Invited Testimony for the House Committee on Science, Space & Technology
Investigations & Oversight and Energy & Environment Subcommittees
Prepared Statement of
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Mr. Chairman and members of the Committees, thank you for this opportunity to discuss the technical role that the U.S. Department of Energy's (DOE) National Renewable Energy Laboratory (NREL) has played in administering the U.S. Department of Treasury's 1603 Program. The Section 1603 Treasury grant program was created under the American Recovery and Reinvestment Act to support the deployment of renewable energy resources to help address the financial crisis – at a time when a lack of available financing, coupled with a steep decline in tax equity investors, severely limited the ability of renewable energy developers to move forward with projects.

As adopted by Congress, the 1603 Program offered businesses that installed energy projects the option of a one-time cash payment, in lieu of the Production Tax or Investment Tax credits found in the Internal Revenue Code Sections 45 and 48, respectively. The Investment Tax Credit – in place since 2005 – provides a tax credit for up to 30 percent of the total costs of many types of renewable energy projects. The Production Tax Credit – in place since 1992 – provides a tax credit for production of energy from renewable energy projects. A 1603 payment is made after the energy property is placed in service; a 1603 payment is not made prior to or during construction of the energy property. Accepting an award under 1603 disqualifies a project for the ITC or PTC, and vice-versa.

The Partnership for Renewable Energy Finance and other industry observers have credited the 1603 Program for substantially lessening the negative impact that the weakened tax-equity market was having on renewable energy deployment. The program, originally approved through the end of 2010, was extended for an additional year and expired on December 31, 2011. A project may still be eligible for a 1603 award if the developer commenced construction by December 31, 2011.

Because the technologies that qualify under the Internal Revenue Code are primarily renewable energy technologies, the Department of Treasury, in consultation with the Department of Energy, selected the National Renewable Energy Laboratory to provide technical assistance to the

program. NREL is the only National Laboratory dedicated solely to research, development, and deployment of renewable energy and energy efficiency systems. Our 35 years of research and credible analyses have contributed to the successful establishment of the growing U.S. industries that manufacture and deploy a broad range of clean energy technologies, including wind power, solar photovoltaics, concentrating solar power, biomass fuels and power, geothermal power and others.

NREL was selected to assist in the technical design and implementation of Treasury's 1603 Program because of its 1) broad and deep technical experience, 2) knowledge of these renewable energy industries, 3) its work on behalf of the Departments of Agriculture and Energy on earlier federal energy grant programs, and 4) its demonstrated history of intricate project management and achievement. This work was crucial because it ensured that 1603 program funds would be made available *only* to those applicants who met the statutory eligibility requirements.

NREL's involvement began almost immediately upon the President's signing of the Recovery Act in February 2009. Energy Department officials came to NREL requesting assistance in advising the Treasury Department on how best to implement the newly enacted 1603 provisions. The Laboratory's previous experience working with the USDA and DOE on grants for rural energy efficiency and renewable energy projects gave us important, parallel insights.

The challenges were understood to be significant. Congress clearly intended – and economic conditions demanded – that a working program be rolled out quickly. Pivoting from the existing tax credits to cash payments required careful scrutiny and deliberative execution of the prior tax credit rules in the form of the new cash payments, and development of application and payment procedures. A working group was formed with NREL, the Internal Revenue Service (IRS), Treasury and DOE representatives. The working group met in Washington, D.C. one week to formulate plans, and then went back the following week to their respective organizations to forge the details and consult on next steps. This method of development was repeated over a period of three months, to reach final consensus.

The group was guided by two fundamental questions: Would this aspect of the plan fulfill what Congress had intended? Would it meet the requirements of businesses which Congress sought to use the provisions of 1603 to continue development of new energy systems?

One early task was to draft an explicit definition of the technologies that met the requirements of the Act, as it now applied to cash payments, and additionally to define what portions of individual projects were eligible for those payments. On these and other aspects of the program, NREL gathered needed information and provided options for Treasury, which made final decisions on program design and implementation. The definitions and requirements had to be aligned with the existing provisions of the IRS tax code.

We attempted to take into account the needs of all pertinent factions in producing a program guidance document, which Treasury used to solicit feedback from industry and others. The final plans included input from a variety of external constituencies.

Our next step was to work with Treasury in standing up an effective program that would fully implement Section 1603 of the Act. While the Act was clear in its intent, the complexity of the issues required technical and business expertise to ensure the interests of both applicants and the nation's taxpayers were well and carefully represented. The tax policies involved little new territory, the underlying tax policies were in fact well known. Early on, we saw the biggest need to be one of strong due diligence – and we designed, staffed, and managed the program to accomplish that.

As an applied science lab, NREL not only conducts needed basic research into promising new technologies, we also place considerable emphasis on each and every subsequent step of the technology development process. Our ever-present goal is to see these new technologies put to good use, to benefit the nation and its economy. As a result we have come to appreciate the value of sound business acumen in technology development. To implement the 1603 applications review program, NREL assembled a qualified team that understood the business cases for these energy systems.

We assessed the skills and experience of existing NREL staff, identified key team members, and then went outside the Lab to recruit individuals with strategic knowledge to fill any gaps. Where necessary, we developed specific criteria for newly created positions, and proactively went outside of our organization to hire the most demonstrably qualified candidates for those positions.

At the same time, we worked on a daily basis with Treasury to design the most credible, effective and transparent review program possible. That included the engineering, development and maintenance of an effective and secure Web-based information, application and database system that would come to be the external "face" of the program. Considerable time and effort has gone into the program's Web capabilities, and this one-stop, on-line resource has contributed greatly to the successful implementation of the program, for both applicants and the government. A link to the Web site is provided here: www.treasury.gov/initiatives/recovery/Pages/1603.aspx

The review process we put in place was infused with an overriding ambition and goal: Give full scrutiny to the projects to make sure they are affirmatively and unquestionably eligible for the payment they would receive. For example, the first step is to ensure the applicant is a qualified business and that the project has in fact been in put in service.

Reviews of submitted applications are conducted in a systematic way by interdisciplinary teams, with experts educated in and experienced with a broad range of engineering, financial, accounting, legal, and other technical and business aspects. Wherever necessary, the 1603 team

reaches beyond their ranks to draw upon the broad and deep expertise across the National Renewable Energy Laboratory to address technical issues that arise.

From the beginning of the project, NREL's management developed a staffing strategy to ensure this critical project would have all the skills and capabilities needed, and the staffing plan was designed to provide sufficient flexibility in resource planning to allow the 1603 staffing level to flex up or down as the flow of applications increased and decreased. The process and staffing strategy also had to ensure that NREL and Treasury would meet the statutory requirement to respond to applicants within 60 days of receiving a fully completed application.

The 1603 project team leader was recruited from outside NREL based strong business experience performing due diligence on behalf of private equity and lending institutions investing in large-scale energy projects, excellent project management skills, and a solid grounding in engineering sciences. Members of the review team collectively possess 450 years of professional experience in accounting, law, engineering, business, economics, physics and finance, with education encompassing 17 advanced degrees, five MBAs, two PhDs, and two juris doctoral degrees.

All review team members at NREL, and several from the Treasury Department, received training in the newly established process. The beginning training session for each reviewer set forth system functions and reviewer expectations. Each member of the team was required to execute a Conflict of Interest agreement and the training emphasized the importance of strict reviewer anonymity and strict non-disclosure of applicant information, both within NREL and outside of the Lab.

We adopted a methodical approach and a set of operating procedures in which the review process works as a system, in step-by-step fashion, to answer a series of questions, including: Is the project eligible under the tax code? Is the technical description consistent with Sections 45 and 48 of the tax code? Has the project been actively placed into service? Are the costs eligible under the tax code? Does the applicant's documentation credibly support their claims? Our goal is to be absolutely consistent on how we review each and every project.

Some of applications are by nature more complex, with considerable back and forth communication resulting from the review process. The guiding principle is: every determining factor is appropriately weighed, and applications are rigorously evaluated against criteria. Thus, every application goes through two reviews at NREL, and a third at the Treasury Department.

The average time (in calendar days) for NREL to complete an application review (in duplicate) is 35 days. Once the review is complete, applications with our recommendations are delivered to the Treasury Department. Treasury officials then conduct their own review and make the final decisions, approving or denying grants, and fulfilling any payment that may be forthcoming.

In addition to the application review process, NREL is also managing the 1603 Program's annual review process for Treasury. Every recipient is required to submit to an annual review, in which they verify that they haven't sold or transferred the project, and state what the actual production of energy of the project has been during that year.

In conclusion, let me summarize our accomplishments on behalf of the 1603 Program. To date, some 41,000 applications have been received, and approximately 35,000 have been reviewed. About 3,000 are awaiting project completion to be processed; another 3,000 have been withdrawn or disqualified. In less than three years, the Treasury Department has issued cash payments for nearly 35,000 renewable energy projects, small to large, across the range of technologies, and in every state. Cash payments under the 1603 Program totaled $11.2 billion, which has helped leverage several times that amount in additional private investment. In total, the 1603 program has assisted in the development of $37 billion in new energy facilities for the nation.

In a separate but related project, DOE's Energy Efficiency and Renewable Energy office requested that NREL conduct a study of the economic impact of the 1603 Program. That work was distinct from our program management work for Treasury, and was conducted by a different organization within the Laboratory. NREL has deep knowledge of renewable technologies and their deployment in the marketplace, and is frequently engaged to perform economic impact analyses. The Laboratory has developed a suite of validated models which are used extensively by the Laboratories, universities and other external organizations and individuals to estimate the economic impacts of individual renewable generation projects, as well as the impacts of broader investment in renewable generation technologies.

The study, entitled, "Preliminary Analysis of the Jobs and Economic Impacts of Renewable Energy Projects Supported by the §1603 Treasury Grant Program," found that up to 75,000 direct and indirect jobs, and up to $44 billion in total economic output were supported by the design, manufacturing, construction and installation of photovoltaic and wind projects funded by the 1603 Treasury. In addition, the study estimates that the operation and maintenance of these facilities will continue to sustain more than 5,000 jobs per year, and up to $1.8 billion annually in economic output over the 20- to 30-year lifetime of the facilities. At the time the study was conducted (data as of Nov 10, 2011), the 23,000 photovoltaic and large wind projects funded by the program added 13.5 gigawatts (GW) of renewable energy to America's electricity generation capacity, representing about half of all the added non-hydropower renewable energy capacity in 2009-2011. The more up-to-date figures on the Treasury 1603 website are over 34,000 projects and 16.5 GW of renewable energy; so the jobs and economic impact figures would be higher if the study were conducted again today.

It is important to note that the NREL study provides estimates of direct and indirect jobs related to facility construction and operation, but does not attempt to estimate the overall economic impact produced by those jobs. No attempt was made to estimate if or how many jobs were lost

or displaced in other sectors by the installation of these RE projects. In addition, the study does not attempt to quantify which projects were completed directly because of the 1603 Program, nor does it address relative effectiveness of these or other tax incentives. It is clear that some portion of the jobs, earnings, and economic output supported by these projects can be directly attributable to the 1603 Program, but no attempt was made to estimate that portion in this analysis.

Thank you for the opportunity to testify. I would welcome any questions you may have.