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TESTIMONY BEFORE THE
SUBCOMMITTEE ON ENERGY AND AIR QUALITY
HOUSE ENERGY AND COMMERCE COMMITTEES ENATE ENERGY
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Introduction

Good morning Chairman Boucher, Congressman Hastert, and distinguished Members of the Subcommittee on Energy and Air Quality. Thank you for inviting me here today. I am Jeffry Sterba Chairman of the Board, President, and Chief Executive Officer of PNM Resources.

I believe that climate change is the single greatest long-term environmental and economic challenge facing our industry. To address climate change in the time frame recommended by the scientific consensus, *i.e.*, 550 ppm by 2100,¹ we will have to fundamentally change how we make and use energy. By acting now and implementing a carefully-designed program that takes advantage of existing commercial technologies while we transition to new technologies, which must be developed and commercialized, we can create economic opportunity and improve the quality of life in our nation as we move toward a cleaner, more efficient, and technologically advanced society.

¹ See *e.g.*, *The Fourth Assessment Report of the United Nations Intergovernmental Panel on Climate Change (IPCC)*. So far only the Working Group 1 - Summary for Policy Makers has been published. Also, Leggett, Jane, *CRS Report for Congress: Climate Change: Science and Policy Implications*, January 25, 2007; M.G.J. den Elzen and M. Meinshausen, *Meeting the EU 2°C climate target: global and regional emission implications*, Report 728001031/2005.

PNM Resources

First, let me be clear that I am here today representing PNM Resources. PNM Resources is an energy holding company based in Albuquerque, New Mexico, with consolidated operating revenues of \$2.5 billion. Our electric generation is primarily a mix of coal, nuclear, wind and natural gas. Through its utility and energy service subsidiaries, PNM Resources supplies electricity to 738,000 homes and businesses in New Mexico and Texas, natural gas to 470,000 customers in New Mexico, and electricity to numerous wholesale customers throughout the southwest. Its major subsidiaries are PNM, Texas-New Mexico Power and First Choice Power, a deregulated competitive retail electric provider in Texas. In November 2006, we announced a Joint Venture with Cascade Investments for the purpose of long-term investment in both in wholesale and retail electricity sales, electricity generation and energy trading.

As the CEO of an electric and gas utility holding company, I concluded three years ago that prudent risk management necessitated that voluntary and deliberate steps were needed to position PNM Resources and its subsidiaries to operate in a carbon-constrained world. In 2003, our Board of Directors adopted the goal of reducing the intensity of greenhouse gas emissions from our utility operations in New Mexico by 7 percent by 2009. Other actions we have voluntarily undertaken to manage and reduce emissions of greenhouse gases (GHG) at PNM and our other utility subsidiaries include:

- *Greenhouse Gas Emissions Inventory:* We have completed an inventory of GHG emissions for our New Mexico operations and have begun

evaluating what PNM Resources potential compliance costs exposure will be under different possible federal policy scenarios.

- *Pricing Carbon in Resource Planning:* We are now internalizing the costs of carbon dioxide emissions into our electric supply planning processes to account for potential future greenhouse gas regulations. This enables us to make more informed resource decisions and allocate capital based on potential future costs of compliance with greenhouse gas regulation.
- *Diversifying Our Generation:* We have diversified our portfolio of generation assets. A generation portfolio that was once dominated by coal and nuclear power, now includes natural gas combined-cycle, wind, distributed solar, demand-side resources along with coal-fired pressurized fluidized-bed technology. This portfolio has provided our customers with a cleaner, less carbon-intensive portfolio of resources than we had in 2002.
- *Renewable Energy:* We have a 25-year power purchase agreement for all of the output from the New Mexico Wind Energy Center. The 204 MW of capacity from this facility represents over 8% of our generation capacity. In 2005, we entered into an agreement with independent developers to supply power to PNM Resources from a 35 MW biomass project. We have also launched a program that pays customers 21 cents per kwh in incentives payments and credits for power produced from customer-owned solar PV systems.
- *Biodiesel:* We have switched to using biodiesel fuel in 57 percent of our diesel-powered vehicle fleet in New Mexico.

- *Carbon Sequestration:* We have participated in a number of programs aimed at reducing or sequestering greenhouse gases, and
- *Energy Efficiency:* We have made significant investments in energy efficiency to offset 10% of annual energy demand growth in our Texas service territory. In 2006, we introduced natural gas efficiency programs to our New Mexico customers and earlier this year we filed a suite of electric energy efficiency programs with the New Mexico Public Regulation Commission seeking approval to spend more than \$8.0 million per year on energy efficiency over the next three years.

Utility Industry

In fact many companies in the electric utility sector have been very successful at reducing GHG emissions through voluntary actions. According to the U.S. Department of Energy, the electric power sector reported 282 million metric tons of CO₂ equivalent emissions reductions in 2004, the last year that data is available.² But we are going to need to do better in the future to address the challenges of climate change. And we cannot do it without federal legislation that is environmentally effective, economically sustainable, and fair.

As you are aware, there are varying opinions within the electric utility industry on what shape federal climate legislation should take. It is also true that we all share a genuine concern about whether or not significant emissions reductions can be achieved without negative economic impacts to shareholders, our customers and the economy.

² Source: EIA Voluntary Reporting of Greenhouse Gases Program, 2004 Annual Report. Analysis by the Edison Electric Institute.

The electric industry is the most capital intensive sector of the U.S. economy. We face a new wave of capital expenditures in the next 15 years that – in sheer magnitude – is unprecedented in recent times. According to the Cambridge Energy Research Associates, the current cumulative asset value of the electric industry is approximately \$900 billion and between now and 2020, the industry will spend: \$250-300 billion in new generation; \$50 billion in environmental retrofits (the Clean Air Interstate Rule and Clean Air Mercury Rule); \$150 billion in transmission; \$300 billion in distribution; and \$25 billion in conservation and related expenditures; totaling about \$775 billion. Compliance costs for GHG regulation are expected to add an additional \$70+ billion (at the low end). To say it another way: in the next fifteen years the electric industry will make capital expenditures that will have a cumulative value in excess of the entire industry's net present asset value.

But, I believe there is general agreement that the greatest impediment to achieving cost-effective GHG emissions reductions is the absence of a robust technology portfolio. Significant GHG reductions are attainable only with a full suite of technology options; including increased energy efficiency, continued development of renewable resources, IGCC and other advanced clean-coal technologies, carbon capture and storage, and advanced nuclear. There is no single, silver bullet. While a few of these technologies are commercially available - though at a higher cost than conventional generation technologies - many are not. Making these technologies commercially available at a reasonable cost is critical to addressing climate change in both the short and long term.

We desperately need to close the technology gap. I agree with others who have likened today's race for carbon-friendly technology to President Kennedy's space race which harnessed the scientific, commercial, and technological talents of a generation of Americans to put a man on the moon. Just as the space race spawned today's information technology age, the clean energy race has the potential to launch the U.S. as a world leader and exporter of carbon-free technology.

Coal in a Carbon-Constrained World

One of the areas where technology needs to play a particularly important role is in the future use of coal. Today, coal is the backbone of our electricity system and it is essential for a prosperous American economy. Coal accounts for about half of all electricity generation, and over 90% of the coal produced in the U.S. fires electric power generators. Coal's central role results from its domestic abundance and accessibility, which translates directly into energy security and economic affordability. With one quarter of the world's known recoverable reserves, the U.S. alone has coal resources equivalent to the entire world's proven oil reserves. This 250 year supply of coal is all located safely within our borders, easily extractable, and readily transportable around the country for conversion into electricity at a fraction of the cost of many alternative fuels. An economically sustainable policy approach to climate change legislation must recognize that coal will continue to play a role in our energy future, and that policies are needed to speed the transition to low- and zero-emission coal combustion technologies that can cost effectively capture and store CO₂.

Technology to capture and store carbon that is emitted from coal plants is a critical component in any carbon-constrained world. A 500 MW coal plant produces four million metric tons of carbon emissions per year alone. Yet, demonstration projects for storage of one million metric tons per year of CO₂ are not expected to begin until 2010, assuming sufficient budgets are provided for these activities. In another illustration of my concern that we merely are paying lip service to the need for a robust technology portfolio, the DOE FY 2008 budget recommends funding for a program that can only support the initiation of three or four of these large scale demonstrations, despite the fact that there are seven DOE regional sequestration partnerships throughout the country. This is only part of a larger problem. The Department of Energy's total budget authority for energy R&D dropped by over 85 percent (in real terms) from 1978 to 2005.³ Continued insufficient government funding delays the development of the robust suite of technologies that our industry so desperately needs.

We need to fund research, development, demonstration and deployment very aggressively so that we can bring carbon capture and sequestration technologies online as soon as possible. And, if mandatory emissions reduction targets are not in sync with the timing of these technologies becoming commercially available, including the sufficient time necessary to permit and construct these new technologies, we run a serious risk of massive switching to natural gas and the associated increase in prices that greater demand will create.

³ GAO Report: *Key Challenges Remain for Developing and Deploying Advanced Energy Technologies to Meet Future Needs*, December 2006, GAO-07-106.

Addressing Climate Change Today

I am not saying that we need to wait to begin reducing our carbon footprint until these technologies are fully deployed. There are a number of things – “low hanging fruit” -- that can be done right now. Energy efficiency measures are at the top of this list and can achieve enormous reductions – immediately and cost-effectively. They can even save Americans money. For example:

- In South Africa, Eskom⁴ implemented a program whereby 5,300,000 compact fluorescent lights (CFL) were exchanged for incandescent lamps, free of charge to the consumer. The energy-efficient lighting program consisted of two strategies, namely, door-to-door and exchange point campaigns. This efficient lighting program resulted in a massive 229 MW savings.
- A recent energy efficiency potential study we have completed for PNM’s New Mexico service territory found that an annual investment of \$22.2 million dollars would result in energy and capacity savings sufficient to meet over 40% of our new system growth and at half the costs of conventional generation.
- In New Mexico, if every residential customer in Albuquerque and Santa Fe replaced five incandescent light bulbs with five CFLs, it would reduce CO2 emissions by 85,000 tons per year, or the equivalent of taking 14,000 cars off of the road (based on 6 tons CO2/year for an average car). Right now, the payback on a CFL that is purchased at a wholesale-like store (Costco, Sam's, etc.) is just over 4 months. But to accomplish this we need to change the regulatory model so that energy efficiency has a business basis and utilities at least are financially indifferent between investments in energy efficiency or supply-side resources.

A more controversial measure worth pursuing is creating an exemption for efficiency upgrades to existing coal plants that might otherwise trigger new source review. These efficiency improvements are important for environmental as well as economic reasons. For example, an improvement of only 1% in the

⁴ Eskom is a South African electric public utility, established in 1923 as the Electricity Supply Commission (ESCOM) by the government of South Africa. It is the largest producer of electricity in Africa, and is among the top seven utilities in the world in terms of generation capacity and among the top nine in terms of sales. Eskom operates a number of power stations, including the Kendal Power Station, the largest coal-fired power station in the world, and the Koeberg Nuclear Power Station.

heat rate of an average 500 MW coal-fired unit would reduce CO2 emissions by over 30,000 tons per year. Another way to look at it, provided by the Coal Utilization Research Council, is that a 1% improvement in the average coal-fired power plant efficiency (from 33% to 34% at existing units) would generate about the same amount of electricity as all non-hydro renewable electricity in 2005 (60 Bkwh). While some argue that investing in these plants may prolong their useful life, I would make the case that it is better to improve the operation of these existing plants with small investments that produce more energy for less coal and less CO2, than to build new plants today – with a much longer useful life -- at a substantial cost which face the risk that they will be technologically and environmentally obsolete shortly after they enter service.

Federal Climate Legislation Recommendations

Climate change is a century long challenge but the time to act is now. Each year we delay taking action increases the risk we will be faced with having to achieve even steeper emissions reductions in the future, at potentially greater costs. I have two sets of policy recommendations I would like this subcommittee to consider: an overall architecture for a comprehensive climate change bill, and some steps that need to be taken immediately, either in the context of climate change legislation to be passed in this Congress, or separate legislation to be enacted in this Congress if climate legislation begins to stall. First, climate change legislation should:

1. Account for the global dimension of climate change through U.S. participation in negotiations for a post-2012 international climate change

framework. U.S. leadership is essential to establishing an equitable and effective international accord to reduce global GHG emissions. Moreover, we should not make U.S. action to address climate change contingent on equal action by all developing nations.

2. Provide for policy initiatives that will fundamentally change the way we produce and use energy. This will require that we establish a national technology roadmap that includes an aggressive research, development, demonstration and deployment program targeting a full suite of carbon-friendly, breakthrough technologies and long term, stable funding that is not subject to the vagaries of annual Congressional appropriations.
3. Be cost-effective and allow for economic growth while achieving meaningful emissions reductions. Both objectives can be achieved through an economy-wide, federal cap and trade program that sets mandatory emissions reduction targets that allow a slow, stop, and reduce emissions trajectories over the next 50 to 100 years. The Acid Rain program, which was very successful, is an instructive starting point for climate legislation.

In addition, there are important policy tools that can be used as first steps toward addressing climate change that we need to implement right now – as soon as legislatively possible:

1. Extend the Production Tax Credit for Renewables for ten years.
2. Extend the Investment Tax Credit for Renewables for five years.
3. Fix the Loan Guarantee Program created by the Energy Policy Act of 2005.
4. Fix the Tax Code to allow depreciation over five years instead of the current 20 years for Smart Meters.

5. Promote Plug In Hybrids and other electric-drive technologies through tax credits and R&D funding of new technologies that will increase their cost-effectiveness and deployment.
6. Require large scale Carbon Capture and Storage Demonstration Projects and address the licensing and liability issues.
7. Fully authorize and fund Research, Development, Demonstration, and Deployment of more climate friendly technologies and applications.⁵
8. Provide the Nuclear Regulatory Commission with the resources necessary to extend the licenses of existing plants and permit the next generation of plants at the pace necessary to meet the demand for nuclear generation in the next 20 years.

To summarize, we need legislation that recognizes the realistic limits of today's commercial technology and the economic risks currently associated with addressing climate change for my industry and our customers that does not create undue economic harm. We need a phased approach that begins with reductions that can be achieved through aggressive application and deployment of existing technologies and rewards those who go beyond their obligations by giving credit for early action. We need additional phases that are commensurate with technology advancement – which we need to begin funding and promoting today.⁶ I also urge your consideration of cost control mechanisms that do not undermine ultimate environment goals but prevent adverse economic impact during the initial transition and enable a long-term price signal for major capital projects. I would also urge that the Subcommittee design legislation that will not create winners and losers among generation sources – particularly with respect to existing resources -- but will promote all types of fuel sources and will recognize the disproportionate impact mandatory reductions will have on certain

⁵ The Electric Power Research Institute is currently working on an analysis of technology needs in a carbon-constrained world.

regions and existing resources. Ultimately our goal should be to design and implement legislation that will promote a smooth transition to a cleaner, more efficient energy economy.

Conclusion

Chairman Boucher, Thomas Edison once observed, “The best way to predict the future is to invent it.” Under your leadership, this Subcommittee can invent a better future for our children by steering our country towards an environmentally sound, economically sustainable and equitable legislative solution to climate change.

Thank you for your time and consideration. I would be pleased to answer any questions you might have and I look forward to being of service in any way I can to this Subcommittee.