AMERICA'S ENERGY NEEDS AS OUR NATIONAL SECURITY POLICY

HEARING

BEFORE THE

SUBCOMMITTEE ON ENERGY AND RESOURCES

OF THE

COMMITTEE ON GOVERNMENT REFORM

HOUSE OF REPRESENTATIVES

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AMERICA'S ENERGY NEEDS AS OUR NATIONAL SECURITY POLICY

WEDNESDAY, APRIL 6, 2005

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

The subcommittee met, pursuant to notice, at 2:05 p.m., in room 2247, Rayburn House Office Building, Hon. Darrell E. Issa (chairman of the subcommittee) presiding.

Present: Representatives Issa, Westmoreland, Marchant, Higgins and Kucinich.

Staff present: Larry Brady, staff director; Lori Gavaghan, legislative clerk; Dave Solan, Ph.D., Steve Cima, and Chase Huntley, professional staff members; Krista Boyd, minority counsel; and Jean Gosa, minority assistant clerk.

Mr. ISSA. Good afternoon. A quorum being present, this hearing of the Government Reform Subcommittee on Energy and Resources will come to order. I want to thank all of our witnesses for being here promptly.

A matter of housekeeping. It is likely that we will go an hour without a vote. If that occurs, we actually will get to hear all of your testimonies uninterrupted.

I will begin with my own opening statement.

Energy drives the U.S. and world economies. Our prosperity and way of life are sustained by energy. Affordable, reliable and sustainable energy supplies are essential to our national security and maintaining our global commitments. In the last decade higher global demand for energy, particularly oil and natural gas, has led to disturbing developments. As more nations increasingly depend on imports to meet their needs, and as the world approaches full oil production capacity, and some might say exceed, countries such as China are becoming more aggressive in pursuing energy agreements often with governments unfriendly to the United States. State-owned energy companies are becoming more assertive on the international market, creating an additional concern because of a lack of transparency in the contracting operations. New alliances and developments indicate a shift in energy geopolitics.

And I might say that there is no question that what was once known has changed—and I particularly want to hear from Jim Woolsey, because of his tenure and position at the CIA.

Domestically continuing high oil and gas prices are impacting families and businesses and could seriously affect our economic growth. Unlike other periods of price volatility over the last 30-plus

years, today's period of price volatility is demand-driven. Because it is demand-driven, there is no person or group to blame for today's high prices. To a certain extent we are victims of our own success in that worldwide economic growth and development are raising the standard of living, but also dramatically raising the consumption of energy.

In the second week of this administration, in 2001, with leadership and foresight, President Bush established the National Energy Policy Development Group and charged the group to develop recommendations for a national energy policy. Based on these recommendations, in the last Congress the House and Senate passed an omnibus energy bill, but reconciliation did not occur, and the bill was not enacted.

It is now clear more than ever that we must adopt a comprehensive national energy policy and establish a long-term strategy to ensure the security of our economy and our national interest. At a minimum, such a policy must expand domestic opportunities for production of traditional and nontraditional sources of energy while expanding conservation and efficiency efforts.

Today we will conduct a frank assessment of energy roles in our national security. We look forward to hearing from our distinguished panel, and today we are pleased to have the Honorable Clay Sell, Deputy Secretary of the Department of Energy. Secretary Sell previously served as special assistant to the President for legislative affairs, with an emphasis on energy; special assistant to the President for economic affairs, and staff director at the Senate Energy and Water Development Appropriations Subcommittee.

We are also pleased to have the Honorable James Woolsey, former Director of the Central Intelligence Agency, and a Commissioner to the bipartisan, nongovernmental National Commission on Energy Policy. He is currently a vice president at Booz Allen Hamilton. His extensive administrative experience also includes time as Under Secretary of the Navy, general counsel of the Senate Committee on Armed Services, and delegate and advisor for diplomatic talks to reduce conventional and strategic arms in Europe.

We are also pleased to be joined by Ambassador Robert Hormats, vice chairman of Goldman Sachs International. The Ambassador served in a number of administrations, holding positions as Deputy U.S. Trade Representative, Assistant Secretary of State for Economic and Business Affairs, and senior economic advisor to the National Security Council.

Last and certainly not least, we are joined by Robert Ebel, chairman of the energy program, the Center For Strategic and International Studies. In addition to extensive private sector experience in the energy sector, he has been advisor to the U.S. Department of State on energy and diplomatic issues. He also served with the CIA for 11 years and spent 7½ years with the staff of the Office of Oil and Gas in the Department of Interior.

We are delighted to have such a distinguished panel, and as is the custom of this committee, I would yield to the ranking member, Mr. Higgins, for such time as he may consume.

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

COMMITTEE ON GOVERNMENT REFORM
SUBCOMMITTEE ON ENERGY AND RESOURCES

OPENING STATEMENT OF
CHAIRMAN DARRELL ISSA
APRIL 6, 2005

Energy drives the US and world economies. Our prosperity and way of life are sustained by energy use. Affordable, reliable, and sustainable energy supplies are essential to our national security and maintaining our global commitments.

Higher global demand for energy, particularly oil, has led to disturbing developments. As more nations become increasingly dependent on imports to meet their needs and as the world approaches full oil production capacity, countries such as China are becoming more aggressive in pursuing energy agreements, often with governments unfriendly to the US. State-owned energy companies are becoming more assertive on the international market, creating an additional concern because of the lack of transparency in their contracting operations. New alliances and developments indicate a shift in energy geopolitics.

Domestically, continuing high oil and gas prices are impacting families and businesses, and could seriously affect our economic growth. Unlike other periods of price volatility over the last 30 years, today's period of price volatility is demand-driven. Because it is demand-driven, there is no person or group to blame for today's prices. To a certain extent we are victims of our own success, in that worldwide economic growth and development are raising living standards but also dramatically increasing energy consumption.

In the second week of his Administration in 2001, with leadership and foresight, President Bush established the National Energy Policy Development Group and charged the group to develop recommendations for a national energy policy. Based on these recommendations, in the last Congress the House and Senate each passed an omnibus energy bill, but a reconciled bill was not enacted.

It is now clearer than ever that we must adopt a comprehensive national energy policy and establish a long-term strategy to ensure the security of our economy and of our national interests. At the minimum, such a policy must expand domestic opportunities for production of traditional and non-traditional sources of energy while expanding conservation and efficiency efforts.

Today we will conduct a frank assessment of energy's role in our national security. We look forward to hearing from our distinguished panel.

We are pleased to have:

- The Honorable Clay Sell, Deputy Secretary of the Department of Energy. Secretary Sell previously served as Special Assistant to the President for Legislative Affairs with an emphasis on energy, Special Assistant to the President for Economic Affairs, and staff Director of the Senate Energy and Water Development Appropriations Subcommittee.

- The Honorable James Woolsey, former Director of the Central Intelligence Agency and a Commissioner to the bipartisan and nongovernmental National Commission on Energy Policy. He is currently a Vice President at Booz Allen Hamilton. His extensive Administration experience also includes time as Under Secretary of the Navy, General Counsel to the Senate Armed Services Committee, and as delegate and advisor for diplomatic talks to reduce conventional and strategic arms in Europe.

- Ambassador Robert Hormats, Vice Chairman of Goldman Sachs International. Ambassador Hormats served in a number of Administrations, holding the positions of Deputy US Trade Representative, Assistant Secretary of State for Economic and Business Affairs, and Senior Economic Advisor to the National Security Council.

- Mr. Robert Ebel, Chairman of the Energy Program, the Center for Strategic and International Studies. In addition to extensive private sector experience in the energy sector, Mr. Ebel is an advisor to the US Department of State on energy and diplomatic issues. He also served with the CIA for 11 years and spent 7 1/2 years with the staff of the Office of Oil and Gas in the Department of the Interior.

Mr. HIGGINS. Thank you very much, Mr. Chairman, for holding this very, very important subcommittee hearing on national energy policy and national security.

I have two primary concerns. One is it is well established that our dependence on foreign oil for our national energy needs is a problem. It is a problem economically, and it is a problem in terms of national security. And that problem is, I believe, pervasive and growing. Economically, when the cost of foreign oil increases, historically since World War II our economy is more susceptible, more vulnerable to falling into recession, which is obviously of economic concern. Also, with respect to national security, I believe that as national security concerns are raised about the foreign terrorist threats, we have to look more at those things, those natural resources that can have a debilitating impact on our economy and, more importantly, our way of life.

In western New York we are blessed with an abundance of fresh water. One-fifth of the world's freshwater supply is found in the Great Lakes and along Lake Erie. Also, the resources that we get from that great natural resource is an abundance of hydropower. In Niagara Falls we have the State's largest hydroelectric plant. Our concern regionally moving forward is that plant becomes increasingly threatened by terrorist attacks as an effort to debilitate our way of life in western New York.

So I am hopeful that during this conference today, during this meeting today, we will hear from officials who can enlighten us as to the importance of energy policy, a real energy policy that addresses our national security concerns as well as our economic well-being moving forward.

With that, Mr. Chairman, thank you very much.

[The prepared statement of Hon. Brian Higgins follows:]

Statement of Rep. Brian Higgins
Subcommittee on Energy and Natural Resources
"America's Energy Needs as Our National Security Policy"
April 6, 2005

Thank you, Mr. Chairman for holding this hearing on the important relationship between our national energy policy and our national security. This is an important and timely topic, especially as the energy bill is being marked up elsewhere in the Capitol today.

It is clear that our dependence on foreign oil and the consequences of climate change present serious threats to the security of this country. In certain instances we are directly giving U.S. financial support to hostile or unstable foreign leaders rich with oil reserves; we are financially enabling those who would do us harm because of the natural resources that they possess and we need. In addition, we are complicit in massive environmental changes that increasingly displace large groups of people and force competition for scant resources while weakening our relationships abroad with allies who do not share this administration's views on climate change.

It is important that we look inward and begin to harness our nation's own renewable resources, much as we have done with hydropower at the Niagara Power Project, which is located in close proximity to my home district in Buffalo, New York. Focusing on renewables and other energy sources would reduce climate change and ensure that our need for oil does not dictate our national security and defense.

I look forward to hearing from the witnesses with their views on the problems we face and their recommendations for addressing them. Thank you.

Mr. ISSA. Now from our vice chairman, the gentleman from Georgia.

Mr. WESTMORELAND. Thank you, Mr. Chairman. Thank you, Chairman Issa, for holding this hearing, and I am glad that this subcommittee is taking a look at the very important link between our economy energy prices and how national security is affected by both. I also appreciate the witnesses for taking your time to come and testify today, and I look forward to hearing what you have to say.

As I said last time the subcommittee had a hearing, I think the bottom line to the problems that we are having with our energy is that we do not have an energy policy, and we desperately need an energy policy. I know that there have been two or three attempts made in the past several Congresses to come up with an energy policy. I also know that the House Energy and Commerce Committee is at the present time marking up the latest version of it.

I am new to the Federal legislative process, but I will tell you that when I have been in the district for the past 2 weeks over the Easter break, between doing Social Security hearings, even doing the town halls, the one thing I heard was about gas prices and the fact that they have just gone out the roof, and really that nobody seemed to be addressing it. And I had several people say, I went to bed last night and gas was $1.92, and I woke up this morning and it was $1.99. How do gas prices go up that quick? So that is something that I have to respond to my constituents about what we are doing about it.

I think what we are going to hear today from this panel's testimony will bolster the argument even more that what we need is a national energy policy to set some regulations that we can look forward to that will guide us in this problem that we have been having.

Mr. ISSA. I would now ask that each witness and anyone who might be advising the witnesses please rise for the oath.

[Witnesses sworn.]

Mr. ISSA. The clerk will note that the witnesses affirmed the oath.

The committee appreciates the substantial written testimony that each of you has given. As you can imagine, we request it in advance so that our staffs have carefully gone over it. We undoubtedly have our questions based on your testimonies even before we get the privilege of hearing them. So although I will not chastise anyone who reads their testimony, it would be very much appreciated if you would skip through, ad lib, add to, make it as much those key items you want us to have; and then it is my fervent hope that we will have a good dialog of real questions to give you an opportunity for real answers.

Mr. Kucinich, do you have an opening statement?

Mr. KUCINICH. Mr. Chairman, with your indulgence, I do. And if I could read a few excerpts from it and have it included in the record, I would be grateful.

Mr. ISSA. Without objection.

Mr. KUCINICH. I want to thank the chairman for holding this hearing on this critical issue. I think you will find there is widespread agreement on the nexus of energy and national security

problems. Unfortunately, there are wide disagreements about the solution.

The severe U.S. dependency on oil, 60 percent of which is imported, makes our Nation highly vulnerable to economic disruptions. Oil prices raced to all-time peaks this past Monday, climbing above $58 a barrel, which will send $250 billion a year overseas, members of the committee. By 2025, U.S. daily oil consumption is expected to increase by 50 percent to 29 million barrels, 75 percent of which is expected to grow from overseas.

Now, the effect of oil prices can be directly seen in the escalating gas prices. The U.S. retail price for gasoline climbed to $2.22 cents a gallon. I am sure some of the members of this committee have had the experience in the last few days, you go to get a fill-up, we are paying anywhere from $25 to $30 for a fill-up, and our constituents are paying those prices.

Mr. ISSA. You must have a small tank on your car.

Mr. KUCINICH. I do. I have a Ford Focus.

There is a Goldman Sachs report that we are all concerned about talking about prices surging as high as $105 a barrel. And based on that analysis, it is estimated that our prices in this country could go to over $4 a gallon.

We could come to an agreement on what the problem is and how we got there, but I would just like to add this. I am concerned about the administration's solution that they see it is to increase the supply of oil by increasing domestic drilling in the Arctic National Wildlife Refuge. The better solution is to reduce demand, and there are numerous ways that we can increase the efficiency of the oil we use, use alternative fuels and smarter transportation choices, and also work to eliminate the price gouging by oil companies. I have a bill I will be introducing to do that, Mr. Chairman.

I want to submit the rest of this testimony for the record and ask you to do that by unanimous consent.

Mr. ISSA. Without objection, so ordered.

[The prepared statement of Hon. Dennis J. Kucinich follows:]

Rep. Dennis Kucinich
Opening Statement
Gov't Reform Energy Subcommittee
April 6, 2005

Thank you Chairman Issa for holding this hearing on a critical issue our great nation faces. I think you will find widespread agreement that the nexus of energy and national security is a growing problem. Unfortunately, there are wide disagreements about the solution to this the great challenge. The severe U.S. dependency on oil, 60% of which is imported, makes our nation highly vulnerable to economic disruptions.

Oil prices raced to all-time peaks this past Monday, climbing above $58 a barrel, which will send $250 billion a year overseas. By 2025, U.S. daily oil consumption is expected to increase by 50 percent to 29 million barrels, 75 percent of which is expected to come from overseas. And as developing countries' demand for oil grows, the cost of oil will rise for everyone including the U.S. China's demand for oil is growing seven times faster than that of the U.S. Its imports have grown by over 35 percent for two consecutive years, and by 2030 China will surpass the U.S. and become the world's largest oil buyer.

The effect of these oil prices can be directly seen in the quickly escalating gas prices. The U.S. retail price for gasoline climbed to $2.22 a gallon, setting a record for the third week in a row. Pump prices are expected to keep rising through the Memorial Day holiday in late May, the beginning of the busy U.S. summer driving season.

The impact on American consumer is immense. A new poll CNN/USA Today/Gallup poll shows that a 58% of Americans for the first time say higher gasoline prices have hurt them financially. Just under half of those surveyed said gasoline prices have forced them to cut back on their driving.

A Goldman Sachs report suggests oil markets have entered a "super-spike" period that could see 1970's-style price surges as high as $105 a barrel. Based on the Goldman Sachs analysis of gasoline spending it is estimated that U.S. gasoline prices may need to exceed $4 per gallon. Goldman Sachs is the biggest trader of

energy derivatives, and its Goldman Sachs Commodities Index is a widely-watched barometer of energy and commodities prices.

The growing economy of China, India, and other nations competing for the same oil we import is driving up the price of oil. Some have suggested that these nations are threatening our national security because of their increased use of oil, but that is shortsighted. The national security problem is our dependency. Because the supply and demand balance is anything but balanced for the foreseeable future, the U.S. dependency is costing our nation billions of dollars and increasing our vulnerability. To add insult to injury, the oil companies are reaping massive profits as a result of this imbalance.

The Administration's solution to this problem is to increase the supply of oil by increasing domestic drilling in the Artic National Wildlife Refuge and off shore drilling. This will do almost nothing to reign in our dependency. The U.S. Geological Survey's estimate of the amount that could be recovered economically represents less than a year's oil supply. According to the USGS numbers, it would take 10 years for any Arctic Refuge oil to reach the market, and even when production peaks (2027) the refuge would produce less than 3% of Americans' daily oil demand. Whatever oil the refuge might produce is irrelevant to the larger issue of meeting America's future energy needs.

The better solution is to reduce demand. This can be achieved in numerous ways including increase efficiency of the oil we use, alternative fuels, and smarter transportation choices. This Congress also needs to eliminate price gouging by the oil companies.

Congress can begin to curb our demand for oil by increasing fuel economy standard for cars and trucks, which account for more than 45 percent of all oil consumption. And we can do so without sacrificing safety or causing consumers hardship.

The biggest single step we can take to curb our oil dependence and global warming pollution is to make our vehicles go further on a gallon of gas. The technology exists to stop global warming, spark economic growth and save consumers money. If we required automakers to make clean cars and light trucks that averaged 40 mpg, we would save more oil than we currently import from the Persian Gulf, and we'd curb emissions of the heat-trapping gases that cause global warming.

Raising miles per gallon standards to 40 mpg for cars, SUVs and other light trucks would cut carbon dioxide pollution by 600 million metric tons, save consumers billions each year at the gas pump and save three million barrels of oil per day by 2013. This is more oil per day than we import from the entire Persian Gulf, or could extract from the Arctic National Wildlife Refuge, combined.

Congress also needs to remedy the issue of price gouging by oil companies. The Gas Price Spike Act of 2005 is a bill that discourages price gouging and reduces demand by implementing the several new policies.

The bill implements a windfall profit tax on gasoline and diesel. Such a tax is to be imposed on key oil industry profits that are above a reasonable rate of return. If oil companies are collecting excessive profits, 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 will not pay.

The bill would give the revenue from the windfall profits tax through a $6000 tax credit to Americans who buy ultra efficient cars made in America. To be eligible, vehicles must travel at least 45 miles on a single gallon of gas. 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 will stimulate the market in ultra efficient vehicles.

It is the working class and working poor in America that are hit hardest by this gas price crisis. In an effort to provide relief, 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 mass transit will slow demand for gas and ease the price of gasoline, benefiting all Americans.

This hearing must also address another major national security issue related to oil consumption: global warming. Links between global warming and national security are undeniable, myriad and severe. The combination of a gradual average increase in global temperature and more frequent and more severe extreme weather events has the potential to undermine social and biological support systems which could threaten national security. In fact, an October 2003 report commissioned by the Department of Defense illustrated the effects of human-induced abrupt global warming.

> An abrupt climate change scenario could potentially de-stabilize the geo-political environment, leading to skirmishes, battles, and even war due to resource constraints such as:
>
> 1) Food shortages due to decreases in net global agricultural production
> 2) Decreased availability and quality of fresh water in key regions due to shifted precipitation patters, causing more frequent floods and droughts
> 3) Disrupted access to energy supplies due to extensive sea ice and storminess
>
> As global and local carrying capacities are reduced, tensions could mount around the world, leading to two fundamental strategies: defensive and offensive. Nations with the resources to do so may build virtual fortresses around their countries, preserving resources for themselves. Less fortunate nations especially those with ancient enmities with their neighbors, may initiate in struggles for access to food, clean water, or energy. Unlikely alliances could be formed as defense priorities shift and the goal is resources for survival rather than religion, ideology, or national honor.

Dealing with global warming presents an unprecedented opportunity for the US to strengthen and repair international relationships as we work together to reduce our greenhouse gas emissions. Such collaborations build mutual trust and respect, both of which are precursors to peace. Unfortunately, our increased dependence on foreign oil has led to aggressive foreign policies by this Administration to secure that oil.

For example, Venezuela is the 4th largest importer of oil into the United States. Venezuela is a functioning democracy led by President Hugo Chavez, who is the democratically chosen and reaffirmed leader of Venezuela. The Bush Administration has not only made it abundantly clear that it opposes this democracy, but there is evidence showing U.S. involvement in the 2002 attempted coup to oust President Chavez. According to the State Department Office of the Inspector General, one of the main reasons for this friction was President Chavez's "involvement in the affairs of the Venezuelan oil company and the potential impact of that on oil prices." The efforts to destabilize one of the few democracies that hold significant oil reserves makes the United States more dependent on dangerous, unpredictable, and undemocratic governments.

The recent war in Iraq also highlights the Administration's failure to resolve this dependency crisis. The U.S. unilaterally and preemptively started a war in Iraq

because of "weapons of mass destruction," though no weapons of mass destruction have been found. Yet during the war, the U.S. didn't secure the 380 tons of conventional explosives located in a former Iraqi military installation. In January 2003 the IAEA publicly warned about the explosives in the Al Qaqaa facility and in March 2003, just before the U.S. invasion of Iraq, UN inspectors confirmed that the explosives were intact in Al Qaqaa. By May 2004, however, the 380 tons of explosives were missing. Today our soldiers and Iraqi civilians continue to die by conventional explosives used in car bombs, suicide bombers, etc. Instead of securing these real weapons of mass destruction, the U.S. secured the oil pipeline, showing to the world our real priority in Iraq.

It's clear the Administration believes the ultimate solution to solving our oil dependency is control on foreign oil. In 1992, Paul Wolfowitz, at the time the Undersecretary of Defense for Policy authored the Defense Planning Guidance report that detailed a new aggressive national security strategy, otherwise known as the Wolfowitz Doctrine. The doctrine called for a dramatic increase in defense spending, preemptive military action, and military action with or without allies. Furthermore, the report stated that this new defense policy was needed in order to secure "access to vital raw materials, primarily Persian Gulf Oil."

The Administrations solutions to boost supplyvia the Artic National Wildlife Refuge, the Venezuela coup, and the Wolfowitz Doctrine have failed. It's time for the United States to reduce its oil consumption, use alternative fuels, and join the world in reducing the threat of global warming.

Mr. ISSA. For all Members present and their staffs, if the Member is not present, we will hold up the record for 5 legislative days for opening statements that were not given here and extensions, including extraneous materials, as you see fit.

Mr. KUCINICH. I have also have testimony from the NRDC that I would like to submit.

Mr. ISSA. Without objection, it will be entered in the record.

[The information referred to follows:]

Submitted for the Record by [illegible]

Written Testimony

Testimony by

Deron Lovaas, Vehicles Campaign Director, Natural Resources Defense Council (NRDC)

and Ann Bordetsky, Policy Analyst (NRDC)

To the House Committee on Government Reform, Energy and Resources Subcommittee

On Issues of Energy and National Security

Wednesday, April 6, 2005

On behalf of the Natural Resources Defense Council (NRDC), a conservation organization with more than 700,000 members, thank you for the opportunity to submit testimony to the Senate Energy and Natural Resources Committee for the April 6th hearing on Energy and National Security.

The bottom line is simple and alarming -- America's dependence on oil is the Achilles heel of our national security, as well as a threat to our economic strength and our environment. Growing demand and shrinking domestic production means America is importing more and more oil each year – much of it from the world's most unfriendly or unstable regions. In 2004 the United States spent more than $18 million per hour on foreign oil.[1] We spent more than $36 billion on Persian Gulf imports alone.[2] Last year Federal Reserve Chairman Alan Greenspan stated that the higher cost of imported oil a tax on U.S. residents has cut into our GDP, warning that geopolitical tension is a serious concern and that adverse economic impacts for the U.S. will intensify if current trends in oil demand and prices continue.[3]

And there is increasing evidence that the era of cheap oil is over, with $20-to $25-per-barrel oil becoming a thing of the past. Global consumption is quickly outpacing spare production capacity and investment in future capacity is struggling to keep up with rising demand. The United States must face the prospect of oil prices remaining at $40 per barrel or above.[4] This is especially likely as OPEC, whose oil export revenues grew by 42 percent to $338 billion in 2004, shifts its supply policy to lock in the higher prices.[5] And sustained high prices are accompanied by disruptive price volatility – in fact, last week Goldman Sachs projected that conditions may be ripe for crude oil prices to climb as high as $105 per barrel in what analysts termed a "super spike."[1]

Recent attacks on global oil infrastructure and subsequent spikes in domestic oil and gasoline prices –m the "terror premium" -- provide clear evidence of the vulnerability that comes with extreme dependence on petroleum. Furthermore, terrorist organizations now recognize that oil is a lifeline of the United States and are well aware that one successful strike could take a million barrels per day or more of Saudi oil off the global market for months. That is just one possible event that could send oil prices soaring.

Today, oil price spikes easily send jitters through the US market, while our military expenditures in oil-supplying regions continue to grow and our dependence is quickly becoming a key target for those who wish us harm. A trend now recognized by a broadening group of experts as a "national security emergency."[2] There is increasingly diverse, bipartisan support for immediate and meaningful reduction in U.S. oil consumption and the diversification of transportation fuels beyond petroleum.[3]

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[1] Reuters. "Goldman Sachs: Oil Could Spike to $105", March 31, 2005.
[2] Gaffney, Frank. Center for Security in Washington Post. "An Unlikely Meeting of the Minds", March 31, 2005.
[3] Wall Street Journal. "Unlikely Allies Fight U.S. Oil Dependence", March 28, 2005.

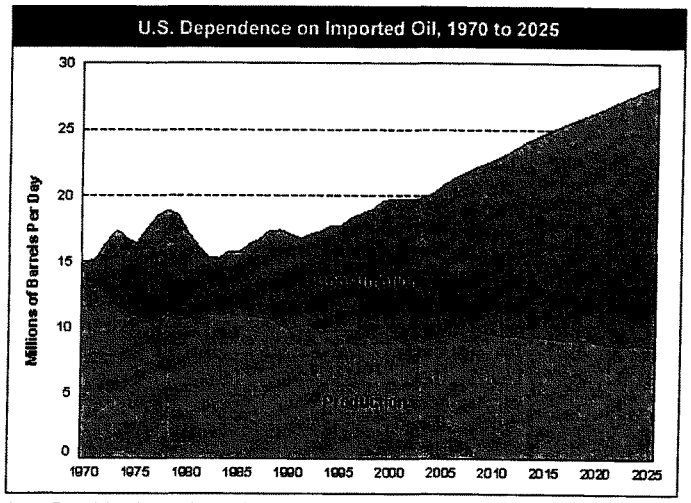
At the same time, our oil dependence exacts a heavy toll on the environment. It helps make the United States the world's largest emitter of carbon dioxide, responsible for one-fourth of the world's total global warming pollution.[4] It causes serious air and water pollution, and it is the source of constant pressure to exploit our last precious wild lands. As our petroleum demand intensifies, Americans will remain exposed to the environmental costs and the harmful public health impacts associated with our dependence on oil.

That is why Congress must act immediately by making a national commitment to save at least 2.5 million barrels per day by 2015 and at least 10 million barrels per day by 2025 – an achievable and important first step toward a more secure energy future. There is burgeoning, bipartisan support for taking such a step. For example, the National Commission on Energy Policy (NCEP) – composed of industry, government, conservation and academic officials – just completed an important report which identifies some opportunities for possible consensus on challenging energy policy questions.[6] And NRDC recently joined the "Set America Free" Coalition, which includes the Institute for the Analysis of Global Security (IAGS), the Center for Security Policy, the Hudson Institute, the National Defense Council Foundation (NDCF), and many others, and is focused on relieving the U.S. of our extreme dependence on oil (for more information, see www.setamericafree.org).[5]

Current Demand Trends

Here at home, while domestic production peaked in the 1970s, our consumption continues to grow at break-neck speed. According to last year's Annual Energy Outlook (AEO 2004), in 2025 the United States is projected to consume 44 percent more oil than we do today or 28.3 million barrels of oil per day; domestic production will meet a mere 30 percent of the total need (see graph below).

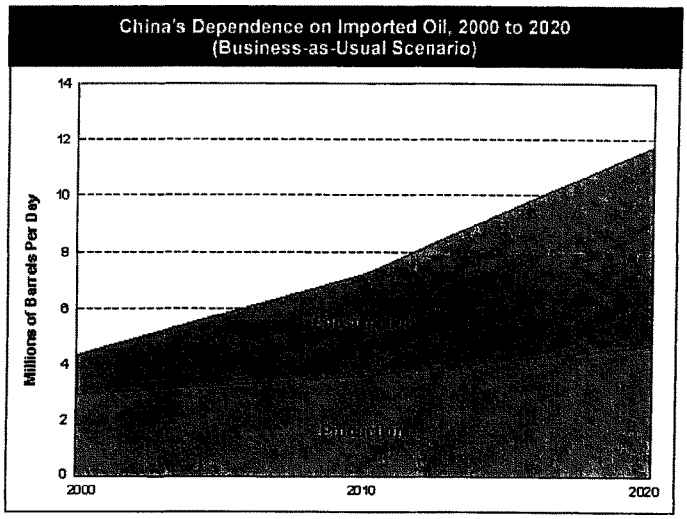
[4] Carbon Dioxide Information and Analysis, Oak Ridge National Laboratory, http://cdiac.esd.ornl.gov/trends/emis/top98.tot accessed on January 31, 2004.
[5] Set America Free Coalition, www.setamericafree.org



Source: Energy Information Administration, *Annual Energy Outlook 2004*

Other growing nations will increasingly compete with the U.S. for the oil on the global market. Oil consumption by industrializing nations is expected to double over the next 25 years, from 15 to 32 million barrels a day. To meet projected world demand of 118 million barrels a day in 2025, global oil output would have to expand by 40 million barrels per day or 51% between 2002 and 2025.

Oil demand in China is especially likely to heat up. While per capita petroleum consumption is just six percent of the U.S. figure, rapid industrialization and a growing consumer culture mean China's demand for imported oil is projected to grow from less than 2 million barrels per day in 2004 to nearly 8 million barrels per day by 2020 (see graph below).[7] While US import dependence will rise to nearly 70 percent by 2025, India already imports 70 percent of its oil and the import share in China is expected to grow from 40 to 75 percent over the same time period.[8] Business as usual keeps the United States on a path fraught with increasingly tight competition with other oil-needy nations.



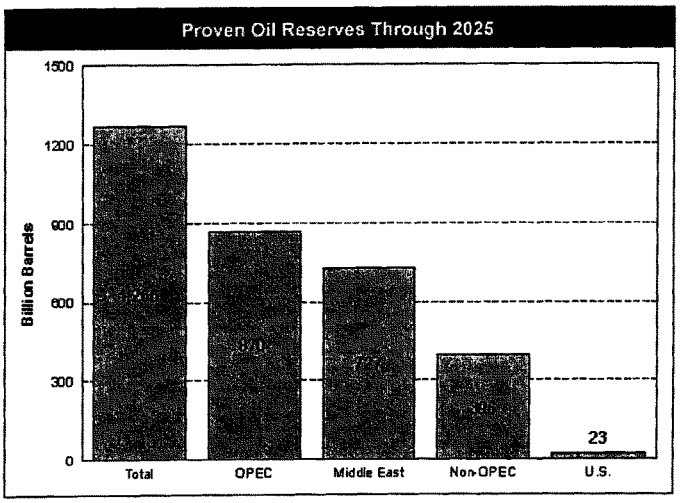
Source: Development Research Center, The State Council, *China's National Energy Strategy and Policy 2000–2020*, November 2003

This challenge is not lost on the Chinese government. In recent years China has been scouring the globe for oil supplies, including the Western Hemisphere (most notably in Canada and Venezuela).[9] With its oil demand growing 18 percent in 2004, China is moving quickly to secure exclusive access to future oil supplies by financing strategically located pipelines, expanding its oil companies, and contracting with the key oil producing regions across the globe.[10] Fortunately, China recognizes that its energy needs must also be met through efficiency, and in 2004 it took an important step towards reducing booming demand by setting vehicle fuel economy standards that are more stringent than those in the United States.[11]

So business as usual means rapidly growing global consumption and intensifying competition for oil that will boost prices and increase the potential for conflict between nations addicted to this resource.

The Grim Supply Picture

Even in the context of higher prices, it is clear that drilling for oil in the United States will not address the challenges of petroleum dependence, as the graph below shows. For example, while some argue that there are 16 billion barrels of "technically recoverable" oil under the Arctic National Wildlife Refuge's coastal plain, the U.S. Geological Survey's estimate of the amount that could be recovered economically -- that is, the amount likely to be profitably extracted and sold – is much smaller and represents less than a year's oil supply. Moreover, it would take 10 years for any Arctic Refuge oil to reach the market, and even when production peaks -- in the distant year of 2027 -- the refuge would produce less than 3 percent of Americans' daily oil demand. Whatever oil the refuge might produce is simply irrelevant to the larger issue of meeting America's future energy needs.



Source: Energy Information Administration, *Annual Energy Outlook* 2004

Furthermore, today's global oil use outpaces new oil discoveries, with the world using about 12 billion more barrels per year than it finds.[12] OPEC is quickly exhausting excess production capacity, allowing for little relief of demand, and despite Saudi Arabia's efforts to cushion the market, global capacity utilization remains at 99 percent in 2005.[13]

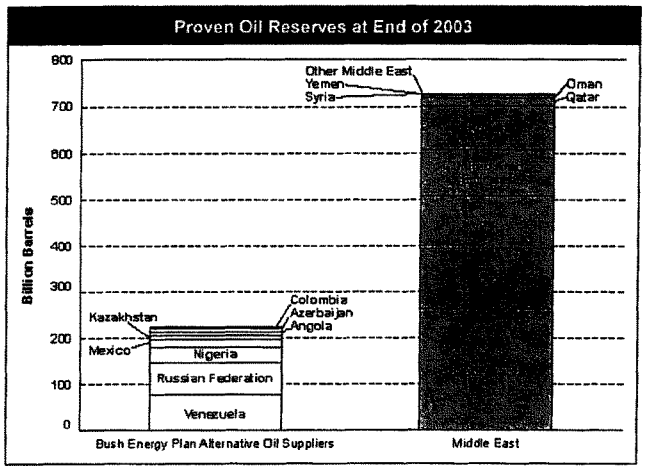
Given booming demand projections and high prices that already pinch the economy, what are the prospects for increasing oil supply? The reality is that the United States is inexorably headed towards greater dependence on hostile regions of the world to slake our thirst for oil. The Middle East has two-thirds of the world's proven oil reserves.[14] Persian Gulf OPEC states already supply the United States with 2.5 million barrels per day -- 25 percent of our daily imports.

The future looks to bring more of the same: Last year's AEO projects that the Middle East will produce 36 percent of the world's oil in 2025 and together with other OPEC nations would control 46 percent of the global oil market.[15] To meet demand, OPEC production is expected to grow by 80 percent to 54 million barrels per day in 2025, while non-OPEC production must rise 43 percent to 63.9 million barrels per day in 2025.[16] However, this is easier said than done – the International Energy Agency estimates the expected expansion of production will require enormous investments in global oil infrastructure of $3 trillion.[17]

Unrealistic, Risky Alternatives to the Middle East

Looking beyond OPEC to fill our needs offers no comfort -- investment in new production wells continues to lag in non-OPEC countries, limiting any near-term growth in production.[18] In short, the system has reached its limit. In May 2001 the Administration recognized the need for a new direction when it released its National Energy Policy but proposed a strategy that would only exacerbate the existing threats of petroleum dependence. The Administration proposes to avoid the Scylla of Middle East

dependence by targeting the Charybdis of alternative oil-supplying nations for government investment and closer alliances, including Angola, Azerbaijan, Colombia, Kazakhstan, Mexico, Nigeria, Russia and Venezuela (see graph below). The total proven reserves of these alternative oil suppliers, 198 billion barrels, is 70 percent lower than Persian Gulf reserves, and at current production levels offer only 30 more years of capacity.[19] In comparison, the Persian Gulf has almost 100 years of proven reserves at 2003 production levels. Furthermore, all of the nations on the Administration's list face significant political and social instability and remain porous to global terrorism, making it difficult to attract the foreign investments necessary to finance future production.[20] Most importantly, increasing U.S. reliance on these states – many of which are unstable and undemocratic -- would do little to address the security and economic threats of petroleum dependence.



Source: British Petroleum, *Statistical Review of World Energy 2004*
http://www.bp.com/genericarticle.do?categoryId=111&contentId=2004175

While global market trends necessitate a new a direction for U.S. energy choices, shifting our imports to non-OPEC states is a risky, short-term solution at best. The Middle East holds most of the supply cards and looking elsewhere may well intensify the threats of dependence by continuing to expose the U.S to the unpredictable political future and domestic tensions of oil supplying states.

Dependence on Oil Undermines U.S. Economic and National Security

The high costs of oil have already been passed on to consumers through higher prices at the pump, more expensive goods and services, and a weaker job market and lower stock prices.[21] In 2004 alone Americans spent roughly $270 billion to feed our oil appetite, nearly half of last year's trade deficit.[22] Sadly, this is just the latest chapter in the saga of oil dependence sapping our economy. Economist Philip Verleger finds that oil price spikes have cumulatively sapped 15 percent of our economy's growth, resulting in $1.2 trillion in direct losses.[23] The total economic penalty of our oil dependence, including loss of jobs, output, and tax revenue is estimated to be $297 to $305 billion annually.[24] The most recent estimates suggest that during peacetime the US spends an additional $20 to $40 billion per year in military costs to secure access to Middle East oil supplies (estimates predate current military operations in

Iraq). At $20 billion a year the American taxpayer is paying an additional $4 to $5 a barrel for crude oil beyond its market price.[25] And despite the already elevated oil prices, over the next 25 years the U.S. will also have to shoulder a substantial portion of the $105 billion a year global investment necessary to finance additional oil production capacity.[26]

Looking into the next few decades, the security costs and the risks of petroleum dependence will only increase as the global oil market tightens and geopolitical tensions play out in the arena of international trade. The International Energy Agency recently emphasized in its annual World Energy Outlook that current market trends suggest serious concerns for energy security and that the short-term risks to energy security will continue to grow as the flexibility of oil supply and demand diminishes, oil use becomes concentrated in the transportation sector in the absence of petroleum alternatives, and the growing oil demand is met by a small group of countries.[27] For example, today 26 million barrels of oil flow every day through just two critical choke points, the Straits of Hormuz in the Persian Gulf and the Straits of Malacca in Asia. By 2030 net inter-regional oil trade is expected to grow to 65 million barrels per day – over half of total oil production.[28] Traffic through these channels is expected to more than double over the next few decades – one of the many trends that will increase the vulnerability and security costs to oil-dependent nations.

In short, petroleum dependence imposes an incalculable price tag on American consumers and the US economy, and is quickly becoming the Achilles heel of our national security.

Trumping Insecurity with America's Strong Suit: Efficiency, Innovation

The real solution that Americans can count on for a healthy economy and greater national security is a lifeline of technology and efficient energy choices supplied by industries and workers here at home, not a lifeline of oil. The U.S. must begin immediately to ease our intense oil addiction, first by making a national commitment to save 2.5 million barrels of oil per day by 2015 and 10 million barrels per day in 2025.

A key component of such a plan would increase the efficiency of cars and trucks, since the transportation sector will be responsible for 80% of the growth in oil demand through 2020. We did it before: Passenger car and light truck fuel efficiency increased 70 percent between 1975, when the fuel economy law was originally enacted, and its peak in 1987. Since then we've been moving backward. Overall mileage of our new cars and trucks has steadily dropped. Today it's at its lowest level in 20 years.

The reason is simple: While automotive engineering has advanced over the last decade to offer a wide variety of fuel-saving innovations, stagnant policies have fostered sluggish fuel economy and failed to harness technological potential to curb our massive oil demand. To re-energize policies, Congress must:

- provide automakers and their suppliers with incentives to retool factories to produce more efficient vehicles and create new jobs;
- raise fuel efficiency standards;
- expand the market for gasoline-electric hybrid vehicles through tax incentives;
- invest in alternative fuels, such as biofuels or hydrogen;
- encourage the adoption of fuel-efficient tires and motor oil in passenger vehicles;
- increase the efficiency of heavy-duty trucks and reduce idling; and
- provide transportation choices, such as public transit, that use significantly less oil per passenger.

However, this important national commitment requires contributions from sectors besides transportation. Specifically, the measures above can and should be complemented by:

- industrial efficiency techniques;
- fuel-savings steps in aviation management;
- reduced heating oil use in homes across America (for example, through weatherization).

NRDC believes that a healthy environment goes hand in hand with a healthy economy. We believe this country can continue to have strong economic growth and a high standard of living, while reducing our oil dependence and cutting global warming pollution. This can be achieved by investing in America, as called for by the bipartisan NCEP. Some of their recommendations mirror ours: $3 billion in tax credits to manufacturers that build and to consumers who buy efficient vehicles, an increase in fuel-efficiency standards, and a national oil savings of at least 3 to 5 million barrels per day by 2025.

As a nation we must blaze a new path, one that will set the United States apart as an innovator and leader in efficiency, rather than a weak competitor and needy consumer of the world's energy. But steps won't be taken without leadership from Congress, and NRDC looks forward to working with Members of Congress to reduce dependence on oil and make our nation more secure through efficiency and innovation.

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[1] Import spending estimates based on 2004 petroleum supply and price data provided by Energy Information Administration, January 2005 Short Term Energy Outlook, http://www.eia.doe.gov/emeu/steo/pub/steo.html .
[2] Import spending calculated based on EIA 2004 data on US monthly crude oil imports (excluding SPR), crude oil WTI spot price, and percent U.S. imports from the Persian Gulf, http://www.eia.doe.gov/emeu/international/petroleu.html#IntlTrade and http://www.eia.doe.gov/oil_gas/petroleum/info_glance/importexport.html.
[3] Federal Reserve Chairman Alan Greenspan, October 15, 2004 and statement before the National Italian AmericanFoundation in Washington, D.C. on Oct. 15, 2004.
[4] Energy Information Administration. Short Term Energy Outlook January 2005. EIA projects 2005-06 crude oil prices of $42 to $43 per barrel.
[5] Mouawad, Jad, "Saudis Shift Toward Letting OPEC Aim Higher," *New York Times*, January 28, 2005.
[6] *Ending the Energy Stalemate: A Bipartisan Strategy to Meet America's Energy Challenges*, December 2004.
[7] International Energy Agency cited by Interfax, "Foreign Investment to Play Key Role in Development of China's Oil and Gas," China Weekly Energy Report, May 22-28, 2004.
[8] Manjeet Kripalani, Dexter Roberts, Jason Bush. India And China: Oil-Patch Partners? Businessweek, February 7, 2005.
[9] Luft, Gal, "In Search of Crude: China Goes to the Americas," Institute for the Analysis of Global Security, http://www.iags.org/n0118041.htm)
[10] Romero, Simon, "China Emerging as U.S. Rival for Canada's Oil," *New York Times,* December 21, 2004.
[11] Bradsher, Keith, "China Sets its First Fuel Economy Rules," *New York Times*, September 29, 2004.
[12] PFC Energy. Global Crude Oil and Natural Gas Liquids Supply Forecast, September 2004.
[13] Id. 2
[14] Mouawad, Jad, "Irrelevant? OPEC Is Sitting Pretty", *New York Times,* October 3, 2004.
[15] Energy Information Administration, *Annual Energy Outlook, 2004.*
[16] Energy Information Administration. *Annual Energy Outlook 2004*, p.2-3.
[17] International Energy Agency, *World Energy Investment Outlook 2003*, Paris: IEA, 2003, Executive Summary, pg. 29.
[18] Federal Reserve
[19] British Petroleum, Statistical Review of World Energy 2004, http://www.bp.com/genericarticle.do?categoryId=111&contentId=2004175.
[20] Klare, Michael T., *Blood and Oil : The Dangers and Consequences of America's Growing Dependence on Imported Petroleum*, Metropolitan Books, New York, New York, 2004.
[21] Stone, Amey, "$50 Oil: A Spreading Slick of Pain," *Business Week* 9/29/04.

[22] Odessey, Bruce. "U.S. Trade Deficit Surges as Exports Fall, Oil Imports Rise", January 12, 2005. US Consulate trade statistics, http://www.hongkong.usconsulate.gov/usinfo/statis/ft/2004/11.htm. Estimate calculated based on 2004 trade deficit data and EIA petroleum spending data in Id. 4.
[23] As quoted in Roberts, Paul, *The End of Oil: On the Edge of a Perilous New World*, Houghton Mifflin, New York, NY, 2004.
[24] National Defense Council Foundation. "The Hidden Cost of Imported Oil", September 2003, as cited by the Institute for the Analysis of Global Security, Energy Security Bi-Weekly, October 30, 2003.
[25] Jaffe, Amy Myers. United States and the Middle East: Policies and Dilemmas. Analysis commissioned by the National Commission on Energy Policy, www.energycommission.org.
[26] International Energy Agency. World Energy Outlook 2004, (119-121). Organization for Economic Cooperation and Development, 2004.
[27] Ibid (29)
[28] Ibid (32)

Mr. ISSA. With that, Mr. Secretary, you get the opening statement of the people we came to hear rather than yourselves.

STATEMENT OF JEFFREY CLAY SELL, DEPUTY SECRETARY, DEPARTMENT OF ENERGY

Mr. SELL. Thank you, Mr. Chairman and members of the subcommittee. I would ask that my written testimony be submitted as part of the record, and I would like to summarize that in about 5 or 6 minutes if that is OK.

Mr. ISSA. That would be excellent, and, without objection, all of your opening statements will be included in the record in addition to anything you say here.

Mr. SELL. I am honored to be here before this subcommittee today. This is my first testimony before Congress since being confirmed as the new Deputy Secretary of Energy. The subcommittee has asked me to address American energy needs and their influence on national security policy.

Energy is the backbone of our economy, and having a strong economy is essential to maintaining and strengthening our national security. Enacting comprehensive energy legislation would be a substantial step forward in the effort to address our economic and national security. Secretary Bodman and I are committed to working with both parties and Members of the House and Senate to finally enact energy legislation this year.

President Bush believes that a sound energy policy must meet four major objectives while upholding our responsibility to be good stewards of the environment.

I'm sorry Mr. Kucinich has left. In his opening statement he suggested a choice that the administration was for more production, and others were for demand reduction. I wish it were that simple, but it is not. We need both, and we need new technology as well, and that is what the President's comprehensive energy proposal involves.

The first objective of the President's energy plan is to promote and improve energy conservation and efficiency. Ways to achieve this include, for example, providing tax incentives which we have proposed to promote the use and development of hybrid and fuel cell vehicles as well as supporting increased efficiency standards for consumer products.

A second objective of a sound energy bill addresses both economic and national security concerns by increasing production here at home. The need is clear. Over the past 3 years America's energy consumption has increased while our overall domestic energy production has actually decreased.

I commend the Congress for taking action last year to address this problem through passage of the Alaska Natural Gas Pipeline Act and for steps taken this year already that may lead to production on the north slope of Alaska inside ANWR.

Another action to increase production here at home involves nuclear power, which can generate huge amounts of electricity without ever emitting air pollution or greenhouse gases. The President has called for an expansion of this alternative source to the Nuclear Power 2010 Initiative, which will ensure nuclear power is available for generations to come.

Also, any discussion of increasing domestic production must always begin with a firm commitment to America's most abundant energy resource. That is coal. As such, the President and Secretary Bodman have been clear that our Nation's extensive use of coal must not be a detriment to the environment. That is why the Clean Coal Power Initiative and the development of FutureGen technology to create electricity and hydrogen with zero emissions are so vital to ensuring efficient coal production in an environmentally responsible way.

The third objective of a sound energy bill is to diversify our energy supply by developing alternative sources of energy. And this is—I want to briefly elaborate on this. Our transportation sector is highly dependent on hydrocarbons, on fossil fuels. Over the long term the President's vision is to dramatically reduce the dependence of the transportation sector on fossil fuels by moving to hydrogen fuel cell vehicles. That is a long-term goal. It is the most substantial policy proposal in place to significantly reduce our dependence on fossil fuels in the transportation sector.

But over the near term, we need to do some other things. We need to reduce demand by increasing fleet fuel efficiency, by moving toward hybrid vehicles; and we also need to increase supply, that is in traditional drilling, but it is also in the greater use of biomass, agrifuels such as biodiesel and ethanol.

The Hydrogen Fuel Initiative is very important. The President has committed $1.2 billion over the next 5 years to develop the technologies that are critical to our ability to realize that vision over the next 15 years. Also, technological advancements in providing clean renewable energy sources such as wind, solar, and biomass are being made every day, and we need to support that effort as part of our energy diversification policy.

The fourth and final objective of a sound energy bill is to find better, more reliable ways to deliver energy to consumers. The Federal Energy Regulatory Commission has recently taken steps to address this objective by moving forward with regulatory action to accommodate the importation of liquefied natural gas. Also, on the electricity side, transmission lines are deteriorating as the amount of energy they support continues to grow. These strains on the system lead to higher prices and bottlenecks in delivery, and when just one piece of the power grid fails, it can instantly affect millions of people over thousands of miles, as we saw in the blackout of 2003. I know, both Chairman Issa and Mr. Higgins, your constituents have individually witnessed those types of blackouts.

The President has called for mandatory reliability standards and a modernization of the grid to address these problems.

In sum, the President has set big goals for our energy policy. If Congress enacts energy legislation that meets the President's four objectives, then we will have gone a long way toward meeting America's energy needs and strengthening America's national security.

Once again, I appreciate the opportunity to testify before you today. I look forward to your questions and further discussion. Thank you.

Mr. ISSA. Thank you.

[The prepared statement of Mr. Sell follows:]

Testimony of the Honorable Clay Sell

Deputy Secretary
U.S. Department of Energy

Before the

Subcommittee on Energy and Resources
Committee on Government Reform
U.S. House of Representatives

April 6, 2005

Chairman Issa, Congresswoman Watson, and members of the subcommittee, I am honored to be here today, my first testimony before the Congress since being sworn in as Deputy Secretary of Energy. As members of the subcommittee know, the department is charged with a broad mission that is vital to our national, economic and energy security.

The subcommittee asked me to address American energy needs and our national security policy. Energy is the backbone of our economy and having a strong economy is essential to maintaining and strengthening our national security.

These issues are addressed in the context of President Bush's National Energy Policy (NEP). After discussing the development of the NEP, I will focus on the need for Congress to enact energy legislation that comports with the NEP, the President's four major energy objectives, and the President's fiscal policy. I note that the Administrator of the Department's Energy Information Administration appeared before this subcommittee on March 16 and provided extensive material regarding the U.S. energy outlook and the recent experience with energy price volatility.

The National Energy Policy

As you know, during his first two weeks in office, the President put together a Cabinet-level group to look at America's energy problems – which, at the time, were very much in the news. Those problems included rolling power blackouts in California… fears of natural gas shortages that were prompting spikes in prices… and OPEC's announcement of a major cut in oil production.

The National Energy Policy Development Group immediately went to work, and the result of its efforts was the National Energy Policy, which was unveiled in May 2001. The NEP outlines a comprehensive, long-term strategy to produce an integrated energy, environmental and economic policy. The group's members told the President that "to achieve a 21st-century quality of life – enhanced by reliable energy and a clean environment – we must modernize conservation, modernize our energy infrastructure, and increase our energy supplies, including renewables."

Action by Congress is Needed

Since the policy was announced, many of its recommendations have been implemented and are helping move us toward a more sound energy future. But several of its most important recommendations require action by Congress.

Enacting energy legislation would complete the effort to give the United States its first comprehensive national energy policy in more than a decade. And Secretary

Bodman and I are committed to working with both parties and both Houses of Congress to finally enact energy legislation this year.

On at least three occasions so far this year, President Bush has emphasized the importance of enacting energy legislation.

- In his February 2 State of the Union address, the President said: "Four years of debate is enough: I urge Congress to pass legislation that makes America more secure and less dependent on foreign energy."
- In a February 8 speech before the Detroit Economic Club, the President said: "It is hard to be in a growing economy if you're not sure whether or not you got energy, if you're not sure whether or not there's cost certainty when it comes to energy. And so that's why I sent Congress a comprehensive energy strategy almost four years ago. And as I said in the State of the Union the other night, four years of debate is enough. We don't need debate. We need action when it comes to an energy plan."
- In a March 9 speech in Columbus, Ohio, the President said: "This country must do more, and it requires legislative approval by the United States Congress. To meet America's energy needs in the 21st century, we need a comprehensive national energy policy. It's time for Congress to act, as I said earlier."

Energy Legislation Must Meet Four Objectives

President Bush believes that a sound energy bill must meet four major objectives: it must promote conservation and efficiency, increase domestic energy production, diversify our energy supply, and modernize our energy infrastructure – while upholding our responsibility to be good stewards of the environment. We believe that meeting these four objectives will go a long way in strengthening our energy security and our national security.

The first objective of a sound energy bill is to encourage the use of technology to improve energy conservation. We are constantly searching for smarter ways to meet our energy needs, so we can fuel more economic growth and reduce our dependence on energy from abroad.

At the Department of Energy and at other agencies, we are supporting dozens of creative technologies that will increase conservation throughout the economy. This is extremely important when you consider that 30 percent of the energy in the average American home is wasted because of things like inefficient lighting and appliances and inadequate insulation. So one of our greatest potential sources of additional energy is the energy we currently waste.

One of these technologies is a device called the smart meter, which shows consumers how much energy they're using – and then calculates exactly what that energy is going to cost. That gives people an incentive to turn the light off when they leave the room, or lower the thermostat when nobody's home.

The federal government is helping consumers make wise decisions at the store through the Energy Star program which allows manufacturers to place an Energy Star label on the most efficient products. And the Administration has proposed tax credits for drivers who choose fuel-efficient hybrid vehicles. Innovations in this country are advancing technology every day, and the President has called on us to use that technology to make America the world leader in energy conservation.

The second objective of a sound energy bill is to encourage more production at home. The need is clear: over the past three years, America's energy consumption has increased by more than three percent, while our overall domestic energy production has actually decreased by about two percent. That means we are relying more on energy supplied by foreign countries. We now get more than half our oil from abroad, and our dependence is growing.

An increasing percentage of our natural gas is also coming from outside our borders, although one recent encouraging development regarding domestic natural gas was last year's Congressional passage of Alaska natural gas pipeline legislation – an action recommended by the NEP and signed into law by the President. Additionally, the Administration, particularly the Federal Energy Regulatory Commission, is moving forward on regulatory action to accommodate the importation of liquefied natural gas (LNG). While we certainly do not want to become overly dependent on LNG, it does represent a needed source of additional supply.

Increasing our energy security begins with a firm commitment to America's most abundant energy resource – coal. Our nation is blessed with enough coal to last another 250 years.

But coal, as we know, presents an environmental challenge. It produces pollutants such as sulfur dioxide, nitrogen oxides and mercury and also produces carbon dioxide, the most common greenhouse gas. We need to deal with the environmental challenges presented by coal, to ensure that it remains a viable part of our energy mix for the future.

In his most recent budget, the President requested funding to bring total expenditures on clean coal research and development to $1.6 billion over five years. That money will fund innovative projects, such as converting coal into clean-burning gas.

Our most ambitious clean coal project is called FutureGen -- an effort to develop the world's first coal-fired power plant that emits essentially no pollutants or greenhouse gases. FutureGen could be the prototype for the power plant of the future.

An extremely important potential source for new oil is in a relatively small corner of the Arctic National Wildlife Refuge in Alaska. The Congress took an important step forward last month in the effort to open part of this area to environmentally responsible oil and gas development.

ANWR is by far the most promising site for oil in the United States. The Department of the Interior estimates that we could recover more than 10 billion barrels of oil from a small area near the edge of ANWR that was set aside specifically for energy development back when the reserve was established.

Anyone who has pulled up to the gas pumps over the past few weeks knows the effect that rising oil prices are having on the family budget – and on businesses that depend on gasoline, diesel, jet fuel or other petroleum products. We have all heard the reasons: economic growth around the world, especially in countries like China, is boosting demand – and production is having a hard time keeping up.

Demand growth here in the United States is also straining our refining capacity. While domestic refining capacity has expanded at existing refineries by 1.6 million barrels per day from 1995 through 2004, no new oil refineries have been built in this country in nearly 30 years, and since 1995, about 26 uneconomic refineries have shut down. Regulatory requirements make building and running refineries difficult and expensive – and that is one of the issues addressed by the National Energy Policy. They also make gasoline markets less flexible by requiring a multiplicity of fuel types. Existing tight refining capacity is further exacerbated whenever extraordinary events such the March 23 BP Texas City Refinery incident occurs. That refinery is the third largest in the U.S. and supplies enough gasoline to meet three percent of U.S. demand.

In addition to growing petroleum demand in the U.S., we must recognize that overseas demand growth is putting additional pressure on available supplies. In

particular, China's total demand for petroleum is forecast to rise about 10 percent in 2005 to 2.5 billion barrels. China's crude oil imports are exceeded by the imports of just one other country – the U.S.

Another factor is the increasing percentage of imported oil. The United States has gone from producing all the oil it needed just a few decades ago to importing 56 percent of our oil today. And that number is expected to increase to 68 percent by 2025. U.S. demand for oil has increased by nearly 40 percent since 1970, while – over the same time period – domestic oil production has decreased by 40 percent. So the need to expand our domestic production -- as called for in the National Energy Policy -- is certainly clear.

The third objective of a sound energy bill is to diversify our energy supply by developing alternative sources of energy. If future generations can count on energy in many different forms, they will be less vulnerable to unexpected price spikes or shifts in supply. To create more energy choices, Congress should continue to provide tax credits for renewable power sources such as wind, and continue its strong support for ethanol and bio-diesel, so we can replace foreign oil with fuel grown in the U.S.

In addition to diversifying our energy supply through renewable sources, we also need to promote safe, clean nuclear power. Nuclear power can generate huge amounts of electricity without ever emitting air pollution or greenhouse gases. America hasn't begun construction of a new nuclear power plant since the 1970s, but it's time to take a fresh look at this technology. We know that many people have concerns about the safety of

nuclear power. Yet decades of experience and advances in technology have proved that nuclear power is reliable and secure... and we are developing new generations of nuclear reactors that are even safer than our current facilities.

Over the long term, in order to significantly reduce our dependence on foreign sources of oil, we must replace hydrocarbons as a transportation fuel. That is the basis for the President's Hydrogen Fuel Initiative, which will invest $1.2 billion over five years on the technology development that will make hydrogen fuel-cell powered cars a reality in the future.

The fourth and final objective of a sound energy bill, as outlined by the President, is to find better, more reliable ways to deliver energy to consumers. In some parts of the country, homes and businesses are receiving their energy through infrastructure built decades ago. Electric transmission lines, and oil and gas pipelines, are deteriorating as the amount of energy they transport continues to grow. These strains on the system lead to higher prices and bottlenecks in delivery. And when just one piece of the power grid fails, it can instantly affect millions of people over thousands of miles.

We saw that impact back in the summer of 2003, when large parts of the Northeast and Midwest, as well as large areas of Canada, were suddenly blacked out because of an outage caused in part by tree branches hitting a power line in Ohio. Over just a few short hours, that blackout cost the U.S. economy billions of dollars. It brought

businesses to a standstill, disrupted people's lives, and vividly illustrated the urgent need for improvements in our electrical system.

Congress can help solve this problem. Current law makes it voluntary – rather than mandatory – for power companies to ensure reliability across the electricity grid. Passage of energy legislation should make reliability rules mandatory and enforceable. Congress also needs to repeal outdated rules that discourage investment in new power infrastructure. And to keep local disputes from causing national problems, the Federal Energy Regulatory Commission should have the authority to site new power lines in certain circumstances. We have modern interstate grids for our phone lines and highways. It is time for America to modernize and expand our electricity grid as well.

Conclusion

The President has set big goals for our energy policy. If Congress enacts energy legislation that meets the President's four objectives, then we will have gone a long way in meeting America's energy needs and in strengthening America's national security.

Thank you again for inviting me to testify before you today, and I look forward to working with you and your colleagues in the days and years ahead. I will be glad to respond to any questions the subcommittee might have.

# # # #

Mr. ISSA. Thank you for being the first of my witnesses to be under 10 minutes, which is a guideline that we always hope is achieved.

Mr. SELL. Mr. Chairman in my previous life, I used to sit on the back row behind the dais, and I also appreciated a short opening statement.

Mr. ISSA. We will try to give the other half the same consideration, which is the short real questions rather than long statements, when it gets to be our turn.

And with that we turn to Mr. Woolsey. I hate to say it, Mr. Woolsey, but as a former Director, do we still address you as Director?

Mr. WOOLSEY. Mr. Chairman, I will answer to most anything. After having been CIA Director, anything that is not outright scabrous or scatological is just fine. Jim is fine.

Mr. ISSA. Thank you very much. Please take all the time you feel you need, but we would like to get to questions as soon as possible.

STATEMENT OF R. JAMES WOOLSEY, FORMER DIRECTOR OF CENTRAL INTELLIGENCE

Mr. WOOLSEY. Thank you, Mr. Chairman. I am representing the National Commission on Energy Policy today of which I was 1 of the 16 members. I am going to focus on oil security. That was our first chapter, and it was a very heavy part of our focus, and it is in many ways separable from the electricity issue, because only 2 percent or so of our electricity is produced from oil, whereas in the 1970's we could—by using renewables or nuclear power, we could reduce our oil consumption coming down from 20 percent of our electricity being produced by oil. Today one could have windmills, photovotaics, or nuclear power plants on every hill in the Nation, and it wouldn't really have any particular impact on our oil dependence except for a new development relating to plug-in hybrids, which I will get to in a moment.

I think there are at least seven major reasons why dependence on petroleum for the lion's share of the world's transportation fuel, and it is not just ours, it is the world's, creates very special dangers. First of all, the transportation infrastructure is deeply committed to oil and built around oil in this country and in most countries, and as a result, one cannot substitute other fuels in the short run if oil prices go through the ceiling, as they are in the process of doing.

One conclusion we grew from that in the Commission was that any new types of vehicles and any new types of fuels really ought to be compatible with the existing energy infrastructure, and we, therefore, focused on two approaches: One, increasing fuel efficiency by using currently available technologies that are compatible with the existing infrastructure, such as hybrid vehicles and increasingly, I believe, plug-in hybrid vehicles since they can use gasoline or ethanol, in time certainly diesel; and second, by utilizing alternative fuels that are affordable, that are available now or in the very near future, and that can be used also within the existing infrastructure. Cellulosic ethanol and compatible biodiesel are the two that we concentrated on, not hydrogen. We say quite explicitly that we do not expect hydrogen fuel cells to have any substantial impact on oil use in the next 20 years.

The second major point is that the greater Middle East is going to continue to be the low-cost and dominant petroleum producer for the foreseeable future. It holds about two-thirds of the world's proven oil reserves and, of course, is the low-cost producer. This puts the Middle East and Saudi Arabia in particular in the driver's seat with respect to oil prices for a long time.

Third, the petroleum infrastructure is highly vulnerable to terrorist and other attacks. In the Middle East al Qaeda has called for worldwide attacks on the petroleum infrastructure. The opening scenario of Robert Baer, a former CIA officer's book, "Sleeping With the Devil," includes a 747 being flown by a terrorist into the sulfur clearing towers near Ras Tanura in northeastern Saudi Arabia, taking some 6 million barrels a day out of production for a year or more. That devastates the world economy.

Fourth, the possibility exists that under regimes that could come to power in the greater Middle East, we could have embargoes or disruptions of supply. The current governments there may have an incentive to sell what they can, but you don't have to sell very much if you want to live for most purposes in the seventh century. And bin Laden has stressed that he would advocate major reductions in oil shipments from the Middle East.

Fifth, wealth transfers from oil have been used, and they continue to be used, to fund terrorism and its ideological support through wealthy families in the region of the Gulf, many in Saudi Arabia, and also because of the funds that have gone to the Wahhabi movement and sect in Saudi Arabia.

Alexei, who understands these numerical issues about costs and Wahhabi spending better than anyone I know, says that some $85 to $90 billion, that is with a "B," have been spent by the Saudis in the 30 years spreading Wahhabi beliefs around the world, into the madrassahs of Pakistan, the textbooks of Indonesia, even into mosques in the United States. That doctrine is hostile, angrily hostile, to Shiite and Sufi and most other Muslims, to Jews, to Christians, to women, to modernity and to much else.

That doctrine, I believe, serves almost in the same way that the angry German nationalism of the 1920's and 1930's served as the ground in which nazism grew. Certainly not all Wahhabis or young men who have been to Wahhabi school become members of al Qaeda or terrorists, but that is the soil in which Islamic terrorism grows, and we are paying for it very substantially ourselves.

Six, the current account deficits for a number of countries create risks ranging from major world economic disruption to deepening poverty for developing countries. We borrow about $13 billion a week in the United States from the rest of the world to finance our consumption, and something over $2 billion a week that we borrow is over oil.

Finally, global warming gas emission from oil use, of course, create at least the risk of climate change. In the Commission we focused on the importance of trying to come up with solutions that would save substantial amounts of oil. At least one we looked at passed our screen would save at least a million barrels a day by 2025. We looked at cost, administrative complexity and political feasibility.

The solution we hit on was to go to a substantial increase in the CAFE standards, but to do so in a very different and far more flexible way than has been the case in the past for CAFE, and also to give American industry and American labor assistance in meeting some of these targets.

We proposed, first of all, with the CAFE standard increase a safety valve mechanism in which the government could make extra CAFE compliance credits available to manufacturers at a predetermined price so that if the cost of reducing emissions exceeded estimates, it would not be a penalty to the manufacturers.

With respect to manufacturer incentives, we proposed credit amounting to about 50 percent of the capital investment that would be required for manufacturers in this country, both foreign and domestic companies, all manufacturers in this country, to make the investments necessary to produce modern diesels and to produce hybrids and plug-in hybrids, and this totaled some $1.5 billion over 10 years, but it was more than recovered, in our assessment, by increased tax receipts as a result of maintaining domestic manufacturing jobs.

One thing that we focussed on very much was safety. There has been for a long time a major argument against improved CAFE standards by saying you are going to force people into small, unsafe vehicles. The interesting things about hybrid gasoline electrics, in our assessment, is—and we took the four hybrids, the Ford Escape, the Honda Civic, the Honda Accord, and the Toyota Highlander, that today have counterparts in regular gasoline-burning internal combustion engines. In each case not only did the hybrid achieve substantial fuel savings, but greater horsepower at the same size. So this is not, not, not a proposal to drive people into smaller cars than they want to be in or into less well-performing cars than they want to be in. The hybrid gasoline technology does not make one make that choice.

I would add that in the Rocky Mountain Institute's recent report, "Winning the Oil End Game," the importance of construction using very strong carbon composites for vehicles is pointed out. That holds also the advantages of having lighter but even stronger vehicles, even safer vehicles with substantial fuel savings.

I want to stress that with respect to hybrids, the recent book, "The Bottomless Well," by Mr. Huber and Mr. Mills, point out the following: With today's nickel-metal-hydride batteries that are in hybrids, one can get about 6 miles of electrical propulsion by plugging in overnight and getting power from the grid to top off the battery. So one can go about 6 miles before the hybrid gasoline electric feature cuts in. With lithium batteries, which are relatively new in technology, that number is 20 miles before one has to use the gasoline electric feature.

Today in the United States residential electricity costs are 8.5 cents percent kilowatt hour. And in places that have differential costs at nighttime, it is 2 to 4 cents per kilowatt hour. Two cents per kilowatt hour electricity equates to 12-cent-per-gallon gasoline. That means that it is available in technology that is now being used, hybrid technology, by people in their garages themselves converting them to plug-in hybrids so they can top off with electricity from the grid. They are able to get transportation for maybe half

or more of their vehicle use at the equivalent of 12-cent-per-gallon gasoline.

I think once the advantages of plug-in hybrids are clear, then the financial incentives that one might need in order to help manufacturers get over the first step, that is hybrids are several thousand dollars more expensive to produce than other vehicles, will be something that American consumers should be very interested in.

I will close, Mr. Chairman, simply by saying, because I see I am over my time, that cellulosic ethanol, ethanol from agricultural waste and prairie grass, and biodiesel from animal waste, used tires and other organic compounds, as a result of new technological work with genetically modified biocatalysts for cellulosic ethanol, and with respect to thermal processes for the creation of biodiesel, make those two fuels which are compatible with the existing infrastructure able to be produced, we believe in the Commission, relatively soon, considerably sooner than hydrogen fuel cell vehicles and hydrogen facilities for fueling, and should mark, together with hybrid gasoline electrics and advanced diesels—those two fuels should be, from our point of view, a major thrust of emphasis by the government as it moves into gasoline substitutes and other automotive power in the 21st century.

Thank you, Mr. Chairman.

Mr. ISSA. Thank you, Mr. Director.

[The prepared statement of Mr. Woolsey follows:]

Hon. R. James Woolsey,

National Commission on Energy Policy

Testimony Before the U.S. House of Representatives

Committee on Government Reform

Subcommittee on Energy and Resources

April 6, 2005

Rayburn Office Building (Room B-349-C)

Good afternoon, Chairman Issa and Members of the Committee. My thanks to you for holding this hearing on a matter of great importance for our country: The nexus between America's energy needs and our national security.

I am one of the members of the National Commission on Energy Policy. By way of identification I am a former Director of Central Intelligence and am currently a Vice President of Booz Allen Hamilton. The Commission is an independent bi-partisan group of 16 persons who came together in 2002 with support from the Hewlett Foundation and several other leading foundations: The MacArthur Foundation, Packard Foundation, and the Pew Charitable Trusts. The Commission released a report at the end of last year entitled *Ending the Energy Stalemate: A Bipartisan Strategy to Meet America's Energy Challenges.*

The first Chapter of this report is about enhancing oil security. The placement of oil security first among all issues reflects the Commission's view that improving our nation's oil security is the most significant near term energy challenge we face. I'm pleased to have an opportunity to summarize the Commission's recommendations on this subject, as well as some of my own.

Rationale For Action

It is my personal opinion that there are at least seven major reasons why dependence on petroleum for the lion's share of the world's transportation fuel creates special dangers in our time.

1. **The Current Transportation Infrastructure is Committed to Oil and Oil-Compatible Products**. This fact substantially increases the difficulty of responding to oil price increases or disruptions in supply by substituting other fuels. Moreover, it leads to the conclusion that to have an impact on our vulnerabilities within the next decade or two, any new types of vehicles and any fuel that would compete with products derived from conventional oil for the transportation fuel market will need to be compatible with the existing energy infrastructure and require only modest additions or amendments to it. The time and cost required to make substantial changes in the infrastructure and the urgent need for reduction in reliance on conventional oil together suggest support for two approaches: (a) increasing fuel efficiency using currently available technologies that are compatible with the existing infrastructure, such as gasoline-electric hybrid vehicles (and "plug-in" hybrids) rather than fuel-cell vehicles, and (b) utilizing alternative fuels that are affordable, available now or in the very near future, and can be used within the existing infrastructure – e.g. cellulosic ethanol and compatible biodiesel fuel rather than hydrogen.
2. **The Greater Middle East Will Continue to be the Low-Cost and Dominant Petroleum Producer for the Foreseeable Future**. Home of around two-thirds of the world's proven reserves of conventional oil -- 45% of it in just Saudi Arabia, Iraq, and Iran -- the Greater Middle East will inevitably have to meet a growing percentage of increasing world oil demand. For the foreseeable future, as long as vehicular transportation is dominated by oil as

it is today, the Greater Middle East, and especially Saudi Arabia, will remain in the driver's seat.

3. **The Petroleum Infrastructure is Highly Vulnerable to Terrorist and Other Attack.** The Islamist movement, pre-eminently al Qaeda, has on a number of occasions explicitly called for world-wide attacks on the petroleum infrastructure and has carried some out in the Greater Middle East. Successful hits on major refineries, oil pipelines, or sulfur-cleaning towers could send oil prices much higher than even today's elevated prices.
4. **The Possibility Exists, Particularly Under Regimes That Could Come to Power in the Greater Middle East, of Embargoes or Other Disruptions of Supply.** It is often said that whoever governs the oil-rich nations of the Greater Middle East will need to sell their oil. This is, however, not true if the rulers choose to try to live, for most purposes, in the seventh century. There was a serious Islamist coup attempt in Saudi Arabia in 1979 and bin Laden has advocated, for example, major reductions in oil production.
5. **Wealth Transfers From Oil Have Been Used, and Continue to be Used, to Fund Terrorism and Its ideological Support.** Some $85-90 billion has been spent by the Saudis in the last 30 years spreading Wahhabi beliefs throughout the world. Some oil-rich families of the Greater Middle East, further, fund terrorist groups directly. The Wahhabi doctrine – fanatically hostile to Shi'ite and Suffi and many other Muslims, Jews, Christians, women, modernity, and much else – plays a role with respect to Islamist terrorist groups similar to that played in the decades after WW I with respect to Nazism by angry German nationalism. Not all angry German nationalists became Nazis and not all those educated in the Wahhabi tradition become terrorists. But in each case the broader movement has provided the soil in which the fully totalitarian movement has grown. Whether in lectures in the madrassahs of Pakistan, in the textbooks printed by Wahhabis for Indonesian schoolchildren, or on the bookshelves of mosques in the US, the hatred spread by the Wahhabis, supported by private oil wealth and by the Saudi government as well, is evident.

6. **The Current Account Deficits for a Number of Countries Create Risks Ranging from Major World Economic Disruption to Deepening Poverty and Could be Substantially Reduced by Reducing Oil Imports.** The US, in essence, borrows about $13 billion per week, principally now from major Asian states, to finance its consumption. Oil is an extremely large category of imports; more than $2 billion per week of this borrowing is used to import it. This degree of borrowing and the accumulated debt increases the risk of a flight from the dollar or major increases in interest rates. Any such development could have major negative economic consequences for both the US and its trading partners. For developing nations the debt they incur to import oil acts as a major drag on their ability to emerge from national poverty.
7. **Global Warming Gas Emissions From Man-made Source Create at Least the Risk of Climate Change.** Although the point is not universally accepted, the weight of scientific opinion suggests that global warming gases (GWG) produced by human activity are one important component of potential climate change. Efforts to reduce oil use will also provide benefits to help mitigate the impacts of climate change.

While the Commission recommended stronger U.S. action to increase global oil production, and I support this recommendation strongly, I will direct my remarks today to the Commission's proposals to reduce U.S. oil consumption through enhanced vehicle fuel economy and increased production of non-petroleum transportation fuels.

I. The Importance of Strengthening Fuel Economy Standards

During its deliberations, the Commission considered a variety of both major and minor transportation policy measures. These included many of the usual suspects: a gasoline tax, a CAFE increase, alternative fuels, as well as some new ideas: heavy-duty tractor trailer fuel economy, efficiency standards for replacement tires, congestion charges in urban areas. We examined these policy measures against four criteria: (1) the ability of each individual policy

measure to save one million barrels per day of oil by 2025, (2) the cost per barrel of oil saved, (3) administrative complexity, and (4) political feasibility. Of all the policies reviewed by the Commission, passenger vehicle fuel economy improvements represented the largest opportunity for oil savings over the next 20 years.

Accordingly, the Commission recommended that Congress instruct the National Highway Traffic Safety Administration (NHTSA) to significantly strengthen CAFE standards, giving due consideration to vehicle performance, safety, job impacts, and competitiveness concerns consistent with statutory requirements. We recommended that new standards be phased in over a five-year period beginning no later than 2010. The Commission did not reach agreement on a specific increase in fuel economy (although in a concurring note I recommended a 10-20 mpg improvement; 10 mpg would still leave us well short of current fleet mileages for both the EU and Japan).

Of course, it would be naïve to make recommendations about a CAFE increase without considering how to break the current political stalemate on fuel economy standards. The Commission identified three issues that have dominated past debates about raising CAFE standards and which we believe are largely responsible for the current stalemate: (1) uncertainty over impacts on the competitiveness of domestic manufacturers; (2) fear that more stringent standards will lead to smaller, lighter vehicles and increased traffic fatalities; and (3) concerns that higher standards will lead to losses in domestic jobs.

Competitiveness and U.S Jobs

To address concerns about competitiveness impacts on U.S. domestic manufacturers and U.S. auto workers, the Commission recommends that a significant increase in CAFE standards be accompanied by reforms to the current program that would increase compliance flexibility and reduce compliance costs,

together with manufacturer incentives designed to promote the domestic manufacture of hybrid-electric and advanced diesel vehicles.

Specifically, the Commission recommends that the current program be altered to allow manufacturers to trade compliance credits with one another and across their car and light truck fleets. The Congressional Budget Office has estimated that this reform alone would reduce the cost of the CAFE program by about 17 percent. An additional reform that should be considered in concert with higher standards is a cost-capping mechanism similar to the "safety valve" the Commission is recommending in connection with a tradable permits system for greenhouse gas emissions. In this case, the government could make additional CAFE compliance credits available to manufacturers at a pre-determined price. Such a mechanism would have the effect of protecting automakers and consumers if the regulatory estimates used to set new standards understate true costs and thus holds promise for overcoming the inevitable and inherently irresolvable disagreements about future technology development that have stymied past CAFE debates.

With respect to manufacturer incentives, the Commission is specifically recommending a program of tax incentives for U.S manufacturing facilities that are re-tooled to produce hybrid-electric and advanced diesel vehicle with superior fuel economy. Consistent with international trade agreements, the incentive would be available to both domestic and foreign companies, including both assembly plants and parts supplies. The recommended subsidy level would total $1.5 billion over ten years, with the amount of credit set to reflect up to 50 percent of the capital investment associated with producing vehicles or vehicle components. Commission analysis indicates that federal outlays under such a program would be more than offset by increased tax receipts as a result of maintaining domestic manufacturing jobs.

Relationship between Safety and Fuel Economy

A paramount concern for us when seeking to improve vehicle fuel economy has been to ensure that there is no reduction in overall vehicle safety. The concern often expressed is that mandating higher fuel economy will require production of less safe, lighter vehicles and compromise vehicle performance. Our Commission considered this concern and tested it against currently marketed hybrid and passenger diesel vehicles. Hybrids and clean diesels offer the potential to boost fuel economy while maintaining vehicle size and performance. The Ford Escape hybrid, Honda Civic hybrid, the Honda Accord hybrid, and the forthcoming Toyota Highlander hybrid, all have conventional counterparts – all achieve substantial fuel economy improvements *while maintaining or increasing* horsepower (by as much as 17 percent) compared to their conventional counterparts, and without reductions in weight or size. These vehicles clearly demonstrate that substantial fuel economy improvements can be achieved using already-available technologies and without compromising vehicle performance and safety.

I would add that the Rocky Mountain Institute has recently published a report, "Winning the Oil End Game" which emphasizes the promise of using in automobile construction less expensive versions of the very strong carbon composites now used in aircraft construction – a step that could further contribute to our having vehicles that are lighter and substantially more fuel efficient but also stronger and safer than existing vehicles.

Finally, the Commission noted the potential importance of adding a "plug-in" feature to hybrid vehicles. Adding such a feature to hybrids would, without interfering with the hybrid's ability to operate without grid electricity, give car owners the option of plugging the vehicle's batteries in when convenient, such as at night, and storing enough power to drive several miles without using gasoline at all. In their fascinating new book on energy (The Bottomless Well) Messrs Huber and Fall point out that with today's nickel-metal-hydride batteries trips of around 6 miles are possible for plug-ins without using liquid fuel at all and that with lithium batteries in the future 20-mile trips should be feasible before the

vehicle would need to use any liquid fuel. From the point of view of consumers, as Huber and Fall point out, average residential electricity costs are 8.5 cents/kwh in the US and in many areas off-peak power is sold at night for 2-4 cents/kwh. Two-cent- per-kilowatt-hour electricity equates approximately to 12-cent-per-gallon gasoline. This extraordinarily low cost is probably the reason individuals are beginning to modify their hybrids themselves to add a plug-in feature (see "Hybrid-Car Tinkerers Scoff at No-Plug-In Rule", NYT Mar. 31, 2005, p. B-1). I have also met with Mr. Roger Duncan, deputy general manager of Austin Energy (a utility owned by the city of Austin, Texas) who is seeking to assemble a group of utilities to agree to give $1000 credits to purchasers of plug-in hybrids, in order to be able to sell power at off-peak hours.

II. Non-Petroleum Transportation Fuels

The Commission seeks to encourage development of a suite of domestically produced transportation fuels that can collectively help to diminish U.S. vulnerability to high oil prices and oil supply disruptions while reducing the transportation sector's greenhouse gas emissions. Those non-petroleum fuels that are compatible with existing infrastructure and vehicle technology enjoy a significant advantage over those that require a wholly new distribution system or vehicle fleet. Two prominent examples are ethanol, preferably from cellulosic biomass, and biodiesel.

Alternatives to Gasoline for the Passenger Vehicle Fleet

Among the variety of alternative fuel options potentially available for the light-duty vehicle fleet, the Commission believes that ethanol produced from cellulosic biomass (i.e. fibrous or woody plant materials) should be the focus of near-term federal research, development, and demonstration efforts. Cellulosic ethanol offers substantial energy security, environmental, and long-term cost advantages compared to corn-based ethanol. Indeed, Commission-sponsored analysis indicates that with steady though unremarkable progress to reduce production

costs and increase crop yields, cellulosic ethanol has the potential to make a meaningful contribution to the nation's transportation fuel supply over the next two to three decades.

I would add that cellulosic ethanol requires very little fuel input for its production: as Senator Lugar and I wrote in an article in Foreign Affairs over 6 years ago ("The New Petroleum") it takes only about a gallon of oil to produce seven of cellulosic ethanol, whereas for corn-based ethanol (because of the petroleum products required for cultivation, fertilization, etc.) it takes about seven gallons of oil to produce eight of ethanol. Indeed the Commission found that the cultivation and use of cellulosic ethanol requires so little fuel (and releases, net, such a small amount of global warming gases) that when cellulosic residues are used to co-generate electricity the total fuel cycle for cellulosic ethanol makes possible a reduction in global warming gas generation of more than 100 per cent compared to the use of gasoline. Using cellulosic ethanol for vehicles can thus in some cases be a carbon sink.

These advantages of cellulosic ethanol are what underlay my statement in September of 2002 in Commentary ("Defeating the Oil Weapon") that: "[u]sing 85 percent [cellulosic] ethanol, a full-sized hybrid passenger car that gets 40 mpg would be realizing the equivalent of about 250 mpg of gasoline." (Actually 160 mpg would have represented a better calculation in this case.) Recent restatements this year of this sort of comparison by Mr. Gal Luft of the Institute for the Analysis of Global Security (IAGS), and columnists Fareed Zakaria in Newsweek and Thomas Friedman in the NY Times have come under fire from commentators such as Mr. Alan Reynolds ("Blowing Smoke on Gas Savings", Wash. Times, Ap. 3, 2005) because of the alleged energy requirements of ethanol production. Mr. Reynolds clearly does not understand the comparatively small amount of fuel required to produce cellulosic ethanol as the Commission has confirmed and as Senator Lugar and I described it six years ago.

Alternatives to Diesel for Heavy-Duty Trucks and Buses

Just as cellulosic ethanol represents a more promising long-term alternative to gasoline than corn-based ethanol, newer technologies are emerging that can produce clean, low-sulfur synthetic diesel fuels from biomass or other organic materials. The Commission found promising technologies that can utilize a wide variety of organic wastes as feedstocks. One process in particular, known as thermal depolymerization, is now being demonstrated on a commercial-scale to produce lowsulfur diesel fuel from wastes generated by a turkey processing facility. This technology and other advanced bio-diesel options merit further research, development, and early deployment efforts. (I have reiterated with respect to thermal depolymerization only what the Commission found. This Committee should be aware that for some years I have been an adviser to the company that invented this process.)

Commission Recommendations

The Commission proposes a ten-year, $1.5 billion effort to reduce the costs of biomass and waste-derived fuel production through a combination of targeted support for research and development and incentives for pioneer commercial production facilities. The primary goal of this proposal is to bring the cost of cellulosic ethanol below that of corn-based ethanol and within striking distance of gasoline over the next two decades.

Conclusion

Advanced technology vehicles, such as hybrids, plug-in hybrids, and clean diesels, and alternative fuels like cellulosic ethanol and biodiesel have the potential to change the game. They offer the uncompromised features of conventional vehicles while improving dramatically automobile fuel economy and reducing our dependence on oil. It should be national policy to foster early introduction on a significant scale of these vehicle technologies and non-

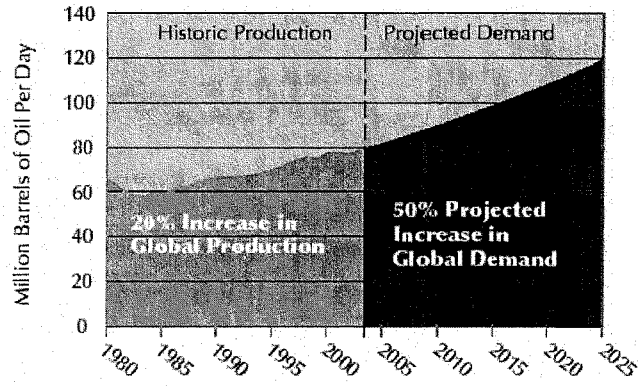
petroleum transportation fuels for they promise to make a major contribution to U.S. energy security.

Figures from *Ending the Energy Stalemate: A Bipartisan Strategy to Meet America's Energy Challenges*, National Commission on Energy Policy (2005).

Figure 1-1

Trends in Global Oil Production and Future Demand

Future demand for oil is projected to grow at more than double the historical rate since 1980.

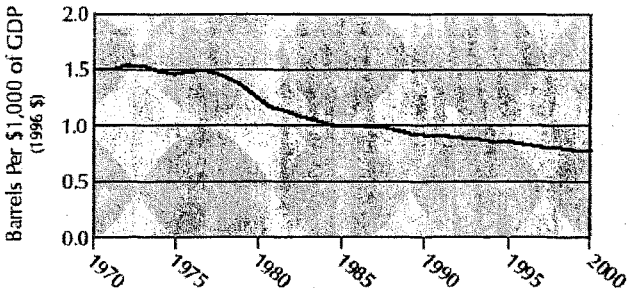


Data Source: Energy Information Administration, 2004

Figure 1-2

Oil and the Economy

The ability of the U.S. economy to weather oil price shocks improves as oil's share of GDP decreases. This share has declined over the past several decades, although the rate of decline has slowed in recent years.

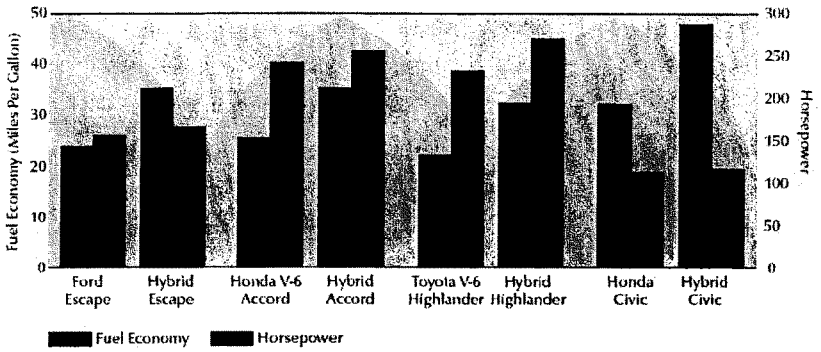


Resources for the Future, 2004

Figure 1-3

Why Hybrids Change the Game

Hybrids can increase fuel economy and horsepower.



Note: The popular Toyota Prius hybrid is not included here because it does not have a conventional vehicle counterpart.

Data Sources: NewCars.com 2004, American Honda Motor Co. 2004, AIC Autosite 2004

Mr. ISSA. I would note that Mr. Marchant, a Member from Texas, has arrived. Your opening statement will be put in the record without objection, and then there will be time for you to provide the equivalent, if you would like, in addition to questioning.

Ambassador, again, we are moving at a snappy pace. If you make it a triple play, I will just be shocked.

STATEMENT OF ROBERT HORMATS, VICE CHAIRMAN, GOLDMAN SACHS INTERNATIONAL

Mr. HORMATS. I'll do my best.

Thank you, Mr. Chairman. Let me make a few general points.

One, I find myself very much in agreement with the other members of this panel. America's significant dependence on imported oil constitutes a major source of economic and security vulnerability. Particularly because a growing portion of U.S. imports comes from politically unstable parts of the world.

Now, in the early part of my career, in the early part of the 1970's, I was Dr. Kissinger's economic advisor on the NFC staff when we had our first embargo, 1973, 1974. And at the time it seemed to me that was a wake-up call, or at least should have been, about our vulnerability. It turned out it was not.

And I have a chart here which illustrates the various periods of time over the last 35, 40 years when there have been supply disruptions of various types, and we have done very little; a lot of rhetoric, but no consensus in this country and very little bold action. And since the 1970's when I thought we would have an energy policy, tragically we have not been able to come up with a bold enough one. As a result we are far more dependent on Middle East oil now than we were during the 1973, 1974 embargo; a painful conclusion to reach, but unfortunately that's the reality.

The other part of the problem is that it is not only the United States that has become increasingly vulnerable; many other parts of the world are also very vulnerable to supply disruptions. Many of these countries are, in fact, more dependent on imported oil than we are, and if there were disruptions in the supply, many of our major trading partners, many of our major allies would be hurt even more than we would be, which would affect our exports and our security in an indirect sense.

The difficulty that we have is when we have a crisis, Americans tend to focus on the crisis. They reduce consumption, and then once the crisis is over, we revert back to gas guzzlers. We pay very little attention to production, conservation, efficiency and all those things, and this is why it's so hard to get a policy in concrete, because when the crisis passes, people pay very little attention to it. And the tragedy is the longer the impasse lasts, the greater the U.S. dependence becomes.

And Jim Woolsey clearly has illustrated the kind of risks there are to oil capabilities in various parts of the world; that people such as bin Laden and other jihadists clearly want to drive the United States out of the Middle East by attacking facilities where Americans and foreigners are playing a key role, and undermine the oil infrastructure there, believing that it will bring down many of these governments and cause the kind of disruption in oil markets that will lead to major problems for a lot of countries, and

then, as Jim indicates, take them over. And this, I think, is an enormous risk.

I think it's important to realize that we're almost certainly more vulnerable today to oil price disruption and oil supply disruption than we have been at any time since the early 1970's. I think this is important to bear in mind. This is not business as usual. This is not just another crisis. The risk of supply disruption now is the highest it has been since the 1970's because we know that these radicals are directly targeting in a systemic way the suppliers and the supplies that are so vulnerable to the United States.

Now, what is the problem? There are various aspects of the problem. I think it's important to understand what's happened. We had a period of time in the 1970's—and I have a chart that is somewhere in your—in the testimony I have given, I think it's page 8 or page 9, which illustrates the fact that during the 1970's, we had considerable investment in oil. I think it's page 9. It indicates that during the 1970's, we did have a lot of investment.

In the 1980's, there was very little new investment, and in much of the 1990's, there was very little investment. If you go particularly from 1992 to the year 2000, very little new investment in the energy sector not just in the United States, but around the world. As a result we are dealing with the rapidly rising demand for oil up against a series of capacity constraints, capacity constraints in drilling, capacity constraints in refineries, a whole range of capacity constraints.

The other part of the problem is that we are simply in the United States running out of available hydrocarbons that can be made available in a relatively inexpensive way. There are in the shale of the Rocky Mountains some great opportunities, Wyoming in particular, the Green River valley. There is a lot of opportunity there, but it tends to take a high price and the confidence that the price will remain high to get it out. Canada, there is a lot of capacity. There is a lot of potential in Alaska. Building the Alaskan pipeline is extremely important, and it is extremely important to move very quickly in part because the Canadians are interested in building the McKenzie Valley pipeline, as you may know. And given the supply of metals and the ability to produce pipes and get laborers, it's awfully hard to build two of those big pipelines at the same time. You run up against constraints. So moving ahead on Alaska does seem to me to be very important in part because we do have capacity in North America. We have potential capacity. It's a matter of making potential capacity real capacity.

Jim has pointed out, I think very importantly, that there are other elements, too, that can be tapped. Biomass is a very important aspect of a potential source of energy, and I have read his Commission report. I think it is terrific and has a lot of very constructive ideas.

Another point we need to bear in mind about security, since that is the focus here, is that since oil supplies tighten, there are oil exporters who have a greater opportunity to exert leverage over oil importers. Russia, for example, has a great ability to exercise leverage over Western Europe, which is a big user of Russian oil and gas; Venezuela, Iran, a whole host of countries; and we also get a number of countries like China which are trying to secure supplies

around the world by buying oil facilities and buying properties. So in a world where energy supplies are tight, there is an opportunity for a lot to go on, particularly in terms of oil suppliers using their leverage.

Let me make a couple of other quick points. One is this is not going to go away quickly. We are not going to see a dramatic reduction in the price of oil, as some people predict. And if you want one indication of that, it is what is called on the market sort of long-dated contracts, which are 5 and 10 year contracts. Traditionally the price of those contracts throughout the whole period of the 1980's and the early part of the 1990's hovered around $18 to $20. Now they're around $45, $50, or a little bit less in some cases, a little bit more in others, but they are around the $45 level as a sort of base, which suggests that the market is not anticipating that these prices are going to be out any time soon, that they will stay up. So while people look at this and say, well, there's a lot of speculation here, from time to time perhaps there is a speculation on a given day or a given week, but that is not the fundamental problem.

The fundamental problem, Mr. Chairman, is the problem that you outlined at the outset, and that is there is relatively little new capacity being laid on, and there is a big increase in demand in China, the United States and many other parts of the world. China is really the big marginal buyer, and if it weren't for China, prices may be a little bit lower, but we would still have this big imbalance of supply which has been constrained by insufficient investment and demand which is going up very, very rapidly.

I think if you look at the market and you look at these long-term expectations in the market, and Chairman Greenspan, I believe, referred to it yesterday, those prices are likely to stay high for a long time, which leads us to conclude we can't expect some miracle to lead to price declines, and the price should be high enough to incentivize a lot of new production. The problem is a lot of people on the production side are very cautious about putting large amounts of money into new capacity because in the past they have been through periods where price has been high, and then it's declined, and they've invested a lot of money, and some of it has been lost.

Let me just make a couple of quick other points to conclude with respect to the kind of remedies that are appropriate to deal with this situation. We have to look at oil primarily as a transportation fuel. Virtually 80 percent of oil in this country is used for transportation, either automobiles, gasoline, diesel fuel or jet fuel. So we really are not going to be able to deal with it, and Jim pointed this out a moment ago, to deal with the question of the demand.

The coalition has come up with some very good ideas. I won't repeat those with respect to biomass, but there are a number of other areas that I will just touch on very quickly.

Increased use of nuclear power. There are opportunities that didn't exist several years ago. Research funds for new technologies, wind, hydro, solar; incentives to increase use of mass transportation; methods of changing car-buying habits including allowing energy-efficient cars to use HOV lanes, giving them a discount in inspection fees while hiking inspection fees for inefficient vehicles;

discounts on EZ Pass; avoidance of regulatory tax incentives for fuel-inefficient SUVs.

These are just a few thoughts. I will conclude with 15 seconds left. Thank you very much, Mr. Chairman, for the opportunity.

Mr. ISSA. Thank you.

[The prepared statement of Mr. Hormats follows:]

Testimony of Robert D. Hormats
Vice Chairman
Goldman Sachs (International)

before

Subcommittee on Energy and Resources
House of Representatives
Committee on Government Reform
B-349-C Rayburn House Office Building
Washington, DC 20515

April 6, 2005

AMERICA'S ENERGY NEEDS AND AMERICA'S NATIONAL SECURITY POLICY

Mr. Chairman and Members of the Sub-Committee, I am very grateful that you have given me this opportunity to present my views on a topic of enormous importance to our nation's economic wellbeing and security.

America's significant dependence on imported oil constitutes a major source of economic and security vulnerability — especially because a growing portion of US imports come from politically unstable parts of the world. But the national security problem goes beyond this; many of our friends and allies are even more dependent on imported oil than we are. They would be harmed to an even greater degree by supply disruptions; some are vulnerable to the potential use of oil by suppliers as a means of exerting political influence over them.

Producing a sound, long term US energy policy presents an enormous challenge for Congress and the President. Americans appear to take energy policy seriously only when gas prices at the pump skyrocket. For example, in the mid-1970s, when the Arab oil embargo focused American's attention on US vulnerability, the country quickly learned to use oil more efficiently.

The problem is that once the shock fades, we begin buying gas-guzzlers and we pay less attention to production, conservation and efficiency, driving import dependence, energy demand and prices back up. So the pattern repeats itself: We forget about energy policy until the next crisis erupts.

Recent events should be a strong signal that we cannot afford to take oil supplies for granted. Since the 1973-1974 oil crisis, US energy policy, for the most part, has been characterized by lofty rhetoric and the absence of tough measures. Successive administrations and congresses have been unwilling to ask Americans to make sacrifices to reduce US oil dependence. The debate has been polarized between extreme environmentalists and those who believe that additional drilling for oil and the development of other hydrocarbons constitutes virtually the entire answer to the problem.

The longer the impasse, the greater US dependence becomes. Terrorist strikes against strategic Middle East oil facilities highlight the economic and national security risks of our excessive

dependence. But even without them, enormous structural imbalances in the world oil market pose a big risk to our economy and the global economy.

In every war the US has fought, Americans have been asked to sacrifice for the common good — to make compromises and, often, to pay higher taxes or go without certain benefits in the interest of the nation's security. We now are engaged in a War on Terror. America's success in this war is correctly characterized by the President as vital to our security. Yet Americans have been asked to make no sacrifices; it has been business (or rather consumption) as usual. The absence of a broad national consensus on the need for action to reduce oil dependence presents a clear and ominous threat to the well being of every American.

This would be an opportune time for the President and Congressional leaders to put the facts squarely to the American people: IF WE DO NOT MAKE MAJOR CHANGES IN US ENERGY POLICY SOON AMERICA'S DEPENDENCE WILL INCREASE AS WILL OUR VULNERABLITY TO THE IMPACT OF LARGE GLOBAL SUPPLY-DEMAND IMBALANCES AND TO POTENTIAL DISRUPTIONS IN OIL SUPPLIES.

If we are to forge a robust energy policy no one, no interest group, will get all it wants. Each will have to give up something. Various interest groups will need to stop vilifying one another and find common ground. As the respected New York Times columnist Tom Friedman has put it, we need a new coalition that marries geopolitics, energy policy and environmentalism.

Here are the hard realities:

The US possesses a very mature geological oil infrastructure, with remaining oil reserves inadequate to meet the needs of a growing economy. As such, US dependence on oil imports is rising. Such dependence is a greater challenge today than a decade ago given four developments:

1. Geopolitical tensions.

Rapid population growth, the absence of a diversified and growing economic base and lack of representative government have increased the risks to stability in several key oil-exporting regions. The risk of supply disruption now is the highest it has been since the oil embargo years of the early 1970s. We know that radical movements have targeted oil facilities in the past and are likely to do so in the future both to disrupt economies in the Middle East and to discourage foreign workers from staying; successful terrorist attacks would cause spikes in the world energy price.

Moreover, while there are plenty of reserves in various parts of the world, many of them are not accessible to western investors or even local investors due to high security risks (e.g. the Western Desert of Iraq), political uncertainties (Russia) or prohibitions/restrictions on foreign investors (parts of the Middle East, Russia and Venezuela). In some regions, populist rhetoric or political sentiment limits the willingness of foreign companies to make major investments.

In some cases also, the geography of the region or regional political uncertainties, raise difficulties in building pipelines to get oil or gas to the market — e.g. in Central Asia.

A sustained period of political and economic stability is needed in a number of countries, particularly in the Middles East, before the supply-risk related to terrorist disruption subsides. Stability involves establishment of government institutions that are more representative of the

underlying population, a broadening of the benefits of economic growth and education geared toward providing skills that permit kids to get productive jobs.

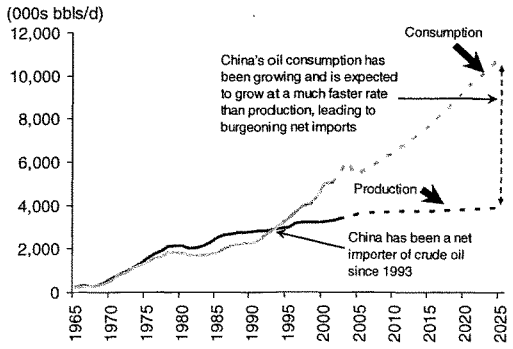
It would be reassuring if higher oil prices were seen as a path toward encouraging such reforms, but there is a tendency in some quarters to believe that high oil revenues allow governments to avoid such reforms and that payments to dissatisfied groups will lead to prolonged tranquility.

However, there are a growing number of people in the Middle East who now understand that political reform is imperative for long term stability. Elections in Iraq and the Palestinian territories have whet the appetites of the reformers for bolder action and widely watched TV broadcasts of Iraqis going to the polls led large numbers of people throughout the Arab world to wonder "Why not us?"

Some argue it is easier to accomplish reforms in a period of economic prosperity rather that one of economic stress. The period ahead will be a significant test of that theory.

2. China.

China has developed a rapidly growing thirst for oil imports given its inadequate energy resource base. And China is attempting to secure supplies of oil in Africa and Asia, which could in turn reduce supplies available to the global market. China's challenge is compounded by the fact that shipping capacity is also in tight supply. (See graph below)



3. Limited spare capacity.

Spare capacity in crude oil, shipping, and refining markets is essentially gone. In an environment where spare crude oil capacity is minimal, the United States is dependent on oil imports and key oil-exporting countries are facing geopolitical uncertainties, US consumers and businesses should be prepared for a sustained period in which energy prices are higher in absolute terms and more volatile than the levels seen during the 1980s and 1990s.

4. Political leverage.

As oil supplies tighten, oil exporters will have greater opportunity to exert leverage over oil importers. Lest we forget, oil is a highly political commodity. Russia has a great deal of leverage over Central and Western Europe because of their significant and growing dependence on Russian oil and gas.(Russia supplies about a third of Western Europe's oil and gas requirements). Suppliers in the Middle East and elsewhere have used oil in the past for political purposes. While they are not likely to engage in 1973-74 style embargos, and given their revenue needs are not likely to take actions that do not maximize economic benefit to them, individual nations (e.g. Iran or, outside the region, Venezuela) could see a tight market and intense competition by consuming countries for supplies as an opportunity to exercise political leverage — to exert political or economic influence over individual importers.

The period ahead could witness intense economic and political competition for oil supplies — not just by China but by other nations as well — with significant geopolitical implications. For example, we are likely to witness growing tensions in Asia as Japan and China jockey for position in gaining access to and drilling in disputed oil and gas fields in coastal waters of the region. Other disputed areas could become hot spots as competition for oil/gas heats up.

PAST DISRUPTIONS

Previous episodes of high oil prices have resulted from supply shocks, and most have come from the Middle East, on which the US and the world are becoming even more dependent. (See DOE chart below)

Global Oil Supply Disruptions Since 1951

Date of Oil Supply Disruption*	Duration (Months of Supply Disruption*)	Average *Gross* Supply Shortfall (Million B/D)	Reason for Oil Supply Disruption
3/51-10/54	44	0.7	Iranian oil fields nationalized May 1, following months of unrest and strikes in Abadan area.
11/56-3/57	4	2.0	Suez War
12/66-3/67	3	0.7	Syrian Transit Fee Dispute
6/67-8/67	2	2.0	Six Day War
5/70-1/71	9	1.3	Libyan price controversy; damage to Tapline
4/71-8/71	5	0.6	Algerian-French nationalization struggle
3/73-5/73	2	0.5	Unrest in Lebanon; damage to transit facilities
10/73-3/74	6	2.6	October Arab-Israeli War; Arab oil embargo
4/76-5/76	2	0.3	Civil war in Lebanon; disruption to Iraqi exports
5/77	1	0.7	Damage to Saudi oil field
11/78-4/79	6	3.5	Iranian revolution
10/80-12/80	3	3.3	Outbreak of Iran-Iraq War
12/02-2/03**	3	2.1	Venezuela strikes and unrest.
3/03-8/03	6	0.3	Nigeria unrest.
3/03-9/04***	19	1.0	Iraq war and continued unrest.

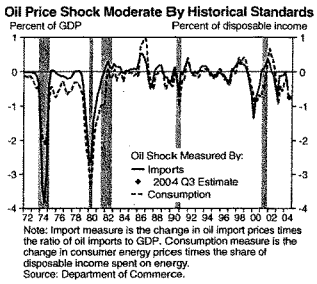
*Note: "Supply disruption" generally refers to a loss of oil from a particular country or group of countries relative to a preceding month or months. The full extent and impact of a disruption or loss depends on a variety of factors, including: a) replacement production from other, unaffected, countries; b) the level of oil inventories; and c) level and growth rate of demand. Definitions of "oil supply disruptions" are not entirely consistent from one case to the next, in part due to differing views of such events over time and amongst analysts.

**Venezuelan total oil production fell from 3.3 million barrels per day in November 2002 to under 700,000 barrels per day in January 2003, increased to 2.6 million barrels per day in March 2003, and has now stabilized at around 2.8 million barrels per day. Although Venezuelan output has not returned to pre-strike levels, for purposes of this table the "disruption" period is defined as the period between December 2002 and February 2003, when the crisis was at its peak.

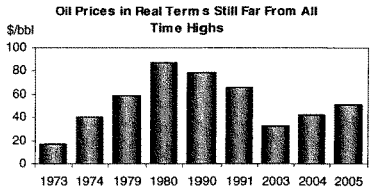
***As of September 2004, Iraqi oil output has not yet recovered to pre-war levels (2.5 million barrels per day in February 2003). In April 2004, Iraqi production reached 2.3 million barrels per day, but since then has not exceeded 2.0 million barrels per day in any month through August 2004. Due to the continued instability in Iraq, the "disruption" is considered as continuing, although certainly the peak of the losses from Iraq were experienced during the spring and summer of 2003. From April 2003 through August 2003, the oil supply disruption from Iraq averaged about 2 million barrels per day. In contrast, since the beginning of 2004, the oil supply disruption from Iraq has averaged around 0.5 million barrels per day.

ECONOMIC IMPACT

Graph A



Graph B



In contrast with the supply shock induced price increases of the past, this time the sharp price increase is primarily the result of increasing global demand for oil clashing with supply constraints that have been over a decade in the making.

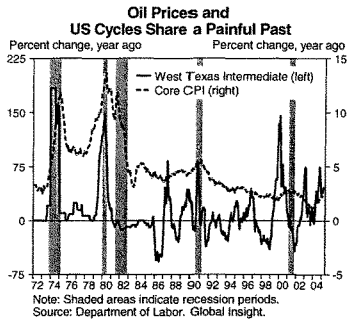
As energy prices soar, concerns about the effect on global inflation and economic growth have grown as well. So far, the price shock is smaller than those associated with most recent recessions. Two points are important here.

First, while the price of crude oil has risen sharply—about 80% over the past year and a half — this is barely on a par with the spike that occurred in 1990. (See Graph A above) It falls well short of the surges that occurred in the 1970s and is smaller, in percentage terms, than the run-up that occurred before the last recession. (See Graph B above)

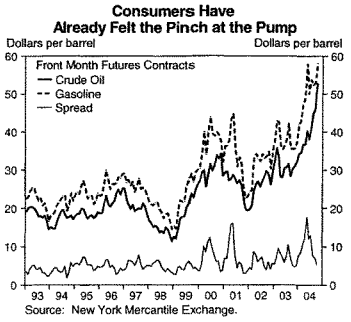
Second, the United States economy has become less dependent on oil (although not on oil imports) over time. Today it takes about half as much oil as it did 30 years ago to generate $1 of

gross domestic product. This means that any price increase has to be correspondingly larger to wreak the same havoc on economic growth. It also means, of course, that higher prices than we have recently seen would be required to significantly curtail energy demand. (See Graph 1 below)

Graph 1



Graph 2



US consumers have already absorbed much of the recent run-up in oil prices in last year's gasoline price surge. This surge in gas prices resulted from constraints on refining capacity in the United States, which drove the "crack" spread—the difference between gasoline prices and crude oil prices—up sharply, as shown above. (See Graph 2 above)

Since then, gasoline prices have fluctuated in a range roughly consistent with the level to which oil prices have climbed lately. Although many households faced significant increases in heating

bills this winter, outlays for gasoline loom much larger in US consumer budgets. If sustained, the increase in the price of oil could shave as much as .6% off of US growth over the next 12 months and add .8% to US inflation; and it could cut .45% from G7 real GDP and boost G7 inflation by 75% — not a negligible impact, but not enough to derail the economy.

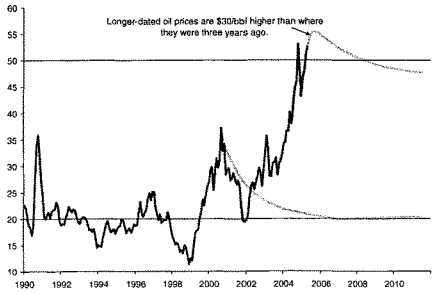
WTI oil prices bottomed in November 2001 at less than $17.50/bbl. Oil demand in particular was reeling following September 11th. Since then, oil prices have traded higher, with nominal WTI crude oil prices surging to a record-range of $55-$57/bbl. The rise in prices, though persistent, has been relatively gradual in comparison to some previous spikes. The largest monthly rise in average WTI prices since early 2003 was 16% in October 2004. This is much lower than the nearly 50% spike in August 1990 or the 22% spike in September 1990 – and significantly lower than the spikes seen in the 1970s. The fact that oil prices have not spiked as suddenly as previous episodes may make the pressure easier to absorb.

Recent rises in oil prices are less a story of supply disruptions and more a combination of strong demand against the backdrop of tight supply and rising marginal costs. Arguably these may be less damaging than the classic supply shocks of the last three decades.

It is also important to put aside the notion that these price increases are the result of speculation. Speculation may have contributed to day-to-day volatility, but it can hardly be the source of the sustained rise in oil prices — and it cannot be the cause of the big increase in the price of long-dated contracts — to which I now turn.

One big difference in the market today compared to a few years ago is that long term price expectations have risen dramatically – signifying a view in the market that the supply-demand imbalance is long-term and structural, rather than short term and speculative.

The long-dated WTI price, as of the close of March 16, 2005, was over $48.50/bbl – more than twice the average long-dated price during the 1990s. (See graph below)

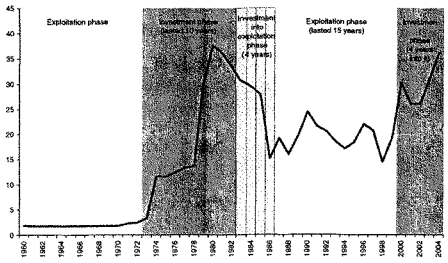


The rise in crude oil prices is likely to motivate investment across the oil supply chain—production, refining, and shipping—as underinvestment during the 1980s and 1990s relative to

current demand has left the market severely supply constrained. The rise in prices has also reflected an increase in the marginal cost of production due to higher tax burdens on producers and rising production and exploration costs. Widened quality and transportation differentials have also supported prices.

This higher cost of production has raised the price required to induce the investment necessary to build out the infrastructure base. Near term, the required increase in spending is significant. We estimate the total amount of capital spending required over the next ten years in the oil industry to meet trend demand growth at some $2.4 trillion, nearly triple the level of spending during the 1990s.

As the graph below indicates, after a sluggish decline — which was the cause of the current capacity constraints noted above — investment has increased dramatically in the last few years. Investment in North America in 2004 increased by 30% in 2004 and 17% in 2003; however, it is expected to decelerate to 15% this year. Internationally, investment is accelerating from around 8% last year to perhaps 12% this year, in large measure due to a big pickup in Saudi Arabia, where investment should grow by around 30-40%, including a doubling of rig count. (See graph below)



One interesting feature of the oil market over the past few years has been the widening of the differential between transportation fuels (motor gasoline, diesel, and jet fuel) and heavier industrial fuels (residual fuel oil). This divergence has been driven by constraints in the refinery complex, as the petroleum market has exhausted its capability to upgrade available crude oils into transportation fuels, which are in high demand. Given the investment time required to correct this imbalance, it is likely that these wider differentials will persist in the near future.

Oil consumption in developed economies, for example both the United States and Europe, tends to be concentrated in the more expensive transportation fuels that have experienced significant price appreciation during the past few years. In contrast, developing countries, such as China, India and Latin American countries, consume heavier petroleum products, which have lagged the appreciation vis-à-vis the lighter transportation fuels. The skew of oil consumption toward heavier petroleum products in developing countries primarily reflects the higher level of manufacturing intensity in those countries. In addition, relatively lax environmental restrictions in developing

economies also lends to a higher heavier oil consumption share, while environmental constraints in developed economies skew consumption to cleaner burning fuels or alternative energy sources.

Emerging market countries such as China and India also have higher oil/GDP intensities than developed countries. An important aspect of this is that plants at early stages of industrial development are less energy efficient.

INFRASTRUCTURE

I would like now to elaborate on the question of weak infrastructure investment.

Low investment rates in infrastructure have been a key reason for the higher energy prices we are experiencing now. The sharp rise in the energy price level that began in 2000 is the result of two decades of low investment in the global infrastructure to supply and deliver oil; this was caused by the modest rates of return on these types of investments in that period. Crude oil production, transportation and refinery output are all currently operating at record levels. As a result, the market is pushing up against capacity constraints in every aspect of the system.

One reason for optimism over the long term is that the energy industry has entered a new investment phase.

Large-scale "next-generation infrastructure" projects will be required to grow supply. The last time the industry built infrastructure on this scale was during the 1970s; that permitted years of energy demand growth at a relatively low marginal cost. This phase" lasted for nearly two decades, however, has come to an end, as the industry has re-entered an "investment phase" that could last for the next five to ten years; it will take about that length of time before new infrastructure is sufficient to for the industry to re-enter a new lower-priced phase.

Our experts believe that a WTI price of at least $30/bbl will be required to incentivize the rest of this investment phase. It will also likely be required to keep older fields cost-effective as the industry builds next generation infrastructure. Once the next-generation projects are completed, prices will likely decline as the new production displaces the older, more expensive fields that are currently supporting prices at the margin.

The total amount of capital spending required over the next ten years in the oil industry to meet trend demand growth is likely to be $2.4 trillion, nearly triple the level of spending during the 1990s. Three main reasons explain why spending needs to be significantly higher during the 2000s than in the past: (1) a shift in government policies from subsidizing to taxing energy production, (2) the exhaustion of substantial low-cost capacity in transportation, refining and other core infrastructure, which was built in part with the help of governments during the 1970s, and (3) the acceleration of decline rates in existing production basins, requiring more capital.

Allow me to elaborate:

1. A significant shift in government policies has taken place, from subsidizing to taxing energy production and delivery through increased environmental regulations, larger royalty payments on production leases and increased taxes for both sovereign and corporate companies. We estimate that the total tax bill will likely increase by $1.8 trillion over the next decade relative to the prior decade.

2. The exhaustion of substantial low-cost capacity in transportation, refining and other core infrastructure, which was built with the help of governments during the 1970s, requires significant investment in next-generation infrastructure. Building this infrastructure without the help of governments will require $150 billion for transportation and $300 billion for refining over the next ten years, including upgrading units to process increasingly poorer quality crude oil production. This spending is nearly double the level of spending that occurred during the 1990s.

3. Existing production basins are declining much faster than in the past, requiring more capital just to keep production flat. Total upstream expenditures on oil over the next ten years will likely need to exceed $2.0 trillion to meet trend demand, and $2.2 trillion to offset the older more expensive production, which is nearly triple the level of the previous decade.

It is important to address head on the argument that the industry is running out of oil. It is not! Higher prices result from the infrastructure being stretched.

DEPENDENCE

The Department of Energy's Energy Information Administration (EIA) predicts that the United States will become increasingly dependent on oil imports from the Middle East. Imports from this region are likely to increase from about 24 percent of total US oil imports in 2000 to about 50 percent by 2020. This level compares with the 15 percent and 23 percent of oil the US imported from that region during the 1973-1974 and 1979-1980 Middle Eastern oil crises, respectively.

As evidenced by the 1973 Arab oil embargo and the 1979 Iranian revolution, an abrupt and prolonged loss of Middle Eastern oil wreaks havoc on the U.S. economy, increasing unemployment and boosting inflation. Oil peaked at $39 a barrel in 1981, contributing to double-digit interest rates, inflation at 9 percent, and unemployment close to 8 percent. Government actions made things even, worse as gas rationing, price controls, and the heavy hand of regulation interfered with energy markets.

Much as we are concerned about US vulnerability, that of many other nations is considerably greater. In an interdependent world, harm done to the economies of US trading partners will cause a drop in US exports and thus will feed back into the US jobs market. And it could lead to enormous social stresses in some of the more fragile nations of the developing world.

So as we develop a strategy for addressing domestic energy vulnerability, the US also needs a strategy for helping other nations to boost their energy development and intensify energy conservation. That would be a good investment in a more prosperous global economy — which helps US exporters. And by helping other nations to increase energy output and curb demand, we would be reducing the global supply/demand imbalance and thus future price pressures.

FINANCIAL VULNERABILITY

While we are on the subject of vulnerability, I thought it might be useful to add a few paragraphs — which I realize go a bit beyond the scope of this particular hearing, but are related to the Security portion of this discussion.

In an Age of Terrorism, large budget deficits and heavy dependence on foreign capital (occasioned in part by the enormous and growing US oil import bill) constitute a significant source of economic vulnerability; they increase the chances of financial turmoil in the event of another attack. Strengthening the nation's domestic and international balance sheets, in part by reducing oil imports, on the other hand, will make the US economy more resilient, frustrating attempts to undermine it through terrorism.

An attack on the US now could produce much greater financial disruption than occurred after 9/11. Before 9/11 the US had a large budget surplus. That provided flexibility to mobilize enormous sums for relief and reconstruction, economic stimulus, war in Afghanistan and homeland defense, with no adverse impact on financial markets. Foreign investor confidence and the dollar remained strong; large amounts of capital continued to flow into the US.

The next time could be a lot different. Three years of big government deficits and growing debt provide less room in the budget to respond to a new disaster. And US dependence on foreign capital has grown to record levels. Overseas investors supply the US with hundreds of billions of dollars annually; in 2004 the federal government relied on foreign central banks and investors to finance over half of its enormous deficit — and they now hold over 43% of all Treasury bonds. Many foreigners already have become skittish about buying more dollar securities; they could become much more so after a new terrorist strike.

And far greater sums could be required to respond to the next attack. Osama Bin Laden has made no secret of his desire to undermine the US economy. He has boasted that 9/11 struck the US economy "in the heart," claiming al Qaeda spent only $500,000 while the US lost over $500 billion. His has proclaimed the goal of "bleeding America to the point of bankruptcy."

Consistent with this, some intelligence experts believe that in the future al Qaeda, or other radical groups bent on terrorism, will deploy weapons of mass economic disruption rather than weapons of mass destruction. A dirty bomb attack on a major US city might kill fewer people than 9/11 but do a lot more economic damage — rendering a large portion of that city uninhabitable for decades due to radioactive contamination. That would disrupt sizeable parts of the US economy, produce massive job, insurance and business losses as well as precipitate a plunge in investor and consumer confidence. Large numbers of people subsequently could refuse to work or live in any big urban area.

A chemical, radiological or biological attack on a municipal transport system, a major port or a key rail facility would disrupt the US transportation and commuter system — and hence the overall economy — for many months. (Some buildings affected by the Fall 2001 anthrax attacks took over three years to reopen.) A radiological attack would have an impact measured in years. In an age of thin inventories and just-in-time deliveries of components and raw materials, such disruptions would cause massive and prolonged dislocations throughout the entire US supply chain.

Because the US imports such large amounts of oil, such an attack on a port through which oil is imported would have a particularly disruptive impact on the US fuel supply. Regions dependent on fuel passing through the affected facility would be left with critical shortages, perhaps for a long time.

Billions of dollars would be required to respond to the medical crisis and cleanup right after an attack, many more to restore or decontaminate vital infrastructure and still more to re-stimulate the economy. Coupled with a collapse in tax revenues due to a plummeting economy, these costs would cause an already massive budget deficit to swell.

Billions of dollars of foreign capital inflows could quickly dry up. Federal Reserve Chairman Greenspan warned last year that the enormous amount of dollars held abroad — including 70% of all foreign central bank reserves — constitutes a "concentration risk." He noted that "a diminished appetite for adding to dollar balances must occur at some point." By increasing the budget deficit and producing economic turmoil, a new attack would elevate fears about holding US dollar assets, potentially triggering a sudden drop in capital inflows or an abrupt withdrawal of funds. That would cause the dollar to plummet and interest rates to skyrocket, further damaging an already traumatized economy.

RESPONSES TO THE ENERGY SECURITY CHALLENGE

In so far as remedies are concerned, there are a number of constructive proposals.

I was stuck by the recent report of the Energy Future Coalition that called for: the reduction of US and international dependence on oil; controlling the emissions from burning coal, oil, and natural gas that are affecting the global climate; and, extending access to modern energy services to developing countries to help them increase production and to create new markets for US energy products at the same time.

One very appealing area discussed in this report is that of providing to provide tax incentives to manufacturers and consumers to bring to the market vehicles with advance fuel saving technologies — for instance, extending the current tax law that allows businesses and individuals to claim up to $2,000 for hybrids and other clean fuel vehicles and the tax deduction of $4,000 for vehicles powered solely by electricity. These incentives are scheduled to be phased out by 2006. They should be extended. Large scale purchases by the Federal Government of hybrid vehicles would also make an important contribution.

The Coalition's ideas with respect to conversion of bio-mass to fuels and other products on a commercial scale deserve priority attention. So does acceleration of research and development for fuel cells and advancing the installation of infrastructure to support new transportation fuel technologies.

Everything should be on the table: Increased use of nuclear power, increased research funds for new fuel technologies, tax incentives to encourage the use of wind, hydro and solar power; incentives to increase the use of mass transportation in major population centers; methods to change car buying habits, including allowing energy efficient cars to use HOV lanes, giving them a discount on inspection fees while hiking the inspection fees for the most inefficient vehicles, or giving them a discount on EZ Pass or related billing technologies; avoidance of regulatory or tax incentives to purchase oil inefficient SUV's.

If we need a few numbers to underscore the need to advance at home and abroad the process of developing and utilizing clean and efficient autos and fuels, the following should provide it. *Wired* magazine recently wrote the following: "Right now, there are about 800,000 cars in active use. By 2050, as cars become ubiquitous in China and India, it'll be 3.25 billion. That increase represents an almost unimaginable threat to our environment...unless cleaner, less gas hungry vehicles become the norm." Even if *Wired*'s estimates are off by half, they point out a critical issue: a dramatic expansion of auto use will dramatically increase demand for gasoline and dramatically harm the environment – unless dramatic changes are made.

More broadly, we need to take a step back and assess the new international politics of oil due to the growing, and potentially fierce, competition for supply and the possible re-politicization of energy, e.g. the tendency for some counties to view oil — and the dependency of other nations on their oil — as a political lever or source of influence on their neighbors.

There are strong national security and national economic arguments for a more urgent drive to reduce oil dependence and to help other nations do likewise — as well as to ensure a more diversified flow of energy supplies and broadened conservation efforts around the world.

Mr. ISSA. Ambassador, I particularly thank you for alluding to a piece of legislation recently passed by the Congress with my name on it. The hybrid being allowed by States to be put into HOV lanes previously has been, as bizarrely as it seemed, mandated that you couldn't do it without Congress' consent rather than at least allowing the States that flexibility.

Mr. HORMATS. It's a far better solution than, for instance, a gasoline tax, because this really is something people want. If they can get into HOV lanes, it saves them a lot of time. It is a great idea, and I commend you for it as someone who would like to use it in New York.

Mr. ISSA. As an owner of two hybrids, I have also pledged not to use that newfound ability to go into those lanes. Just to be McCain-esque, you create it, but you don't dare use it yourself, or it will look politically opportunist.

Mr. Ebel, these gentlemen have all set a high mark for putting an awful lot of information in 10 minutes. It's a challenge.

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

Mr. EBEL. I understand, Mr. Chairman. I feel like the bases are loaded, I'm batting cleanup, and I'm supposed to hit a home run. So we'll see what happens.

Let me begin by noting that national security in today's context, national security and energy security are so closely intertwined that it's inconceivable we should consider them as separate issues.

First, what do we mean by national security? I would suggest that the best answer, at least in my judgment, was provided a number of years ago by the eminent American diplomat George Kennan, who offered perhaps the least complicated definition. National security means the continued ability of this country to pursue its internal life without serious interference.

Well, then what is meant by energy security? I think for the American consumer, and I suspect consumers everywhere, the answer is simple. He has only two concerns, price and availability. If the price is acceptable, and he can buy as much gasoline or as much fuel oil as he would like, then what is the problem, you might ask. Certainly the consumer cares little if at all as to where the oil he consumes comes from. Those are issues deferred to the wisdom of our government. But importing countries hold a different view from consumers. Policies adopted by importing countries stress security of supply through diversity of supply, through diversity among the kinds of fuels we consume and as well how the foreign oil and gas makes its way to our markets.

Oil-exporting countries, on the other hand, seek security of markets, as has been alluded to. Why should we invest in the expansion of our oil-producing capacity, they ask, if we are uncertain as to whether there will be a market for this new oil? So unfortunately, adherence to this philosophy can only ensure a continued tight market and price volatility.

Does diversity of supply provide the assurances we need, we seek? Not at all, because diversity of supply does not protect us from price volatility. We need to remind ourselves from time to

time that the United States does not stand in isolation from the world oil market. We are vulnerable, as are all exporting and importing countries, to any event, anywhere, any time that impacts on supply and demand. When the price of oil goes up, it goes up everywhere.

The question then arises what could we do, what should we do so as to be able to place our oil and our natural gas future back into our own hands? Well, we all know that last year was a year of surprises for the world oil sector, surprises that came because we sharply underestimated the growth in demand for oil in China, unexpected robust demand here at home. At the same time there are another group of other events, real or anticipated, that played out in a way that equally pressured oil supply. We had political uncertainties in Venezuela. We had civil war and strikes in Nigeria. We had the unfulfilled promise of Iraq. We had problems in Russia and possibility of terrorist acts in Saudi Arabia. Then along came a hurricane in the gulf coast, which took as much oil off the market as all these other supply factors combined. Additionally, we had to measure these factors against the disappearance of spare producing capacity worldwide.

Now, Mr. Chairman, what do all these factors have in common? Let me emphasize that these factors were and remain outside our control, and, with only minor exceptions, steps that might be taken to resolve them are essentially outside our control as well.

Every energy decision we make as individual consumers, every energy decision taken by our government has a tradeoff. These tradeoffs carry their own risks and costs. The public needs to understand that there is no energy option, and that includes renewable forms of energy, that can be described as risk or cost-free.

Do we ever stop to consider whether these costs and risks justify the actions we would take? We are now confronted by the real impact of NIMBY-ism, don't build it in my backyard. We have a shortage of essential energy infrastructure, with that shortage in its own way propping up current prices. Is this tradeoff acceptable? Is it in our national interests? If, for environmental reasons, we can not drill in geologically attractive but unexplored areas, what's the tradeoff?

Confronted with rising demand, we don't turn to demand management, we turn to imports. We find ourselves increasingly reliant on the ability and willingness of others to meet that rising demand. Our energy problem cannot be solved by concentrating just on the supply side; neither can successful resolution be secured by concentrating on efficiency, conservation and renewable forms of energy. What's the best means to achieve a secure and sustainable energy future? What policy options should we be looking at?

Specific demand management recommendations should be adopted, including the use of mandates, commercial incentives and joint government/industry cooperation and coordination. Change our consumption patterns, accelerate the development and application of new technologies promoting clean fuel, streamline permitting and siting regulations, and, last of all, educate the consumer.

What should be done to increase the availability of secure, affordable and environmentally benign domestic and foreign fuels? Accelerate technology development and make that technology available

worldwide. Encourage alternative and nonconventional energy forms and their integration into a comprehensive energy delivery system. Reassess the management and use of inventories, and employ international diplomacy as the tool supporting the preceding options.

Mr. Chairman, the question arises as to whether or not energy supply and demand should be managed differently than in the past as part of a larger effort to return to the consumer acceptable control over his energy future. A healthy economy supportive of a lifestyle that many have come not only to enjoy but to expect should reflect an energy supply that again is available, affordable, secure and environmentally benign.

Are these criteria beyond reach, or are they just beyond reach of current energy policy? If we do not respond appropriately to these challenges, we risk being confronted by a future that is increasingly uncertain and defined by factors beyond our control or influence.

Thank you, Mr. Chairman.

Mr. ISSA. Thank you, Mr. Ebel.

[The prepared statement of Mr. Ebel follows:]

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

"AMERICA'S ENERGY NEEDS AS OUR NATIONAL SECURITY POLICY"

APRIL 6, 2005

A Statement by

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Thank you, Mr. Chairman, for the opportunity to present my views on America's energy needs as our national security policy. My name is Robert Ebel, and I chair the energy program at the Center for Strategic and International Studies, a non-profit bipartisan public policy organization.

In today's context, national security and energy security are so closely intertwined that it is inconceivable we would consider them as separate issues.

First, what do we mean by national security? I would suggest that the best answer, at least in my judgment, was provided a number of years ago by the eminent American diplomat, George Kennan, who offered perhaps the least complicated definition: "(national security means) the continued ability of this country to pursue its internal life without serious interference."

What then is meant by energy security? For the American consumer and, I suspect, consumers everywhere, the answer is simple. He has only two concerns: price and availability. If the price is acceptable and he can purchase as much gasoline or fuel oil as he would like, then, what is the problem, he might ask. Certainly, the consumer cares little if at all as to where the oil he consumes comes from. Those are issues deferred to the wisdom of governments.

But importing governments hold a view that differs from consumers. Policies adopted by importing governments stress security of supply through diversity of supply, through diversity among the kinds of fuels we consume, and as well as how foreign oil and gas are delivered to our markets.

The energy commissioner of the European Union has indicated that he will place security of energy supply at the center of his efforts. He has noted that higher energy prices and the growing appetite for oil and gas from emerging economies presented a substantially changed situation compared with five years ago. The EU approach in the past has been to work to manage the risks associated with import dependency. Will that approach in turn be forced to change?

Oil exporting governments today seek security of markets. Why should we invest in expansion of our oil producing capacity, they ask, if we are uncertain as to whether there will be a market for any new oil. Adherence to this philosophy can only ensure a continued tight market and price volatility.

Does diversity of supply provide the assurances we seek? Not at all, because diversity of supply does not protect us from price volatility. Under today's circumstances, we are just as vulnerable, if not more so, to its effects.

We need remind ourselves from time to time that the United States does not stand in isolation from the world oil market. We are vulnerable, as are all oil exporting and importing countries, to any event, anywhere, anytime, that impacts on supply or demand.

When the price of oil goes up, it goes up everywhere. All consumers are hit, the poorer, importing developing countries the hardest. When prices decline, exporters everywhere are hit, again the developing exporting countries the hardest.

The question arises then, what could we do, what should we do, so as to be able to place our oil—and natural gas future—in our own hands?

2004—a Year of Surprises

The year 2004 was a year of surprises for the world oil sector. Surprises that came in the form of sharply underestimated oil demand growth in China, and unexpected robust demand in the United States. At the same time, a number of other events, real or anticipated, played out in a way that equally pressured oil supply.

The market of course reacts to real events that impact directly and immediately on supply and demand. And the market reacts equally to perceptions of an event that **might** take place, an event that would affect either supply or demand. It does not matter. It is perception followed by speculation.

Just what supply-related factors were in play in 2004?

- Political uncertainties in Venezuela,
- Civil war and strikes in Nigeria,
- The unfulfilled promise of Iraq,
- Problems in Russia, and
- Terrorist acts in Saudi Arabia.

Then, along came a hurricane in the Gulf of Mexico, taking as much oil off the market as all supply-related factors combined.

Yet, not all these factors led to reduced supply. For example, oil exports from Russia and Saudi Arabia continued to increase.

Indeed, it was our judgment that world oil production had been sufficient to meet world oil demand, but only barely. Rather, it was the fear—the "fear factor" we all talked about—that something might happen to disturb the tenuous balance between oil supply and demand that helped move prices above and beyond what the market fundamentals would seem to indicate.

Additionally, those factors just referenced had to be weighed against:

- The disappearance of spare producing capacity worldwide,
- Infrastructure limitations, and the need to protect that infrastructure against terrorist acts,
- Cutbacks in oil exploration and development expenditures by the international oil companies,
- Oil reserve writeoffs,
- Minimal working inventories, and
- Market influences attributable to speculators.

Now, what do all these factors have in common? Let me strongly emphasize that these factors were, and remain, outside our control and, with only minor exception, steps that might be taken to resolve them are essentially outside our control as well.

Maintaining working inventories is costly, and companies have adopted the "just-in-time" approach to satisfying consumer demand. This approach is acceptable if nothing intrudes to disrupt supplies or to spike demand. But a pipeline break, a refinery fire, a cold wave—are the kinds of incidents that upset the just-in-time approach and lead to short-term supply shortages and price spikes.

The loss of spare producing capacity has been particularly damaging. Spare producing capacity can be called upon to meet unexpected growth in demand or to cover supply interruptions, manmade or otherwise. Today, most of the worldwide spare producing capacity is in the hands of Saudi Arabia, and even here that measure has fallen to not much more than 1.5 to 2 million barrels of oil daily. To put that volume in proper perspective, this year the world will consume about 84 million barrels of oil every day.

I know of no nation, other than Saudi Arabia, that sets out to deliberately develop spare producing capacity. For most exporters, spare producing capacity is a frozen asset, not providing a return on investment.

But Saudi Arabia does not invest to develop spare producing capacity out of the goodness of its heart. No, its spare producing capacity is there to further the country's national interests, to support its political and financial goals.

Tradeoffs

Every energy decision we make as individual consumers, every energy-related decision taken by our government, has a tradeoff, sometimes knowingly, sometimes not. These tradeoffs carry their own costs and risks. The public needs to understand that there is no energy option, and that includes renewable forms of energy, that can be described as being risk or cost-free.

Do we ever stop to consider whether these costs and risks justify actions taken?

Successful NIMBYism may impose a feel-good mantle on those who come together to block the construction of an energy-related project, whether it be a nuclear power plant, onshore or offshore drilling, a new pipeline or a new power transmission line.

But we are now confronted with the real impact of NIMBYism: a shortage of essential energy infrastructure, with that shortage in its own way propping up current prices. Is this tradeoff acceptable, is it in our national interests?
If for environmental reasons we cannot drill in geologically attractive but unexplored areas, what is the tradeoff? Confronted with rising demand, we do not turn to demand management. No, we turn to imports. We find ourselves increasingly reliant on the ability and willingness of others to meet that rising demand.

Population and prosperity are among the key drivers of oil demand. World population increases annually, more automobiles show up on the roads annually. In the U.S. alone there are some 240 million motor vehicles on the road, supported by 170,000 retail service stations. Miles driven, for business and pleasure, reflect the state of our economy, the state of our mind.

As we pass these 170,000 service stations, what do we see? The latest price in tall, bold numbers, and that does have a strong psychological impact on the consumer. I know of no other essential commodity where the daily price is posted so visibly, and at so many sites. There is no escape.

What is This "New Game?"

As the year 2004 unfolded we noted the appearance of a new "oil game," centered on access to oil supplies. Access drives private and national oil company investment programs alike. Both prowl the world in search of deals that offer the opportunity to replace volumes presently marketed and to provide volumes to meet anticipated future requirements.

But, can private companies compete under circumstances where the playing field is not level? National oil companies, such as those of China and India, can and do strike deals with host governments that often involve political commitments, sometimes hidden, sometimes not, and that adds a worrisome element.

Competition should lead to a more rapid development of new oil supplies. Unfortunately, competition for oil likely will also lead to higher prices, as host governments play one potential investor off against another, thus raising entry stakes.

A Changing Oil Game?

When the sustainability of growing demand and conventional supply is measured against the background of worsening environmental conditions and changing geopolitics, the perception emerges, however slowly, that the global oil game itself may well be changing and that the consumer fuels market could be preparing for an evolution.

Why the particular emphasis today on access? OPEC, owners of the bulk of world oil reserves, may well move cautiously in the years ahead, developing new producing capacity only in line with their own contentious view of future market requirements, thus likely creating conditions for an oil supply-demand balance that continually supports a high oil price structure.

The oil and gas world of 2005 is very much different from that of 2000. Can we successfully meet this challenge?

Canada

Canada is the leading foreign supplier of oil to the U.S. market, having provided one-sixth of oil imports oil last year, as well as one-sixth of the natural gas the U.S. consumed. But, production of conventional crude oil in Canada is declining. The oil future of Canada rests with

development of its oil sands. Yet this development requires considerable volumes of natural gas, and this requirement in turn reduces exportable surpluses.

The unrivaled potential of the Canadian oil sands not surprisingly has attracted the attention of China, now roaming the world in search of oil to meet its continually growing appetite. Should the U.S. be concerned that a portion of future supply might head west, instead of east?

As the U.S. contemplates the prospect of reduced oil and gas supplies from Canada, what to do? The present approach, knowing that much of the remaining U.S. gas potential is out-of-bounds, centers on seeking imports from other suppliers, with natural gas to be imported in the form of LNG. In other words, solve the problem by expanding import reliance.

An Alternative Approach

Our energy problem cannot be solved by concentrating just on the supply side. Neither can successful resolution be secured if we instead concentrate on efficiency, conservation, and renewable forms of energy. What is the best means to achieve a secure and sustainable energy future? What specific policy options have the best chance for achieving this objective?

Specific demand management recommendations should be adopted, including the use of mandates, commercial incentives, and joint government-industry cooperation and coordination.

- Change consumption patterns,
- Accelerate development and application of new technologies promoting clean fuels,
- Streamline permitting and siting regulations, and
- Educate the consumer.

What should be done that would enhance the availability of secure, affordable and environmentally benign domestic and foreign fuels? Having already addressed the issue of access, what policies should be encouraged?

- Accelerate technology development and sharing that would lead to enhanced recovery and cleaner energy use worldwide,
- Encourage alternative and nonconventional energy forms and their integration into a comprehensive energy delivery system,
- Reassess the management and use of inventories, and
- Employ international diplomacy as a tool supporting the preceding options.

Finally, the United States has a unique opportunity to re-engage in the global climate issue, an opportunity that should not be missed.

Concluding Remarks

The events of the past year and the first months of 2005 have once again focused attention on the critical role that energy plays in the global economy. Given this role, the question then arises as to whether or not energy supply and demand should be managed differently than in the past, as

part of a larger effort to return to the consumer acceptable control over his energy future. A healthy economy, supportive of a life style that many have come not only to enjoy, but to expect, should reflect an energy supply that at once is available, affordable, secure, and environmentally benign. Are these criteria beyond reach, or are they just beyond reach of current energy policy?

Our world of energy is changing, and moving in a direction that further complicates the tasks that lie ahead. If we do not respond appropriately to these challenges, we risk being confronted by a future that is increasingly uncertain and defined by factors beyond our control or influence.

During the next twenty years, most forecasts predict that the world will be relying on the same forms of energy that fueled developments of the past century—oil, natural gas, coal, and nuclear power, plus a broad grouping of renewables.

But, against this constancy, just what key changes lie ahead?

- Dramatic change is projected in the geography of demand for energy, as the Asia-Pacific region alone is to account for 40 percent of the total world demand increase out to the year 2025.

- Fully one-half the world consumption of oil is dedicated to transportation uses. Unless and until acceptable fuel substitutes become available to the transportation sector, the prospect for any meaningful reduction in energy demand is limited. It is the *absence of prospect for change* that is the key.

- The United States and Europe, and indeed the industrialized world, in the coming years will find themselves increasingly dependent on imported oil and natural gas. But where will these imports come from? The developing world, where a rising dependency cannot be seen as acceptable in terms of national interests.

- The emergence of new diplomatic regional and international commercial alliances may mark the beginnings of a "new game" in the geopolitics of oil. This new game could devolve into competition for supplies, a competition that favors national oil companies, to the detriment of others.

In sum, I have described a future that would seem to lie beyond our control, a future that rests in the hands of others. What will it take to wrest that control away?

It will take nothing more than the political will of consumers and their government to accept actions and programs that have meaning on both the supply and demand sides of the equation. But we seem to have lost that political will.

Where is this political will, where has it gone, and how might we get it back?

Mr. Chairman, I ask your permission to submit my written testimony for the record.

I thank you, Mr. Chairman and members of your subcommittee, for your attention and I would be pleased to answer any questions you may have.

Mr. ISSA. We have done a wonderful job of getting a lot of testimony in a short period of time. I will lead off by setting a good example for my colleagues. I am going to limit myself to just one question that I think I heard again and again in one way or the other from each of you, and I just want a confirmation and as short as possible of what I think I heard, which was that there is no one solution, it has to be multiple energy sources, and it has to be multiple efforts at conservation. Included in that, I believe there was a pretty universal statement that attacking the oil problem is going to require perhaps not the old CAFE approach, but a new CAFE approach, one that has incentives and perhaps even funding to help us use less oil in our primary area of using it, which, of course, is internal combustion engines that move things down the road. Can I get a confirmation that there is no disagreement with this panel on that?

Thank you. Mr. Secretary.

Mr. SELL. Mr. Chairman, I think you have summarized well the testimony that we gave; and I concur in your conclusions, specifically on CAFE.

One of the recommendations of the President's national energy policy was we requested of the Congress in fact more flexibility in order to set policies and increase fleet efficiency. We did increase the standard as it related to light trucks about a year ago or perhaps 2 years ago. But, as you are well aware, the politics in the Congress have severely restricted the ability to do anything on passenger vehicles or to move to a more flexible approach on CAFE standards. We would like to have that flexibility, and I think a new approach would be helpful in that regard.

Mr. ISSA. Thank you.

Mr. Director.

Mr. WOOLSEY. Mr. Chairman, yes. The Commission supports flexible CAFE standards in the sense of being—manufacturers being able to trade credits among different types of vehicles and among one another, much more flexible than the current standards. And, as I mentioned, this feature of a safety valve would mean that if one, say, set at slightly more than $55, which is the penalty that is required today for a vehicle, when a manufacturer has a fleet that exceeds the CAFE standards or doesn't meet the CAFE standards, it is—1 mile per gallon per vehicle is $55. If you take that or something slightly more as a transferrable fee, then we in the Commission would set a ceiling, let us say $60 per mile per gallon per vehicle.

So, in the first instance, if Maserati wanted to exceed in the aggregate the CAFE standards, they could go to Toyota, which is not exceeding the CAFE standards, and buy credit. But to get new credits Maserati would never have to pay more than $60 from the government.

That feature of a safety valve, which we also have with respect to carbon emissions in the electricity part of our report, we believe offers an opportunity for consumers, for corporations, for labor to all come together and say we don't have to guess exactly what the cost is going to be to get mileage improvements. We may be right. We may be wrong. If we are on the low side, then there is one consequence. If we are on the high side, there is another. But, in any

case, it is never going to cost the manufacturer more than X dollars to get new credits from the government. And with all of that flexibility we were able to come together—corporation representatives, labor representatives, environmentalists representatives, odd ducks like me—on a single report.

Mr. ISSA. Thank you.

Mr. HORMATS. Yes. I am not an expert in this area, but I did read Jim's Commission's report, and it did strike me as a reasonable consensus. And I think that is the interesting point about it. As Jim pointed out, it is very hard—it has been traditionally very hard to get agreement up here on this; and I think if you have all these various elements who have an interest in reaching agreement, that is really an important step forward. And I find myself as, again, not an expert on it but someone who is impressed with the fact that they were able to get this broad-based consensus, which is what is desperately needed to get anything moving in this area.

Mr. EBEL. Mr. Chairman, this country consumes about 9 million barrels of gasoline every day out of a world total of oil consumption of 80 million barrels of oil a day. If we are going to do something about the oil problem in the United States, it has to begin with the internal combustion engine. We have had some ideas placed on the table this afternoon which work in that direction, but I think they need a little push, a little shove down the road.

I had the opportunity Friday to drive a fuel cell car manufactured by a Japanese company. I won't say which one it was. It was not Toyota. It was Honda.

Mr. ISSA. I am glad you didn't say who it was.

Mr. EBEL. It slipped. It is a 2005 model. I checked the tailpipe. Water was coming out of the tailpipe. You couldn't hear the motor. Acceleration was great. And I asked the engineer, what is the cost of this car? It was a million and a half dollars. When do you expect mass production; 15 to 20 years. So we have to find something between now and then if the then is the hydrogen fuel cell.

Thank you.

Mr. ISSA. Thank you.

With that, I would yield to the ranking member, Mr. Higgins, for his questions.

Mr. HIGGINS. I have no questions. Thank you.

Mr. ISSA. How about the gentleman from Texas?

Mr. MARCHANT. Thank you very much. It is pretty unusual to have a panel before you that two people on the panel have degrees from Texas Tech.

Mr. ISSA. It is not unusual to note it, though, is it?

Mr. MARCHANT. It is good to see you. Just a couple comments.

Just recently in our Dallas Morning News we had—one of our respected personal financial analysts had basically wrote a story that discouraged anyone from buying a hybrid because he did this calculation of the cost for the hybrid and then the cost of the savings in miles per gallon and then basically came to the conclusion that, you know, no one really should buy one because of that.

The interesting part of the testimony today is the part that I have never seen interjected, and that is the cost, the low cost of the electricity that you can achieve there. I never see that in any of the

calculations, and I think that is an interesting fact that needs to be in the public domain.

Mr. WOOLSEY. Congressman, a standard hybrid such as the Prius that I drive gets about 50 miles per gallon. Of course, it switches back and forth, just like the chairman's hybrids, between gasoline and electric power; and it charges the battery as it decelerates. And it depends. That financial analyst must not have been thinking at all about bin Laden or the Middle East or any of that. Because if he assumes a perfect market in oil that nobody is going to interfere with, then there may be something to the proposition that the added couple thousand dollars cost of a hybrid to 3,000 is not worth it.

But there are some answers. One is what you referred to, which is adding this plug-in feature so that one can use grid electricity for short trips and thereby, instead of a 50 mile a gallon car, you have a 100 mile a gallon or more car, at least as far as petroleum fuel is concerned. And the electricity that you are getting off the grid is 12 to 25, maximum probably 50 cent per gallon gasoline equivalent. So that ability to have a plug-in feature seems to me to be right at the heart of the attractiveness of hybrids.

Now there are complexities here. The nickel metal hydride batteries, it wears batteries down a bit to charge them and so one probably needs a few more batteries in the vehicle. That would increase the cost. So some of the home tinkerers who are turning their hybrids into plug-in hybrids may be doing something that makes their warranty not as good, for example.

But these are relatively small technical problems to overcome, even moving to advanced lithium batteries, compared to the extraordinary requirements of moving to something like hydrogen fuel cells which, you know, as was said up here a minute ago, is going to take many, many times a reduction in cost more than just a couple or $3,000. We are talking about going from $1 million more a car to something affordable. And I think that we have a chance here with advanced diesels, which soon will be able to meet our Tier 2 standards that came in 2004.

Europe is very heavily into diesels now, and we are somewhat more demanding on particulate emission standards than Europe. But the new diesels are very close to meeting our new standards. New diesels and hybrids, including hybrids with a plug-in feature, if incentivized by government policies seem to me to be just a natural.

In Texas, the Austin utility, which is owned by the city of Austin, has taken the lead in going around to other city-owned utilities around the country and started going to the Big Three in Detroit and saying we, the utilities, will give a $1,000 credit for the purchase of a plug-in hybrid because we want to be able to sell power at night when we need to sell it, off peak power, and we would be delighted to give everybody who buys a plug-in hybrid $1,000. You are a third of the way toward the consumers' credit that you need right there from utilities.

Mr. HORMATS. Can I just add a couple points?

One, there is an additional advantage to the hybrid; and that is, because you get so many more miles to the gallon, you don't have to stop and fill up as much. So there is a time advantage.

Second, an analyst who comes to that conclusion misses a broader point, and that is we have a structural supply demand imbalance. So oil prices are going to stay high for quite some time. If you thought perhaps the price was going to come down to $15 or $10, then maybe—but I didn't see the article, so maybe the economics works. But if you think oil prices, as I do and as the market does, thinks oil prices are going to remain very high for a period of time and may get higher and are subject to a lot of disruption, then it does seem to me you want to have a car that is very efficient and you can get more miles to the gallon when you fill your tank up.

And the third, to the extent there is some price discrepancy, as this person pointed out, that is why you do things like open up the HOV lanes or make it cheaper to buy E-ZPass membership if you have an energy efficient car or do things like a lower registration fee for energy efficient cars and a higher one for less efficient cars.

So there are things that can be done to give these cars at least a temporary incentive. Once the volume begins to pick up, the price will come down, as for everything. And we have seen that. So there is room for public policy here to help the transitional process along.

Mr. MARCHANT. Thank you, Mr. Chairman.

Mr. ISSA. Well, you guys may get off really, really easily here. But I do have a second round, a couple of questions.

One of them that I kind of warned about ahead of time with the Secretary—and Ambassador I don't think I gave you a full heads up, but it was covered in your testimony—the windfall profits history, the 1979 to 1988 period. Oddly enough, your graph on page 9 shows that the peak of R&D was almost exactly when we put in the windfall profits tax, and from there it dropped precipitously.

Mr. SELL. Correct.

Mr. ISSA. I am concerned, and Mr. Kucinich unfortunately was not able to stay, but he alluded to his legislation from the previous Congress that he plans on reintroducing, which would enact a windfall profits tax. So I think it is fair on his behalf and on mine to bring up the subject and say, what is the history of the windfall profits tax of 1979? And if not a windfall profit like that one, then since you have all alluded to incentives and each of you has come up with ideas and some positive ones, what do we do to ensure at this high level, one in which $8 a barrel oil is being taken out of the ground and being sold at $56 a barrel, what do we do to ensure that production rises so that, if that is not the correct supply, demand, that we reach that correct supply, demand equilibrium at some time in the future? In any order.

Mr. SELL. Mr. Chairman, I do appreciate the early warning on the question.

I think in the way you asked the question lies the answer: We should ask about the windfall profits tax, would it help, would it help the situation, the problems that have been described here today. And the view of the administration is it would not help. We believe in the power of competitive markets. It is incumbent upon the government to ensure the marketplace works. We think market forces, when working properly, determine an appropriate profit; and so a profit tax we think is anti-competitive and therefore bad for the consumer. I do believe that $58 oil is a sufficient incentive

for dramatic increases in production, and I think we will see that materialize over time.

One situation that we have gotten into over the last decade is it now takes much longer for new reserves to be developed than it did in the past. In the past, you could typically count on a 2 or 3-year cycle, and now it is as long as 5 or 10 years to bring a new production on line. But today's prices do incentivize that.

On the domestic side, there are additional things we can do. We can open up new areas to access, and we can also streamline the permitting process. And, in some cases, we have increased royalty benefits due to producers in portions of the Gulf of Mexico. So there are some things that we can do on the domestic side, but the administration does not believe a windfall profits tax is an appropriate policy.

Mr. HORMATS. I find myself very much in agreement with Secretary Sell on this. I do not think a windfall profits tax is appropriate. It is—the point that you raised in this chart demonstrates is that it really—I am not sure what the goal of it would be. The goal of American policy should be to increase production and not to impose incentives that takes money away from producers, it seems to me.

I actually have just been finishing up a book on how we financed America's wars in the past, from revolution on, and during World War I and World War II we did have excess profits taxes. We were in war situations then where people were making money from munitions, so there was a feeling of public—that fairness would require you to take some of that money away because there was sort of a windfall as a result of that. It wasn't a very effective way of doing it, but it looked like it would satisfy public opinion.

In this case, it seems to me it is a bad kind of signal to send. The objective—and Secretary Sell put it very well. The goal is to have them utilize their profits to produce more energy, not just gasoline, not just hydrocarbon fuels, but a whole range of other fuels. And I would make a couple points.

One, I mentioned in Canada you have the oil sands. In Alaska you have a whole slew of potential production areas in the north slope. You have Wyoming, the Green River Valley. Plus, and I think it is another element to touch on here, and that is abroad there are a lot of opportunities.

One of the goals should be to increase production here across the board in various kinds of new and old sources but also to help diversify global production of energy. That means, I think, working with groups like the World Bank and other institutions to improve the investment environment in a wide range of countries that have the capability of supplying more oil but don't because either their investment environment is so adverse to people who want to put money in they don't have proper regulations, they don't have proper transparency, the state controls too large a portion of their oil infrastructure. So it should be a global and a domestic process as well. The more diversification in oil supplies the better, because it is a global market. And none of these things would be advantaged by an excess profits tax.

Mr. EBEL. The Ambassador raised a very important point. A major problem facing the international oil companies today is ac-

cess. Where do you go to find the new oil you need to offset the oil you produced last year? Where do you go? West Africa? Venezuela? Iran? Iraq? Libya? Russia? Azerbaijan? Karzakstan?

You can't really go into the Persian Gulf because those resources are held by the national oil companies. In fact, over 70 percent of all the oil reserves are in the hands of national oil companies, and they are going to develop them themselves at the pace that they decide upon. They are going to be responding to market developments. They are not going to be ahead of the market.

And what does that tell us? That we are going to have some difficult times ahead, unless you would have a collapse in the Chinese economy or the Indian economy or even here at home. That is the only way you are going to get a short-term decline in prices, is on the demand side.

Mr. ISSA. Oddly enough, we were having that discussion before the committee hearing. There is an obvious way that we will get that: If the U.S. economy collapses, then China's economy will collapse. So we have that to look forward to. It is not what I am hoping for.

I am not here to give testimony, but uniquely—although, by the way, I also am a Clevelander by birth, so I have managed to be at two electrical power dropouts, the Cleveland side of me, where my family called and said, you know, is this a California curse you have bestowed on us, when it happened. And, of course, being from California, I have seen what happens when you don't have excess capacity.

One of my questions, I am very interested in what I like to call mineral energy, which people always ask what it is and I say, well, it is nuclear. But it is a mineral, after all. It usually gets a laugh, not in such a serious situation.

But we don't have the diversity of one of the No. 1 ways of forming electricity. It is not 2 cent electricity, but it is not too far from it if we do it right. There are no new license requests. There is no next generation of nuclear power. I have been to companies, I have seen their proposals for the next generation, but nobody is funding it. We are not putting a new nuclear power plant on line. We are not even putting a decent-size research operation on line just to test the true proof of concept of, can they produce clean electrical energy with very reduced byproducts. And I am particularly sensitive to that since I sit on the other subcommittee that yesterday dealt with the Yucca Mountain and that stalled process.

So even though this hearing has concentrated a great deal on petroleum, I think it is pretty obvious that not addressing nuclear guarantees that we will be addressing some hydrocarbon. And, you know, in California we have switched to almost all natural gas. As a result, natural gas will be the subject of another hearing that we will talk about how are we going to get natural gas. And places like Qatar and so on today would love to supply it to us, but what if that supply gets cutoff?

If any of you want to deal with—I see you do.

Mr. WOOLSEY. I will try to say a quick word about nuclear power.

Our Commission report advocated resuming substantial research and development and work on nuclear power for electricity precisely because of its cleanliness and the fact that it doesn't put

global warming gasses into the atmosphere. One does have a fuel disposal issue, which is a substantial problem that has to be dealt with.

But I wanted to also note that we also focused on some of the new clean gasification technologies for coal, integrated gasification combined cycle. I think there are about eight plants in the world now that use that, and one or two others. The advantages there are with some new types of coal gasification, the CO2 comes off at a different temperature than the combustion; and that means the carbon is easy—relatively easy to capture. Once the cost of sequestration in geological formations is affordable and one can be assured that it works, then those several types—not all, but those several types of new coal gasification technologies are also not only clean but also can be made into something that sequesters carbon. So, in a sense, they become as desirable in most ways as nuclear, solar, wind, etc. So both nuclear and the new coal gasification technologies were very favorably regarded by the Commission.

Mr. EBEL. Let me make two points on nuclear. One is that the United States gets about 20 percent of its electric power from nuclear power stations. Fifty percent of the fuel burned in those nuclear power stations comes from Russia. Now why in the world would we put ourselves in a position of depending upon Russia for such a vulnerable situation?

That brings to my point that I raise in my testimony on tradeoffs. There is a tradeoff here, and the tradeoff is that we decommission nuclear warheads in Russia and use the fuel for our nuclear power plants; and, to date, I think well over 8,000 nuclear warheads have been decommissioned. So when you tell this to the American audience and you say is that kind of tradeoff in our national interest, the answer is yes.

The second point——

Mr. ISSA. So you are advocating that we develop the next generation and take those warheads and turn them into energy?

Mr. EBEL. Absolutely. Well, the goal is to take out 12,000, I believe. We are moving toward that goal.

The second point is, Mr. Chairman, if you were addressing an American audience anywhere in the United States, I think you could get agreement that nuclear power is the only nonpolluting form of primary energy that we have. I think all the hands would go up and say, yes, we support it. And then you would say, that is good, because the reason I am here is to find a site for a new nuclear power plant, and I found one about 15 miles down the road. Now, can I have your permission to build it? Of course not. So it is a siting, permitting problem that we face, not only just the disposal of the spent fuel.

Mr. HORMATS. That is exactly the problem. Unfortunately, no one wants it near them. I do think nuclear—the technology has come a long way.

The issue you get in addition to the disposal issue and the citing issue is the terrorism issue. As Congressman Higgins will know, we near New York City have had a constant running battle about a particular nuclear power plant in which the people around want to get closed and occasionally picket. It hasn't been closed, and basically it has passed the safety tests, but it is a controversial issue

because of the concern that after September 11 someone is going to run a big airplane into it and blow it up.

In addition to dealing with all the other issues, you have to make sure that these are hard and to the point where there is no question about vulnerability, that they are invulnerable to attack; and this adds yet another threshold that makes it more difficult and adds to the not-in-my-backyard question.

I would just like to segue from that to another issue, just to touch on for a moment, because we have alluded to it very briefly, but it is a similar issue, and that is LNG imports, which are an opportunity for the United States. And there is a more diversified—there are a lot of additional suppliers of LNG around the world. It is one more part of a sound diversification strategy.

We have four import terminals now. There is an opportunity—you will see from this map there are four little red dots, and all these yellow dots essentially are potential places where you can put it up. But the same problem occurs: one, people don't want it near where they live; and, two, there is a risk that some people perceive that someone could blow it up. And the siting issue in many of these things, where it is good for the country, the region that is given the opportunity, shall we say, to have it doesn't really want to take advantage of that opportunity and fears putting it near where they live.

Mr. ISSA. We have done a good job here. I am going to make my closing statement, which is I have the San Onofrie nuclear power plant in my district. I had approximately 80 percent in my district in a poll respond that they would support additional reactors at that existing site. So perhaps the NIMBYism comes when you are asking for a new site more than when you have an existing site with a good record.

You are going to waive? OK. Having no other questions except all of those we will followup with you endlessly, I want to thank the panel for being here. I want to thank the majority and minority staff for not only arranging such a great panel to be here but, in all candor, suggesting a lot of good questions, and we got through some of them.

I hope that you will accept our next invitation. This is not a subject on which we are going to have one hearing and move on. This is one that we want to stick with until it is resolved to a bipartisan conclusion.

With that, this meeting is adjourned.

[Whereupon, at 3:30 p.m., the subcommittee was adjourned.]

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

Statement for the Record of
Rep. Diane E. Watson - Ranking Member
Subcommittee on Energy and Natural Resources
Hearing on
America's Energy Needs as Our National Security Policy

April 6, 2005

Mr. Chairman, thank you for convening today's hearing. I commend your timeliness on this issue pertaining to energy policy. I understand that the House is expected to vote on the current energy bill shortly. Information developed by this Subcommittee ought to be taken into consideration in evaluating that bill. This hearing explicitly highlights the link between America's energy policy and national security.

Energy is essential to the American lifestyle. The United States has only 2 percent of the world's oil reserves, but accounts for 25 percent of the world's energy demand. Of the global supply, we consume 43 percent of motor gasoline, 25 percent of crude petroleum, 25 percent of natural gas, and 26 percent of electricity. Currently, American demand for all of these commodities is rising dramatically.

On the production side of the issue, the generation and delivery of energy is a serious challenge. Procurement of energy is a challenge of engineering, a challenge of planning, and a challenge that evokes the most serious aspects of our foreign policy. Moreover, energy is a key factor in the environmental challenges we face in modern America and the world. Reliance on fossil fuels causes serious air and water pollution, and it is the source of constant pressure to exploit our last precious wild lands. As the petroleum demand intensifies, Americans will remain exposed to the environmental costs and the harmful public health impacts associated with dependence on oil.

On the demand side of the issue, energy markets are increasingly global, and international competition for energy resources has long contributed to international armed conflicts. More specifically, America's dependence of oil makes us economically vulnerable to terrorist attacks on oil supplies, forces us to transfer vast funds to nations that may be hostile to the United States, and requires huge ongoing military expenditures to protect our supplies.

In addition to oil dependence, global warming is occurring today, and the consensus of the worldwide scientific community is that it will accelerate during the 21st Century. Global warming, and our related energy policies, also raise national security concerns.

One such concern is the prospect of international destabilization caused by the consequences of global warming, such as the loss of land area or loss of water resources. Additionally, a research paper prepared for the Pentagon in 2003 addressed the national security implications of abrupt climate change, which could impose even more severe costs and disruptions than are generally projected for gradual climate change. Furthermore, the United States' position on climate change has proved diplomatically costly, as it has strained relations with traditional allies over the past few years.

Mr. Chairman, as I stated in our first hearing a few weeks ago, in this Congress, we have a chance to start again. We can build a bipartisan consensus on energy policy and steer our country through the challenges we face. We know it can be done. The National Commission on Energy Policy brought together business and labor, Republican and Democrat and developed an approach that they agreed could work. We can do the same, and I truly hope we decide to.

Mr. Chairman, thank you for convening today's hearing. I look forward to hearing the witnesses' testimony.

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