Worldwide supply, demand, and competition for crude oil are the most important factors in the national average price of gasoline in the U.S." and "The world price of crude oil is the most important factor in the price of gasoline. Over the last 20 years, changes in crude oil prices have explained 85 percent of the changes in the price of gasoline in the U.S."

Crude prices have steadily increased since 2004, largely because of surprising levels of growth in oil demand in countries such as China and India, and in the United States as well. Actual demand growth for oil and oil products in these countries in 2004 exceeded the experts' predictions and has remained strong this year. As a result, world demand is bumping up against the worldwide ability to produce crude.

As shown in Attachment 2, gasoline costs closely track the cost of crude oil. Crude oil accounts for 55-60% of the price of gasoline seen at the service station. The cost of federal and state taxes adds another 19% to the cost of a finished gallon of gasoline. Therefore under current conditions, 74-79% of the total cost of a gallon of gasoline is pre-determined before the crude is delivered to the refiner for manufacture into gasoline. (See Attachment 3)

Limited refining capacity also affects the price of refined fuels. While U.S. refiners are producing huge volumes of products, continued strong demand has tightened supply. U.S. refiners often operate at extremely high utilization rates; rates approaching 98% at some times during the summer driving season. To put this in perspective, peak utilization rates for other manufacturers average about 82%. In spite of these efforts, gasoline demand continues to grow, with U.S. demand currently averaging approximately 9 million barrels per day. Domestic refineries produce about 90 percent of U.S. gasoline supply, while about 10 percent is imported. These imports account for over 20% of the refined product demand in the northeast U.S. This steadily increasing demand can only be met either by adding new domestic refinery capacity or by relying on more foreign gasoline imports. The need to add more domestic capacity – the option NPRA believes to be the prudent choice – is unfortunately often discouraged by other priorities.

OUR NATIONAL ENERGY POLICY SHOULD CONTINUE TO RELY ON MARKET FORCES

Some policymakers have suggested that the federal government should adopt price control mechanisms on refined products, sometimes at the

wholesale level, to combat the current rise in fuel prices. NPRA urges Congress to reject this advice. As previously noted, in the immediate aftermath of both Hurricanes Katrina and Rita, there were but a few reports of supply shortages or market distortion. Reliance on market forces provided appropriate market signals to help balance supply and demand even during these difficult times. Enactment of politically tempting but marketplace disrupting price controls is absolutely the wrong cure for the situation. President Reagan eliminated price controls on oil products immediately upon taking office in 1981. He was outspoken about the inefficiencies and added costs to consumers that resulted from America's ten-year experiment with energy price controls during the 1970s.

The energy price and allocation controls of the 1970s resulted in supply shortages in the form of long gas lines. Studies have shown that, although intended to reduce costs, controls actually resulted in increased costs and greater inconvenience for consumers. The benefits of market pricing became clear soon after the elimination of price and allocation controls in 1981. The U.S. Federal Trade Commission stated in an extensive study published this June that "Gasoline supply, demand and competition produced relatively low and stable annual average real U.S gasoline prices from 1984 until 2004, despite substantial increases in U.S. gasoline consumption" and "...For most of the past 20 years, real annual average retail gasoline process in the U.S., including taxes, have been lower than at any time since 1919." It is important to note that a "windfall profit tax" is merely another form of price control. Price caps and other forms of price regulation are no more effective in the 21st century than they were in the 1970s. Interference in market forces always creates inefficiencies in the marketplace and extra costs for consumers.

PRICE VOLATILITY

It is also important to keep in mind that cost of gasoline is a significant but limited fraction of the average consumer's transportation budget, constituting less than 20 percent of vehicle related expenditures (See Attachment 4). And while no one likes high gasoline prices, what is probably equally, if not more, irksome for consumers is gasoline price volatility.

Unpredictable gasoline prices make it hard for consumers to incorporate the cost of gasoline into their transportation budget. Indeed, data from the

Bureau of Labor statistics suggest that the American consumers are quite adept at managing the various tradeoffs in their transportation budget. For example, according to the Bureau of Labor Statistics consumer expenditure data show differences in vehicle related expenditures even for an average family of four versus families of 5 or more. Families of 5 or more, for example, spent more on gasoline on an annual basis but spent less on vehicle purchases, maintenance and repair.

Consumers make these sorts of tradeoffs in an atmosphere of stable gasoline prices. In the face of disasters of the magnitude of a Katrina and Rita, there are few short term fixes. However, in the long term, increased domestic refining capacity, coupled with increased regulatory and operational flexibility will promote greater price stability.

A REFINED PRODUCT RESERVE COULD REDUCE MARKET EFFICIENCY

NPRA does not support proposals calling for the institution of a strategic gasoline or other refined product reserve. This concept has been discussed and studied on numerous occasions and in each instance, rejected as unsound policy that would potentially disrupt the market. Filling a product reserve would attract supply from the already tight refined product market thereby putting upward pressure on price. Any supplies diverted from the market would have to be replaced, most likely by imports. Furthermore, complications arise both in storing refined products and in deciding which products to store. Gasoline, unlike crude oil, degrades over time and it would be necessary to refresh the stored product over time. The various fuel formulations in use throughout the nation, which are vital for states to use in meeting National Ambient Air Quality Standard obligations, raise the question of which type of fuel to store.

Other factors that would undoubtedly add complexity and uncertainty to an already complex and uncertain situation regarding strategic refined product storage include:

- the incorporation of the renewable fuels standards (RFS) for both ethanol and bio-diesel prescribed by the Energy Policy Act of 2005;
- the siting, permitting and construction of hundreds (perhaps thousands) of new above ground storage tanks;

- the problem of filling and maintaining the reserve while accommodating the current demand for refined products and the nation's need for imports.

Additionally, the reserve would add additional pressure to both the refining and transportation infrastructure at a time when the nation's energy systems are strained. The reality is that actual supply shortages have not occurred on any great scale. Even in the aftermath of Hurricanes Katrina and Rita, supply shortages were isolated and quickly remedied.

Finally, The California Energy Commission (CEC) thoroughly investigated the efficacy of a refined product reserve and concluded:

"The Governor and Legislature should not proceed with the strategic fuel reserve concept evaluated by the Commission. The Commission found that a strategic fuel reserve could have several unintended consequences, which could limit its effectiveness as a tool to moderate gasoline price spikes and could reduce the total supply of gasoline to the state."

Other studies of refined product reserve proposals over the past 30 years have reached similar conclusions.

REFINERS HAVE OVERCOME HURDLES TO ADD CAPACITY; SOME NEW CAPACITY PROJECTS HAVE ALREADY BEEN ANNOUNCED

Domestic refining capacity is a scarce asset. There are currently 148 U.S. refineries owned by 54 companies in 33 states, with total crude oil processing capacity of roughly 17.1 million barrels per day. In 1981, there were 325 refineries in the U.S. with a capacity of 18.6 million barrels per day. Thus, while U.S. demand for gasoline has increased over 20% in the last twenty years, U.S. refining capacity has decreased by 10%. No new refinery has been built in the United States since 1976, and it will be difficult to change this situation. Economic, public policy and political considerations, including siting costs, environmental requirements, a history of low refining industry profitability and, significantly, "not in my backyard" (NIMBY) public attitudes present barriers to capacity expansion projects. Despite these hurdles, the industry has made substantial efforts and investment to keep pace with demand, resulting in expansions of 2.1 million b/d of capacity over the past eleven years at existing sites.

Refining is a cyclical industry, with high and low periods. In the ten-year period 1993-2002, average return on investment in the refining industry was only about 5.5%. This is less than half of the industrials average return of 12.7% for the same period. After a recent economic assessment of the refining sector, Oklahoma Secretary of Energy David Fleischaker put it simply, "People aren't going to invest in a 5 to 7 percent rate of return when money costs you 8 percent...Unfortunately, bankers aren't looking for welcome mats. They're looking for high rates of return."

The environmental landscape affects the economics of the refining sector in two ways: by making changes in the products refiners produce, and by limiting changes refiners can make in our actual operations. The American Petroleum Institute (API) estimates that refining accounted for about 53% of the petroleum industry's stated environmental expenditures of $98 billion (in 2004 dollars) between 1992 and 2001. These significant, mandatory, capital expenditures divert funds that might otherwise be used to expand capacity. NPRA appreciates and supports the importance of clean fuels regulations, but it is equally important to recognize the impact they may have on fuel supply, and to plan prudently their implementation. The enactment of stringent and overlapping environmental policies without regard for the effect on the refining industry has negatively impacted investment in additional domestic capacity.

Another impediment to new refinery investment has been the so-called not-in-my-back-yard (NIMBY) syndrome. Often the construction of new facilities, or the expansion of existing ones, encounters local opposition. Indeed, when the media recently began to question why so much refining capacity is concentrated on the Gulf Coast, the answer included not only access to infrastructure and supply, but also community acceptance of the refining industry. To say the least, this acceptance is not typical of many other regions of the country where product demand is quite high.

Despite these undeniable realities, the domestic refining industry has increased capacity over the past eleven years. U.S. refining capacity on January 1, 1994 stood at 15.0 million b/d and at 17.1 million b/d on January 1, 2005. This increase of 2.1 million b/d represents an aggregate growth of 14 percent or, in simpler terms, the addition of a larger than average (190,000 b/d) refinery each year. Recently announced capacity expansions also demonstrate refiners continuing efforts to meet growing demand.

Valero, recently announced capital expenditure plans that include investments of about $5 billion dollars resulting in over 400,000 b/d of new capacity. Motiva Enterprises is considering significant capacity increases at one or more U.S. refineries. ExxonMobil's Baytown refinery is currently expanding by 75,000 b/d. Additionally, Marathon Ashland Petroleum has announced an expansion of about 26,000 barrels a day at a facility located in Detroit.

In addition to capacity expansion, several Gulf Coast refiners have made investments to enhance the ability of their refineries to handle less expensive, high-sulfur (or "sour") crudes. These investments expand the total pool of crude input available to refiners and allow for an increased volume of finished product for consumers.

These efforts, and the significant capital required to back them, demonstrate the commitment of refiners to meeting consumer needs. With the increased returns on refining operations in the past two years, it is very possible that further investment in refining will now occur. Unfortunately, it will still be difficult for the industry to keep pace with increasing U.S. demand for gasoline.

REFINERS FACE A BLIZZARD OF REGULATORY REQUIREMENTS AFFECTING BOTH FACILITIES AND PRODUCTS

Refiners are addressing current supply challenges and working hard to supply sufficient volumes of gasoline and other petroleum products to the public. Refineries have been running at very high levels, producing gasoline and distillate. However, it is difficult to sustain such high rates for long periods.

In addition to coping with higher fuel costs and growing demand, refiners are implementing significant transitions in major gasoline markets. Nationwide, the amount of sulfur in gasoline will be reduced to an average of 30 parts per million (ppm) effective January 1, 2006, 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 are in effect. Other state bans such as those in New Jersey, Delaware and New Hampshire will be effective in the next several years. This is a

major change affecting one-sixth of the nation's gasoline market. MTBE use as an oxygenate in reformulated gasoline accounted for as much as 11% of RFG supply at its peak; 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% of the volume lost when MTBE is removed.) This lost volume must be supplied by additional gasoline or gasoline blendstocks. **Especially during a period of supply concerns it is in the nation's interest to be prudent in taking any action that affects MTBE use. That product still accounts for 1.6% of the nation's gasoline supply on average, but it provides a larger portion of gasoline supplies in areas with RFG requirements that are not subject to an MTBE ban.**

Refiners currently face the massive task of complying with fourteen new environmental regulatory programs with significant investment requirements, all in the same 2006 – 2012 timeframe. (See Attachment 5) In addition, many programs start soon. (See Attachment 6) For the most part, these regulations are required by the Clean Air Act. Some will require additional emission reductions at facilities and plants, while others will require further changes in clean fuel specifications. NPRA estimates that refiners are in the process of investing about $20 billion to sharply reduce the sulfur content of gasoline and both highway and off-road diesel. Refiners will face additional investment requirements to deal with limitations on ether use, as well as compliance costs for controls on Mobile Source Air Toxics and other limitations. These costs do not include the significant additional investments needed to comply with stationary source regulations that affect refineries.

Other potential environmental regulations on the horizon could force additional large investment requirements. They are: the challenges posed by the energy bill's mandated increased ethanol use, possible additional changes in diesel fuel content, and potential proliferation of new fuel specifications driven by the need for states to comply with the new eight-hour ozone NAAQS standard. The 8-hour standard could also result in more regulations affecting facilities such as refiners and petrochemical plants.

These are just some of the pending and potential air quality challenges that the industry faces. Refineries are also subject to extensive regulations under the Clean Water Act, Toxic Substances Control Act, Safe Drinking Water Act, Oil Pollution Act of 1990, Resource Conservation and Recovery Act,

Emergency Planning and Community Right-To-Know (EPCRA), Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), and other federal statutes. The industry also complies with OSHA standards and many state statutes. A complete list of federal regulations impacting refineries is included with this statement. (See Attachment 7)

The high level of mandatory environmental expenditures in the current decade continues a trend established after the passage of the Clean Air Act Amendments in 1990. As previously mentioned, the American Petroleum Institute (API) estimates that refining accounted for about 53% of the petroleum industry's stated environmental expenditures of $98 billion (in 2004 dollars) between 1992 and 2001. The Wall Street Journal recently published an editorial that expressed that newspaper's take on the need for more reasonable environmental regulations to stimulate U.S. refining investment. (See Attachment 8)

Obviously, refiners face a daunting task in completing many changes to deliver the fuels that consumers and the nation's economy require. But they are succeeding. And regardless of recent press stories, we should remember that the cost of American petroleum products has long been low when compared to the price consumers in other large industrialized nations pay for those products. The Federal Trade Commission recently found that "Gasoline supply, demand and competition produced relatively low and stable annual average real U.S. gasoline prices from 1984 until 2004, despite substantial increases in U.S. gasoline consumption."

U. S. POLICY SHOULD ENCOURAGE ADDITIONAL DOMESTIC REFINING CAPACITY

As previously discussed, proposed capacity expansions can often become controversial and contentious at the state and local level, even when necessary to produce cleaner fuels pursuant to regulatory requirements. We hope that policymakers will recognize the importance of domestic refining capacity expansion to the successful implementation of the nation's environmental policies, especially clean fuels programs. The Administration's New Source Review reform program is a solid example of one policy modification that, while maintaining desired environmental protections, will provide an important tool to help add and update refining capacity in the U.S.

NPRA supports H.R. 3893, the Gasoline for America's Security Act of 2005 which was recently passed by the House of Representatives. The bill essentially makes the policy statement that increased petroleum product supplies and more domestic refining capacity are in the national interest and should be encouraged, rather than discouraged, by public policy. Passage of this bill by the House marks another stage of progress in America's growing realization that improvements in the nation's energy infrastructure and increased supplies of domestically-refined products are a crucial element in maintaining the nation's global economic leadership and national security.

NPRA also wants to recognize a provision in the recently enacted comprehensive energy legislation that will help encourage additional refining investment. This provision allows 50% expensing of the costs associated with expanding a refinery's output by more than 5%. The refiner must have a signed contract for the work by 1/1/08, and the equipment must be put in service by 1/1/12. Legislation recently introduced in both the Senate and the House would expand this provision to provide for 100% expensing of capacity expansions.

Common sense dictates that it is in our nation's best interest to manufacture the lion's share of the petroleum products required for U.S. consumption in domestic refineries and petrochemical plants. Nevertheless, we currently import more than 62% of the crude oil and oil products we consume. Reduced U.S. refining capacity clearly affects our supply of refined petroleum products and the flexibility of the supply system, particularly in times of unforeseen disruption or other stress. EIA currently predicts "substantial growth" in refining capacity only in the Middle East, Central and South America, and the Asia/Pacific region, not in the U.S. Less stringent environmental statutes, lower labor costs, and local support for projects all contribute to the attractiveness of foreign markets for refining investment.

A KEY GOVERNMENT ADVISORY PANEL HAS URGED GREATER SENSITIVITY TO FUEL SUPPLY IMPACTS

The National Petroleum Council (NPC) issued a landmark report on the state of the refining industry in 2000. Given the limited return on investment in the industry and the capital requirements of environmental regulations, the NPC urged policymakers to pay special attention to the timing and

sequencing of any changes in product specifications. Failing such action, the report cautioned that adverse fuel supply ramifications may result. Unfortunately, this warning has been widely disregarded. On June 22, 2004 Energy Secretary Abraham asked NPC to update and expand its refining study and a report was released last December. NPRA again urges policymakers to take action to implement NPC's study recommendations in order to deal with U.S. refining problems.

NPRA RECOMMENDATIONS TO ADD U.S. REFINING CAPACITY AND INCREASE FUTURE PRODUCT SUPPLY

- Make increasing the nation's supply of oil, oil products and natural gas a number one public policy priority. Now, and for many years in the past, increasing oil and gas supply has often been a secondary concern. Thus, oil and gas supply concerns have been secondary to whatever policy goal was more politically popular at the time. Enactment of the recent comprehensive Energy Bill is a first step to making the energy supply our nation depends upon a first priority of U.S. public policy.

- Remove barriers to increased supplies of domestic oil and gas resources. Recent criticism about the concentration of America's energy infrastructure in the western Gulf is misplaced. Refineries and other important onshore facilities have been welcome in this area but not in many other parts of the country. Policymakers have also restricted access to much-needed offshore oil and natural gas supplies in the eastern Gulf and off the shores of California and the East Coast. These areas must follow the example of Louisiana and many other states in sharing these energy resources with the rest of the nation because they are sorely needed.

- Resist tinkering with market forces when the supply/demand balance is tight. Market interference that may initially be politically popular leads to market inefficiencies and unnecessary costs. Policymakers must resist turning the clock backwards to the failed policies of the past. Experience with price constraints and allocation controls in the 1970s demonstrates the failure of price regulation, which adversely impacted both fuel supply and consumer cost.

- Expand the refining tax incentive provision in the Energy Act. Reduce the depreciation period for refining investments from 10 to five years in order to remove a current disincentive for refining investment. Consider

allowing expensing under the current language to take place as the investment is made rather than when the equipment is actually placed in service. Alternatively, the percentage expensed could be increased as per the original legislation introduced by Senator Hatch.

- Review permitting procedures for new refinery construction and refinery capacity additions. Seek ways to encourage state authorities to recognize the national interest in more domestic capacity.

- Keep a close eye on several upcoming regulatory programs that could have significant impacts on gasoline and diesel supply. They are:

  → *Design and implementation of the credit trading program for the ethanol mandate(RFS) contained in the recent Energy Act. This mechanism is vital to increase the chance that this program can be implemented next year without additional gasoline supply disruption. Additional resources are needed within EPA to accomplish this key task.*

  → *Implementation of the ultra low sulfur diesel highway diesel regulation. The refining industry has made large investments to meet the severe reductions in diesel sulfur that take effect next June. We remain concerned about the distribution system's ability to deliver this material at the required 15 ppm level at retail. If not resolved, these problems could affect America's critical diesel supply. Industry is working with EPA on this issue, but time left to solve this problem is growing short.*

  → *Phase II of the MSAT (mobile source air toxics) rule for gasoline. Many refiners are concerned that this new regulation, which we expect next year, will be overly stringent and impact gasoline supply. We hope that EPA will develop a rule that protects the environment and avoids a reduction in gasoline supply.*

  → *Implementation of the new 8-hour ozone NAAQS standard. The current implementation schedule determined by EPA has established ozone attainment deadlines for parts of the country*

> *that will be impossible to meet. EPA has to date not made changes that would provide realistic attainment dates for the areas. The result is that areas will be required to place sweeping new controls on both stationary and mobile sources, in a vain effort to attain the unattainable. The CAIR rule and ULSD diesel program will provide significant reductions to emissions within these areas once implemented. But they will not come soon enough to be considered unless the current unrealistic schedule is revised. If not, the result will be additional fuel and stationary source controls which will have an adverse impact on fuel supply and could actually reduce U.S. refining capacity. This issue needs immediate attention.*

NPRA's members are dedicated to working cooperatively with government at all levels to resolve the current emergency conditions that result from Hurricanes Kristina and Rita and to maintain adequate fuel supplies to promote economic growth. But we feel obliged to remind policymakers that action must be taken to improve energy policy to help increase supply and strengthen the nation's refining infrastructure. We look forward to answering the Subcommittee's questions.

Attachment 1

In Focus

NPRA

NPRA HURRICANE UPDATE – October 17, 2005

As of October 14, the U.S. Minerals Management Service's reports that shut-in oil production is 1,008,909 million barrels of oil or 67% of daily GOM oil production, which is currently 1.5 million barrels per day. **Shut-in gas production is at 5.647 billion cubic feet per day or 56% of the daily gas production** in the GOM, which is currently about 10 billion cubic feet per day.

MMS also reports that the cumulative production shut-in for the period 8/26/05-10/14/05 is 57.6 million barrels of oil, which is about 10.5 percent of yearly GOM oil production, and 288.9 billion cubic feet of natural gas, which is equivalent to about 7.9 percent of yearly GOM gas production.

Refinery shutdowns in the GOM region total about 1.6 million barrels per day. Two refineries in the Beaumont/Port Arthur are still shut down as well as one in the Houston area following Hurricane Rita. Others are at normal operations or restarting. There are 3 refineries still shut down in the New Orleans area following Hurricane Katrina.

Below is the current status of the major refineries taken offline in advance of Rita:
Astra 100,000 b/d Pasadena, TX, operating at full rate
ExxonMobil 557,000 b/d Baytown, Texas, operating at full rate
Calcasieu 30,000 b/d Lake Charles, LA refinery, operating at full rate
Citgo Lake Charles, LA, 324,300 b/d, restarting
ConocoPhillips' 229,000 b/d Sweeny refinery, operating at full rate
ConocoPhillips' 239,400 b/d refinery in Westlake, LA, restarting
Lyondell-Citgo's 270,200 b/d Houston refinery, operating at reduced rates
Marathon 72,000 b/d Texas City refinery, operating at full rate
Valero's 209,950 b/d Texas City refinery, operating at full rate
Valero's 255,000 b/d Port Arthur refinery, restarting
Valero's 83,000 b/d Houston refinery, reduced rates
Shell/Pemex 333,700 b/d Dear Park refinery, operating at reduced rates
Total's 233,500 b/d refinery in Port Arthur, restarting

TOTAL RESTARTING: 2,937,050

ExxonMobil 348,500 b/d Beaumont refinery, shut down – attempting to restart
BP, Texas City, Texas, 437,000 b/d, shut down – expected restart late October/early November
Shell/Motiva, 285,000 b/d Port Arthur refinery, shutdown – attempting to restart

SHUTDOWN: 1,070,500

Below is the status of the refineries shutdown by Hurricane Katrina:
Chevron Pascagoula, MI, refinery, restarted October 6 – normal production by late October
ExxonMobil Chalmette, LA, refinery, partial power
ConocoPhillips Belle Chasse, LA, refinery, full power
Murphy Oil Meraux, LA, refinery, partial power

SHUTDOWN: 554,000

In Focus

NPRA

TOTAL SHUTDOWN (Rita and Katrina): 1,624,500

All onshore interstate oil pipelines have resumed 100% normal operating capacity. Some systems continue to experience reduced availability of products to transport, according to the Association of Oil Pipelines.

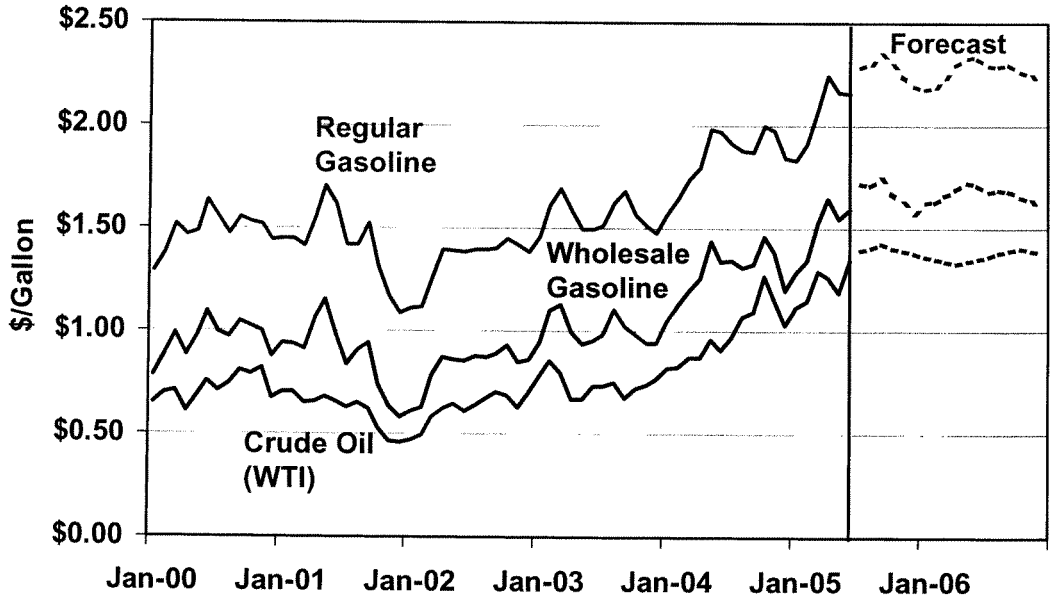
Residential heating fuel price survey returns to high prices. On October 12, EIA released the October Short-Term Energy Outlook. This winter, residential space-heating expenditures are projected to increase for all fuel types compared to year-ago levels. On average, natural gas heating households can expect to spend $350 or 48% more this winter on fuel. Households heating with heating oil can expect to pay, on average, $378 or 32% more this winter. Households heating with propane can expect to pay, on average, $325 or 30% more this winter. And households heating with electricity can expect, on average, to pay $38 or 5% more this winter. Prices for petroleum and natural gas will remain high due to tight international supplies of crude and hurricane-induced supply losses.

U.S. average retail gasoline price falls 8 cents. According to the EIA's Weekly Petroleum Report, as of October 13, the average retail price for regular gasoline decreased by 8 cents to $2.85 per gallon, after rising the previous two weeks. This week's price is 85.5 cents higher than this time last year. Retail diesel fuel prices rose 0.6 cents to $3.15 per gallon, the highest price on record. Residential heating oil prices decreased for the period ending October 10. The average residential heating oil price dropped 4.4 cent from last week to reach $2.65 per gallon, which is 74 cents per gallon higher than last year this time. Wholesale heating oil prices decreased 15.5 cents to reach $2.09 per gallon, an increase of 58.5 cents over the same period last year. The average residential propane prices increased 2 cents to $1.94 per gallon, an increase of 33 cents from this time last year.

EIA's Weekly Natural Gas Storage Report released October 13 indicates working gas in storage increased to 2,987 BCF, which is 1.2% above the five-year-average inventory level. The implied net injection of 58 BCF is about 10% below the five-year average of 64 BCF for the week and about 16% below last year's injection of 69 BCF. Working gas levels are currently about 34 BCF above the five-year average, but 162 BCF below the level this time last year. On October 12, the prices of the NYMEX futures contract for November delivery at the Henry Hub settled at $13.524 per MMBtu, declining about 66 cents or nearly 5 percent since October 5.

Attachment 2

Crude Oil and Gasoline Price Outlook

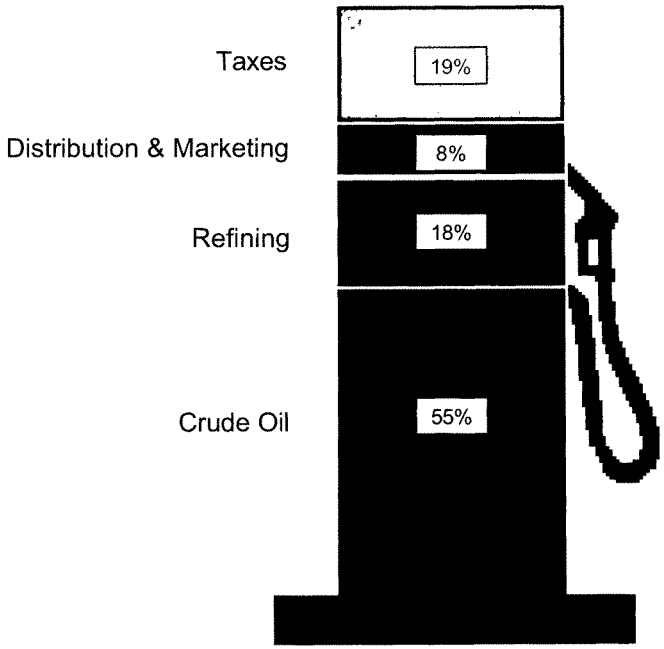


Sources: History: EIA; Projections: Short-Term Energy Outlook, July 2005.

www.eia.doe.gov

Attachment 3

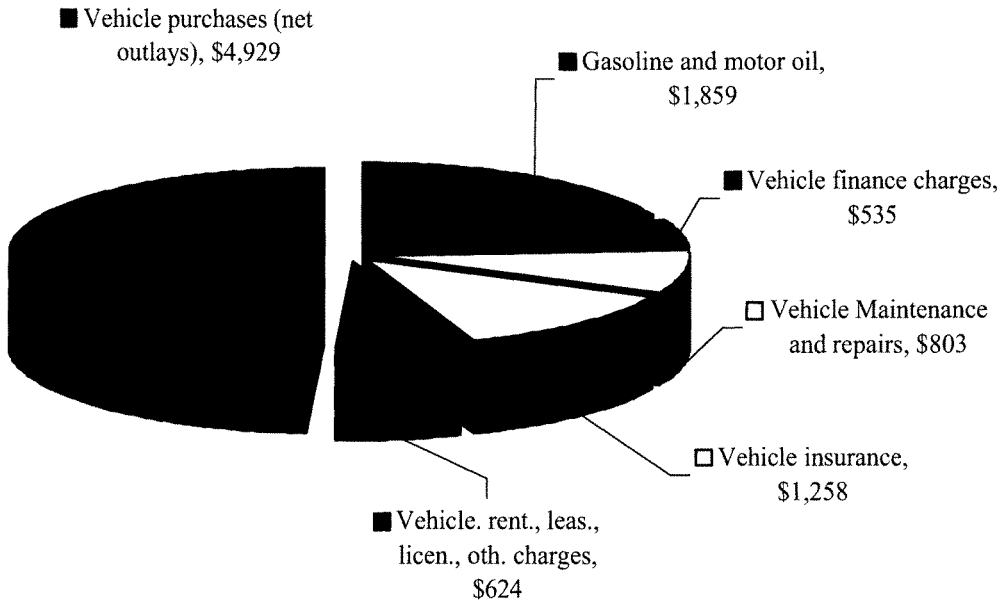
What We Pay for in a Gallon of Regular Gasoline



Source: EIA

Attachment 4

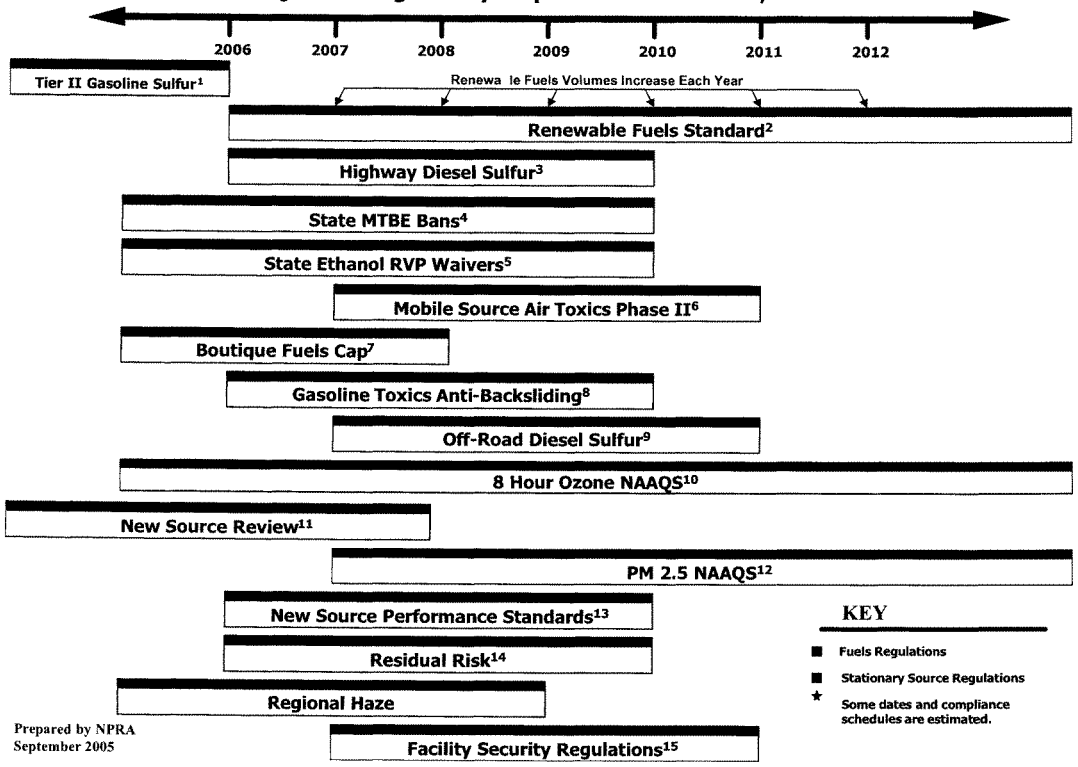
2003 Annual Estimated Vehicle Expenditures for a Family of Four



Source: Bureau of Labor Statistics

Attachment 5

Projected Regulatory Impacts on Refineries, 2006 - 2012*



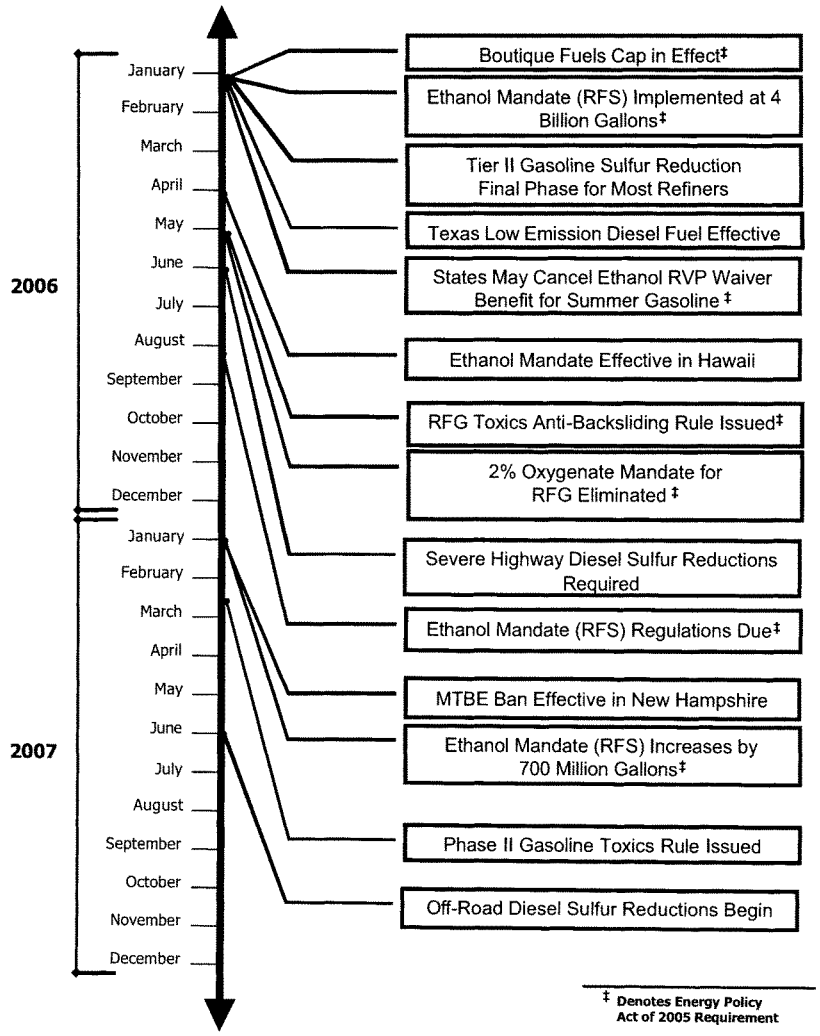
Prepared by NPRA
September 2005

Notes:

1. Longer compliance time for refineries in Alaska and Rocky Mountain states as well as small refineries covered by the Small Business Regulatory Enforcement and Flexibility Act (SBREFA). Additional compliance time is available for these refineries if they produce ultra low sulfur highway diesel beginning in 2006.
2. The Energy Policy Act of 2005 includes a renewable fuels standard (RFS) which mandates the use of 4 billion gallons of renewable fuels starting in 2006. The mandate increases to 7.5 billion gallons in 2012. EPA must promulgate regulations by August 2006.
3. Longer compliance time for small refiners covered by SBREFA.
4. Approximately twenty-five states currently have MTBE bans in place and others may pass similar bans in the future.
5. The Energy Policy Act of 2005 allows state governors to petition EPA to eliminate the one pound RVP waiver for summer gasoline blended with ethanol.
6. Phase II Mobile Source Air Toxics Rule to be proposed in February, 2006. Final rule expected in 2007.
7. The Energy Policy Act of 2005 caps the number of motor fuels available for use in State Implementation Plans at the same level as those already in use as of September 1, 2004. EPA must publish a list of approved fuels by state and PADD by November, 2005.
8. Under the Energy Policy Act of 2005 EPA must promulgate a rule to implement RFG anti-backsliding adjustments that will maintain emissions at 2001 and 2002 levels.
9. The first phase of the off-road diesel sulfur program is effective in 2007 and the second phase is effective in 2011.
10. Ozone non-attainment designations made April 2004. State Implementation Plans (SIPs) are due by June 2007. Compliance, depending upon classification, required between 2007 and 2021. EPA promulgated a Phase 1 implementation rule in April 2004, but has not yet promulgated a Phase 2 rule.
11. New Source Review reform (RMRR) is subject to litigation. Refiners face uncertainty in meeting regulatory requirements. The NSR program was upheld in part by the courts however, part of the rule was remanded to EPA. Refiners support the reforms. EPA is continuing enforcement actions under the old rules.
12. EPA set a new PM 2.5 NAAQS in 1997 and designated nonattainment areas in December 2004, but has not yet promulgated implementation standards. EPA is currently conducting a five-year review of the standard.
13. EPA has entered into a consent decree with environmental organizations to review, and possibly revise, the New Source Performance Standards for petroleum refineries.
14. Proposed rule expected mid 2006.
15. The Senate and the Administration support new authority for DHS to regulate chemical security which will impact refiners. Many facilities currently meet Coast Guard regulations under MTSA.

Attachment 6

Fuels Timeline



Attachment 7 - Source: API, 1997

Appendix A
PETROLEUM REFINING: APPLICABLE REGULATIONS

Name	Code of Federal Regulation (CFR) Cite	Effective Date
CLEAN AIR ACT (CAA)		
New Source Performance Standards (NSPSs)	40 CFR Part 60	
Subpart A: General Provisions	40 CFR Part 60	mid 1970s
Subpart Cb: Designated Facilities - Existing Sulfuric Acid Units	40 CFR Part 60	1991
Subpart D: Fossil-Fuel Fired Steam Generators Constructed After 8/17/71	40 CFR Part 60	1977
Subpart Da: Electric Utility Steam Generating Units Constructed After 9/18/78	40 CFR Part 60	1978
Subpart Db: Industrial-Commercial-Institutional Steam Generating Units	40 CFR Part 60	1987
Subpart Dc: Small Industrial-Commercial-Institutional Steam Generating Units	40 CFR Part 60	1990
Subpart H: Sulfuric Acid Units	40 CFR Part 60	1977
Subpart J: Petroleum Refineries	40 CFR Part 60	1978
Subpart K: Storage Vessels for Petroleum Liquids Constructed, Reconstructed or Modified between 6/11/73 and 5/19/78	40 CFR Part 60	1977
Subpart Ka: Storage Vessels for Petroleum Liquids Constructed, Reconstructed or Modified between 5/18/78 and 7/23/84	40 CFR Part 60	1980
Subpart Kb: Volatile Organic Liquid Storage	40 CFR Part 60	1987
Subpart GG: Stationary Gas Turbines	40 CFR Part 60	1978
Subpart UU: Asphalt Processing and Roofing Manufacturing	40 CFR Part 60	1982
Subpart VV: Equipment Leaks of VOC in the Synthetic Organic Chemicals Manufacturing Industry (SOCMI)	40 CFR Part 60	1983
Supart XX: Bulk Gasoline Terminals	40 CFR Part 60	1983
Subpart GGG: Equipment Leaks of VOC in Petroleum Refineries	40 CFR Part 60	1984
Subpart III: VOC Emissions for SOCMI Air Oxidation Unit Processes	40 CFR Part 60	1990
Subpart NNN: VOC Emissions for SOCMI Distillation Processes	40 CFR Part 60	1990
Subpart QQQ: VOC Emissions for Petroleum Refinery Wastewater Systems	40 CFR Part 60	1988
Subpart RRR: SOCMI Reactor Processes	40 CFR Part 60	1993
National Emission Standards for Hazardous Air Pollutants (NESHAPs)		
Subpart A: General Provisions	40 CFR Part 61	1973
Subpart J/V: Equipment Leaks (Fugitive Emission Sources) of Benzene	40 CFR Part 61	mid 1980s
Subpart M: Asbestos	40 CFR Part 61	1984
Subpart Y: Benzene Emissions from Benzene Storage Vessels	40 CFR Part 61	mid 1980s
Subpart BB: Benzene Emissions from Benzene Transfer Operations	40 CFR Part 61	mid 1980s
Subpart FF: Benzene Waste Operations	40 CFR Part 61	1993

Name	Code of Federal Regulation (CFR) Cite	Effective Date
NESHAPs for Source Categories		
Subpart A: General Provisions	40 CFR Part 63	1994
Subpart B: Control Technology Determination	40 CFR Part 63	1994
Subpart F: SOCMI	40 CFR Part 63	1994
Subpart G: SOCMI Process Vents, Storage Vessels, Transfer Operations, and Wastewater	40 CFR Part 63	1994
Subpart H: Equipment Leaks	40 CFR Part 63	1994
Subpart I: NESHAP for Organic Hazardous Air Pollutants (HON); Certain Processes Subject to the Negotiated Regulation for Equipment Leaks	40 CFR Part 63	1994
NESHAP for HON (partially under stay pending reconsideration for compressors, surge control vessels, and bottom receivers)	40 CFR Part 63	4/22/94
Subpart Q: Industrial Cooling Towers	40 CFR Part 63	1994
Subpart R: Stage I Gasoline Distribution Facilities	40 CFR Part 63	12/14/94
Subpart T: Halogenated Solvent Cleansing (MACT)	40 CFR Part 63	12/2/94
Subpart Y: NESHAP for Marine Tank Vessel Loading and Unloading Operations (MACT)	40 CFR Parts 9, 63	mid 1995
Subpart CC: NESHAP for Petroleum Refining — Phase I (MACT)	40 CFR Parts 9, 60, 63	mid 1995
Stack Height Provisions	40 CFR Part 51, Subpart G	1986
Control Technology Guidelines (CTGs)		
Petroleum Liquid Storage In External Floating Roof Tanks	40 CFR Part 52	1978
Petroleum Liquid Storage in Fixed Roof Tanks	40 CFR Part 52	1977
Petroleum Refinery Equipment Leaks	40 CFR Part 52	1978
Refinery Vacuum Producing Systems, Wastewater Separators and Process Unit Turnarounds	40 CFR Part 52	1977
SOCMI Air Oxidation Processes	40 CFR Part 52	1984
SOCMI Distillation Operations and Reactor Processes	40 CFR Part 52	1993
Tank Truck Gasoline Loading Terminals	40 CFR Part 52	1977
Fuels		
Fuel and Fuel Additives:		
Registration Requirements	40 CFR Part 79	5/27/94
Interim Requirements for Deposit Control Gasoline Additives	40 CFR Part 80	1/1/95
Reid Vapor Pressure Limitation	40 CFR Part 80	late 1980s
Oxygenated Fuel Requirement	40 CFR Part 80	1992
Lead Phaseout	40 CFR Part 80	12/31/95
Reformulated Gasoline	40 CFR Part 80	1/1/95
Low Sulfur Diesel	40 CFR Part 85	1993
Permits		
State Operating Permit Program - Title V (Revised 8/29/94)	40 CFR Part 70	1992
Prevention of Significant Deterioration (new sources in attainment areas) and New Source Review (new sources in non-attainment areas); LAER requirements (existing source)	40 CFR Part 52	1978
Stratospheric Ozone	40 CFR Part 82	1990-2015

Name	Code of Federal Regulation (CFR) Cite	Effective Date
Acid Rain Provisions	40 CFR Parts 72, 73, 75, 77, 78	ongoing
Nitrogen Oxides Emission Reduction Program	40 CFR Part 76	1994
CLEAN WATER ACT (CWA)		
Discharge of Oil: Notification Requirements	40 CFR Part 110	1987
Designation of Hazardous Substances	40 CFR Part 116	1978
Notice of Discharge of a Reportable Quantity	40 CFR Part 117	late 1970s
Spill Prevention, Control, and Countermeasures (SPCC) Requirements for Oil Storage	40 CFR Part 112	mid 1970s
General Provisions for Effluent Guidelines and Standards	40 CFR Part 401	1974
Toxic Pollutant Effluent Standards	40 CFR Part 129	1977
Effluent Guidelines and Categorical Pretreatment Standards	40 CFR Part 419	late 1970s - mid 1980s
Water Quality Standards for Toxic Pollutants	40 CFR Part 131	2/5/93
General National Pretreatment Standards	40 CFR Part 403	early 1980s
Great Lakes Water Quality Guidance	40 CFR Parts 9, 122, 123, 131, 132	early 1995
NPDES		
Stormwater Application, Permit, and Reporting Requirements Associated with Industrial Activities	40 CFR Part 122	5/4/92
Permit	40 CFR Parts 121-125	early 1980s
OIL POLLUTION ACT (OPA)		
Natural Resource Damage Assessments (NRDA) under National Oceanic and Atmospheric Administration	15 CFR Part 990	early 1996
Response Plans for Marine Transportation-Related Facilities (interim final rule)	33 CFR Parts 150, 154	1/19/93
Oil Pollution Prevention; Non-Transportation-Related Onshore Facilities	40 CFR Parts 9, 112	8/30/94
RESOURCE CONSERVATION AND RECOVERY ACT (RCRA)		
Non-Hazardous Waste Requirements (Subtitle D)	40 CFR Parts 256, 257 (Federal guidelines for state/local requirements)	late 1970s, early 1980s
Subtitle C Requirements		
General Requirements for Hazardous Waste Management	40 CFR Part 260	late 1970s
Identification and Listing of Hazardous Wastes and Toxicity Characteristics	40 CFR Part 261	late 1970s
Standards Applicable to Generators of Hazardous Wastes		
Subpart A: General Provisions	40 CFR Part 262	early 1980s
Subpart B: Shipping Manifest	40 CFR Part 262	early 1980s
Subpart C: Packaging, Labeling, Marking, and Placarding	40 CFR Part 262	early 1980s
Subpart D: Recordkeeping and Reporting	40 CFR Part 262	early 1980s
Subparts E & F: Exports and Imports	40 CFR Part 262	early 1980s
Standards for Owners and Operators of Hazardous Waste Treatment, Storage, and Disposal Facilities (and generally for Interim Status)		
Subparts A & B: General Provisions & Facility Standards	40 CFR Part 264 (265)	early 1980s
Subparts C & D: Preparedness, Prevention, & Emergency Plans	40 CFR Part 264 (265)	early 1980s
Subpart E: Recordkeeping/Reporting Requirements	40 CFR Part 264 (265)	early 1980s

Name	Code of Federal Regulation (CFR) Cite	Effective Date
Subpart F: Releases from Units	40 CFR Part 264	early 1980s
Subpart F: Groundwater Monitoring Requirements (Interim Status only)	40 CFR Part 265	early 1980s
Subpart G: Closure and Post-closure Requirements	40 CFR Part 264 (265)	1986
Subpart H: Financial Responsibility Requirements	40 CFR Part 264 (265)	early 1980s
Subparts I, J, K, & L: Use and Management of Containers, Tank Systems, Surface Impoundments, & Waste Piles	40 CFR Part 264 (265)	early 1980s (except tanks: 1986)
Liners and Leak Detection for Hazardous Waste Land Disposal Units	40 CFR Part 264 (265)	1992
Double Liners and Leachate Collection Systems for Hazardous Waste Disposal Units	40 CFR Parts 144, 264 (265)	1992
Subparts M, N, & O: Land Treatment, Landfills, & Incinerators	40 CFR Part 264 (265)	early 1980s
Subpart S: Corrective Action	40 CFR Part 264 (265)	1985 (1993)
Subparts AA, BB, & CC: Air Emission Standards for Process Vents; Equipment Leaks; & Tanks, Surface Impoundments, and Containers	40 CFR Part 264 (265)	
Phase I	40 CFR Part 264 (265)	1990
Phase II	40 CFR Part 264 (265)	1994
Standards for the Management of Specific Hazardous Wastes	40 CFR Part 266	1985
Land Disposal Restrictions	40 CFR Part 268	1986
Phase I: Contaminated Debris and Newly Identified Wastes, F037 and F038 Petroleum	40 CFR Parts 148, 268	1992, 1993
Phase II: Set Treatment Standards (BDAT) for TC Wastes and Establish Universal Treatment Standards	40 CFR Parts 148, 268	1994
Permits	40 CFR Parts 270, 271, 272	1980s
Standards for the Management of Used Oil: Used Oil Destined for Recycling	40 CFR Part 279	1993
Underground Storage Tanks: Technical Standards and Corrective Action	40 CFR Part 280	1988
SAFE DRINKING WATER ACT (SDWA)		
Underground Injection Control Regulations	40 CFR Parts 144, 146	12/16/93
SUPERFUND (CERCLA)		
Natural Resource Damage Assessments (also under CWA)	43 CFR Part 11	3/17/94
Reportable Quantities Releases (Notification to National Response Center)	40 CFR Part 302	mid 1980s
Extremely Hazardous Substances (EHSs) Emergency Planning	40 CFR Part 355	1987
EHS Release Notification (Notification to State Emergency Response Commission, Local Emergency Response Commission) and Follow-up	60 CFR Part 355	mid 1980s
Community Right-To-Know		
Hazardous Chemicals (Material Safety Data Sheet Chemicals) Inventory Reporting	40 CFR Part 370	late 1980s
Toxic Chemical Release Reporting	40 CFR Part 372	1988
Expansion of TRI List	40 CFR Part 372	11/30/94

Name	Code of Federal Regulation (CFR) Cite	Effective Date
TOXIC SUBSTANCES CONTROL ACT (TSCA)		
General Provisions	40 CFR Part 702	1982
Reporting and Recordkeeping Requirements	40 CFR Parts 704, 710	1988, late 1970s
Chemical Information Rule	40 CFR Part 712	1982
Health & Safety Data Reporting	40 CFR Parts 716	1986
Premanufacture Notification (and Exemptions)	40 CFR Parts 720 (723)	1983 (1995)
Significant New Uses	40 CFR Part 721	1988
Chromium Comfort D Cooling Towers	40 CFR Part 749	1990
Rules for Controlling Polychlorinated Biphenyls	40 CFR Part 761	1979
Asbestos-Containing Products Labelling Requirements	40 CFR Part 763	1979

Update of Appendix A[1]

Name	Code of Federal Regulation (CFR) Cite
CLEAN AIR ACT (CAA)	
New Source Performance Standards	40 CFR Part 60
Subpart CCCC: Commercial and Industrial Solid Waste Incineration Units	40 CFR Part 60
NESHAPS for Source Categories	40 CFR Part 63
Subpart EEE: Hazardous Waste Combustors	40 CFR Part 63
Subpart UUU: Petroleum Refineries: Catalytic Cracking Units, Catalytic Reforming Units, and Sulfur Recovery Units (Refinery MACT II)	40 CFR Part 63
Subpart EEEE: Organiz Liquids Distribution (Non- Gasoline)	40 CFR Part 63
Subpart FFFF: Miscellaneous Organic Chemical Manufacturing	40 CFR Part 63
Subpart YYYY: Stationary Combustion Turbines	40 CFR Part 63
Subpart GGGGG: Site Remidiation	40 CFR Part 63
Subpart LLLLL: Asphalt Roofing and Asphalt Processing	40 CFR Part 63
Subpart DDDDD: Industrial/Commerical/Institutional Boilers and Process Heaters	40 CFR Part 63
Subpart ZZZZZ: Reciprocating Internal Combustion Engines	40 CFR Part 63
Fuels	40 CFR Part 80
Subpart H: Tier II Gasoline Sulfur	40 CFR Part 80
Subpart I: Ultra Low Sulfur Highway Diesel	40 CFR Part 80
Subpart J: Mobile Source Air Toxics	40 CFR Part 80

[1] As of April 2004 Source: NPRA

Attachment 8

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A Note to Members of the House and Senate
Re: Refining and Energy Supply Issues
October 5, 2005

In the aftermath of Hurricanes Katrina and Rita, refinery issues have been front and center in many people's minds. For some time now, NPRA's priority issue has been the importance of U.S. refining capacity to the nation's economy and energy security. *The Wall Street Journal* recently published an editorial on this subject, entitled "*Refinery Incapacity.*" Putting the introduction and ethanol-related dicta aside, its comments on refining-related issues are compelling. Few, if any of us ever see an editorial piece with which we agree 100%. But much that is said in this particular editorial directly on the subject of refining capacity is extremely worthwhile. Given Congress' current level of interest in this issue, we want to make certain that you do not miss this important item. A link to the editorial is provided below.
http://webreprints.djreprints.com/29816.html
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Thank you for your continuing interest in and support for the nation's refining and petrochemical industries.

Yours sincerely,

Bob Slaughter
President

Reprinted from THE WALL STREET JOURNAL.

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REVIEW & OUTLOOK

Refining Incapacity

Midway through his press appearance Monday, we wondered if President Bush was going to don a cardigan. He was waxing on about energy "conservation," a la Jimmy Carter, and at one point he even said Americans should "curtail nonessential travel." Maybe they should turn down their thermostats and let their kids tap their keyboards with gloves on, too.

Only belatedly did Mr. Bush get around to the real energy problem that Hurricanes Katrina and Rita revealed for all Americans to see: the degree to which government policy has limited energy production so that a single big storm can deliver a supply shock that sends prices through the roof. Exhibit A is the oil refining industry, which hasn't built a new refinery in America since . . . before Jimmy Carter was in office (1976).

Rita shuttered 27% of the nation's capacity to refine crude oil into gasoline, heating oil and other products. This followed Katrina, which shut down 10% of capacity, sending the average price of gasoline up to $3.07 a gallon. Things are now slowly getting back to "normal," though normal is not a synonym for good.

In 1981, there were 325 refineries in the U.S. with a capacity of 18.6 million barrels per day. Today, there are 148, with a capacity of about 17 million barrels—though U.S. demand for gasoline has increased more than 20%. From 1993 to 2002, the average return on investment in the refining industry was 5.5%, or less than half the S&P industrials average of 12.7%.

One explanation for this performance is the historically low gas prices over much of the past 20 years; there has often been little incentive to build new capacity. But just as big a problem are onerous and costly regulatory burdens that have sucked profits from the industry. This includes a permitting process that is subject to endless bureaucratic delay and court challenges. The one company that is even considering building a new refinery—Arizona Clean Fuels Yuma—has been trying to obtain its necessary air permits for nearly seven years.

Politicians have done as much damage as the hurricanes.

Refiners have also had to spend some $47 billion in the past 12 years to meet the demands of, among other laws, the Clean Air Act, the Clean Water Act, the Toxic Substances Control Act, the Safe Drinking Water Act, the Oil Pollution Act, the Resource Conservation and Recovery Act, and the Comprehensive Environmental Response, Compensation and Liability Act. And from 2006 to 2012, refiners will be forced to comply with 14 new major environmental programs.

One of those is a rule to reduce sulfur in gasoline, which will go into its final stage next year. The U.S. refining industry will spend $8 billion to comply, and should be able to meet federal deadlines. But the rule further limits the ability to import extra gasoline, since many foreign firms are unable or unwilling to meet the new standards.

Ditto a new low-sulfur diesel mandate, which carries another $8 billion price tag. Refiners are understandably worried that low-sulfur diesel, which must go through the same pipes as higher-sulfur products, will ultimately fail to meet specifications and will have to be reprocessed—potentially causing a major diesel-fuel crunch.

The recent energy bill only makes things worse. Its new ethanol mandate, a payoff to Midwest farming interests, will involve complicated refinery changes. And Congress's failure to pass liability protection for makers of MTBE, a fuel additive, will make it difficult for refiners to keep using that product next year. MTBE currently makes up a significant 1.6% of the nation's gasoline supply (more in certain areas), and refiners will have to find something to replace it. Good luck.

Refining companies have actually supported many of these environmental programs. The industry's complaint is that policymakers have put little thought into the timing or cumulative impact of these rules. At the Department of Energy's request, the National Petroleum Council performed two studies of the refining industry (in 2000 and 2004) and among its top recommendations was that regulators sequence environmental programs to give refiners some breathing room. Congress hasn't lifted a finger in response.

Meanwhile, America's energy supply crunch is only going to get worse. Demand for petroleum products is expected to rise by 1.6% annually for the next 25 years. Yet America's refineries are already operating at 95% capacity, while imports are both costly and limited. Assuming the basic law of supply and demand, Americans are looking at sustained Katrina-like gas prices and shortages for years to come.

Congressional Republicans are mulling several ideas, including bills that would speed up refinery permitting or convert old military bases into refinery sites. These are good first steps, but at some point the political class is going to have to find the backbone to ease the rules that it has imposed and that are creating today's energy shortages.

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Mr. ISSA. Thank you.
Mr. Sankey.

STATEMENT OF PAUL SANKEY

Mr. SANKEY. Thank you, Mr. Chairman. It is an honor to be here to address you. Thank you for the invitation. My name is Paul Sankey. I am the lead oil stock analyst at Deutsche Bank on Wall Street.

My professional experience dates to 1990, when I joined the International Energy Agency in Paris—3 weeks before Saddam Hussein invaded Kuwait. It is symptomatic of the situation that we now find ourselves in that the last emergency drawdown of oil stocks that was undertaken by the IEA occurred back in 1990, and we recently had a similar emergency drawdown.

The point being that, certainly from a Wall Street perspective, we have an energy crisis in this country right now. It is a grave crisis. It has been marked and has been overshadowed, if you like, by the fact that we are in a shoulder season for energy demand; which is to say we are not in the driving season of summer. We are in the heating season of winter. But the reality is we have an oil crisis and a gas crisis on our hands.

The markets and Wall Street do not like it. The S&P 500 is down 8 percent this year. The oil stocks are up 40 percent, and even within the past 3 weeks, we have seen the oil stocks themselves begin to sell off very aggressively in a market that essentially is sick. The reason for that primarily is grave concern about very high oil prices and the inflationary impact that will have.

In terms of addressing the question here, "Petroleum Refineries: Will Record Profits Spur Investment in New Capacity?," we would agree that the simple answer is "Yes." And it is actually already occurring.

There are a number of reasons why it is not occurring as quickly as might be expected, but ultimately, the fact is that we are here in Washington addressing this question right at the top of the cycle; which is to say, you are looking at the question too late, and after the event. Even if you could address the situation—assuming a decision was made tomorrow, for instance, to build a refinery on an air force base by the President—it would take 2 to 3 years to actually address a problem that is right here, right now.

The fact of the matter is that, as we head toward winter, we are totally at the mercy of the market, and it could be a pretty serious winter, indeed, ahead of us. Arguably, for the next 2 years we will remain at the mercy of the market, and, of course, the concern there is that the market goes after the weak and the poor first; I am afraid to say that is what is about to happen.

In terms of what I have provided here in testimony, from a Wall Street perspective, we have come several times over the past year to Washington to meet senior policy advisors, such as Mr. Slaughter, for whom we have the highest respect. It has to be said that Bob does represent the industry and is somewhat biased in his opinions; but ultimately, he is a very experienced and respected commentator on the problems that the U.S. refining industry faces—and is a fair commentator, for that matter.

The general political backdrop that we find in Washington is a total lack of coherence on policy. There is no overriding policy, such as in the energy bill, to face up to the problems that you now have in this country regarding oil and gas.

Mr. ISSA. Are you saying that the energy bill did or didn't have a policy impact?

Mr. SANKEY. I am saying it has no overriding policy and, ultimately, will achieve very little.

The fact is that the way that the problems are addressed on the Republican side tends to be supply side solutions; which arguably, are going to make your problems worse. The point being that oil is under-priced in this country.

The Democrat side, as we have just heard, suggests over-complicated solutions that harken back to, as Mr. Slaughter has referred to, the bad days of 1979–1980, when a complex series of regulations were imposed and only came into effect just as oil prices hit $10 a barrel and were incredibly low.

So again, you find yourself addressing Washington at what feels like the peak of the cycle, where the likelihood of policy and legislation addressing the problems that we face will only eventually come into force when the cycle is actually at the bottom. That pattern yields a conclusion that says there will be no help from Washington and there will be no solution from Washington for the problems we face.

Therefore, we look within this testimony, at the market and how the market will react to what we face here. The problem that we are finding is that the market is not reacting either on the demand side of the equation or on the supply side of the equation, which becomes the reason that we are having this hearing today.

In terms of the demand side, it is not all bad; because as you will see on Figure 3 of my testimony, oil has much less impact on the economy than it did in 1979–1980. So, whereas real oil prices now are at similar levels to the prices that we saw back in the 1970's and early 1980's, the reality is that oil's impact on GDP is much lower, and remains, actually, at manageable levels.

I think most people would agree that, whilst they have a degree of sticker shock regarding gasoline prices, in reality, their behavior hasn't greatly changed—maybe at the margin; but there hasn't really been the sense of crisis that you had back then regarding oil. I think that is because of this fact that oil prices do not impact pocketbooks in the same way now as they did then. Of course, you are heading rapidly in that direction, but for the moment you are not having that impact quite yet.

So the demand side of the equation essentially isn't reacting. Figures 4 and 5 illustrate how gasoline prices, whilst looking high in terms of sticker shock, in fact don't impact income in the way that might be expected.

If the demand side is not reacting, it becomes a question of: When will the supply side react? Because as our Democratic commentator pointed out, the fact is that we are really looking for some sort of supply response to this very high price environment. And the fact that we are not getting a supply response is what is driving higher prices.

Now, in that regard, we find that exploration success in oil globally isn't related to high oil prices. We aren't finding any more oil as a result of high oil prices. In fact, the major exploration success of the past 50 years came at times of low oil prices, because major oil discoveries make good money regardless of the oil price. You don't explore necessarily any more just because the oil price is high, you always want to find oil.

The reality is that we are running out of oil in easy places, such as Texas. So essentially, you are forced now to go to countries which more or less are hostile to you, and you have to recognize that. The voracious demand for oil in the United States is coming up against the political reality of what it is like to deal and be dependent on Saudi Arabia and the Middle East, Iran, and these other countries which essentially are not particularly friendly to you.

Now, our conclusion is that you need to do more to address the demand side of the equation, to prevent yourselves being forced into this corner. To refer back, what we find is that the Republican solution tends to be to attempt more supply side solutions that are only going to encourage more demand, which is only going to give the United States problems down the line. That becomes the concern.

There is a further perversity of $70 oil, which is that, at $70 oil, less oil is produced and less opportunities become available. The reason for that is that foreign governments, who are impoverished and weakened by low oil prices, benefit from very high oil prices. What you find is that Hugo Chavez, the Saudis, the Iranians, are earning very, very big revenues at the moment from very high oil prices, and they don't need Exxon-Mobil's investment; they don't need any capital. As a result, they raise taxes, and reduce the opportunity set. The net effect, then, is that we find Exxon with excess cash on its balance sheet—which is what is outraging people in many respects—simply because it doesn't have places to put the money.

Now, one of the outlets that we are seeing very strongly is in U.S. refining. There is no doubt that there is increasing spending from the major oil companies into U.S. refining; not least because there are few other outlets for them to actually spend money.

A further problem here is that the remaining opportunities—which would be friendly countries like Qatar, Canadian heavy oil, some of the other opportunity sets that remain globally—become very competitive. You have a concentration of money chasing the same opportunity sets, and that then bids up prices further.

The net effect of $70 or $65 oil that we have now is actually to cause prices to go even higher. You find yourself in this ongoing crisis cycle; which reverts back to my first point: that we are in a much bigger emergency here, certainly from the perspective of Wall Street, than I think is perceived in Washington, and we remain extremely concerned about the situation.

I talked a little bit about how supply is not reacting, how demand remains robust to the environment. In terms of the investment cycle, the chart that was up—which is no longer up—just addresses, on Figure 15, how investment returns have worked over the past 20 years in oil.

What we saw—and Bob has referenced this—was many years when you had excess capacity in oil and, as a result, very low returns. You can see there in the red bars the returns, and the dotted line is what we call the cost of capital. You need to have bars that are above the dotted line in order to make a decent return. You can see that the global oil industry—in this case, the oils quoted in the S&P 500—didn't meet the cost of capital for fully 20 years; at which point, no politicians reached out a hand to help.

Now that we have found ourselves having successfully tightened up spare capacity, what we have had is a double effect. Because not only has the capacity itself been tightened to the point where margins have risen, but that then has fed through to higher oil prices, and has almost doubled the return, if you like, that the companies are making.

Now again, it is a simple fact of economics that those sorts of excess returns will not be continued as long as you are in a free-market situation. Our major concern would be that you have at this stage of the cycle government intervention which messes up the forces of the markets to the point where you just encourage the investment that is likely to happen anyway.

What you find, I think, to sum up, is if you look at the ratings that Wall Street currently accords U.S. refining stocks, they are now some of the cheapest stocks available in the market. The price/earnings ratio of the overall market is about 18 times earnings. An extreme high stock—like a Google, which everyone wants to own—would trade at about a 70 or 80 times earnings. Valero Energy currently trades at six times earnings.

What Wall Street is telling you is that there will be investment and excess returns will be driven out; but that, furthermore, there is a risk of intervention from politicians that will actually not only allow the market not to work its course, but also destroy the excess earnings through external intervention.

So I guess what I am trying to say to you is that what you should do now—because it is too late—is cross your fingers; hope that the winter is not too cold; and allow the market to work its course, which it will. Investment is going on, and I think ultimately we will solve this problem. I just hope that the near-term pain is not too severe. Thank you.

[The prepared statement of Mr. Sankey follows:]

Industry Bulletin

North America United States
Industrials Integrated Oil

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Industry Announcement

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Oversight Hearing

Subcommittee on Energy and Resources

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House Government Reform Sub-Committee on Energy and Resources
Oversight Hearing: "Petroleum Refineries: Will Record Profits Spur Investment in New Capacity"

Synopsis
The current situation in US oil and gas can be seen in the context of a fulcrum point. The 20th Century was one in which the US economy was driven by abundant cheap domestic oil and gas. The 21st century will be driven by scarcer, more expensive, imported oil. The current priorities of US consumers and politicians are lagging the realities of the future, which are all too visible in the present energy crisis. US refining is a symptom of the problems faced, rather than a cause. Consumers and politicians are living in a past 20th Century in which the US was the largest producer of oil and gas in the world, and oil and gas were cheap enough to fuel voracious energy demand, for example in excessively heavy, over-large private vehicles, or SUVs. That cheap energy era has gone, and with a lack of coherent political policy to address US energy demand, we are in the hands of the market.

From a policy standpoint, given the future for the US is higher cost oil and gas, it would be better to address demand, which, if it could be reduced, would alleviate the problems of US refining. Instead, policy is fragmented but broadly works to encourage more supply and the continuation of cheap prices, that do not reflect the true cost of oil in terms of the wars and environmental costs that are ultimately caused. However, to repeat, policy is currently so fragmented that we are at the mercy of the market.

Will high margins generate more investment in US refining? Yes, as long as the government stays out of the way. Expect a high priced, volatile environment as the market adjust itself to the new reality. Remember that the market will attack the weak and helpless first. Economic and financial pain in the near term – this winter – should be severe. Demand and supply will likely revert to balance over time. Even if policy is rapidly addressed on the supply side, shortage of parts and labour mean nothing effective at a nationwide level can be done within 2-3 years, not least because the refining industry is already investing.

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DISCLOSURES AND ANALYST CERTIFICATIONS ARE LOCATED IN APPENDIX 1

US refining & record profits

Background

It is an honor to be here to address this most august of institutions at this critical time, not only for US, but also for global, energy supply.

My name is Paul Sankey, I am the lead oil stock analyst at Deutsche Bank. My professional energy experience dates from 1990, when I joined the International Energy Agency (IEA) in Paris three weeks before Saddam Hussein invaded Kuwait. The recent emergency IEA drawdown of oil inventory to provide post-Katrina oil to the United States is the first emergency drawdown since that invasion in 1990, giving you an idea of the crisis environment we are now in.

After the IEA I moved to Edinburgh, Scotland, to be a managing consultant at Wood Mackenzie, the global oil industry advisor. My specialization was global gas and particularly liquid natural gas (LNG). Last year I addressed a Joint Economic Committee hearing on that subject.

In 2000 I became a stock analyst at Deutsche Bank (DB), and now work at 60 Wall Street, advising on equity investment in the global oil and gas industry.

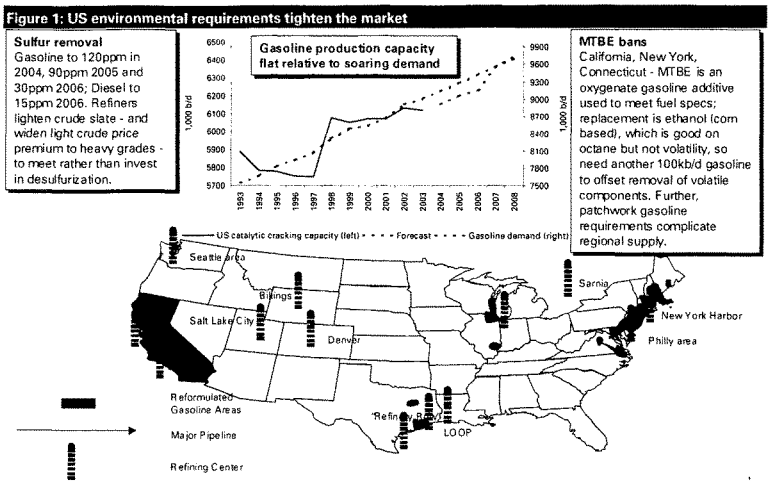
The question here today is: "Petroleum Refineries: Will Record Profits Spur Investment in New Capacity?". Given that conventional economic wisdom would provide a simple one word answer to that question, namely "Yes", it is perhaps more pertinent to first examine why we are asking such a simple question at all, and secondly add the more important and difficult to answer qualifier, namely "When and/or how will record profits spur investment?"

Will investment in new capacity be spurred?

Why are we asking? Because the latest view is that the problems of the US regarding oil stem from a lack of refining capacity. This is true on a short term basis, but the problems in US refining are symptomatic of a far bigger problem regarding the US and oil, namely that demand for cheap oil is huge, cheap oil is running out, the last barrels are heavier in grade and more sulphurous "sourer" and therefore more difficult to refine, yet US politicians have mandated ever lighter "sweeter" products with less sulphur and more complex grades. After years of excess capacity, which led to investment restraint, demand has now exceeded supply and solving the problem immediately is simply not possible. The net conclusion is that high prices and tight markets are here to stay, arguably not only for the 3-4 years it will take to add capacity, but also on a 50 and 100-year view.

US politicians only reflect the average consumer, who wants, by priority, low energy prices, from secure diverse sources, with high environmental restrictions to reduce environmental impacts that result from cheap energy.

Figure 1: US environmental requirements tighten the market



Source:

The net trailing result of that paradoxical combination has been 20 years of low energy prices because of low taxes, a need to move to less and less secure sources of supply as a result of strong demand growth, and a reduction in investment in US refining because of low margins and high regulation.

The prioritization of cheap energy supply above all has totally under-priced oil and gas in terms of its growing scarcity from secure sources and its environmental impact. The current prioritization of cheap - i.e. low tax - energy as a government priority is a function of the following::

- First, of supply side principle from Republicans and
- Second, bitter experience from Democrats, who suffered as a result of government attempts to price energy better to reflect its cost, and address the demand side of the equation. The Democrats were undone by the market in 1979/1980 which reacted sharply to extremely high prices with lower demand and sustained supply growth.

The logical and simple solution to almost all the energy problems that the United States faces is to tax oil, and particularly gasoline, to reflect better its true cost. Governments have been quick to tax smoking with a view to its cost to society, no wars have been fought over cigarettes. European and Asian governments have taxed gasoline to reflect its true cost. But in the United States, that has not been done.

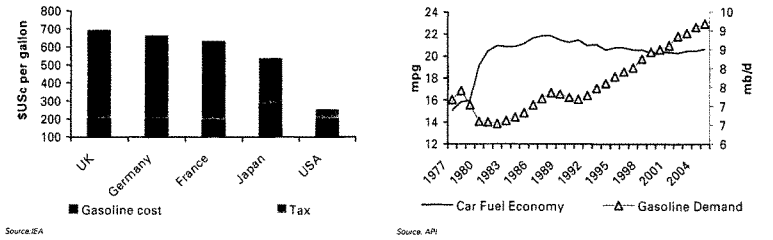
The importance of the US car industry within this equation should not be underestimated, and again the market is violently solving the paradox. SUVs have driven excessive and unproductive oil consumption to the point where they have forced oil prices higher, therefore

destroying demand for SUVs. The SUV manufacturers have had a last gasp "employee discount" giveaway of vehicles, but the sales trend is collapsing. The question now is how the government deals with the grave resultant problems of the US auto industry.

It is the various vested interests at work here that make the US political environment regarding energy so fragmented and contradictory. The most simple solution of higher gasoline tax is seen as political suicide. Any debate on energy quickly breaks into sub-interest groups arguing their corner, with the net effect that no coherent policy emerges. This essentially leaves the US energy market to its own devices.

So the key backdrop here is that the net effect of political intervention has been to reduce refining investment by attempting to patch over environmental impact of the voracious use of gasoline by US consumers who have paid extremely low prices for an increasingly scarce and difficult to obtain commodity.

Figure 2: US gasoline is cheap ...and so demand growth is strong and efficiency poor



Source: IEA Source: API

We take the view that US political consensus regarding oil is so fragmented that effectively there will not be any coherent policy outside of crisis management. With a Republican White House, the net moves made are likely to encourage supply, which effectively make the long term problems worse.

However there is an even worse idea, which is a windfall profit tax. Politicians did absolutely nothing to help the US refining industry when it was almost bankrupt, as recently as 2002, and yet are now formulating taxes that will directly serve to under-mine investment in US refining going forward. Our strong view is that if government intervention is really necessary, it should be to address the demand side (gently), rather than further complicate the supply side of the equation.

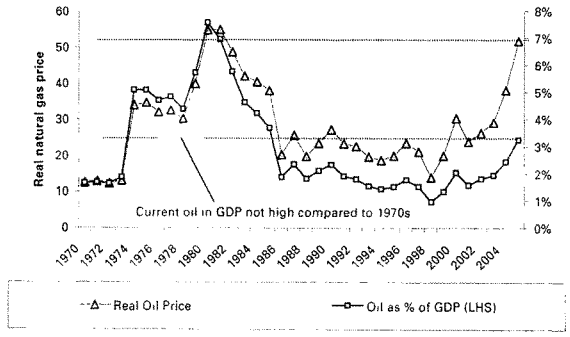
On balance, we think that given fragmentation and vested interest, the free market will work out the problems of US oil and gas, and by extension refining. The simple fact is that it is too late for coherent intervention, and the market is now on top of the situation. A free market might be seen as a positive, and relative to a government-managed market it most likely is. However it should be kept in mind that the market will solve problems with brutal efficiency at times, it will take the weak, helpless and poor first, and that is essentially the current environment in which we find ourselves.

Refining is not really the issue, oil supply and demand is...

Refining in the US may be tight on a short-term basis, but as recently as 2002 US refining was in over-capacity. In fact US refining tightness is a symptom rather than a cause, and should be considered in terms of the long term energy cycle which commenced in the modern era in the 1970s.

If we examine the current situation in terms of a 30 year cycle, and in terms of the economic impact of high oil prices and nervous geopolitics on US energy supply and demand, we can see that although current prices in real terms are approaching the levels seen during the energy crises of the 1970s, in fact oil as a percentage of GDP remains at a relatively far lower level that it was then. Current gasoline prices give US citizens "sticker shock" but do not have the same impact on their pocket book, or their behavior, as the price of the 1970s did. Therefore we find that US gasoline consumption is much more robust in the face of high prices now than it was back then.

Figure 3: Oil in GDP

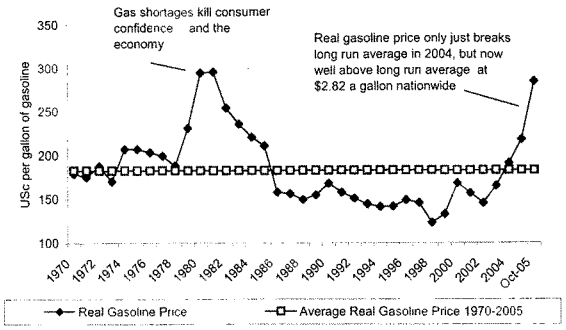


Source: DB, EIA, BLS

This has confounded predictions that oil demand would start falling as prices rose above $30 a barrel, as it did back then. Not only do consumer now spend relatively less on oil, but their consumption of it is now more or less only for staple use, transport (and heat). This is because the easy substitution of oil, for example in power generation, was undertaken in the 1970s and 1980s, and reduced economic dependence on oil. It also reduced oil use to its most staple un-substitutable use: in the internal combustion engine for use in transport. The net effect is we are less affected by high oil prices now, and the money we spend on oil is for a staple use, that of transport. Marginal choice of vehicle may change towards more efficient cars, in fact we think this will be a 21st century mega-trend that may solve our problems, but oil, specifically gasoline, will remain a staple requirement of life, and the US

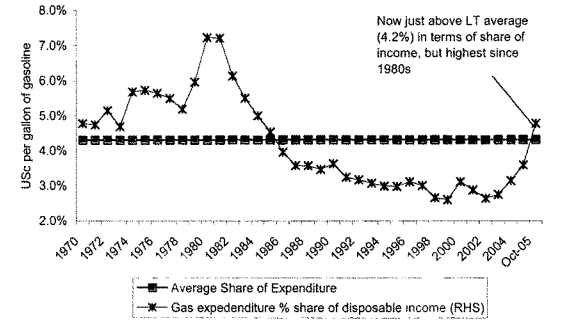
consumer will likely cut discretionary spending elsewhere, before abandoning their car, quite simply because they have no choice but to drive.

Figure 4: Gasoline prices in long term context



Source: API

Figure 5: But not so punitive in terms of average income



Source: API

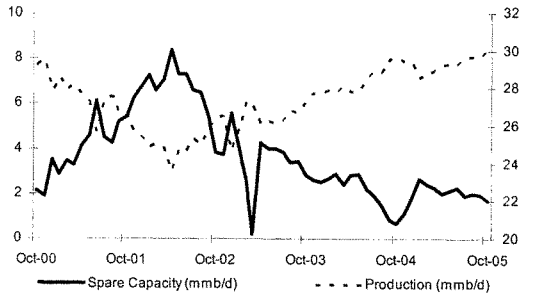
So demand has surpassed expectations, with the US economy accelerating its growth earlier this year in a $50/bbl oil environment. It has taken a move to a $65 environment to impact demand, and we at Deutsche Bank think that US demand still may be surprising with its strength, with data heavily distorted by hurricanes making certainty impossible. We believe that high oil prices will negatively affect poorer consumers, but that the current situation is manageable based on the long term view of how onerous current prices are against income. The concern is that prices may well move higher.

That leads us to the answer to the question "Why are we questioning whether high profits will cause refining investment?" Because elasticities are not working as they have previously. We, and the US refining industry, have been surprised by the strength of supply and the weakness of demand. The US oil industry has been caught scrambling.

We have highlighted that the economy is less dependent on oil and its use is now staple, which explains the demand part of the equation. However the supply side is less well understood. The simple fact is that in this latest cycle, the supply and demand reaction that was expected from $30+ oil has not happened at all to the extent expected, keeping in mind for example that OPEC had previously set a price band (in 1999) of $20-$30 oil. The reason for the *upper* limit was that higher than $30 oil was seen as likely to encourage supply and discourage demand.

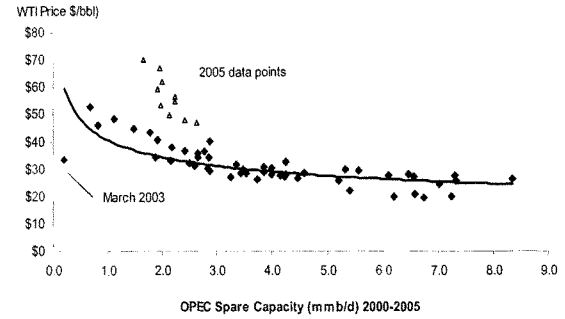
Why has supply not reacted? First, in greenfield oil exploration terms, there is no correlation between major exploration success and high prices. The major finds of Non-OPEC oil were in the late 1960s and early 1970s at low prices, and again in the late-1990s in the deepwater, again at low prices. Basically finding a major oil field is always profitable, and companies will always attempt to do it. Now, oil companies are quite clear that they would not do more exploration more at $50 oil than they would at $20, because of a lack of prospects in accessible places. They are doing everything they can and price makes no difference.

Figure 6: OPEC spare capacity falls .....



Source: OPEC, Bloomberg, DOE

Figure 7: ...which drives a nervous market still higher, but demand keeps coming

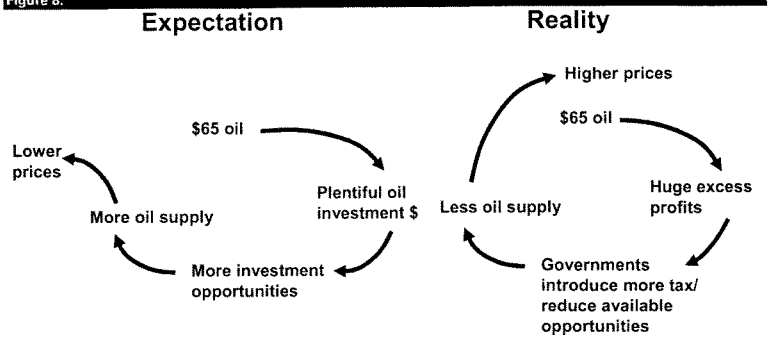


Source: OPEC, Bloomberg, DOE

Basically, demand growth for oil has long since out-stripped available domestic supply and effectively left the remaining resource in less friendly places, either in geological, geographical or geopolitical terms. The effect of not taxing US gasoline has been that now American consumers pay a direct tax not to their own treasury but rather to non-democratic governments with fundamentally different belief systems from the US, leading to a paradoxical need to engage these nations as allies. Every American is tragically aware of how dreadfully that complex and paradoxical engagement can end.

Even then, consumers may not realize how serious the situation is. Oil and gas is now imported from more-or-less hostile countries, many of whom have been offended by US foreign policy over the past 50 years. Again, the politicians tend towards the prioritization of cheap energy over more long term solutions. And again, because of the fragmentation of political policy into vested interest, there are multiple foreign policy paradoxes and problems caused by oil: for example a democratically elected Christian president of a neighboring country with vast oil and gas reserves is treated as an enemy of the USA. A distant non-democratic aggressively non-Christian country with a poor human rights record is accorded the status of primary ally. Both provide major imports. To further illustrate, regarding the first example, I suggested to policy makers here in Washington that in a coherent energy policy, Venezuela should be the single biggest ally of the US. "Yes, but what about the Miami vote?" was the response. Short term political imperatives govern long term policy sense.

Figure 8:



Source: DB

Equally, **now that the remaining oil is in less friendly places, the response when prices are very high are not as might be expected. $70 oil *reduces* the international opportunity set**. At $70 oil the opportunity set for major US oil companies is reduced, because countries such as Venezuela, Saudi Arabia, and Russia are made powerful by oil dollars with strong finances and no need for international oil capital. In fact the response to $70 oil tends to be to increase taxes and keep the majority of opportunities for the state company. The best recent example of this was Russia's major increase in oil production taxes and nationalization of Yukos as ExxonMobil was attempting to buy it. The major opportunities in Venezuela, Kazakhstan, and Nigeria came when oil prices were low, when host governments were critically short of money, and foreign oil company investment was desperately needed. In the current price environment, US foreign oil companies find less opportunities and higher tax.

Additionally, the host governments manage the oil system themselves rather than leave it to a more efficient foreign oil company. The net effect is that at high oil prices less competent management takes over and produces less, not more oil. Furthermore it is fundamentally in a government's interest to produce less oil for more money, to conserve its long term resource, rather than more oil for today's price even if is less, which is how a company will behave, to maximize current revenue and returns. So there is less production from state governments at high prices.

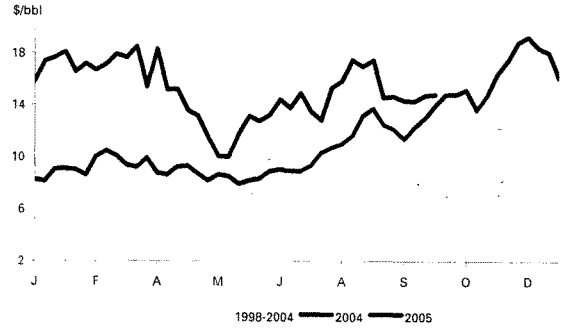
Finally, as host governments close up, the companies are forced to move to where the remaining opportunities are, and they begin to compete against each other, therefore raising costs. The major remaining huge, attractive opportunities are in deepwater, LNG, Canadian heavy oil, and Qatar. Every major oil company is now aggressively pursuing this remaining opportunity set and effectively raising costs by tightening labor costs, raw material costs, acquisition costs and bidding aggressively to win business. Obviously higher upstream oil costs feed through to consumers.

From a US refining investment standpoint, this lack of international opportunities means that crude supply is tight and we are moving to the final barrels available globally. That has widened the spread of price between a light sweet crude such as US domestic West Texas Intermediate, and a heavy sour crude such as Mexico's Maya. ***This has greatly improved***

profitability for those sophisticated refiners who have invested in capability to upgrade heavy crudes (which are relatively much cheaper) into light products.

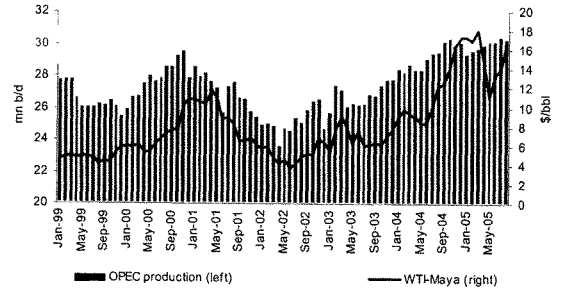
Almost all US refiners are currently undertaking investments or considering investments to take advantage of this differential. ***It is the key tightness of oil markets that leads the Saudis to claim that there is plenty of crude available but no takers. The barrels the Saudis are making available are heavy sourer barrels for which there is currently insufficient spare capacity to process in the US.*** The US refining industry is now undertaking almost as much investment as is physically possible to meet this market opportunity. There is certainly little capacity to do more.

Figure 9: Spread between heavy and light crudes 1998-2005



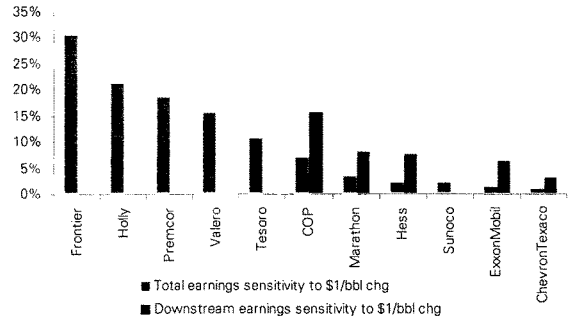
Source: Bloomberg

Figure 10: As OPEC production rises, so the differential light/heavy gets wider



Source: DOE, OPEC, Bloomberg

Figure 11: As the light heavy widens, sophisticated refiners make more money



Source: DB estimates

Oil supply and demand is met by imports from risky places...

Further to our view of global oil supply, the global concentration of oil supply into less friendly places is the answer to the question of "how well is the U.S. positioned to compete for crude oil and refined petroleum products in comparison to other global market participants?", we would say "probably worse", because you are now heavily dependent on countries that are not necessarily your friends. European and Japanese consumers were more import dependent during the 1970s and moved away from imported oil. The US is still in the import ascendancy, and reliant on countries where geopolitical relations are poor.

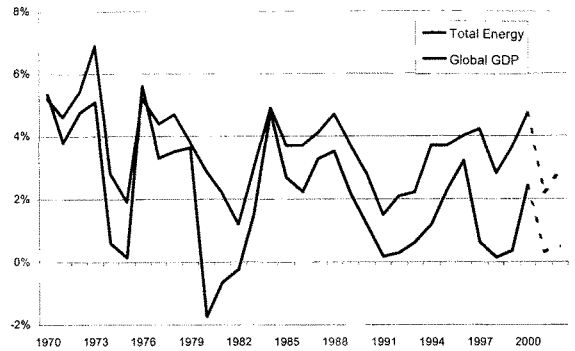
Besides Venezuela, the most vivid example of this is the rise to power as President of Iran one of the leaders of the 1979 US Embassy siege, who has already raised the specter of oil as a weapon in response to pressure over nuclear development. Keep in mind that the oil in Iraq is essentially also now Iranian-, specifically Shia-, controlled.

Another recent example in reference to reliance on import of refined products is the problems of a lack of control of those sources. Specifically of the French, the biggest source of US gasoline from Europe, have recently suffered both port and refinery strikes (and continue to do so).

What will the economic impact be?

Given that on the supply side we are in an environment where high oil prices are feeding higher oil prices, as governments are empowered to act against you. Because of the lack of opportunity and supply response, we now look to the demand side to soften or even fall to resolve the problem. Hopefully that will be as a result of slightly less demand and slightly more supply, but the futures market is now pricing $60+ oil for the foreseeable future, which implies future problems. Energy demand is correlated to GDP, so that the implication is that without a supply response, which we are not getting, we are looking for a recession to force lower oil prices by cutting demand, and we will continue to see higher energy prices until we get one.

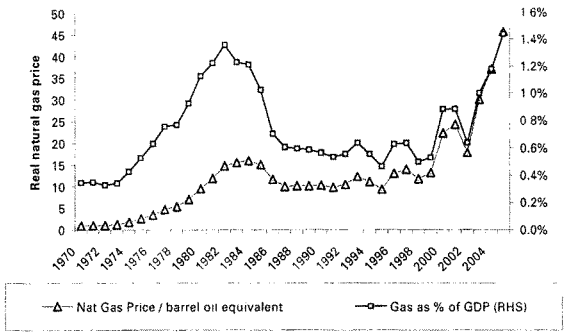
Figure 12: Global GDP vs energy demand



Source: DOE, World Bank

One major economic problem area is natural gas, which fits the theme of the secular shift between cheap oil 20th century to expensive oil 21st century perfectly. The major substitution of global energy in the 1970s and early 1980s was into abundant natural gas. Now, natural gas has become the most scarce part of the US energy equation. We are moving to quite unprecedented natural gas prices in this country, having hit $14 per mmbtu on the NYMEX we effectively hit the celebrated $100 per barrel (of oil equivalent). In natural gas, we at DB characterize the situation right now to be a full scale emergency. Why? Because in oil, you have the strategic petroleum reserve, the IEA, and the overall ability to import more supply. In natgas, there is no SPR, there is no IEA, and there is currently a global shortage of LNG which is not available to import. This country uses around 20 mb/d of oil and around 10 mb/d (oil equivalent) of natural gas, and we are headed towards winter.

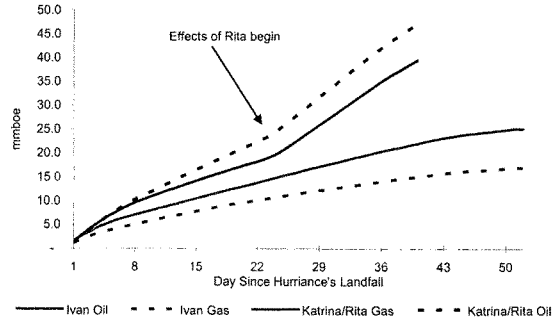
Figure 13: Natural gas in GDP moves to unprecedented levels



Source: EIA, BLS

The economic impact has been severe, with force majeure declared at the natural gas market clearing point of Henry Hub, and many industrial facilities shut by 8 BCF/D of lost production in a 60 BCF/D market. The natural gas impact on refining is also considerable. Not only is natural gas an input fuel, which raises costs, but also natural gas competes with distillate, an oil product. When there is no natural gas at cheap prices, the market moves to consume distillate, which raises oil prices and refining margins. Again, this highlights that the problems in US energy are multi-faceted.

Figure 14: Hurricanes destroy Katrina and Rita US oil supply



Source

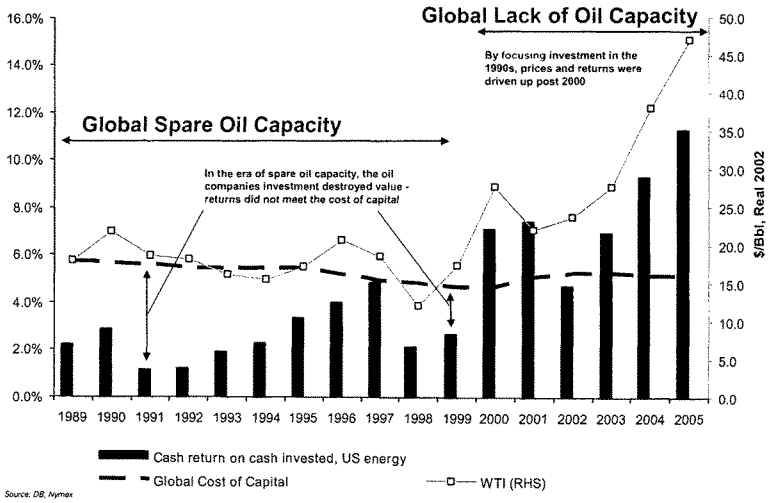
It is important that during the recent huge spike in gasoline prices as a result of hurricanes, the major oils DID NOT pass through the full cost of gasoline to consumers, but rather took losses at the pump in order to reduce the impact on consumers and lessen the potential for government intervention.

When and how will the investment take place?

So why has US refining become so tight in this equation? Again, the answer lies in the long term development of the oil industry this time in the context of the past 30 years. When demand reacted sharply to high oil prices in 1979/80, it did so into an upsurge in investment by oil companies. The last greenfield refinery was built in the US in 1976. Refining capacity was abundant particularly as oil demand began to fall in 1979/80, until **by 1986 the entire world oil industry had 100% spare capacity**. In that year, as the oil price fell from $30/bbl to $10/bbl, OPEC was producing around 11 mb/d of oil, with around 11 mb/d of idle capacity. The world oil tanker business was in crisis, with un-needed tankers parked offshore Athens looking for trade. US refining was at 60% utilization rates, or approximately 100% spare capacity. Four LNG terminals built here in the US were stranded, empty. The oil industry was heavily over-staffed, and an exodus commenced into other industries. Through the 1990s, the oil industry was aggressively consolidated, with a major reduction in staff, for example through the Exxon-Mobil and other mergers.

From 1986 onwards, the world oil business remained in crisis, with around $18 oil, barring a spike in 1990, and a fundamental excess of capacity through to 2000. When looked at in terms of returns against the cost of capital, as illustrated in this chart, we can see that the S&P500 oil companies failed to meet the cost of capital for the entire post-1986 period until 2000. In other words, the companies cost of capital, which was around 6% ex-growth during this period, returned around 4%. This is also known as value destruction. And so the oil industry and particularly US refining became a deeply unpopular place to invest, and the engineers moved to Silicon Valley to generate the tech boom.

Figure 15: Oil investment returns over the past 20 years – suddenly better

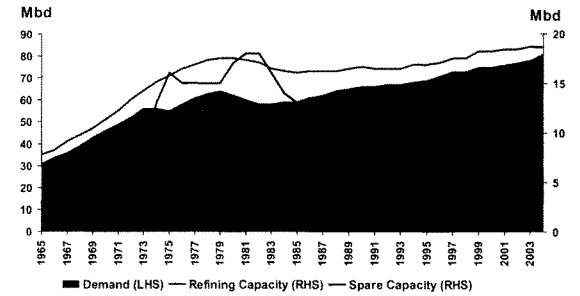


Source: DB, Nymex

In 1991, BP missed its dividend. That was the low point for an industry which from that moment, as illustrated on the chart, began to drive up its returns, by means of investment discipline, cost cutting, and focus on returns. Having had many years of windfall profits in the 1970s and early 1980s, the industry had become fat. At this time excess capacity in the global oil industry, including US refining, was gradually driven out, as the market starved capital from these unprofitable businesses. As illustrated on the chart, during the 1990s, although the real oil price was falling, real returns in the industry were being driven up, and almost made the cost of capital in 1997. However the Asian demand crisis caused two further bad years for the industry, until a combination of global GDP growth and tighter capacity allowed for $30+ oil in 2000/2001 and strong refining margins.

The demand shock post 9-11 once again destroyed earnings power, and the refiners had a very poor year in late 2002 through 2003. However in reality the industry had fundamentally tightened all elements of the energy chain, so that in 2004, which saw the strongest year for global GDP growth since 1976, or since the prior cycle, suddenly all elements of the energy chain, having been rationalized over the previous 20 years, were tight, and prices began to rise rapidly.

Figure 16: Global refining spare capacity



Source: Wood Mackenzie

This driving out of spare capacity and prioritization of returns has massively reduced the potential of the global oil industry to react to the current tightness in markets. A key point is that staff and expertise are not available to add capacity as fast as needed. In areas where capacity can easily be added, such as oil tankers and US LNG regasification, it is being added extremely quickly. Equally US refiners are moving rapidly to address the opportunity set as best they can. Government intervention in US refining investment is likely to compete negatively through the "crowding out" effect of government investment discouraging private investment.

At this stage, there are no major plans for greenfield refining capacity additions, partly because of permitting difficultly, partly because **it is far cheaper to add capacity at existing sites** (around $10,000 per barrel vs. $15,000 for a greenfield refinery), partly from a shortage of labour and expertise, as a function of the tightening of excess capacity over the past 20 years. We do not expect greenfield refinery additions to impact the market within the next four years.

What could go right/wrong?

The biggest fear of the refining bull is sudden demand destruction which has the effect of adding spare capacity rapidly. Examples of a potential shock would be another terrorist event that reduces aviation, Avian flu, which in the shape of SARS dramatically reduced Chinese and Asian oil demand for one quarter in 2003, or a major financial crisis or even depression bought on by a collapse in the property bubble. Why would oil play into this? Because as the US imports more and more oil, especially for use inefficiently such as in excessively heavy SUVs, the current account deficit of imports over exports is widened, this weakens the dollar, and causes oil prices to be higher in dollar terms, which leads more dollars to be spent on oil, so perpetuating the cycle. Again, the response should be in lower demand, but so far that is not happening to the extent necessary.

What does the market think?

The best investors on Wall St call the trend ahead of its development, and sell into its realization. A key sign that the top has been reached is when the government begins to get involved. Historically, the government is extremely quick to intervene because of the industry's deep history of monopolistic behavior (we are thinking here of Standard Oil around 100 years ago), and there remains a deep suspicion of high profits in oil and gas. However this is now one of the most tightly regulated and examined industries globally.

This combination is noxious to investors. A cyclical industry that has years of low profits alleviated by boom years that immediately attract government intervention, with a tough environmental backdrop is not an attractive recipe.

This may be the top for US refining, however the market is already pricing this. US refining stocks have some of the lowest multiples of any equity investments. Where as the overall market trades on a price to earnings multiple of around 18x, Valero Energy, the largest US refiner, is currently forecast by us at DB to make over $15 in earnings next year, and is currently trading right around $100 per share, giving an forward P/E of just 6.7x. This tells us that the market is fundamentally negative on the long term prospects for sustained excess profitability in this industry, firstly because of the likelihood of over-investment if the market is allowed to work its course, and secondly because of the prospect of government intervention if excess profits are recorded. A stock analyst being asked to address a forum such as this in Washington only confirms the market's worst fear that the industry will remain subject to government intervention at times of high profits, and only left alone when times are bad. Hence the low multiples.

Appendix 1

Important Disclosures

Additional information available upon request

Disclosure checklist

Company	Ticker	Recent price	Disclosure
ExxonMobil	XOM.N	58.64 (USD) 13 Oct 05	6,7,8,13,14,15
Chevron	CVX.N	59.48 (USD) 13 Oct 05	6,7,8,13,14,15,17
Valero Energy	VLO.N	101.27 (USD) 13 Oct 05	6,8,13,15,17

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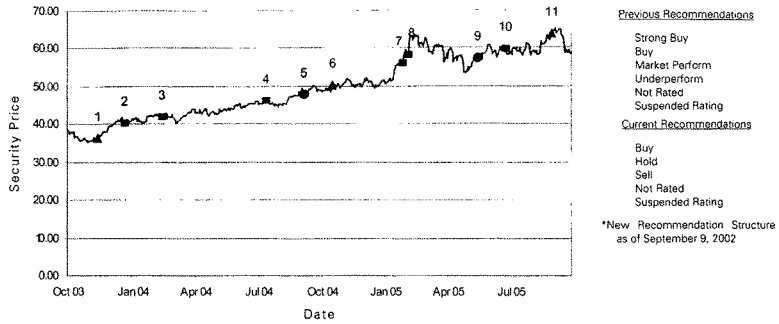
Historical recommendations and target price: ExxonMobil (XOM.N)

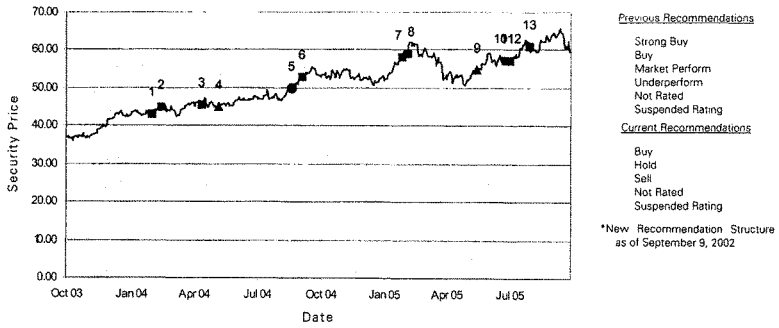
(as of 10/14/2005)



1. 12/1/2003: Upgrade to Buy
2. 1/9/2004: Buy, Target Price Change USD44.00
3. 3/3/2004: Buy, Target Price Change USD46.00
4. 7/30/2004: Buy, Target Price Change USD51.00
5. 9/23/2004: Downgrade to Hold, USD51.00
6. 11/4/2004: Upgrade to Buy, Target Price Change USD55.00
7. 2/13/2005: Buy, Target Price Change USD60.00
8. 2/22/2005: Buy, Target Price Change USD67.00
9. 6/2/2005: Downgrade to Hold, Target Price Change USD62.00
10. 7/11/2005: Hold, Target Price Change USD69.00
11. 9/16/2005: Upgrade to Buy, Target Price Change USD75.00

Historical recommendations and target price: Chevron (CVX.N)

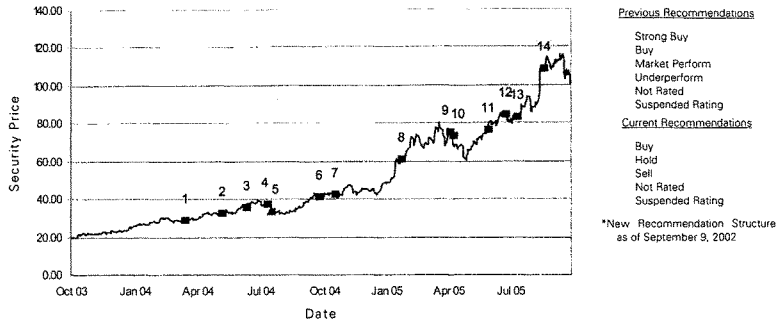
(as of 10/14/2005)



1. 2/18/2004: Hold, Target Price Change USD75.00
2. 3/3/2004: Hold, Target Price Change USD85.00
3. 4/30/2004: Hold, Target Price Change USD90.00
4. 6/24/2004: Upgrade to Buy, Target Price Change USD99.00
5. 9/7/2004: Downgrade to Hold, USD99.00
6. 9/22/2004: Hold, Target Price Change USD50.00
7. 2/13/2005: Hold, Target Price Change USD55.00
8. 2/22/2005: Hold, Target Price Change USD65.00
9. 6/2/2005: Upgrade to Buy, Target Price Change USD67.00
10. 7/12/2005: Buy, Target Price Change USD70.00
11. 7/13/2005: Buy, Target Price Change USD72.00
12. 7/19/2005: Buy, Target Price Change USD70.00
13. 8/16/2005: Buy, Target Price Change USD75.00

Historical recommendations and target price: Valero Energy (VLO.N)

(as of 10/14/2005)



1	4/1/2004:	Hold, Target Price Change USD63.00	8	2/10/2005:	Buy, Target Price Change USD72.00
2.	5/24/2004:	Hold, Target Price Change USD67.70	9.	4/22/2005:	Buy, Target Price Change USD82.00
3.	6/28/2004:	Hold, Target Price Change USD75.00	10.	4/26/2005:	Buy, Target Price Change USD86.00
4	7/29/2004.	Hold, Target Price Change USD80.00	11.	6/16/2005:	Buy, Target Price Change USD88.00
5.	8/5/2004:	Upgrade to Buy, USD80.00	12.	7/11/2005:	Buy, Target Price Change USD96.00
6.	10/12/2004:	Buy, Target Price Change USD48.00	13.	7/28/2005:	Buy, Target Price Change USD104.00
7.	11/4/2004.	Buy, Target Price Change USD49.00	14.	9/5/2005:	Buy, Target Price Change USD165.00

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Hold: Total return expected to be between 10% to -10% over a 12-month period

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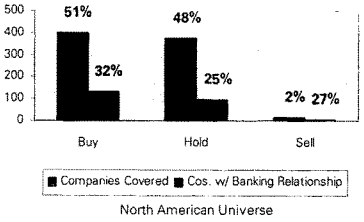

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Mr. ISSA. Thank you very much. I look forward to having you as a guest speaker at our Christmas party. [Laughter.]

Mr. ISSA. Mr. O'Connor.

STATEMENT OF THOMAS O'CONNOR

Mr. O'CONNOR. Thank you. Thank you, Mr. Chairman and committee members, for this opportunity to appear before you. I have submitted a written testimony which addresses questions on global refinery capacity, U.S. imports, and refining investment outlook. This oral presentation summarizes the highlights. I will be referring to several specific exhibits in that presentation—about a dozen of them—as we go through this. So hopefully, it will illustrate what I am discussing.

I would like to begin with exhibit 1. Exhibit 1 shows the trend in global oil demand from 1990 through 2020, with the forecast period being from the International Energy Agency in Paris. These demands include all oil products, from gasoline and distillate to residuals and LPG.

The trend has been steady and sustained growth. The forecast growth in demand from 2005 to 2020 is over 23 million barrels per day, or about the equivalent of 100 world-class-size refineries, in terms of meeting that additional demand.

I would next like to go to exhibit 5. Exhibit 5 shows the change in global refinery capacity over the last 15 years, compared to global oil demand. The refinery capacity is in the upper line. The lower line is the demand. The dotted line shows the trend in the ratio of refinery capacity to demand; and it shows that ratio has declined from 113 percent in 1990, to 107 percent in the 2000–2003 period, and then dropped to 103 percent last year. The drop in 2004 was due to a much larger increase in global demand for product than refinery capacity increased in 2004.

I would like to now look at the forward outlook for refinery capacity, and the exhibit to look at there is exhibit 7. This shows the expected growth in refining capacity worldwide from 2004 to 2010. This information was gathered from actual announced refinery projects which we judged to be credible, as well as an evaluation of annual growth in capacity at existing refineries.

The overall growth, as you can see, is centered in the Far East and the Middle East, with additional growth in Latin America, the United States, and the former Soviet Union. The U.S. capacity growth is based on several expansions of existing refineries between 2005 and 2007 that are already underway; as well as additional capacity planned, which can probably be operating by 2010.

Mr. ISSA. Does this include the Arizona refinery?

Mr. O'CONNOR. Yes, I included the Arizona refinery in this. It is a little dicey, but I am optimistic that there will be impetus to get it done.

In part due to the time it takes to build the refinery capacity, we think this forecast is about as optimistic as it can get, due to the time line to get additional capacity built, even at existing refineries.

Next, looking at exhibit 8, I have tried to look at the increased refinery capacity against the forecast for oil demand growth on a

global basis. The surplus capacity is indicated by the tan areas, or the light-colored areas, on the top of each column.

The key information on this exhibit is the surplus capacity ratio of 103 percent of 2004 doesn't get any better over the period of time. The staging of when the new capacity comes on-line, as I think Paul had indicated, is it is going to be difficult for a few years, at least until some of this capacity gets built.

Again, this is global capacity overall. Even in 2010, it still remains well below historical levels. The other thing, I think, to keep in mind is that this is all based on the demand forecast that has been published by the International Energy Agency.

To take a look at what that could mean for margins, if you look at exhibit 9, the margins I am showing here are spreads of gasoline and distillate product prices, versus crude oil. They represent a big-picture view of the refining sector's overall gross margin or profitability.

Margins increased from 2000 to 2003, as spare capacity declined to the 106–107 percent level from higher percentages earlier. There was a dip in 2002 that we believe was due to the post-September 11th global slowdown in the economy. However, in 2004 and 2005, margins have clearly improved, as the level of global surplus capacity has been reduced.

The numbers I am showing for 2005 do not reflect any data from the period after the hurricanes struck. It is all from prior to that in the year. So obviously, the margins have been higher in the last month or so, due to the outages.

The two key messages on this slide are, first, margins are dictated by supply and demand and, second, that the higher margins have apparently helped stimulate some investors in the Far East and Middle East to get refinery projects initiated. If you recall, that is where over half the additional refinery projects that have been announced have been initiated.

I want to take a look at this point on exhibit 10 of where refiners have been spending money in the last 5 years, and again, this is on a global basis. There has been extraordinary growth in two major areas. First, hydrogen processing capacity, which is used to reduce sulphur levels in products for regulatory reasons. This is for low-sulphur diesel, tier two gasoline in the United States, other reductions in other countries overseas for the same reason. Second, coking capacity, which increases a refiner's ability to process heavier and cheaper sour crudes.

In short, if you didn't make these investments, you either could not make product quality specifications and couldn't market your product, or you would have to pay up significantly for a much higher cost crude. So refiners appear to be primarily investing in areas necessary to sustain their operations and areas where they have a higher degree of comfort on getting a return on investment.

Earlier, we saw that a large amount of new capacity is being initiated in Asia. On exhibit 11, I show some of the reasons for that. They have high refinery margins there, also, as we do here. However, those high margins are coupled with almost certain demand growth in product for both fossil fuels and also petrochemical products. They are building facilities to make Hefty bags and everything else, so that they can fuel their entire economic growth. So

there is synergy between those projects, which makes for overall better investor confidence.

The government is fully supporting these investments. They have collaboration with national oil companies in Saudi Arabia and other areas for long-term crude supply contracts. That will also help investor confidence. In other words, they are nailing down their supply chain.

The costs to build the refineries can be lower in the United States because they have lower labor costs; they have less environmental control equipment that has to be added, and less potential for costly delays due to permitting and siting issues.

Now I will take a look at the United States, starting at exhibit 12. I will just touch on this briefly. It shows the trend on both refinery capacity and demand over the last 20 years, basically—or from 1995 to 2010. It also shows on the right-hand side the forecast in imports, growing from 3 million barrels per day to 3.4.

Now, I want to focus a little bit on imports. If you look at imports on exhibit 13, you can see that the growth in imported products has primarily been gasoline and unfinished oils over the last 5 years. The 50-percent increase in gasoline imports, a good portion of that is for gasoline blending components, not necessarily finished gasoline.

The unfinished oil imports increased by over 80 percent, and these reflect the U.S. refiners importing partially refined overseas product to manufacture additional gasoline and distillate in U.S. refineries based on economics. So basically, they were taking advantage of the market situation to keep their refineries fully utilized; not, as I see it, holding back production to increase margins.

The trend to higher imports of both blending components and unfinished oils is indicative of a global system working to optimize available refinery capacity. As the sulphur specifications ratchet down overseas, one option for overseas refiners is to take their unfinished stocks and move them to the more sophisticated U.S. refineries. And that has been happening.

On exhibit 14, I take a closer look at U.S. gasoline import sources. You can see imports from Europe have increased significantly in the last 5 years. This is basic economics. Europe is long gasoline; they have been moving toward dieselization of their transportation fleet; and gasoline is available in the marketplace to be moved to the United States. U.S. margins have been higher, so prices have dictated to move the product.

At the same time, we continue to get large volumes from the Virgin Islands and Canadian refineries, primarily into the East Coast Pad One markets. Latin American volumes have declined. Imports from other areas of the world have increased significantly—namely the Middle East and Africa, and also Russia. A lot of those have been blend stocks from those areas because they have relatively unsophisticated refineries.

So basically, imports have been increasing, and coming from different sources. Looking at exhibit 15, we believe these are going to continue. We expect there is going to be increasing difficulty with those foreign exporters being able to meet U.S. gasoline specifications—and in particular, the ultra-low-sulphur diesel specifications—next year. So we may see more blend stocks and things of

that nature coming in; but we feel confident the exporters in Canada, the Virgin Islands, and Europe will probably have capacity to meet U.S. specifications, for the most part.

However, they are also open to what is going to happen in the rest of the world. Product is going to move to where the markets dictate. Higher demands for gasoline and diesel in the Far East, South America, are going to pull product. There will be competition, which will keep upward pressure on product as long as the refining spare capacity continues to be tight. The best remedy to reduce the requirements is for consumers to actively work to reduce usage.

Another area that will help in the United States is, obviously, additional refinery capacity. Our forecast does show over—let's see—about 9 million barrels of additional capacity globally, and I think over—I don't know; the number is about 1½ million barrels a day in the United States, I think, over the next 5 to 6 years.

However, large-scale new grassroots refiners are not likely to happen in the United States. On exhibit 16, I mention some of the reasons. First, the sheer cost is enormous, and the time to permit and to build a refinery can optimistically be 5 to 7 years. I think they first applied for their air quality permit in Arizona in 1999, and just got it approved last year. So for them, it has been 11 years—it will be 11 years if they get on by the end of this time window.

The U.S. refining investors are also concerned that a global recession, sustained conservation efforts, could cause global capacity to be overbuilt. They have been there before. So there are no assurances that today's good refining margins are going to be in place when the refinery is completed. Plus, the threat of regulatory action could alter the project economics at any moment.

So in summary, our outlook for global product supply over the next 5 years is for continued very tight supply, price spikes due to periodic supply disruptions, higher import requirements, and more competition for the imports from overseas demand centers like China and India, and that things will stay high until the global surplus capacity improves. We think this is most likely to take place in the 2011 to 2015 timeframe.

Additional new refinery projects will continue to be initiated in high-growth overseas markets. U.S. refiners will continue to grow refinery capacity, but are likely to be very wary of expensive and hard to approve grassroots capacity in the United States, due to the uncertainty of return to shareholders.

The most compelling thing that would help is actions on a personal, industrial, and government level to reduce energy usage, because that has the greatest effect on the overall supply/demand balance. Supply and demand works. The demand side has to have some ability to respond to what we are seeing today. Thank you for your time.

[The prepared statement of Mr. O'Connor follows:]

Testimony before the
House Government Reform Committee, Subcommittee on
Energy and Resources
United States House of Representatives

"Petroleum Refineries: Will Record Profits Spur Investment in New Capacity?"

October 19, 2005

A Statement by

THOMAS O'CONNOR
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DISCUSSION OF REFINERY CAPACITY ISSUES

OCTOBER 19, 2005

Thank you Mr. Chairman and Committee Members for this opportunity to appear before you. I have been asked to address 3 specific areas: the outlook for global refinery capacity changes over the next 5 years, the risks and concerns with this investment pattern and the role and source of imports over the period.

As background, I am a project manager with ICF Consulting in Fairfax, Virginia. ICF Consulting is a large consulting company specializing in energy, environmental, homeland security and transportation issues on a global basis. We have performed work for many Federal, State, and local public entities, including as examples DOE, EPA, MMS, as well as the California Energy Commission and other State groups. We supported the DOE in managing the Strategic Petroleum Reserve, and in establishing the Heating Oil Reserve, and are currently the primary contractor supporting the Natural Gas STAR program for EPA.

My experience is over 30 years of operational and management experience in the oil industry, including responsibilities from trading and marketing crude oil, optimizing refinery operations, and in managing the downstream distribution system from the refineries to marketing terminals. I have been directly involved in dealing with supply disruptions due to severe weather, political actions, refinery outages, and implementation of changing product specifications.

Over the past two years, the price of crude oil and oil products has significantly increased. The reasons for the increase appear fairly clear. Global demands for products have been increasing, particularly in the Far East, but also in the U.S. In addition, it appeared that the available global surplus crude oil capacity was shrinking, with even Saudi Arabia being perceived to have limited spare supply.

As this situation continued to developed, we thought that the issue of global refinery capacity to convert crude oil into products was flying under the radar of many people. We believed that the rise in global demands was outpacing growth in refinery capacity, and that demands were showing little elasticity to the higher price levels in 2004 and earlier in 2005. Consequently, we developed an analysis of this situation and published a paper on the subject in early August to raise attention to the issue.

Unfortunately the disastrous impact of Hurricanes Katrina and Rita on the Gulf Coast has provided ample evidence of the critical importance of the refining and distribution infrastructure to the stability of both supply and prices.

In the testimony provided in this document, I will focus on the specific material requested, and will include additional information related to the subject for your consideration.

The testimony below is presented in the following order:

1. Global Demand History and Outlook
2. Global Refinery Capacity History and Outlook
3. The Shrinking Surplus Refinery Capacity
4. Refining Investment Patterns
5. US Capacity, Demand and Import Outlook
6. US Refinery Investment Issues
7. Outlook for Change
8. Summary

Global Demand History and Outlook

Global Oil demand history and forecast is presented on **Exhibit 1.** The demands presented are for total oil demand, including gasolines, distillates, jet fuel, residuals, LPG and so on. The demand data is from the International Energy Agency, IEA, and 2004 World Outlook. IEA is within a month of releasing their 2005 outlook, so the numbers presented here may be revised shortly. You will note that these are annual average numbers. Demand is typically higher in winter months due to seasonal heating oil demands by several million barrels per day. This factor can become important since historically inventories grow in the second and third quarters to be drawn through the winter. If refinery capacity is barely able to meet summer demand levels, then potential would exist for supply shortages in winter months.

Let's look at the same data from a volume and growth rate basis. In the early 1990's, global demands grew about 1.15% annually. In the last decade, demands grew about 1.8%. IEA is forecasting a growth rate of 1.65% over the next 5 years, and then increasing to 1.8% again to 2020. The additional demand level of about 23 million barrels per day between 2005 and 2020 is roughly equivalent to 100 world class size refineries.

Exhibit 2 shows the demand growth on a decade-on decade basis. While the growth rate forecast is fairly consistent at 1.65-1.8% since 1995, the demand has been accelerating over the past 25 years due to the higher base demand level and the development of economies in the Far East and the Third World. The summary box indicates that over the 40 year period from 1980 to 2020, demands increase substantially each decade. This is a very visible indicator that global demand for fossil fuels has been, and may continue to grow substantially. The demand acceleration is, in part, due to the relatively inefficient use of fossil fuels as new economies develop.

On **Exhibit 3**, I have focused on the growth patterns in the key enclaves of the US, Europe, and the Far East. For gasoline, Asia demands in the last decade have increased over 50%, and US demands have grown about 15%. Most notably, Europe gasoline demand has dropped about 5% due to continued dieselization of European demands for transportation fuels.

For distillates, however, the demand pattern is very consistent worldwide: continued and sustained growth. The bulk of this increase is in diesel fuels, and primarily for transportation needs. The importance of the trend to diesel and distillate growth is significant, since economic growth means commodities and goods must be transported

to markets. In addition, global trends to reduce sulfur levels in all fuels will particularly impact diesel markets and diesel supply.

Global Refinery Capacity History and Outlook

Exhibit 4 shows a longer term perspective on global refinery capacity. In the early 1980's, there was extraordinary global surplus capacity compared with demands. Through that period, many inefficient and smaller refineries were shutdown, and by the late 1980's global refining capacity was stable at about 73-75 MMBPD. In the early 1990's and through about 2000, refining capacity began to increase somewhat paralleling global demand increases.

On **Exhibit 5,** the focus is the most recent 15 year period. This shows the change in global refinery capacity from 1990 to 2004, compared to global oil demand. Capacity and demands are measured in millions of barrels per day. The trend shows that the ratio of refinery capacity to demand declined from 113% in 1990 to 103% in 2004. The reduction in surplus refinery capacity came despite continued growth in overall global refinery capacity. This was due to the demand acceleration factor discussed earlier. In addition, the prevailing margins for investing in large-scale refinery capacity projects simply did not exist over this period, and also for some less competitive refineries did not support major capital investments to meet emerging environmental requirements.

It should be noted that the refinery capacity which was shutdown in the 1980's and 1990's was primarily inefficient, small scale and technologically weak assets. The industry focused capital spending on making the strong refineries more competitive through better technology, energy conservation projects, and greater ability to run cheaper crude oil, and so on.

The larger drop in surplus capacity that occurred in 2004 was because of the large increase in demand in Asia above what many expected. This demand increase tightened markets globally as Asia looked to import additional products to meet demands.

Exhibit 6 estimates the future global growth in refinery capacity based on a number of factors. The numbers show that global capacity is expected to grow by just over 9 MMBPD by the end of 2010. This information is gathered from actual announced refinery projects which we judged to be credible, as well as an evaluation of annual growth in capacity of existing refineries.

Exhibit 7 shows the capacity growth from 2004 to 2010 in more detail. The growth is primarily centered in the Far East and Middle East. The US capacity growth is based on several announced expansions of existing refineries between 2005 and 2007, the construction of a proposed grass roots refinery in Arizona, and a possible large expansion of capacity in the 2010 time frame which is being studied by a major US refiner.

It is important to note that the time to engineer, permit, acquire materials, construct, and start up a refinery could take a minimum of 5 years, assuming fast track permitting, site construction approval, and environmental reviews. In the US, this could take longer due to greater likelihood of permitting delays. For example, the proposed Arizona refinery began permitting processes in 1999, and is still in that process today. Consequently, we

believe this forecast has no significant upside for more refining capacity before the end of 2010.

The Shrinking Surplus Refinery Capacity

Based on the global demand forecast, and the outlook for growth in refinery capacity, we can evaluate the outlook for available refinery capacity versus demands over the next 5 years. **Exhibit 8** maps the increased refinery capacity against the forecast for oil demand growth from the International Energy Agency in Paris through 2010. The key information on this exhibit is that the surplus refinery capacity ratio of 103% in 2004 stays the same and in fact becomes a bit tighter until finally showing some growth in 2010. However, even in 2010 it remains well below historical levels.

Exhibit 9 shows the impact of lower spare refining capacity on refining margins in the US and Europe. Margins have become clearly higher in 2004 and 2005 as the spare refining capacity ratio has been reduced. It should be noted that the 2005 data are average margins for 2005 through July. We excluded from this chart the current higher refining margins related to the disruption in refinery capacity due to Hurricanes Katrina and Rita.

There are several important messages that stem from this Exhibit. First, historical refinery margins had been chronically low through 2003, even though the global surplus capacity was being gradually reduced. When the global demands increased substantially in 2004, the surplus capacity declined and supply tightened. This caused margins to increase and they have remained high. Second, a number of the new refinery plans in the Far East and Middle East have been announced in the last 12 months. This is due both to the clear demand needs in that region and the emergence of higher refinery margins. The margin levels being seen pre-Katrina in 2005 can provide an acceptable return on new refinery capacity in those regions.

Refinery Investment Patterns

Global Refinery investment patterns over the past 5 years are shown on **Exhibit 10.** This Exhibit compares the growth in capacity of key refinery processes over the 2000 to 2005 time frame for both US and World refineries. The key information on this Exhibit is that there has been extraordinary growth in process expansions to reduce sulfur levels in products. This is seen from the increases in hydrotreating and hydrocracking capacity, as well as in sulfur production capacity. In addition, capacity to increase the ability to process heavier and cheaper crude oils through the "coking" process has been a major focus point.

On the other hand, Investment in Crude processing capacity has been very limited. The rationale to focus investment in sulfur reduction and heavy crude processing is simple. The sulfur reductions were mandated, and refiners had to decide to either invest to be able to manufacture merchantable products or to potentially close refineries. Investments in facilities to process heavier crude oils could allow refiners to improve their profits by reducing the cost of their raw materials. The economics of these decisions were far better than expanding capacity during a period when refining margins were too low to justify major capacity investment.

As noted earlier, in the last 12 months there has been a clear increase in new refinery capacity projects in several areas of the world. **Exhibit 11** identifies some of the driving forces for those investments. First, refining margins are clearly higher, as I've shown. Secondly, the refineries are being built in China, India and other Asia markets where economic growth, and demands for fossil fuels have greatly exceeded overall world growth. The commercialization of these areas is very likely to continue which is forecast to sustain high growth in oil demands for some time. In addition to being deficient in refinery capacity, these regions have shortages in the petrochemical manufacturing required to meet growing consumer demands for other non-fuel products developed as derivatives of the refining business. Hence these projects typically have petrochemical synergies.

Also, many of these projects are supported by the Government, and include collaboration with major exporting countries' National Oil Companies (NOC's) who have agreed to supply long term crude.

In addition, these projects can receive approval to proceed far quicker than a US project, and do not require the degree of regulatory technology needed to meet U.S. standards. These areas often also have lower labor costs. All of the above tend to make capacity projects in these regions more attractive to investors than a U.S. market.

U.S. Capacity, Demand, and Import Outlook

The U.S. outlook over the period from 1995 to 2010 for demands, capacity growth, and import requirements is summarized on **Exhibit 12**. We anticipate that U.S. imports will grow to roughly 3.4 MMB per day by 2010 from about 1.6 MMB per day in 1995. The 2005 import level is forecast at about 3 MMB per day, but may be higher due to the recent refinery outages. This import forecast assumes that the planned U.S. refinery expansions will occur, and that U.S. refineries will continue to run at the high utilization throughputs seen in recent years.

The forecast also assumes that U.S. demand for oil products will continue to grow at levels of about 1.5% per year through 2010.

Exhibit 13 shows a closer look at import levels over the 2000 to 2005 period. While overall product import levels increased by about 25 percent, gasoline imports have increased by just over 50 percent. This has been driven by the higher U.S. demands for gasoline over the period. The increase in gasoline imports from 2000 is more than 60% gasoline blendstocks. This may indicate increasing difficulty in overseas refiners being able to meet U.S. Tier II requirements for finished gasoline.

Distillate imports have declined slightly, with the Virgin Islands and Canada being the bulk of imported volume. Of particular note is that Europe has been a minimal at best source of distillate imports. Europe is short distillate fuel, in particular diesel, and it has not been economic to provide significant volume on a sustained basis. There are some discretionary heating oil cargoes that have moved on an economic basis in the winter, but this is only when relative market prices could justify it. Part of the decline from 2000 is reduced Jet fuel import requirements.

Also, there is also an increasing trend to import unfinished oils to process in U.S. refineries to increase gasoline and distillate production. This is a very positive indicator

that U.S. refiners are wringing all the production capability out of the US refineries. Refiners will work to move unfinished oils from overseas refineries which do not have enough capacity to turn their crude feedstocks into finished products. The growth rate from 2000 to 2005 has been over an 80% increase.

You will note that less than half of the total volume of oil imports has been directly for gasoline or distillate products. Apart from the unfinished oils, the balance of the imports have been for residual fuel, LPG, and other hydrocarbon products (e.g. asphalts, specialty oils, etc) which do not enter the transportation or heating fuel sectors.

The common thread in the disparate range of different products imported to the U.S. is economics. Product moves globally, in both finished, ready to market cargoes as well as unfinished products for refining into finished gasoline, based on the relative value of the product in different regions of the world. When prices are higher in the U.S., imported volumes rise as refiners and traders see better value for the product in the U.S.

The sources of the gasoline imports into the U.S. over this period have shown some change, as seen on **Exhibit 14.** Imports from Europe have increased by over 150% from year 2000 levels, with half of this increase being blending components. As noted earlier, Europe gasoline demands have in fact declined due to increased dieselization of the European transportation fleet. This has depressed the value of gasoline for Europe refiners and made the economics of shipping gasoline to the US more attractive. At the same time, there has been a decline in gasoline imports into the US from Latin America. The decline is from countries such as Venezuela and Brazil, who in general do not have as much capability to meet US gasoline sulfur levels since Tier II regulations were implemented. In addition, demands in South America have increased at a faster pace than the U.S., which is also causing less gasoline to be exported from that market.

The other major import sources of gasoline are Canada and the Virgin Islands, with much of this volume moving into the Northeast U.S. and Florida markets. This has been a relatively steady supply since 2001.

In looking forward, we see product import levels increasing by 10-15% in the 2005 to 2010 time frame to meet the expected increase in US demands. (See **Exhibit 15**) The absolute volume of increased imports is not at this point a logistics concern for the US, however, a greater concern is the fact that a number of the refineries who have exported to the U.S. may have increasing difficulty meeting the lower sulfur levels in U.S. gasoline and diesel fuels in 2006 and beyond. Although major exporters in Canada, the Virgin Islands and Europe have adequate capacity to lower sulfur levels, refiners in South America and other regions may have even more difficulty than in the last five years. This impact, coupled with the high demand growth for gasoline and distillates in the Far East and Latin America may pull product from the U.S. even from our traditional "local suppliers" such as Canada and the Virgin Islands.

The impact of energy conservation actions in the U.S. will directly translate to lower imported product requirements. Where surplus global product moves will be dictated by market economics, including prices in different regions, relative freight costs to move product, and demand changes. The market will drive the movement.

Finally, we also anticipate that much of the imported volume increase in the next 5 years will be for gasoline components as well as unfinished oils. The changing product

specifications globally are likely to cause some refiners to have more surplus unfinished oils, which may be discounted versus U.S. product prices.

U.S. Capacity Investment Issues

Decisions to invest in large scale or grass roots refinery expansions are difficult and risky (See **Exhibit 16**). The capital investment required can be from $5 to $7 Billion dollars or more depending on the refinery size, location, complexity, and regulatory requirements for the facility. The financial exposure to the company building the refinery is very high because of the potential, and probability, of delays in getting permitting at local, State and Federal levels. Furthermore, the timeline from a decision to move ahead to completion of the refinery can be extraordinarily long in the United States, at least 5 years and possibly much longer.

While margins are good today, as noted earlier, actual margins when the refinery is finally operational can be very different. Historical refiner margins have been more often weak than strong. And margins are very sensitive to the fact that global oil demand growth can slow or plateau due to either a recession or major conservation initiatives. The fact that we are already seeing trends to lower SUV sales and higher demand for hybrid vehicles is a possible indicator of this.

In the U.S., the economic hurdles are higher than overseas projects for several reasons. Time to construct is longer due to the extensive engineering and modeling work needed to achieve permits. Local siting issues can create additional delays. Labor costs are higher than overseas, and the overall U.S. economy is more mature than areas such as China. This influences demand certainty and the possible benefits of petrochemical project integration that are more viable in growing economies.

In addition, the more sophisticated technology required within the refinery to meet U.S. environmental regulations increases the capital requirements for the investors.

The Energy Bill passed in August provides some benefit by allowing 50% of capacity-expansion capital to be expensed upon project completion. This change could be more beneficial if the expensing could be done as the funds are spent, given the extensive time line required for completion.

Outlook for Change

As noted in the discussion of refinery capacity growth, it is very unlikely that the forecast of refinery capacity through 2010 can increase significantly in the U.S. or the world. If anything, the forecast is an optimistic outlook of future refinery capacity, since all major projects of this nature...in the United States and outside...are complex, expensive, and challenging to complete on time.

In our opinion, this will mean a sustained period of very tight supply, periodic disruptions, and higher prices unless demand growth slows. There are several actions that may be considered to help mitigate the refinery capacity shortfall over the next 5 years. These are highlighted on **Exhibit 17.**

The first and most critical is to re-double efforts to educate U.S. Consumers. The DOE's Energy Hog program is a good start. In addition, consumers must understand that the

cost of energy is driven by supply and demand, and that the most critical element that consumers can influence is demand. The only benefit of the current high price levels for oil products, as well as natural gas, is to raise the awareness of the need for energy conservation initiatives on personal, family, business, and public levels. This is a very substantial benefit.

Second, the actions taken by the Oil industry, the EPA, the President, and others in the wake of the hurricanes to release volume from the SPR and the IEA reserves, waive the Jones Act, provide temporary relaxation of environmental specifications, and import tariff relief all assisted in providing additional supply and assurance to oil markets. These actions were taken quickly, with little publicity and showed good collaboration. It would make sense to explore further contingency plans to protect vital transportation assets (e.g. pipelines), and to perhaps convince Industry to hold additional days supply product in inventory.

As a current example, it may be helpful from a supply and price perspective to consider either modifying the timetable to implement and enforce Ultra Low Sulfur Diesel requirements (currently June 2006), or providing a period of time to make the specification enforceable at the refinery level, rather than at the terminal level. This will allow time for the U.S. distribution system to fully address the likely product degradation issues without jeopardizing consumer supply.

Third, the boutique fuels issue should be streamlined to better enable companies to utilize tankage and respond to disruptions. This will involve collaboration between several layers of government and the industry. Movement toward common global specifications for products would also be helpful, but will not happen without it being championed by governments and key agencies like IEA, EIA and others.

Fourth, identify obstacles in the permitting process for refinery investments, including site approval issues, permit application processes, and so on to enable refinery projects to be constructed in a timely manner with no loss in environmental assurance. In other words, smooth the path for refining investments, including a long term policy that identifies regulatory requirement timings clearly and well in advance so that Industry can invest with firm footing, streamlined permitting and siting processes, and tax benefits consistent with other capital intensive industries.

Fifth, although the impact would be longer term, clear and substantive improvements in CAFÉ standards for all automobiles, SUV's and trucks should be put in place (including diesel engines).

Finally, all the above initiatives, as well as some of the current proposals before the Congress, should be carefully (but quickly) studied to ensure that the full costs and benefits of each are understood. A key part of that assessment would be the impact on supply of the actions being taken.

Summary

In summary (**Exhibit 18**), our outlook for global product supply over the next 5 years is for continued tight supply and exposure to price spikes due to periodic supply disruptions. The US can expect higher import requirements, and the competition for

imports globally will keep refining margins high until the global surplus capacity improves. This will likely be in the 2011-2015 timeframe.

Additional new refinery projects will continue to be initiated in high growth overseas markets. US refiners will continue to grow refinery capacity, but are likely to be very wary of expensive and hard-to-approve grass-roots refinery capacity in the US due to the uncertainty of return to shareholders.

Actions on personal, corporate, and government levels to reduce energy usage can have a significant impact on both higher prices and import requirements that will mitigate both supply and price concerns. Consumer actions on demand can have a powerful leverage, and should not be underestimated.

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Testimony before the
House Government Reform Committee,
Subcommittee on Energy and Resources
United States House of Representatives

Exhibits

Thomas O'Connor
ICF Consulting
Fairfax, Virginia

October 19, 2005

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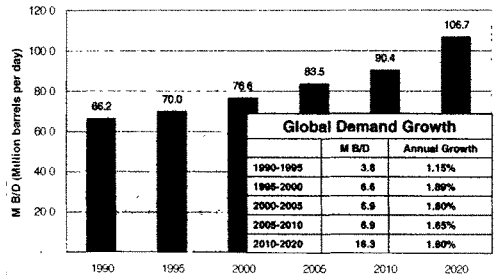
Exhibit 1

Global Oil Demand History & Outlook



Global Demand Growth

	M B/D	Annual Growth
1990-1995	3.8	1.15%
1995-2000	6.6	1.89%
2000-2005	6.9	1.80%
2005-2010	6.9	1.65%
2010-2020	16.3	1.80%

Source: IEA 2004 World Energy Outlook

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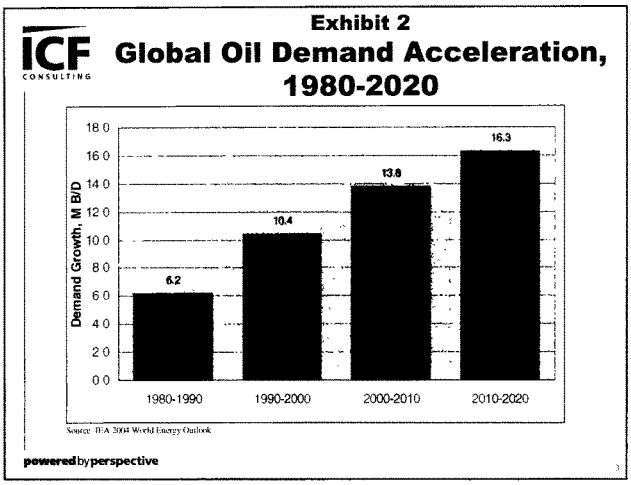
Exhibit 2
ICF CONSULTING
Global Oil Demand Acceleration, 1980-2020
Demand Growth, M B/D
18 0
16 0
14 0
12 0
10 0
8 0
6 0
4 0
2 0
0 0
6.2
10.4
13.8
16.3
1980-1990
1990-2000
2000-2010
2010-2020
Source: IEA 2004 World Energy Outlook
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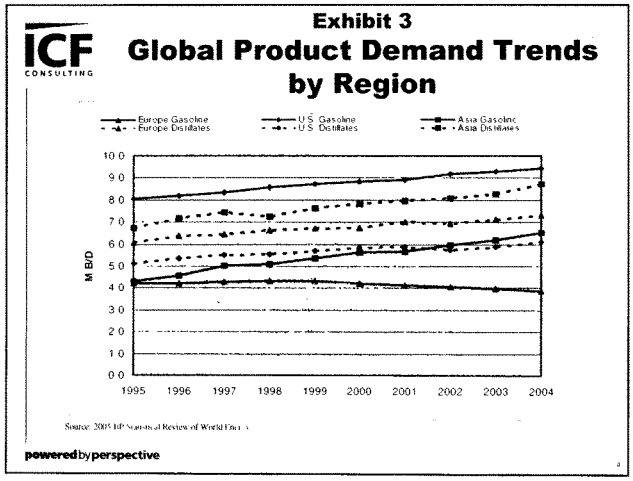
Exhibit 3
ICF CONSULTING
Global Product Demand Trends by Region
Europe Gasoline
Europe Distillates
U S Gasoline
U S Distillates
Asia Gasoline
Asia Distillates
M B/D
10 0
9 0
8 0
7 0
6 0
5 0
4 0
3 0
2 0
1 0
0 0
1995
1996
1997
1998
1999
2000
2001
2002
2003
2004
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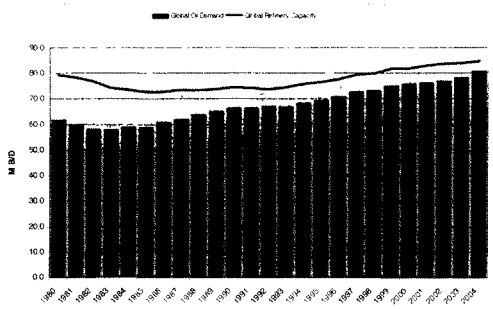
Exhibit 4
Refining Capacity Trends



Source: 2005 BP Statistical Review of World Energy

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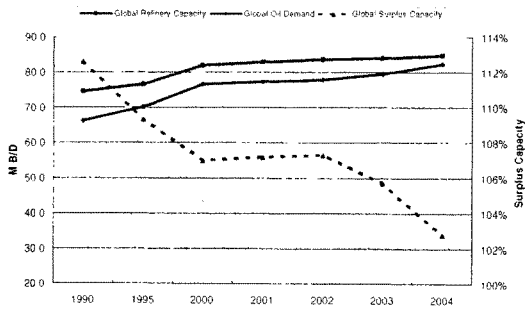
Exhibit 5
Refinery Capacity Trends 1990-2005



Note: Percentages represent the refinery capacity to demand ratio.
Sources: Capacity-BP 2005 Statistical Review of World Energy; Demand-IEA 2004 World Energy Outlook

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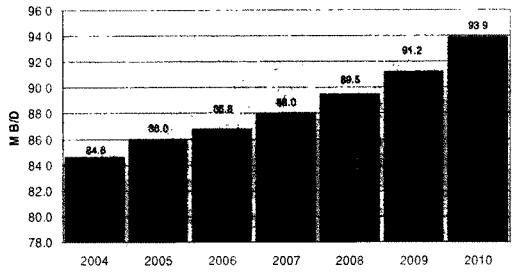
Exhibit 6

Estimated Refinery Capacity Growth, 2004-2010



Sources: OGJ Worldwide Refinery Construction Report, ICF Analysis: Trade Publications and Company websites

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Exhibit 7

Estimated Refinery Capacity Growth Summary, 2004-2010

2004 End of Year Global Capacity Actual			84.6
2010 End of Year Global Capacity Estimated			93.9
Capacity Growth			9.3
New Refineries/Expansions			5.7
	Far East	2.8	
	Middle East	0.9	
	Latin America	0.8	
	United States	0.7	
	FSU	0.3	
	Other	0.2	
Capacity Creep (estimated)			4.4
Capacity Shutdown (estimated)			(0.8)
Capacity Growth			9.3

Sources: OGJ Construction Reports, ICF Analysis, Company Websites, Other Trade Publications

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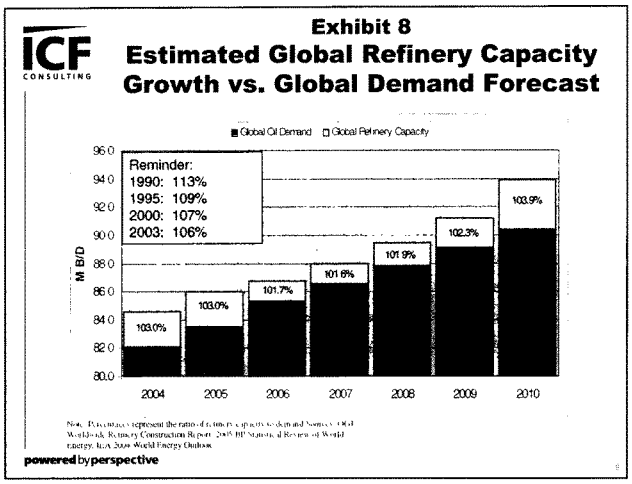
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Exhibit 8
Estimated Global Refinery Capacity Growth vs. Global Demand Forecast
Global Oil Demand
Global Refinery Capacity
Reminder:
1990: 113%
1995: 109%
2000: 107%
2003: 106%
M B/D
96.0
94.0
92.0
90.0
88.0
86.0
84.0
82.0
80.0
103.0%
103.0%
101.7%
101.6%
101.9%
102.3%
103.9%
2004
2005
2006
2007
2008
2009
2010
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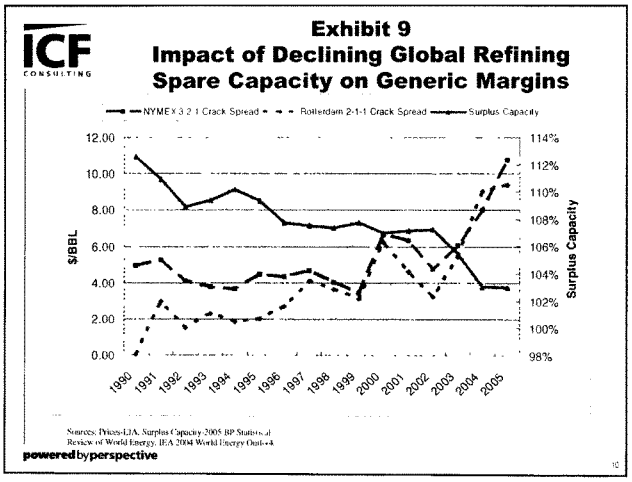
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Exhibit 9
Impact of Declining Global Refining Spare Capacity on Generic Margins
NYMEX 3-2-1 Crack Spread
Rotterdam 2-1-1 Crack Spread
Surplus Capacity
$/BBL
12.00
10.00
8.00
6.00
4.00
2.00
0.00
114%
112%
110%
108%
106%
104%
102%
100%
98%
Surplus Capacity
1990
1991
1992
1993
1994
1995
1996
1997
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1999
2000
2001
2002
2003
2004
2005
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Exhibit 10
Refining Investment Patterns, 2000-2005

- Investment primarily in areas to reduce sulfur levels in transportation fuels, and to enable processing heavier and higher sulfur level crude oil
- Emphasis has been less on capacity and gasoline production, and more on diesel quality and raw material cost

Process	M B/D		Growth
	2000	2005	
Crude Capacity	81.5	82.4	1.1%
Coking	3.7	4.4	18.9%
Coking Tons/d	152.4	196.6	29.0%
Cracking, FCC	13.8	14.5	5.1%
Hydrocracking	4.0	4.7	17.5%
Hydrotreating	36.7	41.3	12.5%
Sulfur, Tons/d	56.1	71.1	26.7%

Source: OGJ Worldwide Refinery Capacity Report

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Exhibit 11
Reasons for Asia Grass Roots Projects

- Strong current margins attractive to investors
- Primary area of global demand growth (China & Far East)
- Collaboration of Governments with Industry and NOC's
- Fast-track permitting and siting approvals
- Potential integration with Petrochemical investments and demands
- Lower cost of project (less regulatory needs and lower labor costs)

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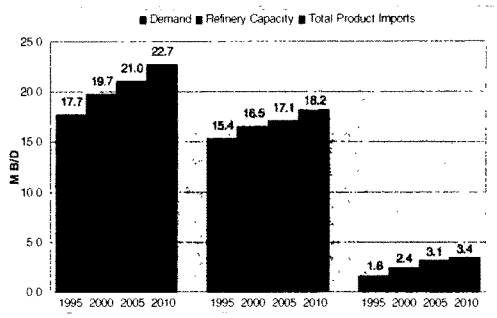
Exhibit 12
United States Supply, Demand and Import Outlook



Sources: EIA Petroleum Supply Annual, OGJ Worldwide Refining, Sources: EIA WEO Demand Forecast (2003), ICF Analysis

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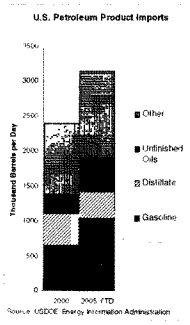
Exhibit 13
U.S. Import Trends, 2000-2005



Source: USDOE Energy Information Administration

- Levels have grown from 2.4 MMB per day in 2000 to about 3.1 MMB per day in 2005 (thru July).
- Gasoline imports higher by 50%; Distillate imports slightly lower (seasonal issues, lower Jet imports, and Europe demand growth)
- Unfinished Oil imported to fill out U.S. Refinery capacity and produce incremental gasoline & distillate based on economics. Increased by 80% over the period
- Other Oil imports are residual fuel, LPG products, asphalt, and other stocks not related to transportation fuel production

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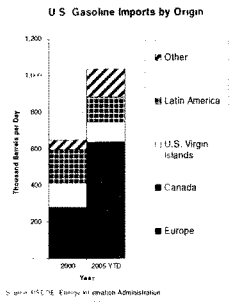
Exhibit 14
U.S. Gasoline Import Source Trends, 2000-2005



- Imports from Europe have increased by over 150% from 2000 due to surplus Europe gasoline from growth in diesel transportation and economics to export to the U.S.
- High volumes enter the U.S. from Canada and Virgin Island refiners into East Coast markets
- Latin America volumes have declined by about 30% due to specification changes and demand growth
- Other source areas include the Middle East and Africa and Far East volumes into the West Coast.
- Over 60% of the gasoline import growth is blendstocks

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Exhibit 15
U.S. Imports and Source Outlook 2005-2010

- Total product imports expected to grow from 3.1 to 3.5 MMB per day over the period based on capacity and demand forecast
- Issues:
  - Key suppliers (Canada, Virgin Islands, Europe) can meet U.S. gasoline specifications. Other areas problematic or unknown.
  - Higher global demands for gasoline and diesel could change market price dynamics
  - Abatement in U.S. demand growth will lower import requirements.
  - Relative market prices, freight costs, product specifications will drive the ultimate flow of oil products into the U.S.
- Anticipate much of the increased imports to be gasoline components and unfinished oils, not finished product.

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Exhibit 16

Investing in Refining Capacity in the U.S.: The Risks and Concerns

- The capital cost (particularly for grass roots capacity) is enormous, at $5-7 Billion for a large new refinery.
- The timeline to plan, permit, and construct can take 5 to 7 years before any revenue flow begins.
- The refining business has been strong since 2004, but has historically had weak margins. The sensitivity of demands to price creates exposure to domestic or global economic downturns or conservation efforts which create huge capacity investment risk
- The U.S. incurs added project costs due to environmental technology requirements, as well as higher construction labor costs which impact project economics
- The threat of government interference in free markets is a risk that must be weighed. Regulatory changes in the U.S. continue to occur which impacts the economics of projects.

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Exhibit 17

What can government do that would be positive and enduring?

- Ramp up energy conservation awareness, provide training, educate consumers (higher prices provide incentive).
- Work with refiners, pipelines, marine & terminal companies to develop clear contingency action plans for major supply disruptions
- Streamline the boutiques fuels issue, to address the impact on tankage and distribution systems while balancing environmental needs. Work toward consistent global product quality standards
- Take steps to smooth the path for refining investments, including a long term policy that identifies regulatory requirement timings clearly and well in advance so that Industry can invest with firm footing, streamlined permitting and siting processes, and tax benefits consistent with other capital intensive industries.
- More substantive and comprehensive CAFÉ standards should be enacted.
- Carefully study issues being proposed such as product SPR's before implementing at high taxpayer cost.

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Exhibit 18

Summary: US Product Supply Outlook

- Based on demand and capacity forecasts, global product supply will remain tight, with strong refining margins, exposure to supply and price disruptions, and high prices
- The U.S. will see higher import levels over the next 5 years, with the availability of additional imports dependent on overall global demands and refinery capability. Product will move where market prices dictate.
- Continued refinery capacity growth, but no large "grass roots" expansions in the U.S.
- Much greater potential for demand abatement since higher prices will create strong incentives to conserve.

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Mr. ISSA. Thank you.
Mr. Schaeffer.

STATEMENT OF ERIC SCHAEFFER

Mr. SCHAEFFER. Thank you, Mr. Chairman and Congresswoman Watson, for the invitation to testify. I appreciate the thoughtful look that you are taking at these important questions of supply and demand of gasoline. I would like to start by challenging——

Mr. ISSA. Could we have you turn on your mic?

Mr. SCHAEFFER. Oh, yes, thank you. I thought I sounded pretty quiet. Let me try that. OK.

I would like to start by taking issue with the idea that environmental rules play a significant cost in driving the price of gasoline, or the supply of gasoline, from a refiner's perspective. I think it is fair to say even the oil industry has downplayed those concerns in previous testimony before Congress. Last year, Red Cavaney, the president of the American Petroleum Institute, said in response to a question at Congressman Barton's hearing on this topic, "We have not said that environmental rules are responsible for higher prices of gasoline." Valero, the Nation's largest refiner, has said, "Poor margins have the biggest impact; not environmental rules."

Additionally, Mr. Slaughter, in his testimony before Congress last year, asked that Congress not make any further changes to clean fuels requirements without additional study. As Mr. Slaughter has pointed out earlier, I think the industry has generally supported those requirements; asking that they be rationalized—which is fair—but generally, been behind the clean fuels standards.

Also, I have to comment quickly about the Arizona refinery—it is the poster child for this concern that no new refiners have been put up in this country—and remind us that refinery has its permits. What it doesn't have are investors with the confidence that company can actually deliver on its promises.

I also think it is not true that it took many years to obtain that permit. It took about a year for the facility to get its permit, after its permit application was complete.

With your permission, I would like to submit some things for the record, to help the committee get a more accurate understanding of the time line for approving that refinery.

Mr. ISSA. Without objection, your additional material will be placed in the record, and any other collateral material that any of you would like to provide, for 5 days after the completion of this hearing.

Mr. SCHAEFFER. Thank you. I appreciate that very much.

The Department of Energy's long-term outlook for 2005 also says it does not expect refinery costs to grow, despite the imposition of clean fuels requirements. So whatever you think of the role that environmental costs play, the Department is predicting that they are going to be relatively stable, and so won't have a long-term effect on margins.

Now, what has been growing, over the past 3 years in particular, are refinery profits, as the demand for gasoline has been increasing rapidly. Profits are at record levels. In the words of one business columnist, these are rocking times for the refinery industry. We have a flat stock market for almost everybody else this year, but

two-for-one stock splits at Valero, Sunoco, and Conoco-Phillips; a $400 million dividend paid by Citgo; eight quarters of record earnings at Valero, the Nation's largest refiner; a quarter of a trillion dollars in profits since 2001 from the five largest oil companies.

I would just like to suggest, it doesn't get any better than this for refining. They have the money, and they have the opportunity now to invest in capacity expansion. As I think Mr. Sankey mentioned, they are investing in capacity expansion; primarily—in fact, entirely—by expanding existing refineries.

I have included as an attachment a list of some of the projects—those for which we were able to get data—which together would add about 600,000—upwards of 600,000 barrels of capacity to the U.S. refining capacity over the next several years.

There are other projects out there that we weren't able to quantify, but I would urge you to try to gather that data to see what is happening, because there is movement in the industry.

I think the industry has made a determination that it is more economical and more efficient and generally more sensible to expand existing refineries, rather than build new ones. That is a decision they have determined is economically rational, and I think we can expect them to continue that way.

I think one of the reasons they are choosing that option is expansion allows them to meet the demand for specialized products, and also to expand incrementally so they can try to keep pace with demand but not overtake it. Really, the economic question is: Would you rather add capacity 20,000 barrels at a time, or place a $2½ billion bet on a huge refinery? And I think refiners in this country are saying, "We would rather build out slowly. It just makes more sense."

I think one of the reasons they are doing that is because consumers are already reacting to higher prices. The Department of Energy has said that the demand for gasoline has fallen below the levels last year. They expect it to continue to moderate over the next year. Maybe you can't get 65 miles a gallon today, but you can get 50 miles a gallon. You can get between 50 and 60 by purchasing a Prius. And I know from experience, because I am trying——

Mr. ISSA. Well, you are kind of on the inside there.

Mr. SCHAEFFER. I will be happy to followup there, too—and not just with information from the dealer—on the mileage. Even if it is 45 miles a gallon, it is substantially better than what we are used to. I can tell you, because I am in the market for one, you have to wait about 6 months to get one, because consumers want them so much. Meanwhile, the SUVs are piling up on dealers' lots.

So consumers are reacting to the higher prices, and I think the industry is concerned that at some point the capacity may overrun demand, and they may be stuck with surplus capacity. We hear often that they are operating at 98, 99 percent of capacity. Producers love doing that. It means they are making a lot of money. That is not a tragic situation for the refining industry, it means they are doing very well.

I also want to remind you that, 10 years ago in California, oil company analysts were complaining about too much capacity relative to demand, and calling for the closure of refineries so that they could make better profits on the capacity they did have. Those

memos are available on the Web site of the Foundation for Taxpayers and Consumers Rights. There is one from Texaco; there is one from an oil industry analyst at a meeting of the American Petroleum Institute.

Some have suggested antitrust conspiracy. I am not an antitrust expert, and I won't go there. I think you could just argue it is rational behavior by producers. If they think they have too much capacity, they are not going to make as much. We are in an area where prices are volatile and if they see prices falling, they are going to cut back on demand.

I guess that is maybe a long-winded way of saying that it is going to be very hard for Congress to deliver with any legislation on two things simultaneously: one, low gasoline prices, and two, lots of surplus refining capacity. I don't think those two things will naturally fit together. I think that is really going to be a challenge.

So unless you want to prohibit existing refineries from closing—which I think would drive Wall Street crazy and would create other practical problems—I think we may be stuck just trying to react and manage to a market situation as best we can.

I will close with several recommendations. One is, since environmental expenditures are always kind of a whipping boy for whatever economic problems an industry is struggling with, I would ask that you look behind the curtain at what the true environmental costs are for refiners. The only data we have comes from the industry, and it is repeated uncritically by regulators and by economists year after year.

I don't suggest that the industry is trying to mislead us with their internal surveys. I don't think that is true, but I think how you define an environmental cost is very important. I think if you look hard, you will find that some of those expenses are actually very productive, help companies make money, and we ought to know that.

As an example of that—this would be my second recommendation—I think one of the reasons refiners like the clean fuels standards is it helps them make money. It basically means that, in order to get into the U.S. market, you have to have high-quality fuels that are pretty clean. A lot of foreign refiners cannot produce that fuel. So if you are interested in preserving refinery capacity in this country, keep the fuel standards high, would be my suggestion. I think it actually helps the refinery industry, and it is also good for clean air.

A third issue: We have nearly half our refining capacity in the Gulf. As Bob pointed out, we lost about a quarter of it through the last two hurricanes. I would agree with Bob that the industry has done a heroic job trying to clean up and restore that lost capacity in the last month. They have economic reasons for doing that, but I also think they have gone the extra mile.

But I do think it is fair to ask what we are doing to prevent these problems in the first place. Are these facilities being designed to withstand the severe weather? Whether you believe it is global warming or not, we are coming into a severe hurricane cycle. There is yet another category-five hurricane boiling up off the coast of Florida. Are we going to continually be reopening and shutting down these Gulf Coast refineries because of the weather? If that

is what we are facing, ought we not to design and operate them to withstand that kind of climate?

The last thing I would hope that you will include is a hard look at the demand issue. You have to keep the question of refining capacity and gasoline supply in context, by relating it to demand. If we are somewhat limited in our ability to affect domestic supply of gasoline, because we are operating in a world market and there are so many other factors at play, I think we probably do have a little more power to affect demand. What would small changes in fuel efficiency standards—which we really haven't done in a very long time—do to help moderate that demand and make sure that we have plenty of energy to meet everybody's needs?

With that, I thank you, and would be happy to take any questions.

[The prepared statement of Mr. Schaeffer follows:]

Testimony of Eric Schaeffer
Director, Environmental Integrity Project
Before the House Government Reform Subcommittee on Energy and Resources
October 19, 2005

Thank you, Mr. Chairman, for the opportunity to testify today. My name is Eric Schaeffer, and I am Director of the Environmental Integrity Project, a public interest group dedicated to the enforcement of environmental laws. I appreciate your thoughtful efforts to evaluate the adequacy of refining capacity in the United States, and would like to address the following questions in my testimony:

- How much do American consumers have to pay for gasoline before oil companies will increase refining capacity?
- Why have refiners chosen to expand at existing facilities, instead of building new refineries?
- Do environmental rules play a significant role in deterring investment in refining capacity?
- Are government actions more likely to be effective at increasing the supply of gasoline, or moderating demand?

Refiners, like other rational producers, will tend to invest in new capacity when prices are high and profit margins high. As prices moderate and margins shrink, capacity will stagnate or even decline. As is widely reported in the business press, refineries today are enjoying record profits. The top five oil companies have reported a quarter of a *trillion* dollars a year in profits since 2001. While the stock market has

been flat for almost everyone else this year, at least three refiners (Valero, Conoco-Phillips, and Sunoco) have offered stock splits in the last six months. Valero, now the nation's largest refiner, has reported eight successive quarters of record earnings, and Citgo paid its shareholders a $400 million dividend earlier this year.

Not surprisingly, refineries are investing some of this windfall by adding to capacity, but are doing so by expanding existing plants instead of building new refineries. Several large expansions were recently completed, and projects reported or announced to date are expected to add nearly 600,000 barrels of capacity over the next several years. A recent presentation by Marathon-Ashland, one of the country's leading refiners, argues that it makes good business sense to increase capacity at existing plants, instead of building new ones. Expansions allow refiners to take advantage of economies of scale, and to tailor the additional production to specific market needs.

Underlying this business strategy is a recognition that the good times may not last, as prices moderate and margins shrink again. It makes sense, given the historic volatility of the market, to expand incrementally instead of investing in a big new refinery that may not be profitable a few years down the road. That may explain why the proposed new refinery in Yuma, Arizona, is still searching for investors after receiving its environmental permits, while expansion projects continue to multiply.

It is pretty clear that gasoline priced at $3 a gallon makes it economically attractive to add to capacity, at least temporarily. But those same high prices also give consumers an incentive to conserve and reduce their demand. The Department of Energy reports that the demand for gasoline is below last year's levels, and sport utility vehicles are piling up on dealers' lots while consumers join waiting lists to purchase energy-efficient hybrids. Last year, energy analysts at Booz-Allen cautioned refiners that demand for gasoline would "plummet" below supply as early as 2007, if inflation-adjusted prices remained at $2 per gallon (which is well below today's levels). It is important to remember that ten years ago, refiners were complaining that the industry was stuck with too much capacity. For example, a senior energy analyst warned an industry audience at an API convention in the fall of 1995 that, "if the U.S. petroleum industry doesn't reduce its refining capacity, it will never see any substantial increase in refining margins." If demand declines again, we can expect these complaints to resurface.

While there is no question that environmental rules add to the cost of refining, the industry's own testimony suggests that it is not a significant impediment to investments in new capacity. Valero, the nation's largest refiner, has acknowledged "it was the poor margins that had the biggest impact [on refinery capacity], not the environmental rules." Red Cavaney, President of the American Petroleum Institute, testified before Representative Barton's House Subcommittee on Energy and Air Quality last summer that, "We have not said that environmental rules are responsible for the higher prices." Bob Slaughter of the National Petroleum Refiners Association

has advised Congress *against* any further relaxation of clean fuels requirements until additional studies are undertaken, urging Members to, "resist imposition of additional fuel specification changes on top of those already in progress." Indeed, lowering our standards for cleaner fuel could flood U.S. markets with imports of cheap gasoline from countries with lower environmental standards, making investment in refinery capacity in the U.S. even less attractive.

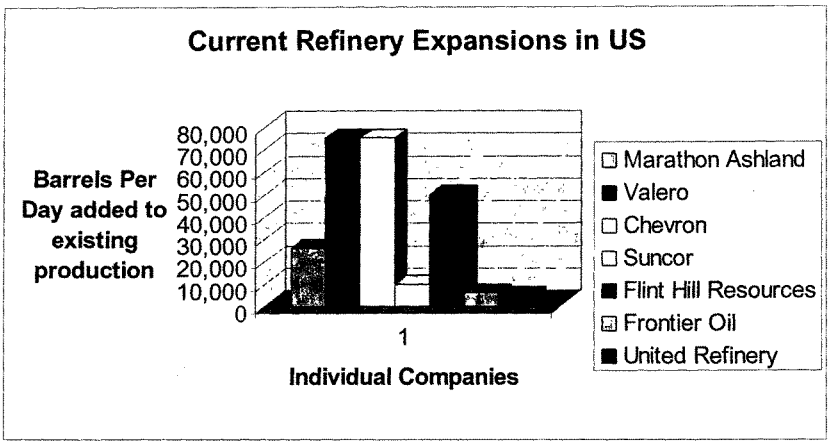
The Environmental Protection Agency's report to the White House in June of 2002 found that Clean Air Act "New Source Review" requirements had "not significantly impeded investment in new power plants or refineries." Permit requirements for modifications at existing plants have already been relaxed by the Bush Administration at the industry's request, so these rules can no longer serve as the whipping boy for lack of capacity.

I would like to point out that the only data we have about the cost of environmental rules comes from the industry itself, through periodic surveys conducted by the American Petroleum Institute. This data has been accepted uncritically for years by government regulators at the Environmental Protection Agency, the Federal Trade Commission and the Department of Energy.

I suspect that some of the costs charged to environmental regulation may be indistinguishable from investments that improve a refinery's productivity and profitability. For example, rules that prohibit leaks of volatile organic compounds

from tanks and valves help the industry recover valuable product that would otherwise be lost. Because the cost of environmental rules are always a hot topic of debate in Congress, I hope you will ask the General Accounting Office to pull back the curtain and undertake a critical evaluation of cost estimates that are now taken for granted.

Of course, the surest way to secure enough gasoline at a reasonable price is to reduce our consumption. In the long run, this may be much more effective than trying to legislate domestic supplies of a commodity, the price of which is driven by the global market. New automotive technologies, even for heavier vehicles, are achieving much higher fuel efficiency without compromising safety. Our fuel efficiency standards are woefully out of date, and small improvements could make a huge difference in bringing the demand for gasoline in line with supply. A recent poll by the Pew Charitable Trusts shows that eighty-six percent of respondents would support tighter fuel efficiency standards. I hope that Congress will find time to consider a solution that the public is so clearly ready to embrace.



Motiva reportedly has plans for a 325,000 bpd expansion--an expansion that will practically double the current refinery expansions in the nation. (http://www.boston.com/news/nation/washington/articles/2005/09/26/)

Additionally, Citgo has recently announced plans to increase its refining capacity in Corpus Christi to 75,000 bpd.

Mr. ISSA. Thank you. As you can see, we have been joined by the ranking gentlelady from California, Ms. Watson, and the gentleman from New York, Mr. Higgins. So we are going to have some lively questions here. I am going to run out of time very quickly, but I will try to be quick in my questions, and we will try to have several rounds.

By the way, Mr. Schaeffer, I think you hit a lot of cogent points, and I particularly enjoyed your testimony. I do think you pointed out an important point: if we need excess capacity anywhere, it is not in Houston or New Orleans, and that may be a big factor that we need to look at. It is not just a question of whether we have enough capacity, but do we have it distributed in a strategic way.

The figure of $254 billion—you are talking about all the profits from people who go to Qatar and get natural gas, profits from people that go to Saudi Arabia or in Kazakhstan, where I visited last weekend—that invested billions, that are making very big money over there? Wouldn't you say it is fair to talk about the increased profit margins at refining; but isn't it unfair to talk about profits from oil overall, which is a windfall based on those who own the oil rights from leases that may have been granted in Libya 20 years ago?

Mr. SCHAEFFER. Not necessarily, if you are an integrated company that has both production and refining operations. You have the ability to shift to where you think you can make money.

Mr. ISSA. No, I understand that. Bob, maybe you can shed some light on this. You represent companies which are not oil exploration companies. I mean, you have companies that basically are in the refining business. So the $248 billion—or $254 billion isn't available to them; is that right?

Mr. SLAUGHTER. That is true. Companies, for instance, like Valero.

Mr. ISSA. Valero.

Mr. SLAUGHTER. Which is the largest refinery in North America, has no production. Sunoco has no production. Tessoro has no production. Flint Hills has no production. There are several that do not.

Mr. ISSA. Since you had the facts on that, Mr. Slaughter, do you also have the facts on, within that industry, what would be the profits for this year, or this previous year, for just the refiners, as best you can estimate it? Making the assumption—and if you don't have it, I would appreciate it in followup—making the assumption that you look at those who are not integrated, those who only do it, and apply that similar profit margin to those who, as Mr. Schaeffer said, could cost-shift.

I think, in fairness, if you have refinery and other things, then I don't want to hear you are not making any money on your refining. But those who live and die on refining, if we were to take those profits for each of the years, you have the margins.

It would be good to have a number, so that this committee would talk in terms of what are this year's estimated profits for the refining industry; rather than a $254 billion figure which, although it is great on the headlines, I can't use, because it really talks to windfalls that are enjoyed by anyone who has oil rights, including Syria.

Mr. SLAUGHTER. I will have to get that for you, Congressman; get you the up-to-date figures. Because, you know, I looked across the industry to both the integrateds and some refiners, for what profit margins are. Profit margins for people who are only in the refining business are usually pretty small, by an order of magnitude. I will be glad to get you all that information.

Mr. ISSA. We are only dealing here with the one part, which is the refining capacity. I wish I could deal with the fact that nobody wants an oil well in their back yard, either, or off the coast of any of the States of the Union. But for today, it really is the refining capacity worldwide. Yes, Mr. O'Connor.

Mr. O'CONNOR. Mr. Chairman, the only thing I would add to that, and it would be more work for Bob——

Mr. ISSA. Let's put him to work. He volunteered for this.

Mr. O'CONNOR. I don't think he's busy right now.

If you are looking at the life cycle of a refinery being, certainly, 30 years, because that is the last one that was built in the United States, you have to look at those margins over an extended period of time. The last 5 years have increasingly gotten better because of the tightness in the global market.

So you want to look back at least to 1990 to see how it has changed over time. It has been very poor, as Bob said, for a number of years. The last few years have clearly been better.

It is a much bigger case when you are looking at spending $4 or $5 billion for a refinery. You know, it looks great today, but you don't know what it is going to look like tomorrow, if conservation and demand changes really take off.

Mr. ISSA. Mr. Sankey, I am a Californian—a State that, for all practical purposes, prohibits diesel automobiles. When I look at the consumers in the United States, as opposed to Western Europe, you said that we don't pay the true cost of oil.

How can you make the assessment of the United States versus Europe? Particularly when the Europeans have liberalized the ability to use—cleaned up, but still use diesel; which has dramatically reduced the actual—or it has given them effectively a CAFE boost. Because it is not just the major vehicles. You know, it is little vans. It is little eight-passenger vans that are almost all diesel there; not to mention the taxis.

Mr. SANKEY. Sure. In reference to the point that you were referring to on profitability in the industry, I would make the point that you were, I think, referring to—that the profits that are made by the U.S. refining are profits that stay within the United States. So the idea that there is some sort of negative element to this profit that remains within the U.S. economy—I don't see what the problem is there. Ultimately, that money will revert to the U.S. economy.

I think where we worry is the amount of imports that you potentially have coming in and that would be a clear reason why you would want to invest more in U.S. refining. People are too lazy about the idea of importing oil here, when it is widening your current account deficit and weakening the dollar.

A further point I would make on the marketing side is that, as we have seen, you have a lot of people accusing oil companies of gouging. What we have seen through the way profits are working

this past quarter is that the companies have been doing exactly the opposite, and they have been very slow to pass through the full price of gasoline at the pump. They have actually taken the probably pragmatic decision not to pass through the full cost of gasoline, in order to not aid the accusation of gouging, but also not to destroy demand too much.

What we have seen, for example, from Chevron is actually reports of quite big negative margins from selling gasoline at the pump, and we subscribe absolutely to those numbers. They are SEC book numbers, and they must be true. So what you are seeing is really no evidence of gouging, whatsoever.

In terms of U.S. consumers not paying the full price of gasoline, it is simply in reference to the fact that there is an environmental cost, and I would subscribe to every one of Mr. Schaeffer's points, actually. I agree with you totally that he had the most cogent points to make.

In terms of the encouragement of diesel, what you have seen is that, because gasoline prices are held so low here, you have effectively skewed the balance toward more gasoline than is easy to produce. Refiners have had to invest more and more in making gasoline and diesel than would naturally come out from a standard barrel of oil, and that has further distorted the market here.

In terms of the way people in Europe behave, again, it simply goes to my point that by encouraging low prices by not pricing and taxing gasoline as hard as it should be taxed. In my opinion, when you think of the reliance you have on foreign sources and of the environmental damage—what you are doing is artificially encouraging demand in the way that in Europe we addressed this issue in the 1970's by taxing heavily early on in the first oil crises, therefore forcing the consumer to take more rational decisions in terms of the vehicle that he drives.

That has been manifested by the use of diesel cars which are more efficient; but perhaps not environmentally more friendly—they produce more particulate emissions. Broadly speaking, you have a better balanced barrel of demand and more rational use of oil in Europe as a result of more aggressive taxing.

This is where I think, coming from Wall Street, we have a message that slightly disagrees with the industry view that more aggressive tax on gasoline would be an extremely negative thing. I think for the United States, it is the most logical and simple conclusion that you make.

Mr. ISSA. My time has expired, so I am going to hope for a second round, with the belief that I just might get one. But while they are asking their questions, I would like, Mr. Sankey, for you to perhaps ponder the fact that Europe is overwhelmingly dependent for gas, natural gas, and oil on unreliable Russian sources; and in fact, has been essentially held hostage by the Russians. Perhaps he couild respond to how well Europe has done, in light of their dependence on Russia, live or die.

With that, we turn to the ranking lady, Ms. Watson, for her questions.

Ms. WATSON. I must apologize for coming in so late, because in my opening statement were a lot of the questions. So I will just not bore you with reading the statement, but I will get right to the questions.

[The prepared statement of Hon. Diane E. Watson follows:]

Opening Statement
Congresswoman Diane E. Watson
Government Reform Subcommittee – Energy and Resources
"Petroleum Refineries: Will Record Profits Spur Investment In New Domestic Capacity?"

October 19, 2005

Thank you Mr. Chairman.

Gas prices in the U.S. rose above $3.00/gallon in September 2005, creating record highs. The cost of gas is rising at an astronomic rate, and Hurricane Katrina has affected about 20% of domestic refining capacity. Refinery profits have doubled since Katrina, according to Bloomberg news. Yet, the only news we hear is how production is reduced due to storm damage. Petroleum products realistically cost an arm and two legs. Americans are very concerned.

Mr. Chairman, the global thirst for oil has placed both foreign and domestic oil companies in a powerful position. American consumers are caught in a difficult situation. There is some concern that recent mergers in the U.S. oil industry have made it easier for companies to control pricing. Exxon-Mobile has recently disclosed the largest annual revenue in the history of business. It is important for the American government to thoroughly examine the

dynamics of an industry in which the top 10 companies control 80% of domestic oil refinery capacity.

The United States General Accounting Office released a report in May 2004 on the effects of mergers and market concentration on the petroleum industry. GAO found that the oil company mergers and an increase in market concentration led to higher wholesale gasoline prices. Since 2001, the largest 5 oil companies operating in the United States, Exxon-Mobile, Chevron-Texaco, Conoco-Phillips, BP, and Shell, have enjoyed after-tax profits of $254 billion.

One argument that arises is the curious fact that there have not been any new refineries built in the United States in the last 30 years. A number of experts have concluded that the increase in market concentration allows individual companies to engage in strategic decisions, such as withholding supply, to increase prices and thereby increase profits. Companies are concerned with poor margins. A recently uncovered Chevron Corporation memo quoted a senior energy analyst who warned an industry audience at the American Petroleum Industry convention in fall of 1995 that, "……if the U.S. petroleum industry doesn't reduce it's refining capacity, it will never see any substantial increase in refining margins."

Another persistent argument is that environmental regulation and permitting is a deterrent to investment in refining capacity. How can this be when only one permit application for a new refinery has been filed in the last 25

years? During 1999 and 2000 the EPA approved 12 refinery permits for refinery expansions. Most of the permit applications were resolved within 12 months, and half of them were sorted out within 5 months.

In the last 25 years, refiners have added 1.4 million barrels per day of crude processing capacity at existing plants, which is equivalent to adding twelve new refineries. In addition motor gasoline production has increased 13% over the same period. The Energy Information Administration states that world wide the largest concentration of refining capacity is in North America, mostly in the United States. Therefore, actual capacity does not seem to be the major problem. We must reduce demand for petroleum-based products.

Mr. Chairman, I want to commend you again on this timely hearing. It is critical that we investigate the reason for high prices at the gas pumps and report back to our constituencies. I also submit that we must be aggressive in implementing alternative energy sources. The quest for, and dependence on, oil has put the United States on a perilous road. Environmentally, Foreign Policy wise and Domestically. Moreover, the President has indicated that the recently passed Majority energy bill will not provide any short-term relief on gas prices. American citizens need an energy break. I look forward to this informational session.

I yield back.

Ms. WATSON. This first one goes to Mr. Slaughter. The energy industry has to recover tremendously in the aftermath of Hurricane Katrina and also Rita. Now, global warming, whether you believe in it or not, predicts that this will be the first of many hurricanes, and we are hearing right now over the news that a very violent Hurricane Wilma is heading toward Florida.

There is a possibility of doing great damage to the Gulf Coast in the upcoming years. So I want to know, since you are representing the National Petrochemical and Refiners Association, what steps is the industry taking to assure that if we do face another natural disaster—and that is very possible—our supply would meet our demand, and consumers will not have to make life choices between energy for their homes and cars, or floods, or food on their table?

I want to thank Mr. Schaeffer for your testimony, because I think that you have recommended quite a few of the resolutions to some of these problems that I would have raised, but can you respond to what the industry is doing at this point, Mr. Slaughter?

Mr. SLAUGHTER. Thank you, Congresswoman Watson. The industry, of course, is learning from every adverse circumstance. You know, we had Hurricane Ivan last year, which did significant damage to the industry; mostly on the producing side, but a good bit in refining. We learned from that.

We basically, with these two hurricanes this year, have been working extensively with government at every level to basically find out—you know, first of all, you have to assess the damage, and redress the damage and get everything working again; but also, treat every bit of it as a learning experience, and to see what can be done.

You have placement of facilities, placement of pipelines, electricity supplies, and also, simply some of the channels. I know people are looking to see if there is any way of doing additional dredging or other work that could eliminate flooding problems that really made a great difference to pipelines and refineries.

There will be a considerable amount of lessons learned as a result of both these disasters this year, as there was from Ivan last year. I mean, some of it is going on right now, even as we speak, but we are still basically trying to bring things on-line.

The one thing I would just caution about a lot of people have pointed out that there is a large concentration of the industry's facilities in this area, but it is because they are largely welcomed in that area. It is also a major producing area, and you have to have access to crude to run refineries. You have also basically got to have access to pipelines, which are in that area, and you have to have communities that are basically willing to accept facilities.

I think that if we tried to replace any of those facilities, many of them would probably go overseas, and we would find ourselves importing even more product than we will, which Mr. O'Connor has already warned about.

Ms. WATSON. Well, let me just say this. In the aftermath of Katrina, many are saying the city should not be rebuilt in a pool. That is what New Orleans is. And I know off the coast and the Gulf are these refineries.

We have problems along the West Coast. I represent Los Angeles. The Santa Barbara area, in particular, has been very con-

cerned. You know, nobody wants the refineries in their area, for aesthetic reasons and others, too.

Given the climate change—and, you know, maybe some don't recognize it, but I can tell you, when California, and particularly Los Angeles, receives a record amount of rain in one season, that is something that we ought to really do a study on. Is the industry at all concerned about the climatic conditions and the changes that we are witnessing right now around the globe?

I think the suggestion that we re-look at how to build facilities that could withstand winds of 150 to 200 miles an hour—is this technology something that the industry is interested in? Is this knowledge about what is happening globally something that you are looking at?

Mr. SLAUGHTER. The industry basically always wants to include the latest technology developments in these facilities. We say that no new refinery has been built since 1976, and that is true. The facilities have been constantly updated, and so they basically have the latest equipment. These refineries in this area are built to withstand a category three——

Ms. WATSON. Well, what happened in the Gulf with Katrina?

Mr. SLAUGHTER. Well, you had, you know, hurricanes that were more powerful than you basically could build a facility to withstand.

Ms. WATSON. OK, well——

Mr. SLAUGHTER. I think, if you look at what actually happened——

Ms. WATSON [continuing]. On that point, let me kind of zero in.

Mr. SLAUGHTER. Go right ahead.

Ms. WATSON. Is the industry looking at what happened with Katrina? Wilma is predicted to be a five, a level five. That is the top level. Now, is the industry saying, "Well, that was a phenomenon that will happen only one time?"

Mr. SLAUGHTER. Oh, no. No, the industry—for instance, if we are looking at offshore wells and things like that, drilling platforms, they have to be shut down days in advance of a hurricane, and if you will notice, they close down whenever there is any near chance of a hurricane veering in the area. Refineries have to be very carefully shut down, because it is difficult to restart them. It takes days to do both processes.

These facilities, the last refinery that was sold, that I remember that we had a record of the cost, went for $1 billion. You know, facilities are worth tremendous amounts of money as productive facilities, and the owners and operators do everything they can to install the latest equipment and protect those facilities and the people who work in them. Those are the No. 1 priorities—particularly the safety of the work force—whenever there is any potential of a hurricane or any other severely damaging incident.

I mean, these will be big learning experiences, but the industry has accident plans, and was prepared for hurricanes in that area.

Ms. WATSON. What happened in the Gulf?

Mr. SLAUGHTER. What happened basically was that we had two major hurricanes that did affect producing facilities, but the industry has worked night and day to bring those that were worst affected back on-line. We are at the point now where we only have—

it was in my testimony. We had about 5 million barrels a day of capacity that was originally affected, but now we are down to about 1½ million that is still off-line, and we are working to bring those back on as fast as possible.

Ms. WATSON. Well, let me just go right to what I am trying to get at.

Mr. SLAUGHTER. Please.

Ms. WATSON. Is the industry concerned about climate change, and is the industry looking forward? As I said, we are going to soon hit the record for major natural disasters in this area in this country. I don't think it is the end of it, because I see things happening around the globe that are saying to me: Something is happening to our climate affecting this Earth that we are on, and we had better start looking at it.

I am just wondering, are you looking ahead? Sure, you are repairing and trying to get back on-line, and we appreciate that. But what are we doing for the future?

Mr. SLAUGHTER. Well, we are preparing for any eventuality. I mean, companies have different ways of looking at the global warming issue. Some are working very hard on voluntary CO2 reductions—voluntary, again. Some are investing huge amounts of money in research programs to really get to the bottom of the problem; and I mean tremendous commitments of capital from some of the companies in our industry. It is an issue that has our attention, yes, ma'am.

Ms. WATSON. I am really glad to hear that, because let me just address this to the Chair. I appreciate this hearing. We had a conversation before the hearing, because I don't think we have given the proper oversight. I don't think government has. I don't think EPA and DOE and FERC have given the proper oversight.

We are going to have to start looking toward the future, if we are going to save what we have now. And I think this impacts your industry more than others. I think I am out of time.

Mr. ISSA. Yes, but we are going to do a second round.

Ms. WATSON. OK. Very good.

Mr. ISSA. I would like to followup on the gentlelady's question, maybe target it a little bit differently. To be honest, if you don't have the answers now, we will be glad to take them as a followup in writing. Both at the refineries and at the productionsites, if you could provide us with either reductions that exist, or could exist, to reduce hydrocarbon emissions, such as flaring of natural gas.

In our home State of California, we flare natural gas—amazingly, because of California State law. Most of the emissions that were previously allowed in the refining business, what they are today; what you anticipate them being; or what amount of emissions in your cracking and other processes could be reduced.

Something on that, because the gentlelady and I both are very concerned that, although your product obviously is estimated to be part of global warming, you can't necessarily deal with what happens after it leaves. If we demand gasoline and we demand diesel fuel, once it leaves your facility it is kind of out of your hands, but within your facility and within the process of harvesting oil and natural gas that is within your industry's facilities. Hopefully, you

can give us some, for the record, insight into accomplishments that have happened, or could happen.

Mr. SLAUGHTER. Are you talking about greenhouse gas emissions, or hydrocarbon emissions, or both?

Mr. ISSA. Both.

Mr. SLAUGHTER. Both.

Mr. ISSA. Because I think that is what the gentlelady was getting to. Like I say, I can not hold you responsible for what happens after you deliver home heating oil to my relatives in New York. What I can do is ask: How much did you impact the environment while processing that fuel?

Mr. SLAUGHTER. I will be glad to provide that. I mean, the general story would be that greenhouse gas reductions have been taken, but are voluntary. Hydrocarbon reductions: for instance, if you look at what EPA says, I mean, the auto industry and the oil industry are basically responsible for most emission reductions in category of pollutants that have occurred since 1970. We have a very good story, and I will get those figures to you.

Mr. ISSA. I appreciate that. This probably comes back to Mr. Sankey and Mr. Slaughter. Let's assume for a moment we don't build another ounce of capacity here in the United States; that we are foolish enough to, as Mr. Sankey said, not realize that with refining done in the United States, no matter how big the margins are, the fact is, the money stays within our system and is part of our own economy. When we buy refined fuel from overseas, obviously, those margins go to an overseas company.

But for a moment, let's assume we are foolish enough not to increase refining capacity. Will foreign refineries have the processing capacity and capability to service the U.S. market with the reliable and to-spec products, if we don't take steps here in the United States, based on your estimate?

Mr. SANKEY. No, I think it is risky. I mean, you have seen the French striking, that one of the biggest sources of the correct grade gasoline that you get here comes from Totalfina—Alpha-Total, as it is now known—refineries in France. Those are highly sophisticated; but of course, you are at the mercy of the French work force, which we know is liable to strike. The same applies to port facilities.

Today we had a major announcement from the Saudis that they would be looking at a 400,000-barrel-a-day refinery to build with Conoco-Phillips. That is an enormous facility; but again, you find yourself looking at the Middle East for your supply.

Again, as you have, I would like to highlight the value added—which is the processing benefit that you get from turning crude into products—is going to be in Saudi Arabia, and not here in the United States. Ultimately, I think it is risky to be reliant on imports, and you would be better off sourcing your own supply from yourselves.

Mr. ISSA. And earlier, you commented, in anticipation of a discussion on a gasoline strategic reserve, that you felt it wasn't appropriate; it had too many other problems, particularly the fact that gasoline deteriorates.

Mr. SLAUGHTER. Sorry, that was me, Mr. Chairman.

Mr. ISSA. I'm sorry.

Mr. SANKEY. I am always happy to take credit for ideas.

Mr. ISSA. Actually, to be honest, Mr. Sankey, mostly, what I found was that you damned everything we did or didn't do. I saw a consistent pattern: Everything we did was wrong; everything that we could do would be wrong; and everything that we haven't done was a mistake. So what did we do right?

Mr. SANKEY. No, I think that you have had the luxury of cheap energy in this country, and I don't think there is anything wrong or evil about the fact that it has been used to drive big cars and heat big homes. That is fine. But I think the big point I am making here is that the era of cheap energy is gone in this country.

It is not at all that you have done anything wrong or right. It is that you have had cheap energy. You have behaved entirely accordingly with the fact that you have had abundant, cheap, U.S. domestic energy at your disposal. You now need to face the fact that we are entering a 21st century which has issues like global warming, and has issues like much less natural gas and oil in Texas.

I am just concerned. It is a matter of concern as to how well we are going to handle this if we leave it to the market. I think we are effectively leaving it to the market, and it is going to be a wild ride.

Mr. ISSA. This committee has done quite a bit to try to promote nuclear energy as a component that would offset some of the challenges we have. It is not the cheapest energy. Certainly, it is not as cheap as natural gas was, but once you lock in on a nuclear facility, you lock in 40 years of stable pricing; something we can not say about natural gas.

Mr. SANKEY. Obviously, that also has global warming implications, because you have far less CO2 emissions with a nuclear facility.

Another one that we have highlighted has been that you should not be filling the strategic petroleum reserve by buying crude in the world market. You should be generating the oil yourselves.

A suggestion would be to crush coal. If you were to go to Wyoming, use your own coal, build a coal-crushing plant of the kind the oil companies are not likely to invest in because of the risk of the market collapsing—but as a government you could invest in—you could then supply yourself with your own strategic petroleum reserve on a much longer-term basis, as well.

So I think the investment issue you are raising is correct, and I think you should look at those sort of less commercially attractive opportunities, such as coal crushing and nuclear, as being a way out.

Mr. ISSA. Mr. Slaughter, a final question for this round. Back to the gasoline reserves, assuming the following scheme—I mean, since you didn't like the overall idea, I will ask you a specific scheme. Assuming the Federal Government paid for strategic gasoline reserves to be co-located at major distribution points that already exist; assuming they were placed at no cost to the oil companies, in that, on a first-in-first-out, the gasoline reserves simply became part of the companies' systems, so that the deterioration of the gasoline ceases to be a problem. They have to be maintained at exactly the level that we put in, so for every gallon you take out,

you put in a gallon from your own reserves. There is a scheme in that, if we need to release from those reserves, obviously, the Federal Government would do so. If a gasoline supplier were to want to borrow from those reserves, there would be a premium for borrowing it. Let's say locally you ran out, but not the whole Nation. You would pay a premium to buy the gasoline; obviously have to replace it; and the delta would represent income to the Federal Government.

Assuming we co-located in that way as part of, so to speak, a pipeline, is there any reason that—and I am not saying there is a will in Congress to do it, but is there any real down side to the industry, other than they suddenly have in their back yard 30 more tanks, or whatever?

Mr. SLAUGHTER. Well, first of all, it would be difficult to permit those tanks, which would be an interesting exercise; but that is secondary.

One of the difficulties there, Mr. Chairman, is I think you are getting into a managed price system, because you see the pressure to tap SPR for price related reasons; which is something that is contrary to policy, and that policy has been adhered to.

With a gasoline reserve of any kind, the pressure that will result from any increase in gasoline prices to tap that reserve means you are going to be tapping it all the time; this means you are going to essentially have a price control system, because whoever decides that gasoline reserve needs to be priced, the minute gasoline price spikes anywhere, no matter how short it is going to be, there is going to be tremendous political pressure to get involved in the market. You will essentially have a managed market.

I think that is really the major problem. There are logistical problems, but things can be solved with enough money, but you are really going back to price controls.

Mr. ISSA. Mr. Sankey, how would you view the idea that Uncle Sam would maintain tens of billions of dollars of gasoline? With or without buying into Mr. Slaughter's assumption that this is price controls, but making the assumption it would be there for whatever you define as the appropriate time to be used?

Mr. SANKEY. Well, it is very expensive. I mean, the Treasury hates it. That is what you found that oil companies have worked for the last 20 years to avoid; which is just to hold inventory, because it costs money to hold the inventory—it is what we just call working capital.

Mr. ISSA. We don't expect the industry to have to hold gas just-in-time just because we would like to have extra gas laying around.

Mr. SANKEY. But I mean, I think the subtlety here is that the industry then allows you to stock on its behalf. I think this is what has happened actually with crude oil; because the Government holds the big strategic petroleum reserve, the industry operating in places like New Orleans and places which are fairly risky will simply allow the Government to stock the oil on its own behalf.

That is, I think, what we have found with crude oil; is that knowing that oil is made available when there are problems has allowed the industry to hold less oil, and therefore just passes the cost of stocking on to the Government. That is one of the reasons

why the companies' profitability has got so high, because they no longer have to stock on their own behalf.

Mr. ISSA. Can I just followup with a quick question? Wouldn't you say that right now we are relying on the European strategic gasoline supply? Isn't that effectively what we are doing right now, after Katrina, after our refining capacity went off-line? We are buying the gasoline from somebody else, and we are paying a premium, but essentially, we are using it as our strategic stockpile; aren't we?

Mr. SANKEY. Yes, that is right. I mean, you are big contributors to the International Energy Agency. As a founding member of that organization, where I used to work, you are benefiting from the years that you spent building up strategic reserves of gasoline. You are very long crude oil, as we would say, but short gasoline here in the United States. And whether or not you wish to address that is something that needs to be thought of.

I think it is definitely an issue that we found; which is that there is plenty of crude oil, but not enough gasoline, and that is why you have had shortages at the pumps here. We on Wall Street hate shortages at the pump, because it destroys consumer confidence, quite rightly. When consumer confidence begins to go, you can get into a very negative mindset and that is what is really worrying us about this current environment.

Mr. ISSA. Thank you. As promised, to the gentlelady from California, Ms. Watson.

Ms. WATSON. Thank you, Mr. Chairman. I am addressing my remarks to Mr. Sankey and Mr. Schaeffer. I would like both of you to comment, one and then the other.

There was an energy bill that was passed out on Friday. I thought it was a terrible bill because it had nothing to do with price gouging, which becomes a real issue when we had that emergency and people couldn't really afford to get out of town. So I would like your opinions on that energy bill, if you are familiar with it.

The other, I would like information given to my office on thoughts of what we need to do as the Congress. Now, you talked about interference; and then there is intervention. Should we intervene because something is not being done that really addresses the industry specifically, and what would you suggest?

I know, Mr. Schaeffer, you already gave us some good suggestions. You might want to reiterate those. We are looking for a place to move on this whole energy issue. We are looking at alternatives to oil and gas and so on, and what we can get here on our own continent and not have to play the political games and be jerked up and down because we are dealing with unfriendly countries who then produce the crude.

So what would both of you recommend in terms of how we can improve our energy supply, how we can see that the refineries make a profit so that they can build bigger, more effective, and environmentally sensitive refineries? What would you suggest we do?

Mr. SANKEY. Well, I think in our view, as I perhaps too negatively highlighted in my testimony, we do not pay a whole lot of attention to the various bills because we do not really see them passing, and we don't see them doing a whole lot when they do.

This is what we saw with the original energy bill. There was a certain amount of supply side encouragement that regards ANWR, but in the context of the challenge that you face here, our feeling was that it was more or less irrelevant. So we haven't worried too much about the latest sudden flurry of bills, which are quite different between the House and Senate.

In that respect, what I was trying to say in my testimony is that I think we are now in the hands of the market. You are seeing the market adjusting far quicker than any of us really can from a political standpoint. You are seeing collapsing SUV sales. You are seeing rapid imports of gasoline coming into the country. You are seeing refiners scrambling to add capacity and get back up and running as fast as they can, make themselves more defensive against the challenges they face from hurricanes coming through, and so on.

I think that as I tried to address in my testimony, over the next 3 years we will see lower demand; some more supply; hopefully, not a recession, which would be our primary concern about the very high price environment, because energy demand and GDP are very closely related; but arguably, some sort of demand reaction that will solve the problems before the political response can really be organized.

For some very specific examples, I will cede the floor to Mr. Schaeffer, because I thought he had some very interesting, much more specific ideas that perhaps could be suggested. But I would remain cynical as to whether they will ever see the light of legislation, quite frankly.

Ms. WATSON. Thank you. Mr. Schaeffer.

Mr. SCHAEFFER. Thank you for the question. I think, Congresswoman, you were on the right track earlier, asking what can be done in view of the increasingly severe weather in the Gulf. Obviously, we, at least in the short term, aren't going to be able to affect the weather. If we get some global warming legislation, 1 day maybe we will be able to do something about it. I think it is fair to ask that, in an area where so much of our capacity to refine oil is located, we do more to protect that capacity from storm events.

I saw an announcement from the government of Jamaica within the last several weeks about the expansion of an aluminum refinery in that country. One of the things they are very careful to say in the announcement is it is going to be designed to withstand high winds and hurricanes. You can't help but look at that and say, "Well, if they are doing it in Jamaica, which really shares the same climate as the Gulf, why aren't we doing it here?"

You know, I agree with Bob that the industry did a good job responding to the problem. I don't think it has done everything it can to prevent a mishap in the future.

I will just give you one example. In the Murphy Oil Refinery, you had tanks ripped off their moorings and carried hundreds of yards. So much oil has spilled from those tanks that the communities are badly, badly contaminated, and they may never recover. That is not the way to get people enthusiastic about hosting refineries, something like the Murphy Oil experience.

I think generally Congress will have better luck doing work to moderate demand for gasoline—some modest improvements in fuel

efficiency will go a long way—than you will in guaranteeing the supply of refinery capacity. I think the demand side is where you can have more influence.

I would ask if you look further at the Gulf issues—and I agree completely with Bob that it makes sense for a lot of refinery capacity to be there. I understand that. There is a history there. There is a lot of infrastructure. There is only one Houston ship channel. So it is probably going to stay there, but ask some of the communities down there what they would like to see in terms of better protection and I think it will also help refineries to make sure they don't have so many outages.

As far as the legislation, very quickly, I think you were referring to Congressman Barton's bill, which I thought first the House defeated, at least when the vote was first counted, but did narrowly manage to get through. It is a terrible bill.

I think it relies on an old paradigm, which is it is all about environmental costs and that is what makes gasoline prices high and refinery capacity short. I don't think there is evidence for that. I wish you had been able to have this hearing before legislation like that went through the House and I hope it won't make it all the way to the President's desk.

Mr. ISSA. Following up on that, if I could, to all of the panel, one of the hallmarks in there was trying to reduce the number of boutique fuels.

I don't serve on that committee presently, but isn't the bill saying, "We have had enough of artificially high prices because of very small batches, barriers to entry because only one refinery or two refineries are equipped to make a particular boutique fuel?"

Both Ms. Watson and I are from the boutique fuel capital of America. So forgetting about anything else in either of the two energy bills, isn't that in fact something where the Federal Government, who helped facilitate these boutique fuels to be endlessly developed, has stepped in appropriately to say, "Enough is enough. You know, we have only got one America, and we all breathe the same air. How many different fuels do we need?"

Mr. SLAUGHTER. Well, I will take the first shot. That is a provision in the bill, frankly, that we have trouble with. The difficulty, just as you said, is that if you have a smaller number of fuels, they are all going to migrate toward the most environmentally pristine fuels; which means you are going to basically be adding costs.

I mean, the chart that showed 14 programs we have to comply with, you are adding an additional one. With all this discussion that we have to do something to make refineries in the Gulf like Martian space capsules, it is going to add additional costs to being in business, at the same time that we are talking about the need to attract investment in the business.

The difficulty with boutique fuels is, what is a boutique fuel? There is disagreement, for instance, is CARB fuel a boutique fuel? Some say, "Yes." Some, "No." RFG, is that a boutique fuel? Some of the boutique fuels only exist in the summer, in very small areas. There has never really been a huge problem with any of them, and so we really don't see what—you know, it looks to be an over-engineered problem to us.

Mr. ISSA. Well, let me just followup with one question, and please pipe in. The last time I checked, when I get in my automobile in San Diego and I drive to Santa Barbara, I drive through six air quality districts—six potential different fuels. When we look at from a refining capability, aren't we in fact opening up more potential competition by capping the number of fuels, because you have larger batches, refineries that are more able to ship? You can be in Long Beach and make one fuel, and send it throughout southern California, potentially, under the Barton change; versus now you have a refinery, but you have to send one truck here with one fuel, one with another. That doesn't concern you?

Mr. SLAUGHTER. Most of California uses either CARB fuel or Federal fuel. I mean, there are not a lot of different fuels in California. It's just a question of whether or not CARB fuel itself is a boutique fuel.

But you have areas that have decided, for instance, instead of going to reformulated gasoline, they just reduced the vapor pressure of their gasoline. They are saving money for everyone who is consuming that gasoline. I mean, it is hard to make an argument that people who don't have air quality that requires it should be forced to buy reformulated gasoline or carb fuel, because it really is not clear that additional costs are being added to the distribution system by these fuels. There is disagreement in our industry on this. People have different positions on this. But that has been our association's position.

Mr. ISSA. Sure, and we have relied on the GAO, whose position is it costs some 3 cents a gallon extra to have so many boutique fuels.

Mr. SLAUGHTER. How in the world they ever came up with that number is beyond me, when people can't even agree what a boutique fuel is.

Mr. ISSA. Yes, we don't always like their numbers either, especially when they don't give us what we hope to have, but on a nonpartisan basis, we are happy for their work. It is one of the few organizations where we know that they are not working for the Democrats; they are not working for Republicans; they are not working for the industry. That gives us some comfort, even if we think they are not always right.

Ms. Watson, did you have any final questions?

Ms. WATSON. From a consumer standpoint, and from the production standpoint, what would we have to do to make fuel affordable in the future? I come from a State where the average is six cars per individual. You are measured by the number of cars you live in. People don't want to know your background. You could be an ex-con.

Mr. ISSA. No sidewalks, but we have garages.

Ms. WATSON. But we have garages, and we have gas stations on all four corners. Right here, you have to get a detective to search them down here in the District—and our youth, everybody drives; nobody rides the buses but, you know, workers on the lower end of the scale.

I am really concerned about energy, and how do we bring the industry and the environment and your profit—I understand that the refiners and the oil companies are making more profit today than

ever. But also, the consumers are being just gouged, and I think it is so unfair.

Now, I know this hearing is on refineries and capacities, but those of you who have this kind of expertise, maybe you can suggest to us—because I am sure my good friend who is chairing this committee would be interested in joining in a piece of legislation that could bring some provisions about that would help us with our energy crisis and our navigating into the future.

I think the weather just gets worse, from what I am seeing, and I don't know how we deal with energy and changing climate. So can anyone suggest?

Mr. O'CONNOR. Well, I will make a comment on that. I think Paul made this comment before, and I will agree with it. We have been in an age of over-indulgence in the United States. We have had low prices. We have gotten used to having six cars.

Ms. WATSON. Yes.

Mr. O'CONNOR. What we have to get used to is having more than half of those cars be Priuses or hybrid vehicles, and have people change their patterns, and that is not going to happen just by suggesting it.

I mean, I think a lot of things are being done. There is this "Energy Hog" program that is out there with the DOE that is a good start, but a much bigger impact is the hammer of $3 gasoline. That is what put the SUVs on the lots and caused those things to happen, and that is going to create a fundamental change.

Now, prices are coming down now. If prices get back down to $2, people are going to think, "Hey, this is pretty good." But it actually is pretty bad, compared to where prices were a year and a half ago. So you have to find a way to keep the emphasis on keeping that energy usage under control, and not just driving.

Ultimately, what is going to happen is diesel is going to turn out to be probably the biggest crunch product in the world, because Europe is growing in diesel, Asia is growing rapidly in diesel demand. Asia's diesel demand is almost as high as the U.S.' gasoline demand.

In the United States, our refiners aren't really geared to make diesel fuel. We are geared to make gasoline and there is going to have to be investments if diesel demands start increasing in the United States.

All through the last 2 months with the hurricane issues, no distillate fuel has come from Europe; despite the fact that prices are higher here. All the gasoline has come; but yet, when we lost the refineries, we lost a lot of distillate production, also. That is because Europe is not importing gasoline. They have their own concerns over there. They are not going to let distillate come over to the United States.

So you know, if you are looking for how to make things affordable: use less. I mean, that is the fundamental hammer that the consumers have, which is not the message they want to hear. Europe did it through taxation. I don't know that you want to suggest massive taxation when the prices start mitigating here.

So there is no quick solution, but I think you are going to see, as I think Mr. Schaeffer alluded to, that the patterns in demand

changes are already taking place. It is keeping them sustained that is going to be the difficult part of the equation.

Ms. WATSON. Well, what I am really getting to, if we could have some meeting of the minds. Because my colleague can tell you, we have tried everything in the State of California to get people out of their cars. You will have a huge car burning gas, and people will drive 20 and 30 miles to work, and one person per car. We have tried the diamond lanes, and so on.

Using less: that is an interesting phenomenon. What a concept. It simply doesn't work in our State. We have to come up with some common ground, and everybody has to take part—the environmentalists, the refiners, the gasoline producers, and so on—if we are going to solve this energy crisis. Believe me, it is a crisis at this point.

I am going to pass this on to my friend here and say, "Come up with the legislation. I will co-sponsor it." Thank you, panel.

Mr. ISSA. Thank you, Ms. Watson. I really appreciate your offering to co-sponsor yet unwritten, but written by me, legislation. I think that is very generous. [Laughter.]

Ms. WATSON. Let me repeat, I said, "a meeting of the minds."

Mr. ISSA. Mr. Slaughter.

Mr. SLAUGHTER. I'm sorry, I just wanted to take just 1 second to say something, because you are talking about the need for consensus. There has been a lot of discussion here about reducing demand for fuels. If you will notice, we talked about supply.

The reason we talk about supply in terms of getting policies that maximize the supply of fuels, plus also refineries that produce them in the United States, is because we think we have seen just what you have seen in California; which is that people want to continue to enjoy their lives, you know, drive a lot, and they want continued economic growth in the United States.

If you do not do difficult things—and increasing refining capacity and increasing supply and taking a look at environmental regulations and their impact on supply are unpopular things to do, but if you don't do that, you have put people who may still want to drive and want to use fuel in the high-price and low-supply environment. That is why we always preach on the point of supply and more refinery capacity. It is not because we are benighted.

Mr. ISSA. Yes. I appreciate that the one thing you can't do is you can't actually reduce our demand. That is going to come from other methods, but I do appreciate all of your testimonies, particularly as to what we can do in the short-, medium-, and long-run. I also appreciate the fact that nobody pulled any punches.

I would like to thank the witnesses for being here today; the gentlelady from California for being my right arm on this committee—or is it left arm? Anyhow, for being my partner on this.

Today, our witnesses described in detail that America is simply unable to meet growing demand for gasoline and diesel, home heating oil, and other petroleum products, with the refining capacity available in light of our demand. As a result, the U.S. refined products supply system is strained to the limits; creating a tight market that is extremely vulnerable to acute price volatility in the face of a supply shock.

Moreover, what we have learned today is that significant new refining capacity will surely be built around the world, but probably, for the most part, not in the United States, because the climate for refining investment remains discouraging in this country.

Twenty years of government policy, industry investment, and consumer choice created our current situation; it will take years of coherent decisions to get out of it. The provisions of the 2005 Energy Policy Act are a step in the right direction, if only a small step. Moreover, the Gas Act recently passed in the House recognizes the importance of ensuring a robust and flexible refined product supply system that is capable of adjusting to supply disturbances within a short period of time.

We know that companies that invest in more sophisticated technologies can take advantage of the cheaper heavy crudes. We also know that countries that support this type of investment will be better positioned to compete for crude oil in the global market; enhancing energy security for the years to come.

Incrementally increasing the refining capacity has not met the U.S. demand for refined products, putting us in a vulnerable situation. If we do not see meaningful increases in domestic—I repeat, domestic—refining capacity, with already enacted incentives and options currently on the table, it may be time for Congress to consider more creative solutions—on a bipartisan basis, if possible—to ensure our economic and national security. We, as a country, must ensure that we take the necessary steps in our policies, in our investment patterns, and in our consumer choices.

We will hold open this record for 2 weeks from this date, for those who want to make submissions for inclusion in the record. I realize that we have asked you for a great many things in followup. Hopefully, 2 weeks will be sufficient. If it isn't, please let me know. This hearing is adjourned.

[Whereupon, at 3:57 p.m., the subcommittee was adjourned.]

[Additional information submitted for the hearing record follows:]

House Government Reform Committee
Subcommittee on Energy and Resources
Hearing on October 19, 2005, "Petroleum Refineries: Will Record Profits Spur Investment in New Capacity?"

Bob Slaughter, President, NPRA
Additional information requested by the Subcommittee

1) Breakdown of 2004 U.S. Refinery Industry Profits
Any discussion of recent industry profits should be viewed in light of historic performance. The refining sector of the oil and gas industry has not historically enjoyed generous returns on investment. In the ten-year period 1993-2002, average return on investment in the refining industry was only about 5.5%. This is less than half of the S&P industrials average return of 12.7% for the same period. Refining industry profits as a percentage of operating capital are not excessive. In dollars, they seem large due to the massive scale needed to compete in a large, capital-intensive industry. For example, a new medium scale refinery (100,000 to 200,000 b/d) would cost $2 to $3 billion. In short, company revenues can be in the billions, but so, too are the costs of operations.

The Federal Trade Commission released a study in June 2005 that made the following comments on industry profits: "Profits play necessary and important roles in a well-functioning market economy. Recent oil company profits are high but have varied widely over time, over industry segments and among firms...Profits also compensate firms for taking risks, such as the risks in the oil industry that war or terrorism may destroy crude production assets or, that new environmental requirements may require substantial new refinery capital investments."

NPRA does not maintain records on member companies' economic performance. However, the Energy Information Administration (EIA) catalogs domestic net income for the refining sector, differentiating between integrated oil companies and independent refiners. This information for 2004 is cataloged in the following charts:

EIA, Major Energy Companies
Refining and Marketing
Domestic Net Income

	Billions of $	Number of Companies
4Q2004	4.80	12
3Q2004	3.83	12
2Q2004	6.26	12
1Q2004	2.67	12

EIA, Independent Energy Companies
Refining and Marketing
Domestic Net Income

	Billions of $	Number of Companies
4Q2004	0.132	5
3Q2004	0.260	5
2Q2004	0.308	5
1Q2004	- 0.008	5

Figures are accessible at the following website:
http://www.eia.doe.gov/emeu/finance/archive.html

These figures do not document an industry wide accounting, but they do document the successful year that domestic refiners enjoyed in 2004. Again, they do not reflect the long-term performance of the industry. Many other industries enjoy higher earnings than the oil industry. Among these are telecommunication services, software, semiconductors, banking, pharmaceuticals, coal and real estate, to name just a few. Efforts to impose a windfall profits tax on the industry, if successful, would discourage investment at a time when significant capital commitments to all parts of the industry, including refining, will be needed.

2) Data on accomplishments in minimizing greenhouse gas and hydrocarbon emissions at U.S. refineries

The refining industry has been instrumental in improving the air quality throughout the United States, primarily through the development and implementation of clean-fuel technologies. The Environmental Protection Agency (EPA) reports that, from 1970 to 2003, total emissions of the six criteria pollutants dropped by 51% while, during the same period, vehicle miles traveled increased by 150%. Additionally, from 1990 to 1999, air toxics emissions declined by 30%. These remarkable achievements, in addition to the estimated $47 billion invested by the refining industry in clean fuels technology, reflect refiners' dedication to improving air quality. Furthermore, the future institution of new low-sulfur gasoline standards, as well as the introduction of ultra-low sulfur diesel to the marketplace will further reduce tailpipe emissions.

Refiners have also reduced, and will continue to reduce, emissions from facilities. EPA estimates that, in the coming years, the refining industry will be responsible for Nitrogen Oxide (NOx) reductions of 80,000 tons per year, and Sulfur Dioxide (SO2) reductions of 235,000 tons per year. Additionally, according to EPA, the industry will invest $4.4 billion in control technologies at refineries, with supplemental environmental project investments of $60 million. NPRA believes that the implementation of EPA's final rules on New Source Review (NSR) Reform released in 2002, will help make facilities more efficient and environmentally friendly. These reforms are common-sense, environmentally-friendly changes which will update the NSR program. The Administration's action will help sustain manufacture of crucial petroleum and petrochemical products such as clean fuels here in the U.S. while encouraging investment

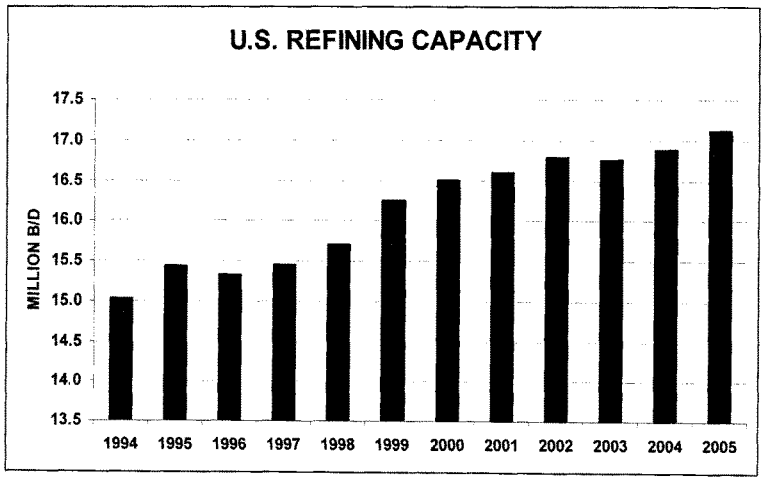
in modern, efficient environmental process and control technologies at domestic facilities.

NPRA does not track emissions of greenhouse gases from refining facilities. The science regarding global climate change, and the impact of greenhouse gas (GHG) emissions, remains unsettled. In fact, a panel of the U.S. Court of Appeals for the D.C. Circuit, in a recent ruling, determined that EPA does not have to regulate gases linked to climate change as air pollutants. Nevertheless, many refining companies have made efforts to reduce their GHG emission profiles and, in some cases, have devoted significant resources to study the potential effects of global climate change. NPRA believes voluntary actions, by balancing the need to meet consumer demand for refined products with concerns regarding GHG emissions, will best serve the public in light of scientific uncertainty on global climate change.

Questions from the Subcommittee

1) Are plans by China, Saudi Arabia, or other governments or oil companies to build refining capacity discouraging investment by U.S. refining companies either here or abroad?

The performance of the refining industry over the past decade reveals that the expansion of capacity has been a priority. U.S. refining capacity increased from 15.0 million b/d on January 1, 1994 to 17.1 million b/d on January 1, 2005. This 14 percent increase is equivalent to the construction of a new, larger-than-average refinery each year. The chart below documents this capacity growth.



Guy Caruso, Administrator of the Energy Information Administration, testifying before the Subcommittee on Energy and Air Quality of the House Committee on Energy and

Commerce on July 15, 2004 sated that "Between 1990 and 2003, 14 medium and large refineries increased capacity by more than 50 percent."

The most significant barriers to domestic refining capacity growth continue to be the massive capital required to expand or build new facilities as well as public policy priorities that have traditionally placed energy supply concerns as a secondary priority. The cyclical nature of the refining industry increases the risk investors take when they commit capital to expansion projects. As documented in our written testimony, the industry has faced, and continues to face, a blizzard of environmental regulations covering both refined products as well as facility emissions.

Nevertheless, many refining companies have announced significant capacity expansion projects in recent weeks. Public policies should support this trend by 1) removing barriers to increased supplies of domestic oil and gas resources; 2) resisting tinkering with market forces when the supply/demand balance is tight; 3) expanding the refining tax incentive provision in the Energy Act; and 4) keeping a close eye on several upcoming regulatory programs: the new 8-hour ozone NAAQS standard, the design and implementation of the credit trading program for the ethanol mandate (RFS), the implementation of the ultra low sulfur diesel highway diesel regulation, and Phase II of the MSAT (mobile source air toxics) rule for gasoline.

2) Has the availability of relatively cheap gasoline and blending component imports from Europe or elsewhere been essentially cheaper for the U.S. consumers than would have been building new refining capacity in the U.S.?

NPRA has not performed the type of analysis described in the question. However, we would point out that additional refining capacity investments guarantee a stream of oil products for decades while a decision to import product is a short-term solution with no long-term benefit. On average, 10% of the nation's refined product supply consists of imports of either finished refined products or blending products. The Northeast U.S. receives the bulk of these imported fuel products which account for over 20% of this region's demand. In the immediate aftermath of Hurricanes Katrina and Rita, imported products helped prevent supply shortages and moderate prices. The Administration, by granting temporary fuel requirements waivers helped ensure that foreign refined products could reach American shores.

NPRA thinks the use of petroleum product imports during this period of supply emergency demonstrated the effectiveness of free-market pricing in the transportation fuels sector. Steadily increasing domestic demand, however, indicates that the nation must either add additional domestic refining capacity or increase its reliance on foreign gasoline imports. Unfortunately, the need to add more domestic gasoline production capacity – the option NPRA believes to be the prudent choice – is often thwarted by other public priorities.

3) With regard to domestic investment in sophisticated hydrocarbon processing technologies to date, how well is the U.S. positioned to compete for and utilize cheaper heavy crude oil in comparison to other global market participants?

Economic realities have prompted many refiners to make investments that allow their facilities to handle heavy, sour crude oil, which is cheaper than light, sweet crude. In many cases the addition of a coking unit makes refineries capable of processing this type of crude into high value products, namely gasoline. Comparing the total amount of coking capacity in the United States in 1995, to that in 2005, demonstrates changes made to refine cheaper crude oil. In 1995, U.S. refiners had an aggregate coking capacity (both delayed coking and fluid coking) of 1,785,300 barrels per day (bpd). In 2005, the total equaled 2,462,710 bpd, an increase of 38%. This comparison is not a perfect analysis, as the addition of coking capacity can serve purposes other than processing heavier crude oil, but it does provide a rough estimate. The significant increase in coking capacity reveals efforts made by the refining industry to transition facilities so that they may handle heavier varieties of crude oil.

The Federal Trade Commission (FTC) released a report this year, "Gasoline Price Changes: The Dynamic of Supply, Demand, and Competition." The report notes that "U.S. refiners also have adapted processing methods that broaden the range of crude oil that they can process and allow them to produce more refined product for each barrel of crude they process." Additionally, the Energy Information Administration (EIA), in a presentation delivered before NPRA's Annual Meeting in 2003, observed that the growth in imported crude oil between 1986 and 2001 "has been greatest in the medium to heavy oils category." The presentation also notes that "The increased use of medium to heavy, sour crude oil has been prompted by: Refiners' concerns that the availability of light, sweet crude oil in the Atlantic Basin will diminish at some point, even though, for the past decade, this prospect has been pushed further into the future;" and the "increased participation in U.S. refining by Western Hemisphere heavy crude oil producers to assure markets for their oil." The EIA presentation is available at: http://www.eia.doe.gov/pub/oil_gas/petroleum/presentations/2003/npra/index.html

4) What studies have examined the feasibility of a national-level strategic reserve of gasoline, when, by whom, and what were the findings?

NPRA is not aware of any studies that examine the feasibility of a national-level strategic reserve of gasoline. However, The California Energy Commission (CEC) performed such a study on a strategic gasoline reserve in California in July of 2003. The major finding of this study states that such a reserve "could have several unintended consequences, which could limit its effectiveness as a tool to moderate gasoline price spikes and could reduce the total supply of gasoline in the state." The CEC study is available here: http://www.energy.ca.gov/strategic_reserve/documents/index.html

NPRA does not support the establishment of strategic gasoline reserves for several reasons. A strategic gasoline reserve creates the potential for market disruption. Filling a product reserve would attract supply from the already tight refined product market

thereby putting upward pressure on price. Any supplies diverted from the market would have to be replaced, most likely by imports. Additionally, political pressure to utilize a strategic gasoline reserve as a measure to moderate prices would be intense, creating a scenario for de facto price controls. The nation's experiment with fuel price controls in the 1970's and 1980's should be lesson enough to approach a strategic gasoline reserve proposal with extreme caution. Furthermore, complications arise both in storing refined products and in deciding which products to store. Gasoline, unlike crude oil, degrades over time and it would be necessary to refresh the stored product over time. The various fuel formulations in use throughout the nation, which are vital for states to use in meeting National Ambient Air Quality Standard obligations, raise the question of which type of fuel to store.

Other factors that would undoubtedly add complexity and uncertainty to an already complex and uncertain situation regarding strategic refined product storage include: the incorporation of the renewable fuels standards (RFS) for both ethanol and bio-diesel prescribed by the Energy Policy Act of 2005; the siting, permitting and construction of hundreds (perhaps thousands) of new above ground storage tanks; the problem of filling and maintaining the reserve while accommodating the current demand for refined products and the nation's need for imports.

Additionally, the reserve would add additional pressure to both the refining and transportation infrastructure at a time when the nation's energy systems are strained. The reality is that actual supply shortages have not occurred on any great scale. Even in the aftermath of Hurricanes Katrina and Rita, supply shortages were isolated and quickly remedied.

5) What effect have Hurricanes Katrina and Rita had on scheduled maintenance at refineries? Have companies you represent opted to postpone maintenance, or will they be shutting down soon?

In the immediate aftermath of Hurricanes Katrina and Rita the industry faced unprecedented logistical, facility, and personnel complications with the impact of two major storms in rapid succession. Faced with shut-downs that, at their peak on September 23rd accounted for nearly 5 million b/d of capacity, the refining industry reacted quickly and effectively. NPRA commends the efforts of its member companies, and especially their employees, to bring refineries back online in areas affected by the storm. During this time, refineries in those parts of the country unaffected by the hurricanes worked to keep their facilities operating so that consumer demand for refined product could be met. The fruit of these efforts is demonstrated in the isolated and short-lived nature of supply disruptions following the natural disasters.

Safety considerations are paramount when a refiner evaluates postponing maintenance and NPRA does not maintain a database on refinery maintenance schedules. Anecdotal evidence, however, suggests that at least some refineries did, in fact, defer scheduled maintenance in order to continue producing transportation fuels. These facilities will have to perform maintenance in order to insure safe operation. When performed these turnarounds are not likely to impact supplies dramatically.

The Honorable Darrell Issa
Chairman, Subcommittee on Energy and Resources
Committee on Government Reform
2157 Rayburn House Office Building
Washington, D.C. 20515-6143

Dear Mr. Chairman,

Thank you for the opportunity to testify before the Committee on Wednesday, October 19, 2005, and to provide responses to the questions raised in your letter of October 21, 2005. I found the session and the exchanges very open, frank, and informative and hope that the Committee did so also.

At this point ICF does not see any reason to alter or update the specific testimony and exhibits provided to the Committee. We have, however, provided a final copy of our testimony to the Committee Staff with the text and the exhibits in the same document.

Regarding questions posed in your October 21 letter, the questions and responses are noted below:

- **Are plans by China, Saudi Arabia, or other governments or oil companies to build refinery capacity discouraging investment by U.S. refining companies either in the U.S. or abroad?**

  The U.S. refining companies, including the international major oil companies who have U.S. refining capacity, *are* investing in the United States. The international majors are also investing in China and Saudi Arabia. Several of these majors have been involved in bidding to be on the joint venture working with Aramco, the Saudi national oil company (NOC), to build a new 400,000 barrel per day export refinery at Yanbu in Saudi Arabia. ExxonMobil, BP, Shell and Total have announced refinery and/or petrochemical projects with Sinopec, China's second largest oil company. These projects in general provide better returns than investments in the U.S. for reasons cited in our testimony in Exhibits 12 and 16.

  There have been investments announced in the U.S. by a number of refiners. Apart from investments to meet regulatory needs, the most recent years have seen U.S. refiners investing in capability to upgrade heavy, sour crude oils that are becoming more abundant and can be purchased at a price advantage over sweeter, lower sulfur crude oils (this was noted in our Exhibit 10). While no company has announced plans for a grass roots refinery in the U.S. (with the exception of the Arizona Clean Fuels project), a number of refiners have been expanding capacity at existing refineries, and others have announced plans to expand. As recently as October 27th, Marathon announced a major expansion at its Garyville, Louisiana refinery, involving an expansion of 150,000 barrels per day targeted for completion in late 2009. So it does not appear that U.S. refinery capacity investment is being inhibited by the overseas projects.

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I think, however, that it is fair to say that owners of U.S. refinery assets are very concerned about overbuilding capacity, and that staying in a relatively tight balance between refinery capacity and global demand levels is a critical factor for refining industry profitability (witness the margins shown in our Exhibit 9 in 2004 and 2005). However, no single refining company can control that balance, and the industry has in fact been in a sustained weak margin environment for the better part of the last twenty years until the 2004 demand surge.

Decisions by some companies, governments and entrepreneurs to move forward with projects such as the recent announcement by Alberta Economic Development to build a $7 billion refinery in Edmonton with 16 industry sponsors, including BP and Petrocanada, to process Canadian bitumen into fuel products for North America and China is the kind of strategic project that can make sense on a number of levels. As more of these projects become economic and are announced, they may slow down the expansion plans for existing U.S. refineries until those investment planners can get a better sense of the fundamental outlook for global demand growth in a higher energy price world.

- **Has the availability of relatively cheap gasoline and blending component imports from Europe or elsewhere been cheaper for U.S. consumers than would have been building new refining capacity in the U.S.?**

The question needs to be considered from a market perspective. Imports come to the United States from both "local" markets (Canada, Virgin Islands, South America, Europe, etc) and more distant sources because the economics in those markets indicate that it makes sense to refine crude and ship the gasoline (and/or components) into the U.S. market at the prevailing spot market price. In other words, the level of price in the U.S. market is economically attracting the volumes from other countries.

Based on our analysis of U.S. refining margins from 1990 to 2005 (Exhibit 9 in our testimony), the spot market margins from 1990 through 2003 were not sufficient to justify new major refinery capacity additions. The product prices used in this exhibit are roughly identical to the spot market prices used to determine import economics. Therefore, as long as the U.S. can attract imported product that meets U.S. product specifications (or can be blended to U.S. specifications) at market prices that do not provide sufficient return on investment for new capacity, the U.S. consumer is getting the lowest possible cost product.

In the future, it is of course important that the refiners exporting to the United States can continue to meet U.S. product specifications and that U.S. refiners and blenders can continue to handle gasoline component blending and unfinished oil processing to meet tighter U.S. specifications. We have concerns that unabated global demand for product could in essence "bid up" the price of products worldwide, and therefore affect the price of imports into the United States. The globalization of oil markets and high demands could find even traditional U.S. suppliers with price incentives to move their product to other markets than the U.S.

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To the degree global refining margins stay strong (and by strong we mean at levels seen before the hurricanes, not at levels in the immediate aftermath), we believe major global refinery capacity projects, as well as increased expansion at existing sites in the United States will take place and mitigate the capacity shortfall over time.

- **With regard to domestic investment in sophisticated hydrocarbon processing technologies to date, how well is the U.S. positioned to compete for and utilize cheaper heavy crude oil in comparison to other global market participants?**

The U.S. refining industry is by far the most sophisticated in the world, and is well positioned to handle and compete for heavier and more sour crude. While the U.S. distillation capacity is 20% of global refinery capacity, the U.S. system has over 50% of the world's coking capacity, almost 30% of the vacuum distillation capacity (a measure of heavy crude capability), and over 50% of the world's sulfur production capacity from refineries.

This is an excellent strategic advantage. It should be noted, however, that as U.S. refiners increase the percentage of heavy crude oils in the refinery raw material supply, additional investment will almost certainly be needed to remove more sulfur and upgrade additional residual material in the crude into transportation fuels. U.S. refiners have been announcing additional projects of this nature, and we expect that trend to continue.

- **What can Congress do to dampen the impacts of a supply-side shock with minimal consequences for financial markets?**

In our testimony, we identified a number of recommendations that Congress could consider to improve the supply/demand balance. These were identified in Exhibit 17 and are noted at the end of this answer in more detail.

The focal point of the specific question posed by the Committee appears intended to identify short term steps that could be taken to mitigate the impact of a supply-side shock. The question is focused on the consequences for financial markets, and price is clearly a concern. However, we believe that the radical price spikes seen were driven by a genuine physical supply shortage of product, and the best method to calm financial markets is to assure that supply can be sustained. To that purpose, we offer the following comments:

First, it should be noted that the degree of impact on the refining industry of the two hurricanes was by far the most significant supply side shock that the Industry has ever seen. It is difficult to imagine a human-initiated action that could replicate the impact of these storms on the U.S. refining industry.

We note, and do not dismiss, the Minority Chair's legitimate concern about the continued experience of weather related and other natural tragedy's which have emerged in the past year. It would be simplistic to assume that the devastation experienced was a "once in a hundred year" event, and that the industry, Congress and consumers would not find ways to mitigate the potential impact of the next

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similar disaster. With that in mind, we offer the suggestions below, which are additive to the recommendations in Exhibit 17:

1. Require the industry to identify specific actions and investments taken at each refinery to upgrade refinery equipment, infrastructure, and practices which will minimize damages and necessary downtime in the event of a similar weather occurrence in the future. It will take considerable time to both assess damages and determine the best technical solution to each specific problem, so the industry should be allowed reasonable time to determine the plan for improvement. Industry has responded to similar but less devastating events in the past (see box below), and will clearly do so now. The need to "require" reporting of plans would be to assure the public that this work is being done in a timely manner.

> In December 1989, just prior to Christmas, a very severe cold wave went through Texas and Louisiana, causing water pipes in many households to freeze up and rupture. For refineries, the level of insulation (or winterization) on existing pipelines and vessels had been designed to keep oil flowing at historical temperature experiences in the region (refineries in the Midwest have much more insulation).
>
> A number of refineries had to shutdown because of freezing problems (oil would solidify in pipelines). Over 1 million barrels per day of capacity was shutdown for 1-2 weeks. While nowhere near the magnitude of the hurricanes, it was a huge issue at the time given the weather and the threat to heating oil supply.
>
> Subsequent to that, the Industry spent considerable time and money in each refinery to make sure this did not happen again. Money was spent on improved insulation, steam-tracing of pipelines, and operating practices were changed. No one wanted to be in the position of repeating a facility shut down during the next cold snap.
>
> Hurricanes are different than cold snaps, and have had a much more devastating effect. Without question, every refinery will be identifying what facilities need to be modified, designed better, and so on to enable them to minimize damage. There is an economic, safety, and environmental benefit to each of these possible investments that will make it a very high capital priority. The cost of lost capacity can be enormous during industry-wide disruptions, as was evidenced in September.

2. The actions taken jointly by industry, the executive branch and the EPA in the aftermath of the hurricanes should be memorialized as part of a comprehensive response plan for future disasters of similar, or near similar magnitude. These decisions occurred rapidly and collaboratively, and assisted in minimizing the impact of the devastation on consumers. The best organizational structure to do

this would need to be considered, however, the types of decisions required would include the following:

a. Release of barrels from the SPR if appropriate
b. Waiver of the Jones Act to allow use of foreign flag vessels between U.S. ports
c. Temporary waivers of product quality specifications
d. Temporary reduction or elimination of import duties

3. Require major pipeline companies to have sufficient power generating capacity at key pipeline pumping stations to sustain operation during a local or regional power outage. These expenditures, due to the infrequency of outages, could likely not be economically justified, but should be made in the interest of protecting consumers' supply chain. Obviously, the pipelines will not be able to run at all if no product is made available from refineries, so the improved pipeline reliability is only one part of the answer. The issue of backup power capability is certainly already being considered by many pipeline companies.

4. Develop and implement a strategy to increase product inventory "reserves" in a manner that is non-intrusive to market economics, but accessible in the event of a true emergency.

   The availability of gasoline product from Europe, released through the IEA, was a clear benefit to the United States in the hurricane aftermath. It served to mitigate the rise in product prices and, over the time needed to arrange shipping, began entering the U.S. market in mid-September. As noted by Mr. Sankey, this was only the second time that these reserves have been allowed in the market (the prior time being the first Gulf war). To date, there has been no use of the U.S. Heating oil reserve volumes maintained in 3 locations in the Northeast.

   The release of the IEA gasoline had a clear calming effect on the market because it sent a message that physical supply would be bolstered. Based on this impact, it seems logical that having more inventory on hand would provide some capacity to mitigate supply disruptions a severe event. However, the best process to do this and not be intrusive on global markets will need to be very carefully considered. The concerns that we would have cover several areas:

   First, as with the crude SPR, it would be essential that the reserve be used only in cases of real, substantive outages, not a particular refiner's problem, or solely to reduce price. For example, distributors who normally buy unbranded gasoline at discounts will often be curtailed by suppliers who have a contractual priority to supply to the branded outlets who pay higher prices for the security of the brand supply. Distributors assume the risk of outages by the manner in which they choose to buy product and market. A distributor out of product is not the same as a regional shortage.

   Second, the quality control of gasoline, jet fuel and diesel are difficult, and the design of the reserve management needs to be carefully considered. One option

(that becomes much more do-able with fewer grades of boutique fuels), is to have all common-carrier product pipelines hold more inventory at their key pumping/injection stations. These inventories could be managed by the pipelines to control quality. The volume of the additional inventory required should also be carefully analyzed, and it will be important, as noted in (3) above, that the pipelines have a first class backup power source to be able to continue, or resume, operations quickly.

The suggestion to use pipeline injection inventory tankage has benefits in positioning the inventory at the normal distribution points in the supply chain. The volume in inventory could be allocated based on historical shipper volume percentages, which would allow the shippers access to supply for their normal customers. The cost of the added inventory, or additional tankage if it is deemed necessary, could be passed on to shippers via higher tariffs.

The volume of required reserve would need to be analyzed, and the operational issues of product quality management would also need careful review. The issue is not just degradation of quality; the real problem is managing the seasonal changes in vapor pressure which requires tanks to be essentially drained and then refilled several times in the Spring to lower vapor pressure. This will have a clear market impact.

Finally, any investment in a product SPR must be seen as an insurance policy for extreme disasters only, or else it could have a devastating effect on the normal process of the product markets and price movements which cause oil products to flow to the United States in tight supply situations. The mechanism to release any of the volume would need to be for events similar to Katrina and Rita in magnitude.

5. Finally, noted below are recommendations provided in Exhibit 17, some of which are more longer term in nature:

   Exhibit 17 Actions for Congressional Consideration:

   - Aggressive energy conservation efforts. High energy prices following the hurricanes are stimulating conservation today, but the greater challenge is to change the mind-set of most Americans that cheap energy is a right. Government can exhibit leadership by implementing new CAFÉ standards that challenge both the auto and oil industry.
   - Streamline the boutique fuels issue. While NPRA indicated that some in the industry do not see this as critical, I see this as a supply reliability issue. Boutique fuels tie up tankage in both refineries and terminals, and can create regional supply shortages which cannot be resolved by redeploying product from other nearby areas because of quality differences. NPRA is concerned about the standard migrating to a very high quality if boutique grades are reduced, but I believe that can be managed and may ultimately be in the industry's interest.
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- Modify the compliance point for Ultra Low Sulfur Diesel to the refinery gate rather than downstream in the distribution system. The ultra low sulfur levels can be met by the refineries by next June, but the likelihood of contamination in the pipelines and terminals is huge. Contamination will result in loss of this product for on-road use, and create isolated shortages and price spikes. The environmental benefit would be no different with refinery compliance, and the consumer would not pay the price for the "learning" curve in the distribution system. The EPA has extended the retail compliance date from September 1 to October 15, 2006, and will allow up to 22 ppm sulfur levels during this phase-in period. This is helpful, but a compliance change for an initial period to the refinery gate would reduce potential for disruptions even further.
- The new Energy law provides incentives to expand refineries by allowing expensing 50 percent of capital upon project completion. Expensing each year under construction would be more supportive of investment. Additionally, refining investments should be allowed similar depreciation schedules as other major Industrials.
- Actions to provide a more streamlined permitting process would be positive to refining investment. The sources of delay can be many: State, Local, Federal, Citizen action groups, and so on. Improving this process, and even identifying the sources of delay will take time but there should be a process where any capacity-related project would be tracked from the initial State or Local permitting application filing to completion. The tracking process could be monitored by an industry group such as NPRA or it could be monitored at a Federal level.

Thank you again for the opportunity to comment, and for the very cordial and helpful attitude of the Committee staff in assisting with our testimony!

Best Regards,

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