

TESTIMONY

OF

JOHN HOFMEISTER

PRESIDENT, SHELL OIL COMPANY

BEFORE THE

UNITED STATES SENATE

COMMITTEE ON ENERGY AND NATURAL RESOURCES

AND

**COMMITTEE ON COMMERCE, SCIENCE AND
TRANSPORTATION**

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Mr. Chairman and members of the Committee:

I am John Hofmeister, President of Shell Oil Company. I appreciate the opportunity to appear before you today to discuss the energy issues important to the Congress, to America's energy providers and to consumers.

Shell Oil Company is an affiliate of the Shell Group, which operates in more than 140 countries and employs more than 112,000 people worldwide. About 22,000 people work for Shell in the United States in a diverse range of energy activities:

- Shell produces approximately 700,000 gross boe/d (Shell gross) of oil and natural gas in the U.S.
- Shell operates or has an interest in seven U.S. refineries with a capacity of more than 1.6 million barrels per day.
- Seventy-five percent of Americans live within five miles of one of our approximately 17,500 retail sites (Shell-branded gasoline stations and Jiffy Lube facilities) in the U.S., where an average of more than six million customers are served per day.
- We operate five chemical plants in the U.S., which focus on the production of bulk petrochemicals and their delivery to large industrial customers who, in turn, use them to make many of the essential materials of our modern world.
- We are a key capacity holder at two of the nation's existing Liquefied Natural Gas (LNG) facilities, Cove Point and Elba Island, and have announced proposals to build two additional, large LNG receiving terminals in the U.S., which will be critical in meeting the nation's growing need for natural gas with potentially lower-cost global supply sources.
- Shell Trading Gas & Power, through Coral Energy, has more than 5,000 megawatts of electricity capacity in the U.S.
- Shell WindEnergy has interests in more than 630 megawatts of clean, renewable wind power capacity in the U.S., and we have just announced a major wind project in West Virginia.
- Shell Solar Industries, based in California, manufactures solar photovoltaics in the U.S.
- Shell Hydrogen opened the nation's first hydrogen fuel dispenser at a Shell retail station. It's about 10 minutes from the Capitol and I invite you to visit to experience what we hope will be a common retail experience in the future. More hydrogen dispensing sites are under development.
- Shell is leading the way on other fuels of the future with its investments in biofuels, cellulosic ethanol and gas-to-liquids fuels.

I would like to use my time this morning to discuss four areas of interest:

1. The economics of the energy business and the growing demand/supply challenges;
2. The impact of hurricanes Katrina, Rita and Wilma on our business and on the price of energy;
3. What Shell is doing to increase energy production in this country and abroad; and
4. Initiatives Congress might take to help address the energy concerns that are becoming increasingly apparent and urgent.

My primary message is that we face fundamental and pressing energy challenges. There is no soft option or soft landing. Every route forward has significant economic, environmental and technological challenges. Every solution will require significant investment.

ECONOMICS OF THE ENERGY BUSINESS

Mr. Chairman, high energy prices and industry profits are matters of concern to Congress, to your constituents and to our customers. Our industry is extremely cyclical, and what goes up, almost always comes down. That dynamic has proven to be true time and time again. For example, the U.S. Energy Information Administration (EIA) reported that only three years ago (in 2002), returns on investment for U.S. petroleum companies were only 6.5 percent, and refining and marketing returns were negative. The challenge is to manage our business in the face of these severe price fluctuations.

As to profits, oil and gas industry earnings per dollar of sales are in line with all U.S. industry during the second quarter of 2005. The energy industry overall earned 7.6 cents for every dollar of sales, compared to an average of 7.9 cents for all U.S. industry. True, the total dollar numbers are large, but so are the billions of dollars that petroleum companies have invested to supply energy to U.S. consumers – and will need in order to re-invest to meet future demand in a safe and environmentally sustainable way. It is this re-investment potential that is critical.

Shell companies are in business to create economic value through the reinvestment of earnings in new technology, new production, refining and product distribution infrastructure and environmental and product quality improvements. As such, we continue to build our portfolio of integrated gas,

unconventional resources and material oil projects. Recognizing that the energy consumed today is made possible by investments made years or even decades ago, we continue to reinvest earnings to help ensure a secure energy future. For example, over the past five years, Shell companies have invested approximately 100 percent of U.S. after-tax earnings in U.S projects to meet the future needs of consumers. Investments of this magnitude require long-term fiscal stability.

The prices of oil and natural gas – which are set on the world market – fluctuate substantially and dramatically. Today we have \$60 per-barrel oil; just six years ago oil was under \$20. Similarly, we have recently experienced \$12 per mmbtu natural gas; just six years ago, natural gas was under \$3, while unleaded gasoline was averaging less than \$1.20 per gallon, including taxes. In fact, with warm weather and the return of supply lost to the hurricanes, the price of natural gas dropped \$3 per mmbtu last week (week of 10/31/05).

Even further, the first hearing of the Senate Energy and Natural Resources Committee held during the 106th Congress just six years ago related to the low-price environment and the state of the petroleum industry. The Committee recognized the potential impact of the low-price environment – noting, for example, the number of wells being shut in and the drop in rig counts across the country.

These low prices were largely attributed to two factors. First, the return of Iraqi crude oil to global markets caused an increase in supply, driving prices down by \$5-6 dollars per barrel, according to the EIA. Second, the Asian financial crisis caused a drop in demand, again affecting price.

Today, the market forces of supply and demand are driving prices up. Oil prices reached an all-time high last year, an average of more than \$41 a barrel for West Texas Intermediate (WTI). So far this year the average is over \$50, with prices rising to around \$70.

The U.S. is not self-sufficient in energy, importing more than 60 percent of its raw energy materials from other countries. The U.S. has to compete for oil in world markets. For crude oil, it competes with large refining centers such as Rotterdam and Singapore. For petroleum fuels such as gasoline, diesel and heating oil it competes with Germany, Japan, China, India and others.

The prices for many fuels are determined in the global marketplace. Buyers and sellers of fuels – energy companies, marketers, futures traders – continually

compete via auctions or other transparent mechanisms to balance their needs. Auctions and fuel trading take place around the globe, but there are major centers in London, Singapore and New York. Fuel prices move up and down based on world demand and supply pressures.

For example, brownouts in China last summer raised the demand for diesel fuel to run generators, which in turn bid up the price of diesel. Asian buyers were successful bidders for cargoes, but diesel prices were higher around the globe. A drought in Spain this summer increased LNG requirements to run generators. To obtain additional LNG, Spain bid for excess cargoes and the result was higher LNG prices around the globe.

The September hurricanes created shortages of gasoline and other fuels, resulting in higher prices in all global trading markets. In the aftermath, Shell imported gasoline and other fuels – purchased at prices that were set in the global marketplace – to compensate for lost production from our damaged Gulf Coast refineries.

Similarly, natural gas prices in most markets in the United States are determined by the interaction of many buyers and sellers. The shut-in gas production during the past two months has averaged over 10 percent of total U.S. output. This production loss raised the fear of not meeting appropriate start-of-winter storage levels. As a result, the market bid up gas prices to levels that encouraged switching and averted a storage shortfall.

As in the late 1970s and early 1980s, we expect that high prices will stimulate supply and reduce demand. But these responses take time. There are indications that Americans have reduced demand for vehicle fuels. Yet on a global basis, high economic growth is stimulating global energy-demand growth in spite of high prices, particularly in major emerging economies like China.

On the supply side, large projects can take a decade or longer to reach fruition and the projects are riskier and require higher capital investment. Industry investments in oil and gas production, refining and LNG facilities are accelerating.

As we look to the future, there are major challenges. Global demand for primary energy is likely to continue to grow, and for the foreseeable future, must largely be met by oil, gas and coal. Keeping pace with this growth will be challenging. IEA estimates that some \$16 trillion will be needed by 2030 to develop supplies

and build energy infrastructure. It will require very large investments in complex, costly and technologically demanding projects.

This demand is already placing upward pressure on costs:

- An onshore rig that cost \$9,000 per day one year ago costs \$15,000 per day today. In the deepwater, the cost of floating rigs has doubled to \$300,000 per day. The cost to develop a major deepwater field is between \$1.5 and \$2 billion.
- On the refining side of our business, building a new refinery or greatly expanding capacity at existing refineries is a multi-billion-dollar proposition. The American Petroleum Institute (API) has estimated that a 200,000 to 300,000 barrel-per-day greenfield refinery could cost up to \$3 billion to build in the U.S.
- To develop one Bcf/d of LNG requires an investment of \$5-6 billion, which would mean, according to the U.S. EIA, that the industry would have to invest \$50-60 billion if U.S. LNG imports grow by approximately 10 Bcf/d in the next 10 years.

So, while energy prices are high, the cost of energy projects is also rising in tight markets for equipment and skills. We must foster and fund technological innovation in an atmosphere of uncertainty. We must work to maximize recovery from existing fields, access more difficult and unconventional resources, develop more efficient ways of producing energy and cleaner fuels, and curb emissions from energy processes.

HURRICANE IMPACT AND RECOVERY

Shell and Motiva People. The landfall of Hurricane Katrina and the subsequent devastation of New Orleans and surrounding Gulf Coast communities affected some of our key facilities and nearly 4,600 of our staff and their families. Our first priority immediately following the storms was ensuring our staff and their families were safe and providing assistance to them so they could return to work as soon as possible to assess damage, begin repairs and restart facilities.

We invested heavily in locating and ensuring the safety of our staff and their families – including going door-to-door, when necessary, to make sure everyone was okay. Following Hurricane Rita, we moved quickly to locate our nearly 1,000 employees who work and live near our Motiva Port Arthur refinery. All told, during the course of the hurricanes, we had nearly a quarter of our U.S. staff directly affected by the storms.

After Hurricane Katrina, we began a large-scale temporary movement of staff from New Orleans to Houston and surrounding facilities. We moved rapidly to gain adequate accommodations in and around the impacted facilities or the new temporary work sites. I am very pleased to share that on Monday of this week (11/7/05), Shell Exploration and Production announced its commitment to return to its New Orleans office. We expect to have a substantial number of currently displaced New Orleans Shell employees back home and back at work in the city we cherish early next year and expect almost all to return within the first half of 2006. We also have offered to the Governor and the Mayor some of the best minds in the world to assist with a successful, transparent and integrated rebuilding program that will help New Orleans.

More than 4,400 pay, loan, employee assistance and payroll re-direct requests have been implemented to date in association with these disasters, totaling nearly \$23 million. These requests consist of 2,360 employee interest-free loans for \$20.7 million, and 1,642 assistance payments of \$250 each – totaling \$407,000 – for employees who have been housing displaced friends and family, and 190 relocation supplements totaling \$1.4 million.

Shell and Motiva Operations. A fragile supply/demand balance and vulnerable energy infrastructure were facts prior to the hurricanes. But the devastating impact of the storms on the energy industry gave these facts visibility and sharper focus. Like all of the companies represented here this morning, Shell plans and invests for the long term, but we live in the present, and we must deal with major dislocations such as those caused by hurricanes Katrina, Rita and Wilma.

Hurricanes Katrina and Rita tore through the heart of the Gulf's oil and gas producing areas, through the Gulf Coast refinery belt, and through the heart of the industry's terminal and pipeline networks that feed products to half the country. Our Mars platform withstood winds of 175 miles per hour for four hours; it was damaged, but the damage is repairable and it will be back in service again.

As of today (11/09/05) Shell has restored Gulf of Mexico production to more than 200,000 boe per day (Shell share) of the approximately 450,000 boe per day (Shell share) prior to Hurricane Katrina (operated and non-operated). Good progress continues to be made on key assets, including Ursa, Mensa and the Auger pipeline and an additional 150,000 boe per day (Shell share) is expected to return to production during fourth quarter 2005. Approximately 15 million barrels

(Shell share) were deferred in third quarter 2005 and approximately 18 million barrels are expected to be deferred in fourth quarter 2005. Production from the Mars platform is expected to resume in the second half of 2006.

To give you an idea of the enormity of the challenge ahead of us, I can tell you that one of our tasks is to examine every foot of pipeline 3,000 feet below the surface of the Gulf of Mexico – something that has never been done before. The Congressional Budget Office has estimated that Hurricanes Katrina and Rita inflicted losses on the energy sector estimated at \$18 to \$31 billion – and Shell certainly bore its share of that damage.

Critical operations continued while our employees, retailers and wholesalers suffered from the same devastation as their neighbors. I am extremely proud to represent these dedicated professionals who began to return to our manufacturing sites, pipelines, distribution terminals and service stations only hours after the storms passed. Despite their own losses, they continued to work to bring our critical facilities back on line for the American people – and that they did so without incurring any health, safety or environmental incidents.

MEETING FUTURE ENERGY CHALLENGES

Today's profits will finance re-investments and new projects that will lay the foundation for greater energy supplies. As in the past, both energy prices and costs are expected to be cyclical, but Shell is committed to providing growing energy supplies. As stated, developing these energy resources will require a tremendous capital investment by our company, year in and year out, in periods of prices high and low. Let me highlight some of our plans and projects.

North America Exploration and Production. Shell's Exploration & Production (E&P) North American businesses are dedicated to growing the North American energy supply. Our commitment is underpinned by a history of investing billions of dollars every year in the development of future domestic energy sources and defining new frontiers. Years of investment in technology and people enabled Shell to lead the industry into the Deepwater Gulf of Mexico, beginning with the development of our Auger field more than a decade ago. Over the past five years in the Gulf of Mexico alone, Shell gross production has been nearly one billion barrels of oil equivalent, and over the same period Shell has reinvested almost \$7 billion in new offshore supply capacity. That same level of determination and commitment continues today.

Shell is aggressively 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, Washington state, North Dakota, Texas, and the U.S. and Canadian Rockies.

Alaska Gas Pipeline. Alaska holds vast resources of natural gas that can be brought to market in the Lower 48. Shell is making significant investments in Alaska in the search for more supply. This year alone we have spent \$45 million purchasing leases in the Federal waters of the Beaufort Sea and the recent State's sale in the Bristol Bay area. Shell is excited about the opportunities that exist in Alaska.

Unconventional Resources. Shell is making significant investments in unconventional resources – oil sands, oil shale and coal. By 2010, EIA estimates that unconventional gas reserves will account for more than 50 percent of total U.S. reserves, up from 46 percent in 2002.

We have a major oil sands resource project in Athabasca, Canada, with bitumen from the Muskeg River mine piped 500 kilometers south to be turned into synthetic crude in the world's largest hydro-upgrader adjacent to Shell's Scotford refinery. Most bitumen is upgraded by coking. The Scotford upgrader is the only one based exclusively on adding hydrogen – enabling it to provide a 103 percent yield rather than the normal 85 percent. The plan now is to expand capacity from the present 155,000 barrels a day to more than 500,000 by 2015. This will require many billions of dollars of further investment in mining and upgrading facilities.

Shell is investing in oil shale in Colorado, where we are testing a process to unlock very large oil shale resources by conversion in the ground – using electric heaters to gradually heat the rock formation to release light oil and gas. This technology has the potential to recover more than 10 times per acre as much as traditional retort technologies, in a more environmentally sensitive way.

In order to meet growing U.S. energy needs, the entire portfolio of domestic fuels will be required. Given the abundant coal resources in the U.S., Shell also is looking at technologically sophisticated ways to use coal more efficiently and cleanly. Given the very large remaining coal resources – particularly here in the United States – it is important to make these technologies viable. Currently, Shell is working with 12 states – including New York, Pennsylvania, West Virginia,

Ohio, Indiana, Montana, Colorado, Wyoming, Utah, California, Arizona and Texas – on the opportunities that exist with coal.

Coal gasification offers an efficient way of using coal for power, town gas, chemical feedstock, liquid fuel and hydrogen. New technology has made coal gasification cleaner and more efficient. The Shell process provides more than 99 percent carbon conversion efficiency. Integrated coal gasification combined cycle power – IGCC – produces 10 to 15 percent less carbon dioxide emissions than the best conventional coal generation. It should be as cost-effective as traditional coal-fired generation with full modern environmental clean-up equipment.

In the U.S., for example, new IGCC offers an attractive way to use coal with the added advantage of the potential to capture the carbon dioxide – produced as a high-pressure concentrated stream in the gasification process – for sequestering underground. We are working with the Queensland government in Australia on the feasibility of building an IGCC power plant with 85 percent of the carbon dioxide sequestered in this way. The aim is to have it in operation by 2010. Coal gasification for power generation is likely to expand significantly in the coming years.

Liquefied Natural Gas (LNG). It is clear to Federal and state government that clean-burning natural gas is critical as an energy bridge to future renewable and other energy resources, and LNG is a key component of this fuel portfolio, even with northern frontier gas. LNG is safe with a proven track record, easy to handle, clean burning with low carbon emissions and utilizes environmentally friendly operations in which to provide energy.

According to the EIA, today the U.S. consumes one-quarter of the world's natural gas and is forecasted to outpace other major markets in year-over-year LNG import growth. World demand is estimated to increase from 6.4 tcf in 2004 to 22.4 tcf by 2020, with the U.S. making up 15 to 20 percent of the total forecasted LNG demand.

As a global industry leader, at Shell we are committed to leveraging our strong global supply position and industry experience to rise to the challenge of providing imported LNG as a critical supplement to domestic gas and other fuel sources in order to meet the country's growing energy needs – because we believe it is right for America. We are proceeding with the Broadwater project in Long Island Sound and the Gulf Landing project for offshore Louisiana.

Given the opportunity through approval of proposed facilities in the U.S., LNG can be a significant source of the North American gas supply, as it represents the potential to provide approximately 10 percent of the North American natural gas supply by 2010. In fact, by 2010, we estimate that Shell's projects alone could result in 2 to 3 Bcf/d of LNG import capacity to serve U.S. markets, growing to 4 or 5 later in the next decade. However, this fuel source opportunity for the American public represents a significant, long-term capital investment for many energy companies, including Shell.

Downstream/Refining. Our joint venture refining company, Motiva Enterprises LLC, is considering a capital investment strategy to increase refining capacity at one or more of its Gulf region facilities. Expansion projects being considered range from 100,000 – 325,000 barrels per day. In Louisiana, we are investing in a \$100 million intrastate pipeline project to facilitate the transportation of refined product into existing interstate pipelines that serve markets in Southeastern, mid-Atlantic and Northeastern states.

WHAT SHOULD POLICYMAKERS DO?

Let me address the role that policy initiatives might play in increasing domestic production and refining capacity to enable us to meet the increasing demand for natural gas.

Outer Continental Shelf (OCS) Access. Given the sustained high energy demand in the U.S. and globally, the key driver impacting oil and gas prices is supply. Although our company is actively exploring for oil and gas in all the areas in North America currently available, we are doing this with one hand tied behind our back, as most of the Outer Continental Shelf (OCS) is off the table for exploration and development.

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 OCS surrounding the Lower 48. When you then add the Alaska OCS, you contribute the potential for another 122 trillion cubic feet of natural gas and 25 billion barrels of oil. If Congress wants to address high oil prices, they must address domestic supply issues, such as the limited access to oil and gas exploration off our coastlines.

U.S. dependence on the Gulf Coast for domestic oil and gas supply and refining capacity became obvious to every American in the aftermath of Hurricanes

Katrina and Rita. The strategic importance of the Gulf of Mexico production and refinery capacity was highlighted after Katrina shut in 92 percent of the Gulf's oil output and 83 percent of its natural gas production. For years, the Gulf of Mexico has shouldered the burden of the U.S. offshore energy production. Urgent action is needed to broaden the U.S. oil and gas production base to other parts of the country if we are to ensure reliable and adequate energy supplies for all Americans in the future.

A step in the right direction for Congress would be to pass OCS revenue-sharing legislation to provide funds, needed by states and communities with production off their coasts, to mitigate the impacts of offshore development.

Earlier I mentioned Shell's interest in Alaska. In order for us to continue to grow in this area, two things need to occur:

1. Ensure fair and equitable access to the proposed natural gas pipeline; and
2. Continue to provide new opportunities for exploration leasing.

Streamline Government Processes. Governments at all levels – federal, state, local – should take the initiative to remove unnecessary bureaucratic barriers that inhibit investment. If the bureaucracy is too slow or too uncertain, investments will go elsewhere. Permit streamlining is an admirable goal, one that should be pursued to attract needed investment, not as a tactic to avoid responsible environmental behavior.

Conservation. Energy efficiency and conservation clearly affect demand and that, in turn, affects the market. The political viability of conservation policies is unclear. I will just note that at Shell, we have found significant cost savings in our own facilities from energy conservation. I would encourage all industries, governments and individuals to stress the need for conservation and efficiency in daily operations and activities.

Workforce. We welcome Congressional initiatives that will help secure a future energy workforce. Today, nearly 50 percent of all oil and gas industry workers are over the age of 50. Only 15 percent are in the age range of 20s to mid-30s. The available skilled workforce is aging, and interest in energy-related educational opportunities is shrinking. University enrollment in petroleum engineering is down from 11,000 students in 1993 to 1,700 today. And the number of universities with petroleum engineering degrees has fallen from 34 to 17.

It is the engineers, scientists, inventors, drillers, geologists and skilled trades people who will actually do the work needed to meet our energy needs. To this end, Shell has funded a number of initiatives, including two training facilities – one in Wyoming and one in Louisiana – that will train returning veterans and others.

Finally, we respectfully request that Congress “do no harm” by distorting markets or seeking punitive taxes on an industry working hard to respond to high prices and supply shortfalls.

CONCLUSION

In conclusion, the world faces fundamental and pressing energy challenges. Demand is likely to be robust despite high prices. The investment necessary to meet this demand will be significant. Prices are high, but input costs are rising everywhere, driven by tight capacity along the supply chain. As I said in my opening remarks, every route forward has major challenges – economic, environmental and technological. I trust that my remarks have given you a sense of how we can meet these challenges.

Thank you.