**STATEMENT OF**

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**OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY**

**U.S. DEPARTMENT OF ENERGY**

**BEFORE THE**

**SUBCOMMITTEE ON ENERGY**

**COMMITTEE ON ENERGY AND NATURAL RESOURCES**

**UNITED STATES SENATE**

**June 15, 2010**

Madam Chairman, Ranking Member Risch, and Members of the Subcommittee, thank you for the opportunity to appear before you today to discuss proposed clean energy legislation.

The Department and the Subcommittee share common goals of strengthening our economy, enhancing our national security, and protecting our environment. As part of the Recovery Act, the Office of Energy Efficiency and Renewable Energy (EERE), oversees a total of $16.8 billion in investments. To date, EERE has obligated 96 percent, or $16.07 billion, of its Recovery Act funds. The funds are putting America to work laying the foundation for our clean energy future. The Department also appreciates the authorities you have provided in recent years in the Energy Policy Act of 2005 (EPAct) (P.L. 109-58) and the Energy Independence and Security Act of 2007 (EISA) (P.L. 110-140). This year, the Committee has proposed further investment and we thank you for all your hard work in reporting the American Clean Energy Leadership Act (S. 1462).

Today, I am pleased to offer the Department's perspective on five pending pieces of legislation related to energy efficiency and renewable energy. Note that many of the authorities outlined in the bills would simply reinforce existing authorities, and may not be necessary for the Department to carry out the activities in question. I will discuss them in the order listed in the hearing invitation letter I received from the Subcommittee. These include the 10 Million Solar Roofs Act of 2010 (S. 3460), the Supply Star Act of 2010 (S. 3396), the Improving Energy Efficiency and Renewable Energy Use By Federal Agencies Act of 2010 (S. 3251), the Heavy Duty Hybrid Vehicle Research, Development, and Demonstration Act (S. 679), the Gas Turbine Efficiency Act of 2009 (S. 2900).

## S. 3460 | 10 MILLION SOLAR ROOFS ACT OF 2010

We thank the subcommittee and the sponsor of this legislation for your strong leadership on solar technologies over the years. The Department's goals for solar electric technologies are to be cost competitive in their respective markets by 2015 and to reach a high penetration of solar installations. The Department is investing $232 million in 2010 to support solar research across the development pipeline, from basic photovoltaic (PV) cell technologies to manufacturing scale-up to total system development. Within the $232 million, DOE is investing up to $50 million in concentrated solar power technology development and deployment related activities and $23 million to understand how solar technologies can be better integrated within existing electricity generation and transmission systems. In solar hot water heating, DOE is investing approximately an additional $6.5 million in 2010.

The proposed legislation incorporates several significant features. We believe that rebates, loan programs, and performance based incentives are all effective means of stimulating demand. Allowing states to choose between these incentives will enable the Act to expand existing state programs that have been effective in promoting solar installations. In addition, the states' matching funds requirements will leverage available federal appropriations and increase the resulting deployment of solar technologies, both of which are high priorities for the Department.

To maximize the effectiveness of the proposed legislation, we would recommend two changes. First, while we support the state match requirement, we propose that the cost share be set at 50 percent to increase the potential leverage of federal funds. Second, the Secretary should be given the ability to reduce this as necessary to increase the overall effectiveness of the program. We also believe the program could be designed in a creative way such as working with municipalities to promote photovoltaic installations through innovative local programs.

We note that by our estimates, the $250 million authorized for FY 2012 would yield roughly 100,000 rooftop solar systems, and may not be sufficient to put us on a trajectory to meet the goal of 10 million solar roofs. With these changes, the legislation could be an effective tool in increasing deployment of solar electricity technologies Nationwide. We note that existing authorities, such as the competitive portion of the state energy program, would allow DOE to undertake such a program already.

## S. 3396 | SUPPLY STAR ACT OF 2010

Supply chain energy efforts can make an important contribution to overall industrial efficiency and the competitive position of domestic suppliers. Analysis suggests that a large part of the carbon footprint for many consumer products can be attributed to the supply chain – from raw materials, transport, and packaging to the energy consumed in manufacturing processes – on the order of 40 to 60 percent[1].

The Supply Star legislation seeks to build upon existing best practices in the industrial community by establishing a voluntary recognition program that supports and promotes products and companies with highly energy- and resource-efficient supply chains.

DOE and the Environmental Protection Agency (EPA) both have existing initiatives that address supply chain efficiency, such as *Save Energy Now*® at DOE and the *Smart Way Transport*™ program at EPA. The legislation should coordinate with and leverage these programs as a structure through which Supply Star activities could be conducted. For example, through its national *Save Energy Now*® initiative, DOE encourages manufacturing companies to engage their supply chains in energy and carbon management. Specifically, DOE develops processes and resources to assist companies in promoting energy management to their industrial suppliers and customers. *Save Energy Now*® LEADER Companies make a voluntary commitment to reduce their energy intensity by 25 percent in 10 years. Many of these companies are interested in improving the efficiency of their supply chains as well.

The Supply Star bill also builds upon Superior Energy Performance (SEP), a voluntary certification program working to provide industrial facilities with a roadmap for achieving continual improvement in energy efficiency while maintaining competitiveness. A central element of SEP is implementation of the forthcoming International Organization for Standardization (ISO) 50001 energy management standard, with additional requirements to achieve and document energy intensity improvements. DOE is working through SEP to bring ISO 50001 to the U.S. Upon its expected publication in 2011 this American National Standards Institute-accredited program will provide companies with a framework for fostering energy-efficiency at the plant level and a consistent methodology for measuring and validating energy efficiency and intensity improvements. This new framework will be an important tool to integrate into supply chain efforts.

## S. 3251 | IMPROVING ENERGY EFFICIENCY AND RENEWABLE ENERGY USE BY FEDERAL AGENCIES ACT OF 2010

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**Source: *Climate Change and Supply Chain Management*, McKinsey Quarterly, McKinsey & Company, July 2008**

On October 5th, President Obama signed Executive Order 13514 requiring Federal agencies to set GHG emission reduction targets, increase energy efficiency, reduce fleet petroleum use, conserve water, reduce waste and promote environmentally-responsible produce purchases by federal agencies. With this action, the President directed agencies to demonstrate the Federal government's commitment, over and above what is already being done, to reducing emissions and saving money.

As a whole, the Federal government has made significant progress in meeting the energy requirements of EISA 2007 and EPAct 2005. Further progress on these efforts would be bolstered by S. 3251. The Department is particularly supportive of provisions clarifying the definition of allowable "renewable" energy sources, and authorizing the creation of a revolving fund for Federal facility energy efficiency and renewable energy projects.

The Department looks forward to working with the Subcommittee on legislation that would provide agencies with the flexibility to purchase renewable energy for appropriate time periods, that do not exceed asset life, create appropriate risk sharing between project developers and taxpayers, and that recognize the importance of fiscal responsibility and Congressional Budget Office scoring of contracts. This authority would provide opportunities for more on-site renewable power at Federal agencies and would provide strong support for growing our domestic clean energy economy.

The Department's recommended definition of renewable energy follows the definition in section 203 of EPAct 2005, with an additional recommendation to allow for both electric energy and thermal energy from renewable sources. It is very important to allow thermal energy to count as renewable energy, particularly because renewable thermal energy sources such as ground source heat pumps are often the lowest-cost option for displacing purchased energy and are already widely deployed. This approach contrasts with the current definition which is limited only to "renewable electricity," a definition that reduces incentives for this valuable and cost-effective form of renewable power.

The Department fully supports the creation of a revolving loan fund based on best practices and subject to appropriate interest rates for Federal facility energy efficiency and renewable energy projects. There is considerable experience and success at the state and local level with using revolving loan funds to assist innovative projects to improve energy efficiency. In addition, there is Federal experience with a similar concept within the General Services Administration (GSA) that funds agency relocations, and agencies reimburse the fund at slightly above costs to gradually increase the amount of funds available for lending.

Federal agencies are already responding to the requirements of EISA Section 432 to survey their facilities for potential energy efficiency and renewable energy upgrades, as well as to complete energy audits and to report on measures taken. The Department recommends that the renewable energy facility surveys called for in S. 3251 Section 5 should be included as a modification of EISA Section 432.

DOE's Federal Energy Management Program is already at work implementing provisions similar to the Federal energy management and data collection standard called for in S. 3251 Section 7. As required under EISA Section 432, DOE will publish overarching guidance for implementation of all Section 432 requirements in 2010. The Department is also developing a web-based tracking system for facility-level energy data and identified or implemented energy conservation measures per EISA. Tasking the GSA to deploy a similar publicly-available resource with facility-level energy data would create redundancy as the Department's compliance tracking system will be deployed for use by all agencies in July 2010.

## S. 679 | HEAVY DUTY HYBRID VEHICLE RESEARCH, DEVELOPMENT, AND DEMONSTRATION ACT

The program authorized by S. 679 would complement several of the Department's current activities focused on increasing vehicle energy efficiency. One of those programs is the SuperTruck Program, in which DOE is seeking to improve the freight hauling efficiency of Class 8 trucks by 50 percent. Other complementary efforts underway include: (1) the development of hybrid school bus technology; (2) research, development, and demonstration of medium-duty utility bucket trucks and passenger shuttles using a plug-in hybrid electric system; and (3) other medium and heavy duty truck deployment activities supported by our Clean Cities program. S. 679 has the potential to increase the fuel economy attainable by vehicles in this sector.

There are several technical definitions and reporting requirements about which we would like to seek clarification, and the Department looks forward to working with the subcommittee on those provisions.

## S. 2900 | GAS TURBINE EFFICIENCY ACT OF 2009

The Gas Turbine Efficiency Act would establish a research, development, and technology demonstration program to improve the efficiency of gas turbines used in combined cycle and simple cycle power generation systems.

The Department believes that industry has economic incentives to invest in research, development and demonstration to increase the efficiency of gas turbines. To the extent that the private sector underinvests in basic research, DOE has sufficient authority and existing programs to improve high temperature materials applicable to a range of energy technologies.

The bill is similar to an existing successful program within DOE. The Advanced Turbine Systems Program, a research, development and demonstration collaborative between the Department's Offices of Energy Efficiency and Renewable Energy and Fossil Energy, successfully developed and deployed advanced turbine material and coating leading to today's turbine efficiencies.

The legislation outlines activities DOE already performs. For example, through its Industries of the Future (crosscutting) investments, DOE's Industrial Technology Program (ITP) aids the development of advanced manufacturing processes for the expanded use of lightweight materials such as titanium. Those breakthroughs help to drive production cost down and market impact up. In other efforts, ITP promoted advanced alloys of steel to support many of the new clean energy products being developed today. Nanocoating technologies are still another group of innovations developed with the assistance of ITP that now extend the life of tooling systems and provide wear resistance to reduce the cost of manufacture and extend the useful life of products. All of these efforts support the overarching objective of reducing the energy intensity of Industry to help advance the Administration's energy security and environmental performance goals.

The Department is committed to continuing research of high temperature materials which will help industry develop more efficient energy technologies.  Meanwhile, the private sector has economic incentive to invest in the development and demonstration of efficient gas turbines. Therefore, private sector work on later stages of efficient natural gas turbine development and demonstration will likely be conducted without the need for additional funding authorizations beyond that already in place.

In conclusion, the Department of Energy thanks the Subcommittee for the opportunity to comment on these proposed initiatives.  We look forward to working with Congress to develop strong, effective clean energy policy to ensure U.S. leadership on these global issues and in the clean energy economy.