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Introduction

Chairman Boxer, Ranking Member Inhofe, and members of the Committee, thank you for the opportunity to speak here today. My name is Jon Wellinghoff, and I am the Chairman of the Federal Energy Regulatory Commission (FERC or Commission). My testimony addresses climate change legislation in the context of the energy industries. The Commission has regulatory authority over various aspects of these industries. The Commission seeks to assist energy consumers in obtaining reliable, efficient, and sustainable energy services at a reasonable cost through appropriate regulatory and market means.

One of the Commission's most important authorities is to regulate the rates, terms and conditions of transmission and sales for resale of electric energy by public utilities in interstate commerce. The Commission has used this authority to remove barriers to the use of "low carbon" renewable resources and to encourage greater efficiency in the electricity system. These efforts, as described below, and the similar efforts of many States are helping to reduce the emissions produced by the generation of electricity.

Our Nation, however, has much greater ability to reduce the emissions from its usage of electricity. For example, studies indicate that we could add hundreds of gigawatts of renewable energy resources by 2030. Similarly, a study issued last week by

McKinsey and Co. indicated that, on an economy-wide basis, energy efficiency alone could reduce our overall energy usage by nearly 25 percent. Moreover, this study did not consider the substantial additional potential for improved efficiency in the interstate electric system on the utility side of the meter. Only efficiency on the consumer load side of the meter was analyzed. Thus, the total potential for efficiency savings in this country is even greater than estimated by McKinsey.

A major reason why "low carbon" renewable resources and energy efficiency are not used more extensively is that the cost of greenhouse gas emissions is, in economic terms, an "externality." In other words, the effect of these emissions is not reflected in the energy marketplace. The market-based cost of producing electricity from coal as compared to, for example, producing electricity from wind turbines or reducing energy use through efficiency, takes little or no account of the fact that certain types of coal production currently cause significant emissions of greenhouse gases and wind turbines and efficiency do not.

Climate change legislation can change this. This legislation is a way to recognize, in the energy marketplace, the effect of greenhouse gases. Doing so will encourage more energy efficiency and use of "low carbon" renewable resources, allowing us to reduce our greenhouse gas emissions while maintaining our quality of life. We have extensive amounts of untapped renewable resources and large potential to use energy more efficiently. Climate change legislation will remove a major impediment to using those tools.

Renewable Resources

Renewable energy resources can not only help reduce greenhouse gas emissions, but also diversify the fuels used to generate electricity and reduce our dependence on foreign sources of energy. For example, solar photovoltaic systems installed on homes and businesses produce emission-free energy, especially during peak hours of energy usage. Other examples of emission-free energy sources include wind power and geothermal power.

Renewable energy already plays an important role in U.S. energy supply. Energy from renewable resources, excluding conventional hydroelectric generation, accounted for over three percent of U.S. generation in the most recent 12-month period (ending in April 2009) reported by the Energy Information Administration (EIA). Including conventional hydroelectric generation, renewable energy provides almost ten percent of total electric energy supplied, with wind energy production increasing significantly in recent years. In fact, since 2006, wind energy production has more than doubled, and its contribution to U.S. generation has more than doubled. New energy technologies such as wave, tidal, and advanced photovoltaics—coupled with new battery technologies—promise to make renewable resources an even more important contributor to our electricity supply.

FERC has taken a range of actions to reduce barriers to renewable energy development and deployment. For example, in FERC's Order No. 890, the Commission reformed transmission rates to exempt wind generators and other intermittent resources from the highest tier of "energy and generator imbalance penalties." (These are charges

for deviations between the amount of energy scheduled for delivery to the grid and the amount actually taken by a transmission customer or delivered by a generator, respectively.) This reform was important because intermittent resources have a limited ability to control their output, and must therefore be assured that imbalance charges are no more than is required to provide appropriate incentives for prudent behavior.

As another example, FERC recognized that its policy on allocating transmission interconnection costs can present a barrier to entry by location-constrained resources like renewable energy. To address this problem, FERC approved a variation from that policy proposed by the California Independent System Operator that should make it easier for California, and other regions that implement a similar approach, to meet state-level renewable energy requirements.

FERC also has approved rates to fund the development of transmission facilities needed for renewable resources. In May of this year, for example, FERC approved the funding arrangement for a major transmission project to deliver hydroelectric power from Quebec to New England, an effort expected to reduce greenhouse gas emissions by up to six million tons of carbon dioxide annually by displacing natural gas-fired generation. In April 2009, FERC approved rate incentives for proposed transmission facilities to deliver wind power from the upper Midwest to consumers in and around Chicago, Minneapolis, and other cities. In February 2009, FERC approved rates for two transmission projects to deliver wind power from Montana and Wyoming to consumers in Nevada and other Southwestern states.

Last year, the Commission addressed the delays of Regional Transmission Organizations (RTOs) and Independent System Operators (ISOs) in processing the requests of planned generation projects to interconnect with the electric grid. Many of these projects are wind projects. The Commission required the RTOs and ISOs to file reports on their backlogs and their efforts to expedite interconnections. The RTOs and ISOs have since taken, or are planning, significant steps to reduce their interconnection backlogs.

A significant expansion of renewable resources in our electricity supply portfolio will impose other stresses on the electric grid, requiring additional high-voltage transmission facilities, network upgrades, and feeder lines. It is highly unlikely that the transmission facilities necessary to deliver the output of these renewable resources will be constructed without additional federal planning, siting, and cost allocation authority.

Hydrokinetic Energy

The Commission also is supporting the development of emerging hydrokinetic energy technologies, which use the power of ocean waves, tides, and river currents to generate electricity. The Commission has determined that new hydrokinetic technology can be tested in certain circumstances without the need for Commission authorization, has issued a policy statement regarding preliminary permits focusing on hydrokinetic projects, and has developed a "pilot license" process allowing for the expedited licensing in appropriate instances of hydrokinetic projects. FERC also has issued two licenses for such projects (including, in December 2008, the first installation of a hydrokinetic device

at an existing FERC-licensed hydroelectric project), and over 140 preliminary permits with the potential for approximately 8,400 megawatts of generating capacity.

In April 2009, FERC and the Department of the Interior signed an agreement clarifying the agencies' jurisdictional responsibilities for leasing and licensing in relation to renewable energy projects on the U.S. Outer Continental Shelf. This agreement will facilitate the development of offshore hydrokinetic projects as well as wind and solar projects. Similarly, the Commission has signed agreements with the State of Washington (in June of this year) and the State of Oregon (March 2008) to coordinate the review of hydrokinetic projects in the waters of those States. The agreements recognize that FERC and the States will undertake their regulatory efforts in an environmentally-sensitive manner that recognizes economic and cultural factors.

Consumer Energy Use Management

Consumer energy use management, also called "demand response", refers to consumers reducing their usage at certain times that will result in improved grid efficiency. Consumer energy use management increases efficiency by reducing transmission congestion, enhances the amount of variable renewable energy such as wind that can be integrated into the grid, and reduces the need to run inefficient and costly generators. Thus, the incorporation of consumer energy use management into the operation of the electric grid will reduce consumer costs, and will reduce the carbon footprint of our electricity supply.

In June, the Commission issued a national assessment of demand response potential, estimating the potential for consumer energy use management both nationally

and for each state, through 2019. The assessment found the potential for peak electricity demand reductions across the country is 188 gigawatts, up to 20 percent of national peak demand. These savings, if realized, can reduce significantly the number of power plants needed to meet peak demand and thereby reduce carbon emissions by as much as 1.2 billion tons of carbon annually.

Last month, the Commission (in its Order No. 719-A) reaffirmed that removing barriers to demand response in the RTO and ISO electricity markets is consistent with FERC's responsibilities under the Federal Power Act. FERC required filings by RTOs and ISOs addressing barriers to demand response in their markets. These filings ultimately will help facilitate even more use of demand response in the markets.

Smart Grid

Our nation's electric grid generally uses decades-old technology and has not incorporated new digital technologies extensively. Digital technologies have transformed other industries such as telecommunications. A similar change has not yet happened for the electric grid. Smart grid advancements will improve the efficiency of the bulk-power system and realize the efficiency improvements that are possible on the utility side of the meter. And they will help promote wider use of consumer energy use management and other activities that give consumers the tools they need to reduce electricity costs.

Last month, after considering comments from over 70 interested groups, the Commission adopted a policy statement on the smart grid. The Commission identified several priorities for the development of standards for smart grid technologies, including standards needed for the integration into the power system of demand response resources,

electricity storage facilities and electric transportation systems. The Commission also adopted an "Interim Rate Policy," specifying the criteria "early adopter" utilities must meet to recover their smart grid costs. The Department of Energy and the National Institute of Standards and Technology also have major roles in the development of the smart grid, and FERC is working closely with those agencies and with States in collaboratively fostering deployment of smart grid technology.

Conclusion

FERC is using its statutory authorities aggressively to eliminate barriers to renewable resources and consumer energy use management, and to encourage greater efficiency in the electricity system. But those efforts and the efforts of other Federal and State agencies, while helpful, are not enough to prevent the growing accumulation of greenhouse gases in our atmosphere. Climate change legislation is the key to altering this trend. This legislation will also set an example of leadership for other countries, and help our Nation change from an importer of energy to an exporter of "green energy technology." Congress should enact this legislation now.

Thank you again for the opportunity to testify today. I would be happy to answer any questions you may have.