

Statement of Lamar McKay, Chairman and President, BP America, Inc.
Senate Committee on Energy and Natural Resources
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Chairman Bingaman, Ranking Member Murkowski, members of the committee, my name is Lamar McKay, and I am the Chairman and President of BP America.

I appreciate the opportunity to appear before this panel to present BP's views on the role natural gas can play in mitigating climate change.

BP has long been a proponent of comprehensive energy policies that promote energy security at an affordable cost through the development of both traditional and non-traditional sources of energy, as well as conservation and efficiency. We have also been a long-time advocate of taking a precautionary approach to CO₂ emissions, and are committed to reducing the environmental impacts of both energy production and consumption.

Throughout the 20th century, an abundant supply of low-cost energy was the driving force behind America's prosperity and development. EIA projects that US energy demand will grow by 11 percent from 2007 to 2030. Satisfying such demand in a sustainable way is one of our nation's most significant challenges.

Accomplishing these objectives in the 21st century will require a more diverse energy mix — increased efficiency, nuclear power, renewable energy, cleaner coal, oil, and natural gas.

This will require the right combination of policies and market-based systems to incentivize the transformation of energy use. Getting there will require all energy participants — consumers, governments, energy companies and other stakeholders — to work together to build a sustainable energy future.

If we do that, the result will create new jobs, enhance our nation's energy security, and mitigate the impacts of climate change.

At BP, we believe that natural gas, which is in abundant supply, is key to making the vision of a lower-carbon energy future a reality.

As a member of US Climate Action Partnership (CAP), we helped draft a blueprint for climate change legislation that recommended, among other things, how cap and trade could work — with equitable treatment between all sources of carbon as a basis.

Current legislative proposals do not create a level playing field and, as a result, natural gas is in danger of being squeezed. In spite of its economic, energy security and environmental benefits, gas is caught between support for emerging

low carbon technologies on the one hand, and relief for coal generation on the other.

If all sources of carbon are not treated equitably, massive misallocation of capital and insulated consumption will occur. Our bottom-line is a ton of carbon is a ton of carbon — whether it comes out of a tailpipe or a smokestack, it should be treated the same.

BP America

BP has a long history in the US energy market. I represent the 29,000 US employees of BP America. We are not only the largest oil and gas producer in the United States, but also the company that invests in the most diverse energy portfolio in the industry. In the last five years, we have invested approximately \$35 billion in the US to increase existing energy sources, extend energy supplies and develop new, low-carbon technologies.

Oil & Gas: Offshore and onshore, BP is one of the largest producers of oil and gas in the United States. From the Alaskan North Slope to the deep waters of the Gulf of Mexico, we are a leader in providing America's traditional energy needs. Our recent discovery of the Tiber oil field in the Gulf is only the latest in a long list of BP investments in America's energy security.

Wind: We are major investors in wind generation and have amassed a land portfolio capable of potentially supporting 20,000 megawatts (MW) of wind generation, one of the largest positions in the country. As of year-end 2008, we had 1,000 MW of wind generation on-line and expect to have an installed capacity of 2,000 MW of wind power by the end of 2010.

Biofuels: We are one of the largest blenders and marketers of biofuels in the nation. BP has committed more than \$1.5 billion to biofuels research, development and production in response to increasing energy demand and the need to reduce overall greenhouse gas emissions from transport fuels. Our cutting-edge research looks to use dedicated energy crops that will contain more energy and have less impact on the environment than past generations of biofuels. They will also be more compatible with existing engines and transport infrastructure, making them less costly to deploy at scale.

Carbon Management/Carbon Capture and Storage (CCS): BP is involved in three major CCS projects: active operations in Algeria; a potential hydrogen energy project in California, and a planned project in Abu Dhabi.

Solar: BP's solar business has been in operation for over 30 years and last year had sales of 162 MW globally. This represents an increase of 29% over 2007 and further growth is expected.

By investing heavily in the most diverse portfolio of energy sources in the industry, BP is helping meet America's energy needs while ensuring a more sustainable and secure energy future.

Transition to a lower-carbon economy

The transition to a lower-carbon economy will take substantial time, investment and technology — spanning decades. While we look to the future, we can make choices today based on what we know.

In reviewing current climate legislative proposals, we have found aspects we endorse — such as transitional support for renewables. There are other areas, however, that cause us concern.

First is the way in which mature energy sources (coal, oil, natural gas) are treated. Because the utility sector is insulated, the transportation/refining sectors foot the vast majority of near- and medium-term costs for the entire energy economy. This results in an under-allocation of allowances to the refining sector, which puts further pressure on an industry already facing significant challenges.

Our second concern is the lack of a level playing field within the utility sector for natural gas — especially over the next decade or so.

To some extent, this may be an oversight, as America's growth in domestic natural gas reserves is a relatively new story. However, we have not seen any analysis of legislative proposals which forecast natural gas growth to 2020.

Indeed, our own forecasts indicate the potential for lower demand, as natural gas is squeezed over the next decade between growing renewable mandates and coal. Our analysis indicates legislative insulation for even the oldest and least efficient coal-fired power plants.

Having said that, we are pleased that the Senate climate proposal creates a "place holder" to discuss natural gas. We welcome the opportunity to elaborate on the role natural gas can play in mitigating climate change.

The Potential of Natural Gas

Natural gas has played a supporting role in America's energy story. However, we believe it is time for its role to change.

If the necessary technology is applied, within a stable fiscal and regulatory framework, natural gas can help fundamentally transform America's energy outlook and emissions profile in the decades going forward.

Its advantages are many:

- Natural gas is far and away the cleanest burning fossil fuel in the energy portfolio. It generates less than 50 percent of the CO₂ as coal per kilowatt hour and emits significantly less sulfur dioxide, nitrogen oxide, and particulate matter. Unlike coal, natural gas does not emit mercury and generates no waste ash.
- It is also the most versatile fuel, because it can be employed in the transportation sector, for home heating as well as the electricity/industrial sectors.
- Natural gas infrastructure is already in place — with gas pipelines already criss-crossing the country with more being built. There is also significant underutilized gas-fired power generating capacity.
- Natural gas generators are also more easily switched on and off, providing a synergistic compliment to intermittent sources such as solar and wind.
- Finally, natural gas-fired plants can be more easily expanded and permitted than other sources.

Policies promoting the use of natural gas in power generation hold the potential to create new American jobs throughout the natural gas value chain (exploration, production, pipelines and gas plants). We believe such policies can also help to address concerns around natural gas supply and volatility.

Supply

Over the last few years, a revolution has taken place in America's natural gas fields. Deposits of shale gas once thought out of reach are now accessible, thanks to new uses of proven technologies, such as hydraulic fracturing and horizontal drilling.

These technologies have enabled production in three of BP's key fields in Texas to more than double between 2006 and 2008. Successes such as these have led to major new discoveries, not only in traditional oil and gas states, but also in such non-traditional ones as Pennsylvania, Ohio and New York.

As a result, the US natural gas picture has been transformed. US gas production increased last year by 1.5 tcf — the largest increase in the world and the largest in US history. And we can do more of this, if the right policy framework is put in place to encourage and enable the use of natural gas.

Estimates vary, but the US probably now has between 50 and 100 years worth of recoverable natural gas which is accessible with technology available today.

Price volatility

Natural gas prices are driven by a combination of short-term and structural factors. Short-term events, such as cold weather and hurricanes, will always impact energy markets, and financial tools exist to help consumers and producers alike manage such risks. Earlier in this decade, structural factors included availability of domestic supply and limited LNG import availability.

That picture has changed dramatically. In addition to the increased domestic supplies of natural gas referenced above, there has also been significant expansion of LNG import capacity in recent years. These two factors, we believe, can help contain structural pressures on natural gas prices in the future. Also, stronger base-load demand will encourage development of a stronger, more flexible supply base.

Given this positive new supply picture, the question then becomes: What should we do with it?

Options for lowering US carbon emissions

The US has already taken some significant steps toward lowering carbon emissions. In the arena of transportation, which generated about 2 billion tons of carbon dioxide in 2007, according to the EIA, the federal government has mandated more fuel efficient vehicles and increasing use of biofuels.

According to the EPA, electricity generation is the largest single source of CO₂ emissions, accounting for 41 percent of all such emissions. Therefore, this is an area where we should dedicate some real focus.

The numbers are well known. Coal provides around half of America's electricity, but contributes over 80 percent of the CO₂ produced via electricity generation.

Virtually all projections show coal playing an indispensable role in the US energy picture for decades to come — and we agree. Coal, as well as natural gas plants, can be fitted with carbon capture and storage (CCS) technology. This involves capturing CO₂ and reverse-engineering and building a gas injection field so that we can put CO₂ back into the ground.

CCS faces challenges of implementation at scale, substantial costs and specific locational issues. It will take time, perhaps a decade or more, for the technology to mature.

Nuclear power is carbon-free and should be part of the solution. However, it is also capital intensive and has long lead times.

Wind and solar are the sources most often mentioned as alternatives to existing fuels, and BP is an industry leader in both. Wind can be economically competitive with more conventional sources, which is one reason it is growing so rapidly — but it still requires subsidies in today's environment. Solar is higher cost than wind and requires a greater government subsidy, though costs are coming down.

Both sources, however, face challenges and have limitations of intermittence and affordability. The development of smart-grid technology might alleviate some of these challenges, but we're not there yet.

So where does this lead us?

The role of natural gas in mitigating climate change

We support greater efforts toward energy efficiency and transitional incentives to encourage the rapid growth of alternatives.

We also think it is important to establish an economy-wide carbon price, with all hydrocarbon sources treated the same. In that framework, increased reserves of natural gas mean we can rely on it more fully to support demand growth in electric power generation.

As we have indicated, current legislative proposals distort that framework in favor of coal. Either those distortions should be removed, or alternatively, incremental transitional incentives are needed to accelerate the retirement of the least-efficient coal-fired generating capacity.

For example, our analysis indicates that if the least efficient coal-fired plants are provided with transitional incentives to retire, the power sector could deliver a significant amount of near-to-medium term emission reductions at low costs. Approximately 80 plants (30 GW of generating capacity) fall into the “least efficient” category, having an average efficiency of 27.1 percent versus 32.7 percent for the average plant. In reality, this means that the least efficient plants must burn 20 percent more coal to achieve the same amount of output.

Most of these facilities are not located in areas where CCS is an apparent option and are not suitable to be retrofitted with CCS. This is because of their vintage and emission profiles, factors which will also require significant investment to reduce NOX, SOX and particulate matter in order to meet new clean air requirements.

The retirement of these 80 facilities over the next decade (8-10 plants per year) could deliver 10 percent (700 million tons) of the Waxman-Markey, Boxer-Kerry targets of 7 billion tons of cumulative reductions from 2012-2020. If replaced by gas alone, demand would increase by about 1 TCF per year of natural gas by 2020, or roughly five percent of the current US market. Given the transformed gas market conditions, we believe that such an increase in demand can easily be met by existing reserves — recall that US natural gas production grew last year by more than this amount.

We are not suggesting that gas be mandated as a replacement for the retired capacity. It could also be replaced by cleaner, more efficient energy sources. However, with a level playing field for carbon, we believe the market will choose gas, because it offers the lowest-cost option to replace retired coal capacity.

BP believes these important actions will result in a significant down payment on carbon emission reductions, with minimal costs to generators and consumers while CCS and alternative energy technologies mature.

Conclusion

In summary, BP is committed to providing the United States with the energy it needs to grow in coming decades, and doing so in a responsible and sustainable manner.

We support policies which:

- encourage energy efficiency;
- provide transitional support to renewable technologies; and
- apply a consistent, economy-wide carbon price to all hydrocarbons.

Failing that we support policies which promote early retirement of the least efficient sources of electric power generation as a means of achieving and sustaining significant CO₂ emission reductions. We believe legislation should aim to deliver the greatest carbon reductions at the lowest cost, with technology that is available today.

Expanded use of domestic natural gas can help not only the environment, but also the economy by providing sufficient supplies to meet agricultural and industrial demand.

BP is eager to join with policy makers, members of the energy sector, and other stakeholders in order to develop responsible policies that reduce carbon emissions and promote the use of clean, domestic sources of energy. Such efforts must not exclude or sideline any stakeholder.

America is at a critical juncture. If we begin to move now, we can enable a cleaner energy future for the nation. I don't believe we can afford to wait.

And with that, I would be happy to take your questions.