



Katrina Landis speech, Renewable Energy Technology conference

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Thank you very much for asking me to be here today to bring you up to date on BP and its alternative energy businesses.

Next month, the world marks the 80th anniversary of the death of the man who was probably its greatest inventor and industrial innovator – Thomas A. Edison.

Edison's most famous products – the light bulb, the phonograph, the motion picture – all have one thing in common: they need energy. Generating the necessary electricity gave rise to concerns in the early 20th century that, at the rate coal was being consumed; the world might one day run out of it.

Coal wasn't the only issue. It was Edison's great friend, Henry Ford, who discovered how to mass produce automobiles. That created a similar demand for oil to be refined into gasoline, and concerns about its supply.

That caused Edison to ponder the question of energy source and supply. In 1931, near the end of his life, he offered his vision of a possible energy future.

"(W)e should be using nature's inexhaustible sources of energy – sun, wind and tide," he said. "I hope we don't have to wait until oil and coal run out before we tackle that."

Well, BP hasn't been waiting to tackle it. For several years, we have been investing money into the effort. And we are preparing to invest a great deal more. And while we have not yet realized Edison's ultimate dream, I am pleased to report that we have made good progress toward making access to renewable energy a reality today.

That's good news, both for BP and for the world. Because in coming decades, we are going to need all the energy we can get.

Earlier this year, BP published Energy Outlook 2030, our first-ever projection of world energy trends.

The numbers are staggering.

Total world energy demand is likely to increase some 40 percent by 2030. Given our industry's lead times, that's just around the corner. It is the equivalent of adding twice the entire energy demand of the United States today, in just 20 years.

The bulk of that new demand will be in the developing world. As recently as 1992, China was a net oil exporter. Last year, she imported over five million barrels of oil per day. In 2000, the US used 150 percent more energy than China. Today, China uses more than the US.



Energy Outlook 2030 projects that energy sources will diversify and that together non-fossil fuels will likely account for a significant source of growth for the first time ever. Between 2010 and 2030 the contribution to energy growth of renewables is projected to increase from 5 percent to 18 percent. Biofuels are expected to account for around 10 percent of global transport fuels.

At BP, we believe we are seeing the coming of age of a new energy sector that, over the next 100 years, will supplement traditional fossil fuels to create a more diversified energy mix.

Note I said “supplement,” not “replace.” The world has had more than a century to build its energy portfolio around fossil fuels. A fundamental shift can’t be anything other than the work of decades.

So in the very brief time that I have today, I want to share two things.

First, an overview of BP’s alternative energy business, with a primary focus on the U.S., and why we have chosen to invest as we have. And second, a closer look at the policy environment our business, and those of other companies, require in order to grow and become an integral part of US energy policy.

In 2005, BP made a commitment to spend \$8 billion over 10 years on alternative energy. I am pleased to report that we are actually investing ahead of that pace. Just last week we agreed to invest \$71 million to become the sole owner of Tropical BioEnergia S.A in Brazil; and we also invested a further \$25 million to increase our ownership of CNAA in Brazil to 99.97%. We will have invested approximately \$7 billion at the end of 2011, about \$4 billion of that in the US.

We now have about 4500 employees working globally in alternative energy, with 500 of them here in the US. We have a presence in 20 states.

We invest in select clean energy technologies because we believe they will be material, they will be scalable, and they are closely related to our core capabilities.

We have the experience and capability to fund, develop and deploy new energy technologies. Our experience, gained from large scale deployment of new technology, drives constant innovation and cost reduction. That is what led to our focus on biofuels, wind and solar power, and the creation of our ventures business to gain strategic insights on the advances occurring in this sector.

In Renewable power, we are focusing the wind business here in the US because both the physical and the public policy climate are favorable. Right now, we have 11 operating wind farms in the US, with almost 1600 MW gross capacity. Two more are under construction and at least two are planned for 2012. When ranked by new capacity added in the past two years, BP Wind Energy is seventh in the nation.

While BP has been involved in solar for more than 40 years, the business has changed radically in the last two years as a result of China's entry into low-cost solar panel manufacturing. So we began restructuring our solar business to focus on large power projects with high margins.

Right now, we have 119 MW of projects built in Europe and the U.S. and another 113 MW in construction, one of which is the 32 MW solar farm on Long Island, NY. The farm, the largest of its kind on the East Coast, is due to be operational in late 2011 and is expected to generate enough energy to meet the needs of 4,500 average Long Island homes.

Also in the US, we are building a low-cost, low-carbon, scalable and sustainable biofuels business. We are developing the next-generation biofuels based on cellulosic materials grown on lower-quality



agricultural land not best suited for growing food crops economically. Using these feedstocks and our technology to make biofuels can produce yields four to five times that of corn ethanol on a per acre basis.

We believe that no other biofuel has the potential to deliver the necessary volume at the low cost of cellulosic biofuels. Our product will be made from dedicated energy grasses, converted into fuel using proprietary technology that extracts sugars from the cellulose in the plant and converts it into liquid fuel.

Cellulosic biofuels will dramatically reduce the greenhouse gases (GHG) of our fuel transport system. The EPA estimates that cellulosic biofuels produced using perennial energy grasses can achieve more than a 60 percent reduction in GHG from conventional gasoline.

Finally, through our Ventures arm, we are actively seeking out opportunities to help develop additional "clean-tech" businesses.

It is a fact that, promising as it is, alternative energy requires policy support at this stage. These incentives can take the form of tax benefits, mandates and regulations, but they need to be transparent, stable, sufficiently long-lived and provide the incentive to increase production while lowering costs.

The support must attract private investors to put capital at risk and incentivize them to achieve cost reductions. This support should be transitional, not open ended. It will help bridge today's nascent industries, allowing developers the time and space needed to deliver at scale cost-efficient, sustainable US energy solutions.

In US wind, for example, we see ongoing uncertainty over the renewal of the production tax credit or PTC. We are urging the government to maintain this transitional incentive in some form over the next several years. Otherwise, investor uncertainty will likely lead to dramatic reductions in wind farm construction.

Thanks to taller towers, larger rotors, more accurate monitoring of wind speed, improved siting technology and weather forecasting, today's turbines have a nameplate capacity seven times greater than turbines in 1990, with the capability to generate as much as 15 times more energy.

This strong result is partly the result of economies of scale that have become possible as the industry has grown. Turbine prices fell 32 percent from 1990 to 2000, then another 33 percent from 2000 to 2010, lowering the cost of wind energy to consumers.

And in difficult economic times, wind energy development has not only aided rural development through tax and royalty payments to farmers and ranchers but it has enhanced U.S. energy security, contributed to a diversified energy economy and created jobs.

Over 400 facilities in the US are currently producing products for the wind industry, producing the 8,000 components that go into a wind turbine. The US wind industry supports ~75,000 direct and indirect jobs as of the end of 2010. These include construction, operations and maintenance jobs, as well as 20,000 US manufacturing jobs. Forty-three states now have wind-related manufacturing facilities.



The Production Tax Credit and other fiscal support mechanisms have succeeded in accomplishing what they were designed to achieve. Matched by private investment, they have enabled the delivery of these concrete results. The premature and abrupt termination of this support will squander the gains that we have made just as we are approaching the finish line. A PTC extension in some form for a period beyond 2012 would drive further cost reductions, provide investor certainty and help industry reach grid parity by 2016-2017 assuming gas prices rise from current levels. It is especially important for Congress to send a signal this year.

When it comes to biofuels, we can see the benefit of resilient policies. They will remain in strong demand to 2020 and beyond because governments in many countries have established targets and mandates. We have seen no weakening of these.

Later today, you will hear from Sue Ellerbusch of our Biofuels team that the policy framework must continue to include a set of transitional support mechanisms that bridge today's nascent industry. An effective policy framework is in place today. The Renewable Fuels Standard was created under the Energy Policy Act (EPAct) of 2005 during the Bush Administration, and established the first renewable fuel volume mandate in the United States. The program was expanded as RFS2 in the Energy Independence and Security Act of 2007 and has been extremely successful in driving hundreds of millions of dollars in technology investment.

This is a great example of a policy that does the right thing and does exactly what is needed – diversifying the US energy portfolio, increasing domestic energy security, creating US jobs and boosting US agriculture, while at the same time producing a low-carbon fuel. Approximately 300 advanced biofuels plants are needed to meet RFS2, requiring >\$100 billion in financing. It is critical that this long-term framework remain secure and stable to encourage technology development, continued private investment and capital financing.

If this long-term policy framework stays in place, we anticipate being able to compete with conventional fuels when RFS2 reaches maturity.

Also, BP Biofuels is partnering with farmers in the South and Southeast to bring stability back to their agriculture business through the planting and management of energy crops. We are investing in local economies, creating rural employment and enhancing the local community tax base. The unique approach we are taking sees farmers maintaining control and ownership of their land.

I started out this talk mentioning Thomas Edison, so I will finish with him as well.

It is important to note that Edison was not by any means a solitary inventor. He considered the research laboratory, which brought together diverse minds from different disciplines to work on similar issues, to be one of his greatest innovations.

“There’s a better way,” he would tell his scientists. “Let’s find it.”

He also knew that discovery was not enough. The product had to be commercialized, and made accessible to the consumer. Otherwise, it was simply a curiosity.

That last step is one that requires a sophisticated organization like BP. We aim to move renewable energy from the world of Thomas Edison’s dreams to one that is available today.

Thank you.