



Speeches

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How the US Can Ensure Energy Supply for the Future **John Hofmeister's remarks at the National Press Club in Washington, D.C.**

23 Oct 2006

It's very nice to be here, ladies and gentlemen, and to speak to you about a subject that is as near as our gas tank or as close as our light switch.

But as I thought about coming to speak here today, as I looked in a mirror this morning, I said, "Why am I here?"

(Laughter)

Why am I here in this distinguished audience representing an industry that some would say has zero credibility; selling a product that you don't want to taste, touch, smell or even see; pushing on policymakers to open up access to the Gulf of Mexico or other outer continental shelf locations, which essentially irritates virtually everyone that we talk to about it; pushing alternative fuels, new technologies, like coal gasification and other technologies that will take years to penetrate the market; promoting the notion of conservation or energy efficiency, which, if we are really good at it, will take decades to make a difference; and finally, trying to promote the notion of how do we manage greenhouse gases in a way that we have a sustainable atmosphere, not only in this country but around the world, which many people dispute the technology or dispute whether there's even a problem? Why am I here?"

Well, there are two main reasons I am here.

I believe in the brand that we represent. The Shell brand that we represent has brought affordable energy to the American people for nearly 100 years. It has brought credible technology to an industry that has continued to evolve and has supported the economic well-being not only of this country, but the world, for more than one century.

And secondly, I really do represent what I consider the myths of big oil. And let me penetrate that myth for a moment, because big oil really represents the tens of thousands of people, everyday Americans in this country, who get out of bed each day to go bring energy to the American people, who work hard, who do what they do, who create against the odds, who work in the extremes of weather, whether it's the Arctic Circle or the Gulf of Mexico, and try to turn around a refinery near the Gulf of Mexico in the month of July or August, wearing all of the safety gear and coveralls, and realize how difficult a job that is to perform.

So those two reasons say, "Yes, come and make your comments."

And the comments I'd like to make are the fact that we can achieve energy security in this country by working on it, by doing the things that can be done, all within the realm of human possibility, all within the realm of technology. We can do these things. And we start by continuing to do what we have been doing, and that is bringing conventional oil and gas to market.

Bringing conventional oil and gas means continuing to exploit the Gulf of Mexico, continuing to develop the resources that are there, prolific as they are, but needing the access to go do it.

We have recently seen an announcement in the lower tertiary region of the Gulf of Mexico, where Chevron and Devon made a big announcement a couple of weeks ago. And we're very pleased that they made that discovery. Shell is on both the east and the west side of that discovery, called Great White and Stones. And we are working very hard to develop that form of energy, which is in unprecedented deep water and at unprecedented depths below the surface of the Earth. It will be a technically challenging project, but it is what we still consider conventional oil and gas.

We're hopeful that the Congress, when it returns, will pass legislation that would open up additional outer continental shelf to try to get access to even more of the Gulf of Mexico. Of course, we'd like to see outer continental shelf developed in other parts of the nation, and particularly off the coasts of Alaska, and even off the east coasts, if those are one day to be developed.

But the conventional oil and gas, the easy stuff, as we call it in the industry, is running out. It is more difficult to find prolific reserves, in this country, of what we consider conventional oil and gas. And so we've come to a conclusion that

that's not enough.

So what will be enough? What will be enough to provide energy security in this country?

Well, we can start by developing the oil shale of Colorado. The estimates are that more than a trillion barrels of oil and gas sit within the basin in Colorado, which was once a sea. You may not know that. That was once a sea. And so there are a trillion barrels of immature oil and gas in rock, called shale, that can be developed.

We know, in the 1970s, there were efforts made to mine and extract and use retort methodology to heat the rock, to take out the oil and gas. That was given up on in the 1980s, or mostly given up on.

Shell, however, stayed. We stayed in Colorado to try to test a different technology for developing the oil shale.

We're still testing that technology, but we're getting close and closer to a financial investment decision, hopefully by 2010, where we use an in situ technology -- in situ means "in place" -- where we would drill holes rather than mine huge quarries.

We would drill holes down into the oil shale and place heaters in the oil shale that would then accelerate the maturation of the oil that's already there to where it drips off of the rock and then it can be pumped out in fashion.

We hope that the technology works. We're testing, now, a freeze wall to see if the freeze wall technology in which these wells would be drilled can contain the water. We believe that sometime in the next three or four years we should be far enough along in our research to make an investment decision.

And so if we develop the oil shale and we have the conventional oil and gas, is that enough to provide energy security?

Shell doesn't think so. We think not. We need some additional supplies of energy.

This nation has abundant coal. We believe that technology has moved coal to the point that coal can be developed in what people are now calling clean coal. IGCC technology is what it's called. That's a technology in which it's an integrated gas combined cycle gasification of coal, which instead of using pulverized coal that is burned, we would rather gasify coal powder in a gasifier that explodes the molecules, resulting in a far more efficient use of the coal. And with the appropriate membrane technology associated with the gasifier itself, we can capture the emissions.

One of those emissions is natural gas. The natural gas moves to a gas turbine. The gas turbine creates electricity.

Another emission is natural gas liquids, which can be used as a clean diesel fuel—no sulfur—because the sulfur is also captured and the sulfur can be managed.

And what about the CO₂? The CO₂ can be captured as well. And that CO₂ can then be managed. Rather than simply emitted into the atmosphere, that CO₂ could be captured and sequestered. Or it could be captured and piped for enhanced oil recovery purposes to the old remaining oil fields in this country, which may have as much as half of the oil still remaining in the conventional oil fields—and the mercury and the sulfur, all of which can be managed through the IGCC technology.

If we develop that and utilities put that to work, is that enough? Not yet. We don't think so.

We use prolific amounts of natural gas in this country, but, ladies and gentlemen, we have a problem: The demand for natural gas is, over the next 10 years, going to exceed the supply of natural gas.

The supply of natural gas, today, comes from the Gulf of Mexico, Texas, Oklahoma, Colorado and other states—Montana, Wyoming, et cetera. But that supply of natural gas is at risk for two main demand purposes.

One of those demands is American industry. American industry needs natural gas in its production processes as a fuel source. It is a clean, efficient use of fuel in the factories of America, particularly petrochemicals, fertilizers, and other agricultural industries; but also most other industries such as steel, et cetera, use massive amounts of natural gas—and power generation.

The combined cycle turbine has been well developed in this country and makes efficient use of gas for electricity purposes. And the construction cycle over the last decade and into this decade have—and will—put such a demand on natural gas that it's doubtful that, with the reserves we have, we can meet the demand.

An augmentation of that supply chain can come from liquefied natural gas. There are vast deposits of gas in different parts of the world called stranded gas, such as off the coast of Australia, or such as Nigeria and Qatar and other parts of the Middle East.

This gas can be liquefied and brought by ship to this country and re-gasified. Shell is actually quite well positioned already in this country for liquefied natural gas. Cove Point, Maryland, and Elba Island, South Carolina, where we have

re-gasification terminals and we're proposing to build several more.

There is an issue with siting liquefied natural gas terminals. There's a problem in this country called NIMBY, not in my backyard. And the people who don't want a re-gasification terminal near them have rights to protest and to protect what they consider to be their environment, their security, and their neighborhood.

This is an issue that we have to face to for liquefied natural gas to come into this country. But we believe it's possible, we believe it's doable. It's already happening.

Will this be enough?

No, we don't think so. We think there's more that needs to be done. There's the whole field of alternative fuels that needs to be worked on. Shell is a major investor in second-generation ethanol.

What is second-generation ethanol? It's cellulosic ethanol. And we're pleased that, today in the audience, is the president and CEO of Iogen—a company in which Shell is investing, too—that produces cellulosic ethanol from straw. Brian Foody is here.

And that second-generation ethanol, we believe, is an excellent way to extend the fuels market of this country. We're already putting ethanol in cars, as you know. There are some states that have a 5 percent, up to a 10 percent, mandate to put ethanol in gasoline. It stretches the gasoline supply.

There are some who advocate E85, which is 85 percent ethanol. I'll come back to that in a moment.

But here's the issue we face in the ethanol development phase of this new alternative fuel industry: Should it come from corn and sugar? Or should ethanol come from cellulosic matter, such as the cornstalk, as the president has referred to as switchgrass, or other forms of biomass, such as woodchips?

The issue with corn-based and sugar-based ethanol, from a Shell point of view, is that if we, as a company, are already being blamed for high gasoline prices, we really don't want to be blamed also for high food prices. And corn-based ethanol affects the food chain. Sugar-based ethanol affects the food chain as well.

And there are stories beginning to build in this country about what farmers are now paying for chicken feed, because the price of corn, as you know, has gone up significantly in the past months not only because of the demand for ethanol, but also because of a relatively poor harvest this year.

The consequence of that will be felt by all of us in our pocket books. Thus, the concentration of our investment dollars on a second-generation ethanol or cellulosic ethanol. Will that be enough?

Well, let me just cover the E85 for a moment. To get E85 to market, two things have to happen. One of those is the fleet of automobiles in this country has to be large enough to create a market. Today, about 2 percent of America's cars can use E85.

Now we know the automakers are trying to build flex-fuel automobiles as fast as they can, but then we run into the second problem. That is, there isn't a supply of ethanol to satisfy a large market of E85 requirements.

So while we can talk about E85, the reality is there's no market and there's no supply. That can change, of course, over the next 10 or 20 years, but it's not an instant turn-on-the-ethanol switch and all of a sudden it's at your local station.

Because in addition to that, an infrastructure would have to be built to distribute and sell that ethanol. We cannot put E85 ethanol into our regular gas station gas tank storage tank because the alcohol will eat right through the fiberglass storage tank or it will corrode the pipes that we currently have in the gas stations because they were never designed for ethanol.

So we need a whole new infrastructure if we're going to sell E85 ethanol. Shell is piloting E85 ethanol in Chicago. We hope to test the market to see if people like it. Procuring it is very difficult because supplies of ethanol are so tight.

And then building the infrastructure is really just a matter of paying for it. But before we go invest millions or hundreds of millions in an infrastructure, we need to find out if the market will accept it.

One of the reasons the market may or may not accept ethanol is that it gets 75 percent of the mileage that gasoline gets. In other words, it has 25 percent less miles per gallon than we see with gasoline.

Will customers pay the same price to get 25 percent less if ethanol is priced at the price of gasoline?

Throughout most of this year, ethanol has cost more than gasoline. So it may not be the solution that some think it is, although we are investing money and making it, and we are investing money in testing the market to see if it will be accepted.

If that goes forward, is that enough? We still don't think so. We still believe that there are other forms of energy that need to be developed, such as wind.

We started construction in the last few weeks in Mount Storm, West Virginia, to build a very large wind farm that produces CO₂-free electricity.

And the good news about this country, ladies and gentlemen, is we do have a lot of wind. And that wind can be used to make CO₂-free electricity.

I was in Maui recently where we announced a wind farm for the back side of Maui, out of sight of most of the visitors, so the issue of observing wind turbines is not at stake. But it takes away the need for a common pulverized coal generating plant in Maui. They've run the limit of the current generation of electricity, they need another plant. Instead, they will have a wind farm, which Shell will provide.

Is that enough? Not yet.

Early mention was made of the Benning Road hydrogen station. Shell is pleased to have a partnership with General Motors working on hydrogen fuel cell vehicles.

I had the good fortune of being here three weeks ago for a day-long meeting at the Energy Department with Undersecretary Garman, working on hydrogen fuel cell technology, where the three major American automotive manufacturers were there and the five major oil companies were present to talk about how do we develop a hydrogen infrastructure to support a hydrogen fuel cell vehicle.

And I invite you, as you leave today, to either take a look or take a ride in the GM vans downstairs, powered by Shell hydrogen, and see how they operate.

It can become a commercial reality, probably not next year or the year after. But within five to 10 years we should be seeing commercially available hydrogen fuel cell vehicles on America's highway. And Shell wants to be the distributor of choice for the hydrogen fuel that this car will use.

Is that enough? No. Three more areas to touch on, ladies and gentleman, to make all of this real and to deliver U.S. energy security.

First and foremost of the remaining three, we must recognize that energy efficiency is a field of endeavor that we must pursue. Four and a half percent of the world's population does not have the right—the inalienable right—to use 25 percent of the world's oil and gas. And that's the formula today in the United States.

The rest of the world wants that oil and gas as well, and they would like their fair share. If that is to occur, then something has to give in the balance or the price will simply skyrocket from where we've seen it.

Four and a half percent using 25 percent of the world's oil and gas is simply a formula that has to change. And so, energy efficiency and ideas coming from the Department of Energy are very useful, but I think we have to go farther. I think we have to go into the culture of America to make a change felt.

People say this is too soft to say, but I'll say it anyway: The hearts, the minds and the behaviors of Americans need to change to where we teach our children energy efficiency and then those children grow up and become technicians and technologists, and then they design differently than we have known in the past.

Our homes, our offices, our factories, our vehicles to be designed with efficiency in mind as a priority, because that last 50 years of enjoyable mobility that we've had in this country are not to be repeated in the next 50 years if we don't do something very different. And energy efficiency is one of those differences that must change.

Secondly, it's Shell's belief that we have to deal with greenhouse gases. From a Shell point of view, the debate's over. When 90-plus percent of the world's leading figures believe that greenhouse gases have impacted the climate of the Earth, who is Shell to say to say, let's debate the science?

We're not going to debate the science. When the policymakers decide it's a problem, it's a problem. And so there are good ideas coming from the White House that will address this, but we believe there needs to be more.

Shell was involved in discussing AB32 in California. At the end of the day, we didn't support the bill because of its ambiguity, but we want to be involved in the debate, we want to be involved in the rule writing that will now occur in California.

But, ladies and gentlemen, we can't have 50 state policies on greenhouse gas emissions. We believe, Shell believes, we need a national approach to greenhouse gas management and how that would work across our industries, not only the gas and oil industry.

And then, finally, in some parts of this country children are taught about energy. They are taught about gas and oil. They are taught about the social implications of CO2. They are taught about the kind of use and applications of energy.

It's Shell's belief that all children should be taught about energy. Here we are in the capital of the nation having a huge debate about the future direction of energy in this country, and the debate, it sometimes sounds like a squabble. And I personally irritate both sides of the aisle when I express my own views on it.

The fact that we are having such a debate when other countries have a straightforward direction that they are following is due to the fact that I don't think we fully understand, as Americans, where energy comes from, how hard it is to produce it, and how challenging it is to sustain that level of production.

And we should be having a debate that is informed by people knowing more than they know today, starting with schoolchildren and moving through the generations.

I think the time has come for the Education Department to recommend to the state school superintendents of the nation that energy become a part of the curricula in our nation's schools in the same way that history and science and civics and math are part of our curricula, because, ladies and gentlemen, we have developed a lifestyle that is predicated on energy.

We have developed an economic capability in this country and a desire for economic growth that, again, is predicated on energy. But yet we're not teaching ourselves how precious, how important and how challenging and difficult energy is to produce and to bring to the American people.

The combination of conventional oil and gas, unconventional oil and gas, liquefied natural gas, coal gasification, alternative fuels, such as ethanol, wind, hydrogen and solar—which I didn't mention, but which Shell is investing in, in terms of a new technology called copper indium diselenide technology—coupled with greenhouse gas management, energy efficiency at the core of how we behave and how we think, and an education of our nation's population that are growing up and learning about this precious commodity, all those together, we believe, will deliver energy efficiency and energy security to this country.

Thank you.