STATEMENT OF

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COMMITTEE ON ENERGY AND NATURAL RESOURCES

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Mr. Chairman, Ranking Member Domenici, Members of the Committee – thank you for the opportunity to testify about how our nation can best accelerate the large scale capital formation and deployment of clean energy technologies in the United States. Bills introduced by Senators Bingaman and Domenici, the 21st Century Energy Technology Deployment Act and the Clean Energy Investment Bank Act of 2008, respectively, seek to address these challenges. I applaud your leadership, Mr. Chairman, in calling this hearing to investigate the pros and cons of various approaches to meeting this challenge. While the Administration has not finished its review of either bill, certain aspects of the new government entities and financing mechanisms proposed in the bills raise a number of issues concerning Federal credit policies, and financial risk and cost to the Federal government, along with certain constitutional concerns that the Justice Department has indicated would need to be carefully considered and addressed. We would have strong concerns about provisions that provide additional exposure of the Federal government to large liabilities.

Although no single technology solution exists to address our Nation's energy and environmental responsibilities, all elements of the solution share a common basis: increased market penetration of clean energy technologies. The private sector is the appropriate and most efficient means of delivering the solutions to the market at scale, but the government can play a facilitating role, where deemed appropriate such as it is currently doing by providing direct funding for research, development, and demonstration programs; by providing additional support such as risk insurance, loan guarantee programs including Title XVII, and production tax credits. We are continuing to review these bills and would like to discuss our ongoing energy programs.

One such mechanism as you well know, is DOE's Title XVII loan guarantee authority from the Energy Policy Act of 2005 and the 2007 Energy and Water Development Appropriations Act, which supports early commercial use of advanced energy technologies that avoid, reduce or sequester air pollutants or anthropogenic emissions of greenhouse gases. The program currently has $42.5 billion in loan volume authority that can be used to support a wide-range of innovative technologies including but not limited to advanced renewable, energy efficiency, electricity transmission, nuclear power, and advanced fossil energy. To date DOE has invited 16 projects to submit full applications under the first solicitation and has received application fees for the first four of these projects, meaning that DOE can begin their due diligence evaluation of projects. On June 30 DOE issued three new solicitations totaling $30.5 billion. These solicitations are for renewable, energy efficiency, electricity transmission, nuclear power facilities, and front end of the nuclear fuel cycle projects. DOE anticipates issuing a new solicitation later this summer for advanced fossil energy ($8 billion).

Together, Congress and this Administration have taken great strides to move beyond problem identification and toward problem solving that will enhance our energy security, diversify our energy systems, and reduce emissions that contribute to climate change. On December 19, 2007, the President signed the Energy Independence and Security Act of 2007 (EISA) into law. As you know, EISA includes increased Corporate Average Fuel Economy (CAFE) standards and an increased Renewable Fuel Standard. Specifically, the Act increases CAFE standards to 35 miles per gallon for all passenger automobiles, including light trucks, by 2020; and mandates the replacement of 36 billion gallons of gasoline with renewable fuel by 2022, including 21 billion gallons of advanced biofuels. The mandates included in EISA are aligned with Presidential

initiatives to make the future of energy cleaner and more sustainable. These include the Advanced Energy Initiative (AEI), announced in 2006 to confront our nation's addiction to oil and reduce greenhouse gas emissions by developing clean sources of electricity generation, as well as the "Twenty-in-Ten" initiative, announced in the 2007 State of the Union, to reduce gasoline consumption by 20% by 2017.

The President has also called for expanding domestic supply to increase our energy security. Just yesterday, the President lifted the executive ban on offshore drilling. He has also asked Congress to:

- lift the legislative ban and allow exploration and development of offshore oil resources;
- eliminate a provision, inserted into last year's omnibus spending bill, that blocks oil shale leasing on federal lands; and
- permit exploration in northern Alaska.

For the past 30 years, DOE has helped to reduce the cost of some clean energy technologies through research and development. The President's new national goal to stop the growth in U.S. greenhouse gas emissions by 2025 demands market penetration and significant capital formation and growth in a new and risky technology arena beyond the business-as-usual scenario. Meeting this ambitious goal will require tremendous investment in emerging technologies. The International Energy Agency estimates that North America will require over $1.5 trillion in cumulative energy investment by 2020,[1] although they did not disaggregate "clean tech" and conventional energy generation.

This study indicates a need for North American energy investment of over $100 billion per year between now and 2020. We expect that a significant portion of new energy investment would have to be from clean sources to meet the President's goal. In 2007, the U.S. saw $15.15 billion in clean energy asset investment according to New Energy Finance.[2] While the private sector can, and I believe will, continue to invest in clean energy technologies, the urgency of the energy and environmental challenges we face requires that greater capital formation occur in the private sector. The question before us, as a nation, is how will that gap be bridged?

Clean Energy Investment Challenges and Opportunities

Before achieving any impact on our national energy goals, an advanced energy technology must evolve from a laboratory experiment, to a technology venture, to an infrastructure development project. The transition to commercial scale presents many economic, political, and technological risks.

Economic Risks Include:

- Chicken and egg problems – for example, which comes first: Flex-fuel vehicles or the E85 fuel itself? The availability of critical transmission infrastructure or increased generation capacity? Additionally,
- Historic volatility of energy commodity price signals;
- Unpredictable feedstock availability, pricing, and quality control;

[1] IEA World Advanced Energy Outlook, 2003.

[2] Data from New Energy Finance desktop 3.0, "Asset Financings Investment Overview," www.newenergyfinance.com.

- Limited off-take agreement length; and
- Unknown final design costs due to unforeseen engineering challenges or permitting delays.

Policy Risks Include:

- Changing environmental and economic regulations, including a lack of predictable, long-term tax policies;
- Balkanized regional and state energy policies; and
- Siting, permitting, interconnection, and transmission and transportation challenges.

Technological Risks Include:

- Complications in scaling from laboratory to commercial-scale production; and
- The development and deployment of cost-effective technology, as well as technological obsolescence.

On the positive side, however, free access to abundant sun, wind and geothermal heat allows clean renewable energy a fundamental economic advantage over traditional energy sources. While renewable energy assets currently cost more per unit of production capacity, the larger future profits realized by lower production costs and zero exposure to fuel price volatility can economically justify the investment. On the security front, clean energy, including nuclear and clean coal with carbon sequestration, is generally produced from domestic resources which reduces geopolitical leverage surrounding strategic energy commodities.

Financial mechanisms are in place to accelerate research and development and project implementation for established technologies, but financing for commercialization of new technologies often falls short or is deemed too expensive. Additionally, large-scale energy infrastructure is a capital intensive business to begin with, requiring debt financing and stable or predictable cash flows.

It is essential that we work not only to accelerate R&D for new energy technologies, but also to address the accelerated adoption of technologies into commercial products that are widely available at reasonable cost to all Americans. We seek to help enable and accelerate market transformation toward the use of more efficient and cleaner technologies.

Conclusion

National security, environmental stewardship, and economic growth goals form the basis of robust U.S. energy policy. National security is enhanced through diversifying our energy mix and reducing dependence on petroleum. Environmental stewardship is maintained through the mitigation of greenhouse gas emissions and other negative environmental impacts. Achieving global economic competitiveness entails creating a more flexible, more reliable, and higher capacity national energy infrastructure, as well as improving the energy productivity of the U.S. economy and industry. The Congress and the Administration have enumerated concrete goals to achieve this policy vision, and this Committee's leadership has been instrumental in the progress that we have made toward meeting them. Mr. Chairman, this concludes my prepared statement and I would be happy to answer any questions the Committee Members may have.