

Speaker: Lamar McKay
Speech date: 24 September 2009
Venue: New York Hilton
Title: Chairman and President BP America Inc.

Good morning.

I would like to thank the Financial Times, particularly Ed Crooks, for inviting me to come here today and share my thoughts on the future of U.S. energy.

For more than a decade, it has been BP's position that America and the world must start moving toward a lower-carbon energy future.

Long ago, BP voiced its support for precautionary action with regard to climate change.

And a more diverse energy supply - one consisting of fossil fuels, as well as, biofuels, wind, solar and nuclear - is simply a good idea on energy security as well as environmental grounds.

But, a sensible roadmap - how society gets from here to there - has always been a bit vague. Especially when you factor in the desire to maintain and enhance the standard of living Americans have come to expect.

The Energy Information Administration is projecting that US energy demand will grow from 101.9 quad BTUs in 2007 to 113.6 quad BTUs by 2030.

That's the equivalent of adding another Texas.

Alternative fuels have an important role to play, but care must be taken not to oversell what we can expect from them.

Promising too much, too soon when it comes to alternatives risks rendering the entire effort politically and economically unsustainable. And the world can't afford that.

Even as we seek to diversify our energy portfolio, we need to take note of a basic fact.

Except for the 8 percent of US energy that is generated by nuclear power and the 7 percent that comes from hydro and renewables, the entire US economy runs on fossil-based fuels.

That fact is key as we look forward.

One hundred and fifty years ago last month, Col. Edwin Drake discovered oil in Titusville, Pennsylvania.

A century ago, the company that would become BP found oil in the Middle East. Since those events, an enormous infrastructure has been built to provide the world with oil and natural gas.

That infrastructure can't be replaced easily, quickly or cheaply.

So when we think about moving quickly toward a lower-carbon future, it makes more sense to work with that infrastructure than against it.

But we badly need a road-map.

A road-map based on a clear understanding of the existing infrastructure, changing technology, economic incentives and the policy trade-offs we will face along the way.

Some of the big questions are:

What kind of clean energy technologies are scalable right now? In the next decade or two?

Where can we get the biggest bang for the buck in reducing emissions?

And, most importantly, I think, how can fossil fuels actually drive reductions in our national carbon footprint?

US energy is divided broadly into two sectors.

Transportation, which overwhelmingly uses petroleum-based fuels... And heat and electricity, which use mostly coal, supplemented by natural gas, nuclear, renewables, and some oil.

In 2007, transportation generated about 2 billion metric tons of CO₂, while combined commercial, residential and industrial heat and electricity generated almost twice as much, about 4 billion.

Obviously, the costs required to get a handle on that - and let's not kid ourselves, going lower-carbon will cost - should be spread as equitably as possible across energy sectors.

That is one of our core beliefs.

As a member of USCAP, we helped draft a blueprint for climate change legislation that recommended - among other things - how cap and trade could work - with equitable treatment as the basis.

If not done equitably - massive misallocation of capital and insulated consumption will occur.

That would seriously impede - or make much more costly - the very carbon reductions that we intend.

Bottom-line: a ton of carbon is a ton of carbon - whether it comes out of tailpipes or smokestacks.

Please keep that in mind as you view any contemplated legislation on climate change.

We also believe that higher prices alone are not necessarily sufficient to catalyze the changes that are required.

In other words, sometimes regulations are required to move things in a positive direction.

I am going to focus my remarks today around the electricity and heat generation sector, which accounts for the bulk of GHGs emitted every year in the US. The EPA estimates that electricity generation alone causes 41 percent of all CO₂ emissions.

The three big players in this arena are coal, nuclear and natural gas.

And of the three, coal generates around 50 percent of the power, but 81 percent of the carbon.

So if we are going to get a handle on carbon generation, replacing or cleaning up coal is the place where we must start looking for significant reductions.

Squaring the circle of needing more heat and electricity while emitting less carbon will require a combination of energy sources.

But we believe that increasing the use of natural gas provides the most affordable, most efficient, most immediate and longer-term step in solving this conundrum.

To see why, look at coal...

Is there a path to clean, or at least cleaner, coal?

The answer is "yes" - but it will take time and money.

You've heard a lot about carbon capture and sequestration lately.

Essentially, CCS involves capturing CO₂ at coal or gas-fired power plants and reverse-engineering a natural gas field - putting the gas back into the ground.

BP is involved in three major CCS projects, one in California, one in Algeria and one in Abu Dhabi.

With the appropriate regulatory regime and an adequate carbon price, we believe CCS could be commercial by 2020+.

But deployment will take time and, again, there will be substantial costs.

One way to constrain those costs is by replacing coal with lower carbon fuels.

Wind and solar are the sources most often mentioned, and BP is active in both spaces.

Wind has grown faster than any other renewable source. BP has over a gigawatt of gross wind capacity now spinning in the US and we are one of the country's top five holders of wind resources. Wind can be economically competitive - but currently still requires subsidies.

Solar is higher cost than wind and requires a greater subsidy.

And both sources are intermittent, requiring back-up. Smart-grid technology might help, but we don't have it yet.

So where does that leave us? Natural gas. And it's not a bad place to be.

Natural gas has the greatest potential to provide the largest carbon reductions at the lowest cost using technology that is available today.

Natural gas has been around for a long time, of course, though it has generally been more of a supporting player in America's energy story than a star.

It's time that changed.

The prize is great.

If we get it right - and apply the necessary technology within a stable fiscal and regulatory framework - gas can transform America's energy outlook in the decades going forward.

The list of its advantages is long:

- It is far and away the cleanest burning fossil fuel in the energy portfolio, delivering 60 percent less CO₂ than coal per kilowatt hour.

60 percent!

- It is also the most versatile. Natural gas is unique in that it can be used for transportation, as well as for generating light and heat.
- Combined-cycle turbines, fuelled by natural gas, are also quick and relatively cheap to build.
- In addition to being cleaner burning, natural gas generators are more easily switched on and off than coal-fired plants, and can be expanded and permitted with far fewer NIMBY issues than coal or nuclear.

And the timing is right.

The United States is experiencing a renaissance in natural gas development.

Proven techniques, such as hydraulic fracturing and horizontal drilling, are being combined to open up new deposits of tight gas.

And this is happening, not only in traditional oil and gas states such as Texas and Louisiana, but also in such non-traditional areas as Pennsylvania, Ohio and upstate New York.

As a result, US dry gas production increased last year by 3.9 bcf/d, despite major disruptions from Hurricanes Gustav and Ike.

Without those impacts, production growth would have been closer to 5 bcf/d, just short of 10 percent year-over-year growth - a phenomenal achievement.

Estimates vary, but the US probably now has between 50 and 100 years worth of recoverable natural gas.

These new reserves, coupled with the recession, have driven natural gas prices to a seven-and-a-half year low, a fact with which I am more familiar than I'd like to be.

And those lower prices are having an effect. In only the last year, between 3 and 4 percent of US electricity generation has switched from coal to gas.

It is too early to say that the price spikes that have characterized commodities such as the coal and natural gas markets in earlier years are a thing of the past. But I can say that I have confidence in the US resource base.

Globally, gas is becoming a much more fluid, global commodity - more flexible, more tradable, and more secure than in the past.

So with all of these advantages, why is the Energy Department projecting that the share of US

electricity generated by natural gas will stagnate over the next 20 years?

Increasing use of renewables is one reason, and I think we can all agree that is to the good.

But another reason is that America is still building coal-fired power plants.

As of June 2009, 36 new coal plants are permitted, under construction or near construction in the US, with 47 more announced.

Inefficient coal plants - which some call "clunkers" - are still out there, with an average age of around 45 years.

And that's an average. One plant in Minnesota is - hang on - 95 years old.

In fact, coal is projected to be providing 47 percent of America's electric power in 2030, a level almost unchanged from today.

What's wrong with this picture?

At a time when we are looking to make the American energy portfolio greener, we are doubling down on the most carbon-intensive form of energy known to exist.

Even without a carbon price, new-build gas-fired plants are cheaper in cost to new-build coal-fired plants, and feature fewer emissions.

And they are only slightly more expensive than just retiring old coal plants.

If we could ramp up natural gas use by one trillion cubic feet per year, we could retire 150 GWh of the oldest and dirtiest coal-fired plants.

In fact, BP has calculated that - for a fraction of the cost of other options - as much as 30 percent of the near-term Waxman-Markey reduction volume target could be delivered through expanded gas use.

This would be for both power and by switching a variety of home appliances to gas, for example.

Nor is gas in some kind of competition with renewables. It complements them.

In Spain, for example, gas and renewable energy have grown in tandem.

And natural gas can use the existing fossil fuel infrastructure, which I mentioned earlier.

Fortunately, there are signs that natural gas is beginning to turn some heads inside the Beltway.

Interior Secretary Ken Salazar recently said that natural gas should play a more prominent role in the US energy picture.

So have former Vice President Al Gore, Senate Majority Leader Harry Reid, and Energy Secretary Steven Chu.

I believe there is a growing consensus that any bill in Congress that aims to control carbon simply

must do more to discourage the highest polluting coal-fired plants and increase the use of natural gas.

In the near term - the next 10 years or so - our energy path for power and heat should look like this:

1. New electricity capacity should be met by renewable energy sources developed at a pace that is technologically and economically sensible - aided by transitional incentives, and natural gas;
2. The oldest, lowest efficiency coal plants should be substituted or replaced by natural gas-fired, modern Combined Cycle plants.

Over the medium- to longer-term, the electricity/heat demand mix should be met by:

1. Renewables and alternatives;
2. Natural gas;
3. Nuclear;
4. Coal w/CCS technology.

If we do that, then I think we have a fighting chance of meeting the challenge I outlined at the beginning of my talk....

Reducing the amount of carbon we put in the atmosphere, while at the same time meeting increasing energy demand - at an affordable price for American families.

Natural gas has been described before as a "bridge fuel" to a lower-carbon future. It is that, certainly. But I believe it can be much more.

Rather than merely a bridge fuel, it can be a destination fuel for a lower-carbon future. The potential of natural gas is not a vision founded on conjecture or hope. It is founded on existing reality.

Increased use of natural gas provides us with the best, most realistic path for achieving the greatest emission reductions, at the lowest cost, using technology that is available today.

There is no need to wait...

Thank you very much.