Testimony of David Crane
CEO and President
NRG Energy, Inc.

The Future of Coal under Climate Legislation

Chairman Markey, Ranking Member Upton, and members of the Subcommittee: Good morning, and thank you for inviting me to testify today. My name is David Crane and I am the Chief Executive Officer and President of NRG Energy. I want to also thank you for your commitment to debate and develop legislation to address climate change, and your recognition of the importance of addressing the future of coal, and specifically carbon capture and sequestration (CCS) as part of that legislation. You are to be applauded for focusing on a topic that is obscure to the public but fundamental to winning the fight against climate change in our children's lifetime. As I will explain, I think it is quite likely that the future for the use of coal as a resource in America will be brighter if CCS is effectively deployed as part of climate legislation than otherwise.

First let me tell you about NRG. In the US, we own and operate some 24,000 MW of power plants, enough to power 20 million American homes, in Massachussets, Connecticut, New York and the Delmarva Peninsula, through Louisiana, Texas, and into California. About 7000 MW of these plants burn coal, 1100 MW are nuclear, and the rest are a mix of natural gas, oil and, more recently wind. We're a merchant generator – we have no captive customers or rate-base to absorb extra risks and costs, and so we are extra aggressive in reducing risks and costs.

We are a large coal user, and a large emitter of CO2. But we have been working hard to change that. NRG is a leading developer of zero carbon technologies – just in the last few months, we have energized 270 MW of new wind farms in Texas, agreed to develop and invest in 500 MW of solar thermal projects in California and New Mexico, and achieved major milestones in our 2700 MW new nuclear project in Texas. These zero carbon projects, which will add up to one-half the capacity of our existing coal fleet, represent more than $10 billion in new investment, and have already started to create over 9,000 high paying construction, engineering and operating jobs. And that's just the beginning.

Our efforts to decarbonize are proceeding in anticipation of a price being imposed on emitting carbon into the atmosphere. We need a climate change bill that provides this price for carbon and a set of complementary policies to make decarbonizing of the US power sector and economy really work. To that end, we are active members of USCAP and were deeply involved in developing its *Blueprint for Legislative Action*. We strongly believe that it offers a real, effective and pragmatic approach to the key climate issues. In particular, we believe a well-designed "cap and invest" program with transitional, "no-windfall" allocations, is needed to ensure that companies like ours can quickly make massive investments in these costly and challenging new technologies – and that such investment is essential to protecting the climate and our economy.

Perhaps no new technology is more costly and challenging right now than carbon capture and sequestration or CCS. At the same time, none is more critical to solving the climate change problem. CCS is so critical because of the dramatic increase in the use of coal globally, especially in the developing countries of China and India. Last November, the International Energy Agency projected that increased coal use will account for more than half of the global increase in CO2 emissions by 2030, and that three-quarters of the total increase will come from China, India and the Middle East. Clearly, the ongoing massive development of conventional coal plants in China and India means we need to make the development of post-combustion capture retrofit technologies the highest priority, along with a variety of technologies for new builds.

You may have noticed I did not include CCS on my list of NRG's low carbon achievements. This is not for a lack of trying. In 2006, we won an award from the State of New York to build a large scale IGCC project with CCS. Over the next two years, we spent close to $20 million engineering the project and demonstrating the viability of capturing, transporting and sequestering the carbon locally. Ultimately, because the costs and the legal and regulatory uncertainties became too high for us and the state to bear, we were forced to terminate the project.

We have also worked productively with Mr. Alix's company to explore a utility scale PowerSpan retrofit for one of our Texas plants and to use the CO2 for enhanced oil recovery in Texas, but funding uncertainties and logistical challenges have kept us from moving forward as quickly as we would like. We are developing an agreement to work with Basin Electric to share research and engineering knowledge with them as they move to implement a post-combustion CCS project at their gasification and power complex in North Dakota, and as we renew our efforts to develop a post-combustion carbon capture demonstration facility ourselves in Texas.

All these efforts pose serious challenges for any business that must serve customers at a reasonable, competitive price and provide a return to its shareholders. Here are the five main barriers, as I see them, based on our experience to date:

1) There is no price on carbon, so there is little reason to incur any substantial cost to capture it. Unlike other clean energy investments, the CCS equipment produces no commercially useful commodity, outside of limited use for enhanced oil recovery.

2) Even with a moderately high price on carbon, early CCS equipment is still likely to cost too much to install and operate without additional policy incentives. This is because the equipment faces typical "first of a kind" design, engineering and production costs, cannot offer standard commercial or performance guarantees, and has high "parasitic load" energy requirements that reduce plant output and efficiency.

3) There are only sporadic and very limited government incentives to bring these high and uncertain costs within reach.

4) There are no clear or final regulations to define the legal obligations of the developer, owner and operator and ensure that the various long term risks will be commercially manageable.

5) For all these reasons, it is more economical to build a natural gas plant or, if the price of carbon is low enough relative to the price of gas, even an efficient new coal plant.

To make CCS globally competitive, we need to address these five problems head on. The USCAP *Blueprint* contains what I think will be very effective solutions to these problems. Its key recommendations supporting CCS are:

- Quickly pass cap and trade legislation with the key components of the USCAP *Blueprint* - including initial "no-windfall" allocations that transition to a full auction;

- Establish a commercially friendly, environmentally responsible regulatory and legal framework for CCS;

- Quickly roll out an early demonstration program of some 5 to10 large scale projects;

- Provide strong, performance-based incentives for the rapid, competitive deployment of a very large number of additional commercial scale facilities;

- Create a backstop emission standard to prevent any significant subsequent deployment of new coal without CCS; and

- Provide additional incentives to repower existing coal plants – especially the most inefficient and heavy emitting ones – with much lower carbon alternatives.

This package has been designed to solve all of the key problems above.

Most importantly, it will rapidly lead to orders from companies like ours for CCS technology – lots of orders. That will allow companies like PowerSpan, GE, Siemens, Fluor, and others to scale up their factories and assembly lines, hire more skilled workers, buy lots of concrete and steel and high-tech devices, and rapidly reduce the costs of building this equipment. And, just as important, it will make them compete vigorously with each other to build it, sell it, install it and maintain it for companies like mine.

Those two factors – large scale production and vigorous competition – are the keys to turning high cost specialty products into globally competitive "must have" devices. And, until this technology is competitively priced in China and India, the projected 50% increase in global CO2 from coal is likely to continue unabated. These and other countries are also beginning to develop and deploy CCS technology. The U.S. needs to start fast in the race to competitively develop this technology, and we need to win it, so that America will be selling it there, rather than buying it there.

Finally, let me say why I think the right approach to climate legislation offers the brightest future for American coal and coal workers. Credible current assessments of firm new coal plant builds are about 16,000 MW.[1] Though many more – perhaps 65,000 MW -- are in various stages of development, the number has been shrinking rapidly and there is no way to tell how many of those will actually get built. At the same time, there are about 50,000 MW of smaller, older, inefficient coal plants over 50 years old that are likely to retire soon for economic reasons alone.

That suggests between 50,000 and 115,000 MW of coal plants are at risk of retirement or not being built, which would jeopardize a lot of coal mining, shipping and power plant jobs. The *Blueprint* sees that challenge, and addresses it head on with some 77,000 MW of new coal with CCS. And it would judiciously use public revenues from, for example, auctioning a fair share of the allowances, to leverage the much larger private sector investment needed make sure these plants are actually built efficiently and competitively.

I want to underscore this point. To ensure this private investment can take place, it is critically important to implement the *Blueprint's* transitional "no-windfall" allocations. This will allow competitive power companies like mine to continue to invest billions of dollars of our own money in these technologies, and also help regulated utilities avoid excessive rate-shock for their customers as they make similar investments. We all know that, once the allocation transition period is over, we will succeed or fail based on our success in decarbonizing our fleets – a risk that, in my view, will provide the supreme motivation for the power sector to aggressively deploy low- and no-carbon technologies during the transition period and to really make them work.

The massive private sector investment that will result from this combination of transitional allocations and targeted CCS support should provide far more coal-related jobs, including mining, heavy manufacturing, construction and power plant jobs, than a number of other policy approaches – including no action on climate – that fail to both stimulate and support competitive private sector investment. And, along with the ample offsets you discussed last week, it will help avoid an undue "dash to gas" and the economic dislocation that could result.

To sum up, like many in the business community, NRG wants to do the right thing for the climate and for the economy. We know coal is part of the problem, and we understand that it also has to be part of the solution. The measures we've discussed, as part of a comprehensive climate bill consistent with the USCAP *Blueprint*, offer a clear path to achieving this important goal in an environmentally effective and economically responsible manner. We look forward to working with this Subcommittee to create such a path quickly.

---

[1] Cambridge Energy Research Associates, November, 2008. *How Much New Coal Power in North America?*