Statement

of

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Chairman Leahy, Senator Specter and members of the Committee, I am John Hofmeister, Retiring President of Shell Oil Company.

Shell Oil Company is an affiliate of the Shell Group, a global group of energy and petrochemical companies, employing approximately 104,000 people and operating in more than 110 countries and territories. Shell Oil Company, including its consolidated companies and its share in equity companies, is one of America's leading oil and natural gas producers, natural gas marketers, gasoline marketers and petrochemical manufacturers. Shell, a leading oil and gas producer in the deepwater Gulf of Mexico, is a recognized pioneer in oil and gas exploration and production technology.

I welcome the opportunity to testify today. It is, in fact, very timely because it comes at the end of an 18-month Shell journey called "A National Dialogue on Energy Security." We traveled to 50 cities and visited with more than 15,000 Americans to engage in meaningful dialogue on energy security.

I heard what you are hearing.

Americans are very worried about the rising price of energy – the cost to fill their cars, as well as the cost to heat, cool and light their homes and businesses. These cost increases are hitting consumers hard, particularly the poor and those on fixed incomes.

Let's look at historical data on the price of a barrel of crude and the average price of regular gasoline. Since April 2004, the price of a barrel of U.S. light sweet crude has gone up by more than $70, which is more than a 300 percent increase. In this same period, the average U.S. nationwide price of regular gasoline at the pump went up 100 percent. Looking just at the last 12 months, the price of a barrel has increased $60, or more than 100 percent. The price of regular gasoline has gone up 20 percent.

There is no single reason or simple explanation for the recent run-up in crude oil prices. Rather, a combination of circumstances, some short-term and some long-term in nature, is playing a role.

Let me highlight some of these factors.

- The rate of growth in global demand for oil has accelerated in recent years. This is largely the result of rapid economic growth and industrialization in countries like China and India and also sustained subsidies on oil products in oil exporting countries.
- Geopolitical events, such as the disturbances in the Niger Delta, have reduced supplies available to the international market.
- The cost of materials, labor and engineering services has skyrocketed. This in turn drives up the cost of new energy projects and the cost of developing new energy supplies.
- There is a shortage of capacity in energy services and materials. This shortage is in some instances leading to project delays and lengthening the time it takes for new projects and new supplies to come on line to meet increased demand.
- Access to oil and gas resources is becoming more difficult around the world. This, coupled with more stringent fiscal conditions governing investment in several major oil and gas-producing countries, adversely affects the economics of new energy projects. It may lead to reductions or delays of new investment in oil and gas supply capacity.
- The oil and gas resources that are available for development are increasingly found in extremely difficult or hostile areas – areas that are more technically challenging, more remote from markets, require more infrastructure, carry greater technical risk, have longer development lead times and are more costly to develop than has been the case during the past 30 years.

In addition, developments in the financial market have also contributed to the rise in prices.

- The fall in the value of the U.S. dollar, relative to other currencies, has reduced the equivalent revenue available to oil exporting countries and also partially shielded other oil importing countries from the impact of rising dollar-denominated oil prices.
- Global investment funds are rebalancing their portfolios to include a higher portion of commodities, including oil and natural gas, and this trend has accelerated with recent weakness in equity markets.

Along with the above factors, some observers have questioned whether speculative trading has also contributed to increased crude oil prices. We have observed that there are more participants buying and selling oil commodities than previously, and that these participants are made up of commercial users, such as ourselves, and non-commercial entities, such as pension funds, university endowment funds and hedge funds. Yet, it is unclear what effect this activity has had on prices. For example, the Commodities Futures Trading Commission recently testified before Congress that there was an absence of evidence that speculation had driven up oil prices. What is clear, however, is that the combined oil commodities trading community is telling us that we need to produce more oil.

Despite the apparent size of the major investor-owned energy companies, this remains a highly competitive industry. Consider the structure of our retail gasoline business, where the Shell brand has an 11.3 percent market share nationwide. Roughly 95 percent of Shell branded stations are owned by independent retailers and "jobbers." We are seeing healthy new retail competition emerging with brands such as WaWa, Sheetz and Turkey Hill.

From the perspective of the transactions experience at Shell, in markets of concern to both federal and state antitrust law enforcement agencies, mandatory divestitures were designed to prevent declines in the number of competitors or increases in concentration. And we have fully complied with such divestitures.

Most of these factors are not controlled by or even much influenced by the actions of oil companies. However, our business is developing energy and delivering it to consumers in the most efficient and cost-effective manner we can. We will continue to strive to contain cost pressures and to deliver these energy products to consumers at competitive prices in a secure and reliable manner.

Today I will talk about three issues related to the energy future of America. First, the global demand for energy and the supply outlook. Second, the investments that Shell is making to increase energy supply. Third, actions that policymakers can take to address the energy challenge.

Energy Demand and Supply

The world will demand an additional 35 million barrels of oil per day by 2030, which is a 42 percent increase over today's demand. It will demand 64 percent more natural gas than we are producing now.

The United States accounts for 25 percent of the world's energy demand. Americans use 10,000 gallons of oil – enough to fill a backyard swimming pool – every second of every day. We use 20 railcars of coal every minute.

These are sobering facts. How will this demand be met? Alternative and renewable energy sources will play a role and grow substantially. Energy efficiencies will improve as new technologies are developed and implemented. But leading experts forecast that oil and natural gas will continue to meet more than half of the world's energy needs in 2030.

There is no shortage of molecules of oil and gas in the ground. However, there are multiple influences that will affect the pace at which this oil can, and will, be developed.

On the demand side, we are seeing a step-change in the growth of demand for energy, particularly as emerging economies, such as China and India, enter into more energy-intensive phases in their economic development. It will be vital to become more efficient in how we use energy and to develop unconventional sources of oil and gas (such as oil sands), biofuels and vehicle electrification to meet this surge in demand. All energy sources added together will struggle to match demand – we will need all of the energy we can get.

On the supply side, many existing reservoirs are facing a natural decline in production. This means that high levels of continuous investment are required just to maintain status quo or to invest in enhanced oil recovery (EOR) techniques. In addition, ever-increasing levels of investment are required as smaller fields are developed and more complex frontier environments become the targets for hydrocarbon exploration and production, alongside the development of unconventional oil and gas supply. There are also uncertainties about the pace of investment in sensitive regions such as the Middle East and Latin America. Naturally, major resource-holding governments seek also to develop their sovereign reserves at a pace that matches their own economic goals.

The significant economic point comes when tensions arise between the growth of global demand for energy and the pace of investment, production and supply. We believe we are entering such a period and will face this increasingly for some time to come.

U.S. production has fallen steadily for the last 35 years. Oil production in this country peaked in the 1970s. As U.S. consumption of oil has doubled, domestic oil production has fallen off nearly 40 percent. Why? In large part, this is the result of government policies that placed important oil and gas resources off limits.

We still have a significant resource base in this country, both offshore and onshore. The U.S. Government estimates that there are about 300 trillion cubic feet of natural gas and more than 50 billion barrels of oil yet to be discovered on the Outer Continental Shelf surrounding the Lower 48. When you then add in the Alaska OCS resource, you add the potential for another 122 trillion cubic feet of natural gas and 25 billion barrels of oil. Unfortunately, 85 percent of the Lower 48 resource base is off-limits because of Congressional moratoria.

The U.S. has enormous oil shale resources, too, that, when the technology to extract it is mature, may provide a very significant boost to domestic energy supply. According to Rand Corporation, the oil resource in place within the Green River Formation, which covers portions of Colorado, Utah and Wyoming, ranges from 1.5 to 1.8 trillion barrels, of which between 500 billion and 1.1 trillion barrels are recoverable. According to Rand, "the midpoint in our estimate range, 800 billion barrels, is more than triple the proven oil reserves of Saudi Arabia." The U.S. has more oil locked in shale than any other country on Earth but impediments exist to accessing and developing this resource.

For the past 30 years, federal policies have restricted the availability of domestic oil and gas resources to U.S. consumers. Such as:

- Outer Continental Shelf Moratorium Atlantic Ocean
- Outer Continental Shelf Moratorium Pacific Ocean
- Outer Continental Shelf Moratorium Eastern Gulf of Mexico

- Congressional bans on onshore oil and gas activities in specific areas of the Rockies and Alaska
- And even a Congressional ban on doing an analysis of the resource potential for oil and gas in the Atlantic, Pacific and Eastern Gulf of Mexico

According to the Department of the Interior, 62 percent of all onshore federal lands are off-limits to oil and gas development with restrictions applying to 92 percent of all federal lands.

The Argonne National Laboratory did a report in 2004 that identified 40 specific federal policy areas that halt, limit, delay or restrict natural gas projects. I urge you to review it – it is a long list. If I may, I offer it today, if you would like to include it in the record.

Hundreds of lawsuits result in significant delays or eventually derail energy projects. A 2004 report by the General Accounting Office identified 10 opportunities during the leasing and permitting process where outside parties can sue to hold up or stop oil and gas projects on federal lands. And we are now seeing increased litigation on offshore activities as well. The combined weight of litigation and restrictive and uncertain policies is placing a heavy toll on America's ability to produce its own energy resources.

As we have increased imports to meet our domestic energy needs, a new concept of "resource nationalism" is emerging in resource-rich nations around the world. This concept has changed the dynamics of global energy development. Thirty years ago, national oil companies owned by or affiliated with governments were either non-existent or small players. Today, these national oil companies own as much as 90 percent of the proven oil reserves in the world, while investor-owned oil companies – some of which are here today – hold just six percent of proven reserves.

In 2006, the U.S. imported 3.7 billion barrels of oil to meet domestic demand, which is more than seven times the amount imported in 1970. The United States is the only country in the world that restricts the use of its own energy resources while transferring trillions of dollars of wealth to other countries in order to import energy.

So what is Shell doing? We are making significant capital investment to produce more energy – and more kinds of energy – to meet global demand.

Enormous amounts of capital are required to fund our huge-scale projects and our cutting-edge research.

Let me share with you some statistics:

- Today, we have double the number of new projects under construction that we had in 2004.

- Last year, we spent some $25 billion on capital investment worldwide developing energy projects.

- This year, Shell will spend $28 billion to $29 billion – the largest capital expenditure program in the oil and gas industry.

- Over the last 3 years that I have been in office, Shell has spent over $10 billion on capital investments just here in the U.S.

Shell has invested in alternative and renewable technologies, as well as additional conventional and new unconventional energy sources.

Wind
Shell is becoming a significant wind energy producer. We are involved in 11 wind projects spread across the U.S. and Europe. The total capacity of these projects is around 1,100 megawatts (Shell share is about 550 megawatts) with 845 megawatts in operation and more than 260 megawatts under construction. Out of the total capacity, almost 900 megawatts are in the United States where we have wind farms in Texas, Colorado, Wyoming, California, Iowa and West Virginia. More wind farms are under development. Our activities focus on the development and operation of commercial-scale wind developments that can add significant power and capacity to the grid.

Solar
Shell is an international developer of thin-film solar technology. We believe thin-film technology – although in the early phases of development – could prove to be the most commercially viable form of photovoltaic solar technology to generate electricity from the sun's energy.

Biofuels
Shell is making a major commitment to the use of biofuels in transport fuels. Shell is the world's largest blender of biofuels by volume and one of the world's largest distributors of transport biofuels, at around 800 million gallons a year. Shell buys and sells 400 million gallons of ethanol a year in the United States, about 11 percent of the total U.S. ethanol production.

And our commitment will increase to meet the new Renewable Fuel Standard (RFS) mandates passed by Congress last year, including the significant increase in the supply and distribution infrastructure necessary to move the five-fold increase in the RFS to markets all over the U.S.

Shell is a leader in the development of advanced biofuels technologies. We are quadrupling our rate of investment in transport biofuels, particularly in those using more sustainable second-generation technologies.

Shell believes that cellulosic ethanol holds particular promise. In the last six months, we have announced three new or expanded partnerships in advanced biofuels research and development projects in the United States, including fuel from algae and a promising new technology that could convert cellulose-derived sugars directly to biogasoline, rather than ethanol. This technology could potentially eliminate the need for special infrastructure and the low blend rates now required for standard vehicles.

Hydrogen
Shell is a leader developing transportation solutions with hydrogen. We are building hydrogen infrastructure in the United States, Europe and Asia. Right here in Washington, D.C., approximately three miles from Capitol Hill, is the nation's first integrated gasoline/hydrogen station at our Shell station on Benning Road.

Gasification and Gas-to-Liquids Fuel
The Shell proprietary gasification technology is being used to convert coal and biomass into a cleaner fuel for power generation and other applications. We also have a leading position in Gas-to-Liquids (GTL) technology for the production of cleaner transportation fuels. Our Pearl GTL project under construction in Qatar will be the world's largest plant converting natural gas into transportation fuel. GTL from our plant in Malaysia is mixed with diesel and sold at 5,000 Shell stations in 11 countries.

Liquefied Natural Gas
Shell is an industry leader in the production of liquefied natural gas (LNG). When projects under construction in Australia, Sakhalin and Qatar are completed, our LNG production will have increased 80 percent above 2005 levels. In the United States, we have significant regasification capacity at two existing LNG terminals and plans for development of a new terminal in the Northeast.

It is important that we put these energy sources into proper perspective. As I mentioned earlier, alternative and renewable energy sources will not make a significant contribution to the energy mix for many decades to come. Therefore, Shell continues to make substantial investment in producing and refining conventional oil and gas.

Oil and Gas
Exploration and Production: The Shell Exploration & Production (E&P) North American business is dedicated to growing the North American energy supply, a commitment underpinned by a history of investing billions each year, developing future domestic energy sources and defining new frontiers.

In the Gulf of Mexico, our exploration strategy is to drill prospects with large potential volumes and pioneer new plays. We are involved in a number of material prospects. Shell will continue to be an industry leader in the deepwater Gulf of Mexico, a frontier we pioneered more than a decade ago. In the past five years, we have produced nearly one billion barrels of oil there. The costs of deepwater exploration and production are immense and rising – from buying leases to bringing product to market. In November 2005, I told the combined panel of the Senate Energy & Natural Resources and Commerce Committees that the industry average cost of renting a deepwater oilrig was approximately $200,000 a day. Twenty-two months later, rigs were in such scarce supply that the cost of chartering one had climbed to more than half a million dollars a day. That was just the rig rental. The *total* daily costs of drilling a deepwater well – with the costs of pipe, support and all the rest – are even higher. In 2007, the average daily cost for a deepwater exploration well in the Gulf of Mexico was $759,000.

Shell is also pursuing natural gas prospects in a number of onshore North American basins. It is our goal to build new supply positions by developing

both conventional and unconventional gas resources. Today Shell is drilling for new natural gas supplies in the Gulf of Mexico, Texas and the U.S. Canadian Rockies.

Downstream: Shell has a world-class manufacturing organization. By running our facilities safely, reliably and efficiently, we achieve consistently high levels of operational excellence that help us better meet customer demand. In the U.S., refineries operated by Shell and our joint venture, Motiva, currently have a refining capacity of nearly 1.4 million barrels per day. Motiva is spending around $7 billion to double the capacity of its refinery in Port Arthur, Texas. This project, when finished, will be one of the largest refineries in the United States and in the world. By adding 325,000 barrels-per-day capacity, the expansion is equivalent to building a new refinery.

Oil Sands and Oil Shale: Shell is investing in the technology and infrastructure to develop vast oil sands in Canada and oil shale in the United States. The Canadian resources can benefit the United States fuels market. Shell has a 25-year research and development program to access oil locked in shale rock in Colorado, Wyoming and Utah. Congress should pursue policies that ensure that these critical energy resources can be responsibly developed to help meet our nation's energy challenge.

This brings me to my closing point.

What policymakers can do to address the energy challenge.

I invite you to read the attached report, "A National Dialogue on Energy Security: The Shell Final Report," which highlights the findings of our tour across America. It lays out a 12-point plan to address future energy needs.

For today, however, let me highlight six points for you to consider.

First, I urge policymakers to look at the facts. Energy demand is rising to fuel economic growth. Oil and natural gas will be the major energy sources for decades, even as we grow new technologies. We cannot rationally decide among the hard choices ahead of us without understanding the basic issues of energy security.

This brings me to the second point. In general, the United States tends to resist the need to develop new domestic energy sources. Can we afford to continue this approach while energy demand and costs are rising? Oil and gas development can and should occur in an environmentally responsible way. In 2006, Congress took a significant step in opening some new oil and gas prospects in the Gulf of Mexico to exploration and development while, at the same time, providing those energy-producing states and local coastal communities in the region with a revenue stream to help ensure economic and environmental stability. Congress should extend Outer Continental Shelf revenue sharing for all coastal areas adjacent to offshore development and should make more areas available for offshore leasing.

Third, we need more than oil and gas to meet demand. We need all forms of energy – plus conservation and energy efficiency. I commend Congress for passing the Energy Independence and Security Act of 2007 with more stringent CAFE standards. These standards and the other provisions in EISA will do more to increase energy efficiency than any other piece of legislation in recent memory. Congress should continue to adopt policies that encourage conservation, and companies like ours must continue to think more creatively about products and services we can develop to help customers use less energy. Consumers – and that means all of us – must think more about our own energy footprints: when and how we drive, what we buy, how we work and the kind of world we want to create for coming generations.

Fourth, government agencies must have the staff and the resources needed to do the environmental analyses and other scientific studies that must underpin energy projects of all kinds. This data is critical and must be completed in a thorough and timely manner. Therefore, Congress should consistently authorize and appropriate funding for these key federal agencies to hire, retain or contract the expertise needed.

Fifth, Shell supports the adoption of a federal law to reduce greenhouse gases. Specifically, we support a cap-and-trade program coupled with sector approaches. Such a program must include policies that lead to commercialization of carbon capture and storage (CCS) technology. Congress should ensure that we address CO2 emissions as we make the transition away from fossil fuels to new energy sources.

Finally, we need individuals skilled in math, science, technology and engineering to build the workforce of the future that will bring new energy

sources to America. School curricula should include more study of energy – where it comes from, how it is used and the impact of the energy choices we make. And these lessons should begin at an early age, to shape consumer behavior and encourage curious young minds to become our next generation of energy engineers. We welcome Congressional initiatives that will help secure a future energy workforce.

I thank the committee for its time. I am hopeful that policymakers, the private sector and the American people will come together on this important topic. We need to commit resources to all existing and potential energy sources, as well as innovations to address supply, demand and our carbon footprint.

Thank you. I am happy to answer any questions you may have.

Attachments:

"Environmental Policy and Regulatory Constraints to Natural Gas Production", by Deborah Elcock, ANL/EAD/04-1, Environmental Assessment Division, Argonne National Laboratory, December 2004

"A National Dialogue on Energy Security: The Shell Final Report", Shell Oil Company, 2008