



speech

Energy Security: Taking the Long View



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Thank you very much. It's good to be in Boston. I'd like to thank Peter Rollins, your president, for the invitation to join you. And Tom May, thank you for that very kind introduction.

You all represent some of the leading enterprises in this region, and your reputation goes well beyond New England. Some of you lead large firms with famous names. Others preside over newer companies that have risen quickly and aim even higher. One thing we all have in common is that we can learn a lot from one another. So I look forward to talking with you today about energy in America and answering your questions.

Let me start with the economy.

If anybody wants a firm prediction of when we can expect a strong recovery, I'm afraid an educated guess is the best I can do. The short answer is that it will surely take time, and most likely 2009 will be gone before the worst is behind us. But if it's optimism and confidence you're looking for, that I can offer.

Despite some serious flaws in the financial markets, economic growth over the long run is still driven by the same forces — rising population, technological progress and human ambition.

Last month I was in Ireland, the nation of my birth, and was reminded just how dramatically life can improve in a generation or two. Despite the current setbacks, such a rise in wealth, enterprise and opportunity would have been hard to imagine when I left 40 years ago. And the Irish experience is part of a larger story unfolding across the world as men and women keep striving for a better life.

When it comes to general economic trends, I take a very hopeful outlook. The economies that have been at the center of so much activity in recent years — including China's and, of course, our own — will continue to drive innovation and progress. And they will surely lead the global economic recovery. And in the case of our own future, I am certain of this: The long-term stability and success of America's economy will depend, as much as anything else, on energy security.

It's understandable and necessary that the Obama administration is focused on the overall economy, and especially on resurrecting the financial markets. But the challenges of energy security are also urgent. And they will only grow in importance as recovery draws near and optimism returns.

I'm in an industry where you don't have to exaggerate the importance of what you're selling. Every enterprise represented in this room depends on a reliable supply of energy at an affordable cost. Energy concerns every household and supports every local economy. The oil and gas industry alone employs some 1.8 million Americans directly and another 4 million indirectly. This surprises some because those who use the term "big oil" don't want you to think of us as a big employer. But whether we explore for energy, produce it, deliver it or sell it, we're part of a massive infrastructure that provides good jobs for millions of Americans.

Right now, energy prices are much lower than last year, mainly because of the falloff in economic activity across the world. It's only a year ago on the calendar, but it seems a decade ago on the political calendar that gas was hitting \$4 a gallon and oil trading at well over \$100 a barrel. Everybody was talking about it, Congress was calling hearings, and the word "crisis" filled the air. But time passed, and the issue dropped from view. When prices decline, there's always the tendency to pay less mind to long-term energy concerns.

In my business we don't have that luxury. If you bear responsibility for energy production, you have to think decades ahead and stay focused on the fundamentals. And the men and women who set policy for our country will have to do the same because when the economy revives and prices rise with demand,

we'll be in the same fix we were in a year ago. Unless we take the long view and act on it, America will be struggling again with the same serious challenges. And for all the debates over energy use and production, there is almost universal agreement on what those challenges are.

First, we need enough supply to meet the vast needs of a prosperous, productive nation of more than 300 million people — a nation that also must compete for some of those supplies in a world market. Second, we agree on the goal of becoming less dependent on foreign sources of oil and gas. We understand that a good deal of these lie in some of the world's most unstable regions. And this leaves us and our economy at the mercy of far-away events and decisions. Even absent these concerns, there is still the problem that burning fossil fuels can carry a cost to the world, including to the climate of the Earth itself. And so we share a third objective: to reduce the impact of fuels of all types on our environment.

These are the great purposes we largely agree upon in energy policy. But while the goals are shared, what we often seem to lack is a common set of facts from which to begin. It happens on some issues that strong opinions are often easier to come by than basic knowledge, and this is the case with energy.

I spoke recently with a well-known reporter who started covering energy matters more than 30 years ago. He put it this way: The "asymmetry between the number of people talking about this issue and the number of people who understand it ... [is] at the one-in-a-million level. I've never seen a wider gap." The man has a point, and I'm afraid it applies to many political leaders as well. Even they spend a good deal more time talking about energy than in putting their various claims and pledges to the test.

A realistic strategy for meeting the world's demand for energy has to start with an understanding of scale. How much energy does the world need, and how much of the demand can be met with alternatives right now? How long will it take to make the transition away from fossil fuels? And in the meantime, how much oil, gas, coal and nuclear power will we need to ensure energy security for America?

Consider, as a starting point, the fact that every day in the life of the world we use, from all energy sources, the equivalent of 245 million barrels of oil. Demand on that order is a fact, and over time it moves in one direction — upward. Worldwide, we use 50 percent more energy than we did only 20 years ago. And 20 years from now, demand will have risen by another 30 percent or so. Eighty-five percent of the global economy is powered by oil, natural gas and coal. And that reliance on traditional fuels is just as great here in the United States, despite the enormous progress we've made in the direction of renewables.

There's a tendency to think of nations in Europe and elsewhere as far ahead of us in renewable fuels. But in fact, America's progress is considerable: We have, for example, become the No. 1 producer of wind-generated power and ethanol. As it happens, my company is the largest geothermal producer in the world and the largest solar installer in California. The development of renewables is moving at an impressive pace. Over time, we will replace fossil fuels with cleaner, more diverse and more secure forms of energy. And smart policy can help speed the day when the world has moved past its heavy reliance on carbon-based fuels. That is all to the good.

Yet, if we look at the data, there is no avoiding a simple conclusion: The sheer scale of our energy needs is far beyond the capacity of any one source or technology.

You can assume, as I do, that our use of renewables will grow dramatically. That's going to happen. But it's still the case that, as a percentage of the global energy mix, 20 years from now renewables will still be at around 10 percent. Simply stated, renewables have strong promise. And yet, we will need to rely on traditional fuels for quite some time to come. In the long sweep of time, renewables will meet a far bigger share of global demand. But it's false to suppose that they can replace conventional energy in a short time frame as we are sometimes asked to believe. After all, the development and application of new technology always take time. Look at the computer industry. It took about 50 years from the development of the silicon chip before computers were a widespread part of everyday life.

Will energy alternatives take that long? I hope not. But we need to be realistic. Conventional energy sources will remain indispensable to meeting demand for decades to come, even as we pursue greater contributions from other sources. It's for us to decide where we obtain the conventional energy we need. And from a policy standpoint, America has been moving in the wrong direction for a very long time.

Although talk of energy independence has been in the air since the 1970s, one policy after another has severely limited domestic exploration and production. In just the past 25 years, America's oil production has fallen by nearly 4 million barrels per day. And we have not made up for it with a corresponding increase in nuclear, renewables or any other source. This is the equivalent of taking a major producing country's supply off the world market. And over the same 25-year period, U.S. demand grew by nearly 4 million barrels per day, and we've met that demand by importing still more from abroad.

When oil and gas is discussed in Washington, often the intention is to impose more taxes on oil and gas companies. The "windfall profits" tax can make an appealing campaign pledge, but all it does in practice is to hinder development and leave America ever more dependent on foreign sources.

The same mindset in Washington refuses to allow even a complete and accurate measurement of America's current oil and natural gas inventory. Estimates are that America has the equivalent of over 30 billion barrels of oil and natural gas resources available in the Outer Continental Shelf that is currently off-limits to development. We know that our methods of extracting it are the safest, most environmentally sound methods in existence. We know that the more we produce at home the less we import from others. And we know that the result will be new jobs, dividends to shareholders including pension funds, increased government revenues and a stronger economy when more energy is produced on American rigs by American workers.

For me this is a matter of common sense. Yet here, too, we need a dose of realism.

If we could simply drill our way to full energy independence, I'd be the first to tell you. But we can't. Even if we had all the access we wanted, there still aren't enough domestic reserves. But if greater energy security is the goal, more access will help. The lifting of the moratoria last year on offshore drilling presents an excellent opportunity to move forward. And in keeping with their pledges of last fall, I hope the president and Congress will seize the moment. If they do, they will benefit America's future.

The solutions to our energy problems are rarely a case of either/or. It's not a choice between more drilling or more efficiency, coal or wind, nuclear or solar. We need greater efficiency and more renewables. We need nuclear and clean coal. We need wind and oil and natural gas. To achieve energy security, we need it all.

That means getting beyond simplistic proposals and staying focused on energy security. There are no quick or easy answers. Massive scale, long lead times, growing demand — these are the realities we face. And don't doubt for a moment that America has the means and the know-how to manage all these challenges. After all, America is the No. 1 producer of nuclear power, ethanol and wind. We're the No. 2 producer of coal and natural gas. And we're the world's third-largest producer of oil. It's clear that we are energy-rich and our capacity is immense.

This country is not an energy weakling or anything close to it. We are an energy powerhouse. Don't let anyone tell you otherwise. We've got what it takes to keep moving forward on every front. And that is what we must do if we're going to be ready for the increase in demand that will come along when the global economy recovers.

As for our shared goal of managing the transition to lower-carbon energy, that too is achievable. But it'll require a long-term commitment and, again, a grasp of the true size and scale of the undertaking. We've all heard people running for office promise to reduce carbon emissions by this or that big percentage over the next decade or two. And they've got the right idea. But they vastly overstate how quickly those

reductions can be made and understate the cost of the enterprise. Some talk about reducing emissions by 20 percent by 2020. It sounds good! 20 by 20! Others talk about reducing emissions by as much as 80 percent by 2050. Even with the best of intentions and an all-out effort, we will only get part of way there. Here's why.

If we were to replace today's global transportation system with a zero-carbon solution — all cars, trucks, buses, trains, planes and ships — we would reduce greenhouse gas emissions by only 15 percent, that's 1 - 5 percent! If we were to replace the entire global power generation system, we would reduce greenhouse gas emissions by only another 25 percent. So combined, that's only a 40 percent reduction. And these observations assume no growth by 2020 or 2050.

I am for a safe, environmentally sound world. But we have to be honest with ourselves: Can the world replace its entire energy system in just a matter of decades? And that is a challenge of scale that advocates of such reductions simply have not faced up to.

In short, seeking those reductions without any realistic plan to replace that energy is a straight path back to a pre-industrial economy and a standard of living to match it.

There are serious and systematic ways of reducing carbon emissions for the long term. But trading in false hopes and inflated numbers will get us nowhere. We need to set goals that are both high and realistic. We need to willingly accept the associated costs that we all must bear. And we need to be realistic that an economy free of all fossil fuels may be beyond our reach.

But we can make meaningful progress, and there are actions we can take today. The most immediate and cost-effective thing we can do is to maximize conservation through energy efficiency. Our country has made great strides in efficiency. In fact, we use half as much energy per unit of GDP as we did a generation ago. Among other steps, we also need to encourage investment in the kind of breakthrough clean-energy technologies that greatly reduce emissions and bring those technologies up to commercial scale.

In all that we do to address climate change, it's critical to remember how much our progress will depend on economic growth here in America and in nations that aspire to our standard of living. Even as we deal with the adversity of an economic recession, whole nations are shaking off ages of poverty and moving toward prosperity. The long-term trend is ever upward. And this great progress for billions of people hinges on a growing supply of energy from sources that can be drawn on right now.

I meet with policymakers from time to time, and my best advice to them is never to take economic growth for granted or to forget that the strongest economies, and those on the rise, are still powered largely by fossil fuels. Many wish it were otherwise, but it's a fact. And the danger is to let energy

promises get ahead of energy realities. To the extent that oil and gas fuel economic growth, they can actually serve the great goal of getting us beyond a carbon-based economy.

It is no coincidence that the greatest advances in alternative fuels have come in this past quarter-century, a time of incredible economic expansion. The market is working as investment capital moves in the direction of new sources and far greater efficiency.

This is a crucial point, often neglected by advocates of new controls and mandates: Alternatives depend on innovation, and innovation depends on growth and open economies. Growing economies are always better situated to make the big investments that yield the long-term payoffs.

Go to any major developed country and you'll find a petroleum-based economy. Try to change that fact overnight, with overly restrictive policies, and what you'll get is a weaker economy and all that comes with it — a falloff in investment, the loss of optimism and less willingness to take the long-term view. In those conditions, making big investments in energy sources that have a distant time horizon will often be the last thing on people's minds.

Supplying the energy needs of the world requires time and money — lots of both. Indeed, the energy system we have right now is the product of more than 100 years of investment. We have to think about the next energy system we're heading toward as another 100 years of investment.

Our responsibility now is to prepare the way — to set in motion the world's transition to new sources of energy. It's not a sudden turn, but a long arc. We will rely less on conventional fuels, but it is more than the work of years or even of decades: It is the work of generations. Today and tomorrow, a realistic and facts-based view is critical to progress. A great president and son of Massachusetts, John Adams, put it best: "Facts are stubborn things; and whatever may be our wishes, our inclinations, or the dictates of our passion, they cannot alter the state of facts and evidence."

In the end, we'll succeed through technologies not yet developed nor perhaps even fully imagined. As always, when the conditions are right, there will be those moments of genius that solve old problems and clear new paths.

The human capacity for invention and our boundless desire to improve life for ourselves and others — the essence of human energy — are always the prime forces of growth and progress. They remain vibrant and powerful in the free market economies, especially in the United States of America. And I would never bet against them.

Thank you very much.

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