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Re-establishing U.S. leadership in Clean Energy, High Technology Manufacturing.

Chairman Bingaman, Ranking Member Bunning, and Members of the Subcommittee, thank you for the opportunity to appear before you today to report on the progress of "The American Recovery and Reinvestment Act's"(Recovery Act) clean energy tax credit program. The members of this Subcommittee and the Finance Committee as a whole were critical in including clean energy tax provisions in the Recovery Act, and I am happy to be here today to report on how the Department of Energy is working with our colleagues at Treasury and the IRS to implement these provisions.

President Obama made it clear in his first State of the Union address: "The nation that leads the clean energy economy will be the nation that leads the global economy." And with the investments we made in advanced energy manufacturing, we have started to stake our claim in the global manufacturing marketplace.

The Recovery Act has helped us meet this goal by ensuring that creative, productive manufacturing stays and prospers in the U.S. instead of going abroad. The Advanced Energy Manufacturing Tax Credit ("48C") program has made a decisive difference in ensuring that U.S. producers see the U.S. as a good place to invest in production, and in the innovation that is closely tied to manufacturing. I am pleased to report that, coupled with other deployment programs in the Recovery Act, the 48C program has already begun to yield results maintaining and reinforcing U.S. leadership in high technology, clean energy manufacturing. It is playing a key role in our national effort to build new businesses, and new rewarding, long-term jobs around clean energy manufacturing.

The 48C program selected 183 projects in 43 states for a total of $2.3 billion in tax credits. We were oversubscribed 3:1 with qualifying projects, allowing us to select a portfolio of highly-qualified projects. In combination with other investments and policies, the 48C program is providing the incentives to expand domestic manufacturing allowing the U.S. wind industry for example to move domestic content from 25% just five years ago to more than 50% today to over

70% once this round of manufacturing expansion is complete. The U.S. is now on pace to double U.S. renewable manufacturing capacity (excluding conventional hydropower) by 2012.[1]

The DOE nuclear loan guarantees are expanding demand for manufactured nuclear equipment. (The 48C program created the tax incentives to expand nuclear equipment manufacturing in the United States to meet the demand with goods manufactured here.)

The 48C program also helped move advanced building technologies, developed in part with DOE support, to move rapidly to production in U.S.-based facilities. Products include energy efficient lighting, windows, appliances, water heaters, and HVAC equipment as well as fuel cells, batteries and advanced vehicle manufacturing.

The program was particularly effective in getting money out the door quickly to put people back to work on great projects that would otherwise have been idled in the face of the Great Recession. These incentive programs are laying the foundation for a broad expansion in high technology clean energy manufacturing. They are positioning the United States to regain global leadership in these high growth markets and remain an important policy tool for the future. That is why the Administration has called on Congress to provide an additional $5 billion in tax credits for clean energy manufacturing projects.

The 48C program is an integral part of the Recovery Act's multi-faceted strategy to encourage investment in domestic manufacturing. Taken together, Recovery Act investments will total $90 billion. Together with matching private investments, we estimate that the programs will result in as much as $150 billion in clean energy projects.[2] Existing investment programs could produce up to $90 billion in additional clean energy projects.[3]

In addition to the 48C program:

- To date the Department of the Treasury awarded $3.5 billion in payments in lieu of tax credits to 934 renewable energy generation projects in 44 states. DOE provided technical support for these selections.
- The Smart Grid investment grant program created incentives for upgrading our power infrastructure to 21st century technology, within the greater Office of Electricity's portfolio of $4.5 billion for smart grid and efficient electrical transmission. In parallel, the 48C program provided tax incentives for companies to expand manufacturing to meet the demand created by other federal investment.
- The Office of Energy Efficiency and Renewable Energy is investing nearly $16.8 billion in projects across its portfolio, from advanced battery manufacturing and advanced biorefinery projects to weatherization assistance and building retrofits.

[1] "Status Report on Goal of Doubling Renewable Energy in 3 Years" National Renewable Energy Laboratory; Logan and James, Strategic Energy Analysis Center, September 23, 2009.
[2] This includes Recovery Act appropriations across all government agencies. http://www.whitehouse.gov/sites/default/files/administration-official/vice_president_memo_on_clean_energy_economy.pdf
[3] This figure represents the estimated project value if all the existing authority for the DOE loan guarantee program is used. The estimate includes Title 17 loan guarantee authority for energy efficiency, renewable energy ($18.5 billion), fossil energy ($8 billion) and nuclear ($20.5 billion for both reactors and front-end), and Section 136 Advanced Vehicle Technology Manufacturing loans ($25 billion). Typically, projects require a minimum 20% equity share.

- The Department's Environmental Management office is investing nearly $6 billion in clean up of Cold War nuclear sites.
- The Department's Loan Guarantee Program has approximately $4 billion in appropriated credit subsidy to support an estimated $32 to $35 billion in loans for renewable energy, transmission, and leading edge biofuels projects.
- The Office of Fossil Energy is investing $3.4 billion in carbon capture and storage projects.
- $1.6 billion is being used to support scientific research through the Department's Office of Science.
- The Advanced Research Projects Agency-Energy (ARPA-E) is funding $400 million in highly innovative energy research projects.

I would like to take a moment to highlight two stories made possible by the clean energy manufacturing tax credit. With additional funding we can make sure that stories like these are heard more often.

James Morris is a native of Oconee County, South Carolina. He worked for a fabric manufacturer for 28 years. When the plant he worked at closed, he got a new job in manufacturing, but was laid off after just one year. After being unemployed for a year and a half, he was hired as a setup/repair operator for a manufacturer of smart meters that help businesses and consumers monitor in real-time how they use electricity. The company won a $5 million 48c tax credit to expand manufacturing lines in its factories in South Carolina and Minnesota. James is one of 120 people at the South Carolina plant that was hired because the tax credit helped the company expand. $3.4 billion in smart grid investment grants to other companies are also increasing demand for smart meters, creating more work opportunities for people like James.

A wind energy manufacturing company operating in western Pennsylvania is putting 79 laid-off employees back on the job and will be able to hire 50 additional workers at its other Pennsylvania locations. Eric Sheesley of Nanty Glo, Pennsylvania is one of these workers. Eric is a quality inspector who was laid off just before the holidays and a father of two young children. Because of the stimulus funds and the wind projects across the country being helped by ARRA 1603 program for which the company is now providing turbines, he's back on the job. After living off of his unemployment compensation and the extra hours his wife was able to pick up at her receptionist job, Eric's happy to be back in this exciting industry that is now a priority across the country.[4]

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The next six months will see an accelerating rate of job creation, specifically in clean energy, high technology manufacturing. We look forward to working with all of the recipients as they receive their credits, construct new projects, and expand and build new manufacturing facilities, all while hiring more workers to grow a strong, clean energy economy.

[4] http://www.energyempowers.gov/post/Wind-projects-providing-hope-for-Pennsylvania-workers.aspx

As proposed in the FY 2011 Budget, extending and expanding the 48C program would allow the U.S. to accelerate this manufacturing expansion. There is widespread agreement in the economic community that innovation is a primary driver of long-term economic growth and prosperity. Innovation drives job creation—long-term, high-quality jobs stay in industries where there is a high degree of innovative content and where innovation, manufacturing, and end-user demand are tightly integrated. This interface between innovation and manufacturing in the U.S. market is essential, allowing companies to move new products to market faster, enabling more rapid cost reduction in manufacturing processes, and creating, high quality, high productivity jobs.

Again, I want to thank this Committee for the opportunity to testify today. The 48C program and related energy programs have been critical to the increase in clean energy manufacturing we have seen over the past year. I strongly believe that these programs have been a success, and the Department looks forward to continuing that success in the future.

Background:

Creating a sustainable clean energy manufacturing sector and growing our supply chains

For too long, the U.S. has not been competitive in the global market for clean energy manufacturing and our domestic demand incentives were weak as well. As a result, the U.S. held a relatively small share of worldwide manufacturing capacity for clean energy-related industries, such as wind, solar, and batteries. In 2008, the U.S. had 16% of global wind manufacturing capacity (5.4 gigawatts (GW)[5] in the U.S. out of 33 GW worldwide), 6% of global solar manufacturing capacity (0.5 GW out of 9 GW worldwide), and less than 1% of global battery manufacturing capacity.[6]

This is largely because, until recently, a combination of factors including greater incentives for clean energy development and manufacturing overseas than in the U.S. have enabled clean energy manufacturing to grow more rapidly in Europe and Asia. Recently, however, the grant and tax provisions under the Recovery Act have made the U.S. a more attractive market for investment in clean energy development and manufacturing. As a result, we are seeing rapid growth of U.S. clean energy markets, and billions of dollars invested in expanding clean energy manufacturing in the U.S.

There is an opportunity for the U.S. to lead the world in high-technology, clean energy manufacturing. In these industries, the U.S. can leverage the R&D and innovations being pursued by companies, universities, and the Department of Energy's national labs into competitively advantaged manufacturing positions.

The U.S. clean energy manufacturing base is starting to expand rapidly. Section 1302 of the American Recovery & Reinvestment Act of 2009 Division B[7] amended the Internal Revenue Code by adding a new Advanced Energy Manufacturing Tax Credit ("48C").[8] As a tax credit, the program falls under the jurisdiction of Department of Treasury; it is being administered in cooperation with the Department of Energy, which led the review and selection of qualified advanced energy manufacturing projects[9] that would receive the 48C tax credits.[10]

ARRA authorized the IRS and Treasury in consultation with DOE to competitively award $2.3 billion in 30% tax credits for qualifying advanced energy projects in new, expanded, or re-equipped domestic manufacturing facilities.

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[5] Finished wind turbine capacity.
[6] The U.S. supplied less than 1% of global nickel metal hydride manufacturing and a negligible portion of the 3 billion cells per year worth of global lithium ion manufacturing.
[7] Pub. L. No. 111-5 (2009).
[8] 26 USC. 48C
[9] The term 'qualifying advanced energy project' means a project—which re-equips, expands, or establishes a manufacturing facility for the production of: property designed to be used to produce energy from the sun, wind, geothermal deposits or other renewable resources; fuel cells, microturbines, or an energy storage system for use with electric or hybrid electric motor vehicles; electric grids to support the transmission of intermittent sources of renewable energy, including storage of such energy; property designed to capture and sequester carbon dioxide emissions; property designed to refine or blend renewable fuels or to produce energy conservation technologies (including energy-conserving lighting technologies and smart grid technologies); new qualified plug-in electric drive motor vehicles (as defined by section 30D), qualified plug-in electric vehicles (as defined by section 30(d)), or components which are designed specifically for use with such vehicles, including electric motors, generators, and power control units, or other advanced energy property designed to reduce greenhouse gas emissions as may be determined by the Secretary.
[10] *See* IRS Notice 2009-72 §5.01. "The Service will consider a project under the qualifying advanced energy project program only if the U.S. Department of Energy provides a recommendation and ranking of the project."

In January, President Obama announced the award of the entire $2.3 billion of 48C tax credits to 183 projects in 43 states. We received 594 applications overall requesting over $10.9 billion in credits to support over $30 billion in total project value. After initial review 418 projects were deemed eligible requesting over $8.1 billion in credits (representing over $27 billion in total project value). DOE recommended, and IRS awarded, $2.3 billion to 183 companies, leaving $5.8 billion and 235 companies with unfunded eligible applications. [11]

The 48C tax credits are allowed for projects that are placed in service on or after February 17, 2009, when the Recovery Act was signed. Projects must be placed in service before 2014 (with the exact date depending on when the IRS issues the certification for the project). The statute favors the selection of projects that are in service early. As a result, some of the selected projects already have been completed and begun operation.

Projects were assessed based on the following statutorily specified review criteria including: domestic job creation (direct and indirect), net impact in avoiding or reducing air pollutants or emissions of greenhouse gases; lowest levelized cost of energy, potential for technological innovation and commercial deployment, and shortest project time from certification to completion. Applicants estimate that the advanced energy manufacturing facilities helped by this program may generate more than 17,000 jobs. This investment could be matched by as much as $5.4 billion in private sector funding likely supporting up to 41,000 additional jobs.

This tax credit program is already building a robust high technology, U.S. manufacturing capacity to supply clean energy projects with U.S.-made parts and equipment. These manufacturing facilities should also support significant growth in U.S. exports of U.S. manufactured clean energy products.

A strong supply chain means a nationwide network of clean energy companies, which means a well trained, robust workforce throughout the country. The geographic breadth of this network shows these initiatives are creating clean energy jobs all over the country and rebuilding the U.S. manufacturing base. The geographic concentration of some supply chains shows the value of clusters, creating synergies between manufacturers, suppliers, universities, and labs linked into a pocket of regional expertise. The mix of new and old industries shows the expansive impact of the clean energy supply chain. High-tech startups like Amonix and Calstar are constructing large factories to build cutting-edge products and contracting with traditional U.S. manufacturing companies to provide the steel, bolts, and glass necessary to make the most advanced solar panels, wind turbines, and vehicles in the world.

[11] The final application breakdown is as follows: 594 projects applied requesting a total of $10,902,251,709; 176 were ineligible (did not meet the specified requirements) for $2,783,932,005;; 183 projects were selected for $2.3 billion; 235 were eligible but not selected totaling $5,818,319,703

Clean energy innovation leads to long term, sustainable job growth

The global clean energy industry is expected to be worth trillions of dollars over the coming decades. In Durham, NC, we have helped fund the Nation's foremost producer of LED lighting, Cree Inc.. It's a tale of many important economic advances coming together: cutting- edge energy-saving technology, export-led growth, and good manufacturing jobs here in the U.S. And at the center of the story is a Recovery Act tax credit that helped to pull a lot of this together.

Cree was chosen for a $39 million tax credit through this Recovery Act program, which is called the Advanced Energy Manufacturing Tax Credit. So far, the investments they're using the credit to make, along with the private capital they're putting into those investments, have led to 375 new factory jobs in the last year, and they're planning to add 300 more next year.

The 48C credit has a unique characteristic that makes it especially important in today's economic landscape. For years, the tax code has been used to subsidize the generation and use of clean, renewable energy. That approach is consistent with President Obama's environmental vision. But another part of that vision calls for the growth of new, clean energy industries, providing American workers with the opportunities to build the equipment of the renewable revolution here in the U.S. The 48C tax credit incentivizes exactly that: it's a 30% credit going to domestic companies building domestic capacity to meet this new and growing source of demand.

The Recovery Act included $2.3 billion for the 48C program, but we were flooded with more applications than we were able to fund. Given the high volume of quality applications we would like to support and the impact this program has on growing new jobs today and new industries tomorrow, the President has called for a $5 billion expansion of the program.