Statement of the Honorable Kyle McSlarrow

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Global Energy Security

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Thank you, Mr. Chairman. I am pleased to appear before you today to discuss the important role that energy plays in the global economy and the Administration's efforts to enhance our energy security.

Introduction

Over the past century, we have witnessed the power of energy to drive economic development and sustain progress. On the other hand, since the 1970s we have learned firsthand how energy shortages and the high prices that result can compromise economic growth and the quality of life to which Americans have grown accustomed.

As energy markets become more integrated, U.S. energy security has become integrally linked to developments around the world. The U.S. is the largest single energy market in the world. As a result, U.S. energy policy plays an important role in maintaining global energy security.

From our first days of the Bush Administration, we knew that the United States faced an energy crisis long in the making. In addition to the California electricity crisis, you will recall that consumers faced unparalleled increases in natural gas and gasoline prices.

That is why President Bush so quickly directed the completion of a comprehensive and balanced national energy policy.

II. Energy Outlook

What was true in the beginning of 2001 is still true: we have a series of long-term energy challenges that require action now. These challenges are present along the entire energy continuum, and affect the environment and economy, the generation and transmission of electricity, and commodities ranging from crude oil and its associated products to natural gas.

These challenges can be summarized by one phrase: energy security. To be more specific, the United States is increasingly dependent on foreign oil and may not be far from the point at which we no longer can assume a domestic-or even a North American-supply of natural gas that fully meets demand.

Thus, before I address some of the policy issues before this committee and Congress, it is worth analyzing the premise of growing dependence on foreign energy. I

will use the analysis presented by the Department of Energy's independent analytical arm, the Energy Information Administration, in its Annual Energy Outlook 2003 (AEO 2003), and will confine this brief review to petroleum specifically and total energy supply and demand.

A. Petroleum Trends

The historical record shows substantial variability in world oil prices, and there is similar uncertainty about future prices. Three *AEO2003* cases with different price paths allow an assessment of alternative views on the course of future oil prices. The three price cases are based on alternative assumptions about OPEC oil production levels, primarily from the Persian Gulf: lower output in the high price case and higher output in the low price case. However, with its vast store of readily accessible oil reserves, OPEC is expected to be the principal source of marginal supply to meet demand increases in all scenarios.

By 2025, OPEC production is projected to be 61 million barrels per day (more than twice its 2001 level) for the "Reference" case. Based on growth in world oil demand of about 2.0 percent annually, projected prices in real 2001 dollars reach about $27 per barrel in 2025. In nominal dollars, the reference case price is expected to exceed $48 per barrel in 2025.

In the high world oil price case, OPEC production is assumed to only increase to 46 million barrels per day by 2025 (about 25 percent less than the reference case) and prices rise by about 3 percent per year from 2001 to 2015. Prices remain at about $33 per barrel (in real 2001 dollars) after 2015 as market penetration of alternative energy supplies become economically viable at the higher price and cap oil prices.

In the "low world oil price" case, with assumed greater expansion of OPEC production to 71 million barrels per day by 2025 (about 15 percent greater than the reference case), prices are projected to decline from their high in 2003, reaching $19 a barrel by 2010 (in real 2001 dollars), and remain at that level to 2025.

U.S. petroleum consumption varies, not only with oil prices, but the level of economic growth. While projected U.S. petroleum consumption varies with the projected price of crude oil, from 28.2 million barrels per day in the high world oil price case to 30.2 million barrels per day in the low world oil price case in 2025, the largest variation is with different assumptions about the rate of economic growth. Total petroleum consumption in 2025 ranges from 26.9 million to 31.8 million barrels per day in the low and high economic growth cases, respectively.

In the reference case, gross domestic product is expected to increase by 3.0 percent per year between 2001 and 2025. In the high economic growth case, GDP grows at a faster 3.5 percent per year and in the low economic growth case at a slower 2.5

percent per year. However, while petroleum consumption varies with each scenario, it increases in all cases from today's level.

In 2001, net imports of petroleum accounted for 55 percent of domestic petroleum consumption. Dependence on petroleum imports is projected to grow in the reference case, reaching 68 percent in 2025. The corresponding import shares of total consumption in 2025 are expected to be 65 percent in the high world oil price case and 70 percent in the low world oil price case.

The growth in the share of petroleum accounted for by imports has received little notice in recent years. Expenditures on petroleum as a share of GDP have fallen from a peak of 9 percent in 1980 to only 3 percent today. The OPEC share of U.S. petroleum imports has fallen from a peak of 70 percent in 1977 to 40 percent in 2002. More importantly, the share of U.S. petroleum imports originating from the Persian Gulf is about 20 percent today versus a peak of 28 percent in the late 1970s.

However, as the marginal source of supply, OPEC and, ultimately, the Persian Gulf producers are expected to become increasingly important for future supplies to the United States and the world. By 2025, 53 percent of U.S. petroleum supply is expected to come from OPEC, including 26 percent from the Persian Gulf.

Although crude oil is expected to continue as the major component of petroleum imports, refined products are projected to represent a growing share. Growth in domestic

U.S. refinery capacity is expected to remain constrained by regulations and economics. While total capacity is projected to grow by 3 million barrels per day between 2001 and 2025, all of the growth is at existing refineries. No new facilities are expected to be built over the forecast period.

Growth in total U.S. petroleum demand in the reference case, from 20 million barrels per day in 2001 to over 29 million barrels per day by 2025, is projected to outstrip U.S. refinery capacity. As a result, refined petroleum products are projected to account for a growing portion of total net petroleum imports, reaching 34 percent of total net imports by 2025 (6.7 million barrels per day) in the reference case, up from a 15 percent share of total imports in 2001 (1.6 million barrels per day).

This means that the U.S. will increasingly rely on foreign refinery investors to provide not just the volume of petroleum product needed by U.S. markets but products that meet the required characteristics (e.g., sulfur content, octane levels, etc.) of the U.S. supply slate. This decreases the flexibility and direct control that U.S. policymakers have in dealing with petroleum supply issues.

B. Total Energy Trends

Another way to analyze our energy picture is to look at our total energy consumption and balance it against our total energy production.

Total U.S. primary energy consumption is projected to increase from 97 quadrillion Btu in 2001 to 139 quadrillion Btu by 2025 in the reference case, 1.5 percent per year. It is important to note that the reference case already assumes continued improvement in energy consuming and producing technologies, consistent with historic trends. Without these improvements, total primary energy consumption would otherwise grow to about 200 quadrillion Btu by 2025.

The difference between reference case consumption and domestic energy production is the level of net imports (all energy types) required to meet projected U.S. energy consumption levels. Because of slow growth in domestic energy production, total net imports are projected to grow from about 26 quadrillion Btu in 2001 to almost 50 quadrillion Btu in 2025.

As I mentioned earlier, this already assumes that future gains in energy efficiency take place at the same impressive rate as in recent years. Nonetheless, the EIA also analyzed what it termed a "high demand side technology" case, with an even more aggressive decline in energy intensity.

With more rapid decline in energy intensity, total energy consumption could be reduced to levels below that shown in the reference case. In the high demand side technology case, it is assumed that increased spending on research and development will result in earlier introduction, lower costs, and higher efficiencies for end-use and electric generation technologies than assumed in the reference case. Due to a faster decline in

energy intensity in the high demand side technology case, total primary energy consumption is projected to be 6 percent lower in the high demand side technology case by 2025, at 130 quadrillion Btu.

With lower levels of total consumption, net imports are also reduced. However, the reduction in imports is partially offset by lower levels of domestic energy production resulting from a decline in the energy prices that producers see with lower consumption levels. Net energy imports decline to 45 quadrillion Btu by 2025 in the high demand side technology case from nearly 50 quadrillion Btu by 2025 in the reference case. The result is that even in a case with an accelerated decline in energy intensity, the U.S. will still be highly dependent on energy imports to meet future consumption needs.

III. President Bush's National Energy Policy.

These trends are a concern. We long ago ceased to fully provide for our petroleum needs domestically, and though most of our natural gas can be supplied currently by North American production, the trend here is also toward a greater share for gas imported from outside our hemisphere.

Quite simply, we are at the mercy of events and decisions over which we have often limited—sometimes no —control. When winters and summers are mild; when all refineries or pipelines are online; when supply from abroad is abundant and reliable, we do not feel this dependency. However, when almost any one of these factors breaks

down, markets react instantly, and we face the higher prices and volatility that have become by now an almost certain cyclical phenomenon.

President Bush recognized that to prevent these problems from becoming a permanent, recurring feature of American life, we needed a long-term plan for energy security that would promote reliable, affordable and environmentally sound energy for the future.

Almost two years ago, President Bush presented his solution, a national energy policy, to the American people.

Our approach to our energy security – indeed, to global energy security – is contained in the following principles.

First, we must balance increased production with a renewed focus on the clean and efficient use of energy. Second, we must expand international engagement with consumer and producer nations. Third, we must expand and diversify our sources of supply. And, finally, in everything we do, we must champion free markets and free trade.

IV. Energy Security: Closing the Gap Between Supply and Demand

The Administration believes that a balanced, comprehensive energy plan is imperative to the long-term strength of our economic and national security. This balance

should include a recognition that we must also increase domestic production in order to reduce our rising dependence on imported oil and gas; and key to achieving this balance is the President's proposal to open a small portion of the Arctic National Wildlife Refuge (ANWR) to environmentally responsible oil and gas exploration and development.

But we also understand that we need to leapfrog the status quo and fundamentally change our reliance on imported energy. That is one important underpinning of the President's Hydrogen Initiative, which the President announced earlier this year during the State of the Union Address.

Hydrogen can be produced from diverse domestic sources and has the potential to free us from reliance on foreign imports for the energy we use at home. When hydrogen is used to power fuel cell vehicles, it will do so with more than twice the efficiency of today's engines.

And hydrogen-powered vehicles would have a tremendous positive impact on the environment, as they would produce none of the harmful emissions that we see with today's gasoline-powered fleet. In fact, the only byproduct of the fuel cell is pure water.

The Hydrogen Fuel Initiative complements the FreedomCAR initiative, a partnership with the U.S. auto industry that Secretary Abraham announced at the Detroit Auto Show in January 2002. The FreedomCar partnership is designed to greatly accelerate the pace of development of fuel cell vehicles powered by hydrogen.

The President's Hydrogen Fuel Initiative represents a commitment to the future hydrogen economy, and it has already generated tremendous enthusiasm among the energy and auto industries--partners that will be integral to transforming our nation's energy future from one dependent on foreign petroleum, to one that utilizes the most abundant element in the universe.

As the President has said, his goal is to see to it that the first car driven by a child born today could be powered by hydrogen and pollution free. To support the Hydrogen Fuel Initiative and the FreedomCAR partnership, we propose to focus $1.7 billion over the next five years on overcoming several significant technical and economic barriers to the development and expanded use of hydrogen, fuel cell, and advanced automotive technologies.

If we are successful in this endeavor, we estimate that industry could make a commercialization decision on fuel cell vehicles, hydrogen production, and refueling infrastructure by 2015. A positive decision would lead to hydrogen fuel cell vehicles in the showroom by 2020, and by 2040, this could reduce oil use in light duty vehicles by over 11 million barrels per day--an amount of oil that approximates that which America imports today.

V: Energy Security: Strengthening International Cooperation

But our initiatives are not limited to domestic activities. We are partnering with key energy countries to help create new technologies and develop new energy sources that will enhance U.S. and global energy security. These international partnerships allow us to share costs, increase our knowledge base, and eventually expand markets for advanced energy technology.

One example is the Generation Four International Forum (GIF) in which we work with Argentina, Brazil, Canada, France, Japan, South Africa, South Korea, Switzerland and the United Kingdom on joint nuclear energy research and development. Through this process, we are cooperatively exploring six new reactor designs that are more advanced, safer, more efficient, and more proliferation-resistant.

Another example is the recently launched Carbon Sequestration Leadership Forum in which we will work with countries around the world to develop cutting edge pollution-control and carbon-sequestration technologies that can make tomorrow's coal or natural gas plant truly emission free. This June, the U.S. Government will host a ministerial level conference to discuss international collaboration on carbon sequestration, including the FutureGen Project. With international and private sector partners, the U.S. will sponsor this $1 billion initiative to design, build and operate the first coal-fired, nearly emissions-free power plant.

Earlier this year, President Bush announced that the United States would join with the international community to develop the International Thermonuclear Experimental

Reactor (ITER). When built, ITER is expected to achieve the first sustained burning plasma, an essential next step on the long technical, regulatory, and economic road toward demonstrating the feasibility of commercial fusion energy systems. If ITER and significant future scientific and engineering efforts prove to be successful, fusion energy plants would produce no harmful emissions, no long-term radioactive waste, and—because no fissile materials are required in the fusion process—virtually no proliferation threat.

VI: Energy Security: Increasing Diversity of Supply

To meet our long-range energy needs, we must expand and diversify our sources and types of energy. To assure energy security, we need to maintain a diversity of fuels from a multiplicity of sources. Opportunities for increased investment, trade, exploration and development are increasing every year, far beyond the traditional markets of the last 50 years.

We are working to diversify energy supplies and promote the development of new resources in the Western Hemisphere, Russia, the Caspian Region and Africa. We are working to enhance our dialogue with key producing and consuming countries to better predict and monitor oil market developments and offset energy crises. And we are working to expand global capabilities to protect against energy supply disruptions.

A. North American Energy Working Group

Shortly after taking office, the Administration prioritized our energy relationship with Mexico and Canada, the top two energy suppliers to the United States. In April 2001, President Bush Canada's Prime Minister Chretien and Mexico's President Fox launched the North American Energy Working Group to further integrate the North American energy market and make it stronger and more efficient.

Our experts meet regularly to develop and implement strategies that enhance North American energy trade and interconnections, and most of all energy security. We work to identify and overcome the regulatory, technical and policy obstacles to increased production and delivery of energy within North America in an environmentally friendly manner.

B. Western Hemisphere

The North American effort is just part of the process. Half of all U.S. petroleum imports come from Western Hemisphere countries, and Trinidad and Tobago is the United States' largest supplier of liquefied natural gas. We have been working with our partners in the Hemisphere to promote increased development of oil and natural gas resources and advance energy integration on a regional scale. We have met with our counterparts from Mexico, Canada, Bolivia, Brazil, Ecuador, Colombia, Peru and Venezuela – all of whom are determined to develop and expand their vast energy

resources. The Hemispheric Energy Initiative is a product of the Summit of the Americas and provides an arena for hemispheric cooperation on energy issues.

C. Russia

Outside of the Western Hemisphere, we continue to strengthen our energy relationship with Russia, now the second largest crude oil producer and exporter in the world. Last year, Presidents Bush and Putin launched a new era in our bilateral cooperation by creating a new strategic energy initiative between our two countries. As the American co-chair of the Energy Working Group, I am pleased to report the continued success of this initiative.

Under the Working Group, our experts meet regularly to exchange information and technical expertise. The objective is to help create the regulatory and investment conditions required for increased energy development in Russia as well the infrastructure necessary to deliver the energy to the outside world. Our cooperation takes into account the environmental risks associated with oil production and transportation. Earlier this month, Secretary Abraham and his Russian counterpart established a bilateral dialogue on oil spill prevention and response.

The private sector plays an important role in this effort. Last year, the U.S. and Russia co-hosted a Commercial Energy Summit in Houston to incorporate companies into the dialogue and leverage our technical cooperation with investment opportunities.

In our view, rising Russian production significantly increases the supply diversity in the world oil market.

D. Caspian Region

In addition, the United States has a strong interest in resource and infrastructure development in the Caspian Sea region. The United States has been a strong supporter of oil and gas development in the region, urging governments to establish the necessary legal, fiscal, and regulatory environments to safeguard the large investments required to develop these new resources. The Caspian Basin has proven reserves in the 17-33 billion barrel range (to put this in perspective, Persian Gulf proven reserves amount to approximately 679 billion barrels), with possible oil reserves of about 233 billion barrels. With sufficient investment, the Caspian region could produce 3.5 to 4.0 million bpd by 2010.

The Administration has been a strong advocate of new pipeline capacity to transport oil – and, gas -- in an east-west corridor to reach world markets. Secretary Abraham attended the inauguration ceremony for the Caspian Pipeline Consortium (CPC) that opened its pipeline from Kazakhstan to the Black Sea, providing direct access from Kazakhstan to export markets. Secretary Abraham also participated in the groundbreaking ceremony in Baku for the Baku-Tbilisi-Ceyhan pipeline that will be able to carry 1 million bpd from the landlocked Caspian to world markets.

E. Africa

Energy from Africa plays an increasingly important role in our energy security, accounting for more than 10 percent of America's oil imports, and is a key engine for economic development in Africa. We are pleased with the resolve of African nations to facilitate private sector investment in the development of energy resources.

At a meeting of U.S. and African Energy Ministers last year in Morocco, the U.S and African countries reaffirmed a commitment to good governance and stable regulatory structures and discussed additional steps to encourage private investment in the energy sector. At that meeting, we met with government and industry to discuss ways to improve energy trade and facilitate energy sector development to better serve U.S. and African economic growth and development.

F. Producer-Consumer Dialogue

In addition to these efforts, we have been strengthening our dialogue with key producing and consuming countries to better monitor energy market developments and respond to supply disruptions.

We continue to participate in the International Energy Forum (IEF), a multilateral effort to enhance relationships between oil producing and consuming nations. A key focus of the IEF is a joint effort to improve the transparency, timeliness, and accuracy of

the data that guides global oil markets. This initiative, begun by the United States, has garnered broad support from both producers and consumers.

G. G-8 Energy Cooperation

We are also working closely with our other friends in major consuming countries to address our common energy challenges. Last year, as recommended by the National Energy Policy, Secretary Abraham co-chaired with his Canadian counterpart a meeting of energy ministers from the G-8 countries in Detroit. We reaffirmed the importance of emergency oil reserves and our commitment to coordinate their use. We agreed to work together to meet growing energy demand by encouraging the investment that will be needed in energy development, production and infrastructure, as well as in improved energy efficiency.

H. Asia Pacific Economic Cooperation (APEC)

We also participate in the Energy Working Group of the Asia Pacific Economic Cooperation (APEC), most notably in the APEC Energy Security Initiative, which the United States originally proposed in 2000 and which was endorsed by APEC Leaders in at the 2001 Shanghai Leaders Meeting. Shorter-term actions under the initiative include enhancing the transparency of the global oil market and sharing ideas on energy emergency preparedness. Longer-term actions include cooperation on energy efficiency, renewable energy, and alternative fuels.

I. U.S.-U.K. Energy Dialogue

Last year, President Bush and Prime Minister Blair agreed to establish the US-UK Energy Dialogue. The dialogue involves discussion on both domestic and international energy policies. The collaboration focuses on deepening cooperation on environmental, economic, and developmental issues, and incorporates the private sector in implementing these objectives. We are in the process of developing a comprehensive report for our leaders, which will highlight our common position on various energy issues and outline joint activities to be undertaken.

J. Cooperation on Natural Gas

Although most of these initiatives encompass a wide variety of topics, with a particular emphasis on petroleum, we also have stepped up our cooperation on natural gas issues.

We have, for example, undertaken a joint study on natural gas with Canada and Mexico to assess future supply and demand projections. And, last November, the Department of Energy hosted a liquefied natural gas (LNG) Summit with Algeria to discuss the investment and infrastructure required to expand LNG trade between our two countries. And we look forward to continuing our work with other key natural gas producers such as Trinidad & Tobago, Angola, and Nigeria.

In addition, the Department of Energy participates in the World Bank's Gas Flaring Reduction Initiative and is a member of its steering committee. We undertake research and development activities and partner with other organizations to assist in gas flaring reduction. Bilaterally and multilaterally, we are working with various countries and organizations to promote the development and utilization of natural gas resources, which, in turn, will directly contribute to the reduction of gas flaring and venting.

VII. Emergency Strategies: Response to Supply Disruptions

All of these activities are directed at ensuring a reliable and affordable supply of energy to the American people today and in the future. But we also recognize the importance of protecting against the possibility of a severe supply disruption. The Administration early on reaffirmed the importance of maintaining a strong Strategic Petroleum Reserve (SPR). In November 1991, the President directed that we begin to fill the SPR to its 700 million barrel capacity. Today the SPR contains a record 599 million barrels of oil – the highest amount in its history. This oil can be released at a maximum rate of 4.2 million bpd, and we can begin delivering oil to the market within 13 days of the President's order.

We continue to play a leadership role in the International Energy Agency (IEA). Created following the 1973 oil crisis, the IEA includes 26 member countries that are committed to holding emergency oil reserves and to taking common effective measures to meet oil supply emergencies. Together, IEA members' oil stocks total nearly 4 billion

barrels, 1.2 billion barrels of which are under direct control of member governments, with the remaining 2.6 billion barrels from commercial stocks. IEA members have the ability to draw down these stocks at a rate of over 8 million bpd (including the SPR).

At the G-8 Energy Ministerial last May, we agreed on the importance for net oil importing countries to maintain emergency stocks and to use them when necessary to respond to major physical supply disruptions. We also recognized the value to global energy security when other countries, including those in Asia (whose import dependence is projected to increase sharply), build similar stocks.

Mr. Chairman, at this point, I thank you for the opportunity to testify before you today, and I welcome any questions the Committee might have.