Statement of Secretary Steven Chu
U.S. Department of Energy
Before the
Committee on Oversight and Government Reform
U.S. House of Representatives

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Chairman Issa, Ranking Member Cummings, and Members of the Committee, thank you for the opportunity to discuss the Department of Energy's work through the American Recovery and Reinvestment Act to strengthen the U.S. economy and promote a secure energy future.

When President Obama took office, the United States was in the midst of the greatest economic crisis since the Great Depression. More than 800,000 jobs were lost in January of 2009, and nearly 3 million jobs were lost in the six months before that.

To meet this challenge, we had to respond quickly and forcefully. In February of 2009, President Obama signed into law the American Recovery and Reinvestment Act to jumpstart the economy. The Recovery Act provided immediate assistance to families, gave much-needed relief to states and local communities, and invested in priorities like energy, infrastructure, and technology that would create jobs and lay the foundation for our future prosperity.

Today, we are moving in the right direction. The economy has added private sector jobs for 24 straight months for a total of more than 3.9 million jobs during this period. The non-partisan Congressional Budget Office estimated that at its peak, the Recovery Act was responsible for up to 3.6 million jobs nationwide.

Energy Department Recovery Act Implementation and Oversight Efforts

As part of the Recovery Act, the Energy Department received more than $35 billion to help jolt the economy and to position the United States to lead in the global clean energy race. By the end of fiscal year 2010, the Department had obligated virtually 100 percent of its Recovery Act contract and grant funds. We are supporting more than 15,000 projects across the country. And since the summer of 2010, we have consistently supported between 40,000 and 50,000 direct jobs each quarter, and likely thousands more throughout the supply chain.

From day one, our mission was to get Recovery Act funding out the door quickly, responsibly, and transparently. The Department takes its obligation to the American taxpayer seriously, and we took a number of steps to make sure we efficiently implemented our programs and rigorously monitored our projects.

For example, we broke down silos in the Department and brought together all the relevant parties from program and staff offices for regular meetings to discuss how to overcome barriers to implementation. We improved customer service by conducting webinars to train recipients on reporting requirements and by establishing a clearinghouse to answer questions. To

promote quality decision making, we asked leading experts in their fields to review project applications. And to increase the transparency and accountability of our spending, we developed an online financial database to provide users with a standard set of financial numbers for departmental and public review.

The amount of money we had to get out the door to meet our obligations to Congress and the American people required us to significantly ramp up our operations. While there were, understandably, some bumps along the way, we worked hard to promptly resolve road blocks.

Oversight of our Recovery Act funds has been a top priority for the Department and me. We have put in place an aggressive monitoring system to ensure that the Department and its grantees spend Recovery Act funds wisely and that taxpayers get the value they deserve. Our multilayered process includes financial controls at the front end, regular monitoring and site visits by our project officers, and audits by the Inspector General's office, which continues to play an important role in identifying ways we can further improve our programs.

The Department takes any case of waste, fraud, or abuse very seriously. The data strongly suggest that these cases are the exception rather than the rule. To date, less than 0.1 percent of the Department's 15,000 Recovery Act projects have resulted in a criminal indictment or conviction for waste, fraud, or abuse. Each one of these cases was unacceptable, and we have taken aggressive action to address issues early on and hold responsible parties accountable. Moreover, in addition to our own monitoring and oversight efforts, the Department has cooperated, and will continue to cooperate, with the Inspector General's office as it investigates any allegations of waste, fraud, or abuse.

I have spent my career as a scientist. Rigorous peer review and double-checking someone else's findings are fundamental to a sound scientific process — and I believe the same is true in government. So I welcome any and every sincere effort at oversight, and where we find mistakes, we have and we will move swiftly to correct them. I hope today can be an opportunity to have a serious, substantive dialogue. The American people expect all of us to honestly assess the investments we've made and chart a course for the future. Ultimately, we share the same goal: ensuring that America wins the clean energy race.

While any case of waste, fraud or abuse is unacceptable, and deserves appropriate punishment, oversight also requires us to examine the overall effectiveness of our Recovery Act programs. These investments are helping to modernize the ways we produce and use energy in this country so we can compete for the energy jobs of the 21st century and build an economy to last. We have made strong progress in several key areas, which I would like to briefly highlight.

Saving Americans Money through Energy Efficiency

The Recovery Act has put construction workers, contractors, and many other Americans to work helping families and communities save money by saving energy.

- **Weatherization Assistance Program:** Since 2009, the weatherization program has completed energy efficiency upgrades in approximately 860,000 homes. Of those homes, 680,000 were upgraded through the Recovery Act.

  These energy efficiency improvements are helping families to reduce energy waste and cut energy costs. An Oak Ridge National Laboratory study found that weatherization services save families an average of more than $400 on their heating and cooling bills in the first year after services are performed.

- **State Energy Program and Energy Efficiency and Conservation Block Grant Program:** These programs are helping states and local communities to save money by supporting energy efficiency upgrades in nearly 120,000 buildings and by installing a combined total of 390,000 energy efficient streetlights and traffic signals.

Renewable Energy

The Recovery Act invested in the research, development, production and deployment of renewable energy technologies to strengthen U.S. competitiveness in this growing industry. Thanks to our Recovery Act investments, the United States is on track to double renewable energy generation by 2012.

- **1603 cash payment in lieu of tax credit program:** The 1603 program, administered by the Department of the Treasury in consultation with the Energy Department, has supported more than 30,000 renewable projects nationwide, which have put tens of thousands of Americans to work and will have enough capacity to power roughly 4 million homes.

- **1705 loan guarantee program:** The Section 1705 loan guarantee program, which was included in the Recovery Act, is accelerating the deployment of commercial-scale, innovative clean energy technologies. Among other important projects, we are supporting the world's largest wind farm, several of the largest solar generation facilities, and an unprecedented solar rooftop project.

  The Energy Department also supports deployment of clean energy and advanced vehicle technologies through two non-Recovery Act programs: the Section 1703 and the Advanced Technology Vehicles Manufacturing programs. Collectively, projects supported by the loan programs are expected to employ more than 60,000 Americans, generate enough clean electricity to power nearly 3 million homes, and displace nearly 300 million gallons of gasoline annually.

  The Loan Programs Office continues to work to make certain that its Portfolio Management Division has the resource capacity and expertise to actively monitor loan and loan guarantee transactions to protect U.S. taxpayers. The office is held accountable through a number of rigorous internal and external reviews.

- **The Advanced Energy Manufacturing Tax Credit**: Known as 48C, this tax credit provided $2.3 billion in incentives to create jobs and strengthen America's high-technology manufacturing industry to produce advanced energy technologies.

Reducing our Dependence on Oil and Diversifying Transportation Options for Consumers

The Recovery Act is helping to transform America's transportation sector to reduce our dependence on oil, to help protect consumers from high gas prices, and to promote U.S. leadership in making and selling the fuel-efficient vehicles consumers demand.

- **Advanced Battery Manufacturing:** In 2009, the U.S. had only two factories manufacturing advanced vehicle batteries. With Recovery Act funding, 30 new advanced battery and electric vehicle component plants are opening across the country. By 2015, the United States will be able to produce enough batteries and components to support 500,000 plug-in hybrid and electric vehicles through strategic Recovery Act investments.

- **Advanced Biofuels:** To move advanced biofuels closer toward commercialization — helping to create jobs across rural America — the Recovery Act is supporting nearly 20 integrated biorefinery projects. For example, construction is underway on the commercial-scale INEOS biorefinery in Florida, which will produce up to eight million gallons of bioethanol per year once fully operational from renewable biomass including yard, wood, and vegetable waste.

Creating a 21st Century Electric Grid

To compete in the 21st century global economy, the United States needs a 21st century electric grid. The Recovery Act is helping to upgrade the grid to a more secure, stable nationwide electric system that can better integrate renewable energy and help consumers manage their energy use. A $4.5 billion investment from the Recovery Act has been matched by more than $5.6 billion of private sector investment in smart grid projects.

- **A Modern Electric Grid:** The Recovery Act supports more than 130 projects nationwide through the Smart Grid Investment Grant program and the Smart Grid Demonstration Program that could set the course for a modern electric grid. We have already installed more than 10 million smart meters, helping to give consumers better information on their energy use. We also expect to install about 1,100 networked phasor measurement units on the transmission system, providing nearly 100 percent visibility of the transmission system by the end of FY 13 — helping to make our power grid stronger and more reliable.

Unleashing American Innovation to Win the Clean Energy Race

The Recovery Act included $400 million for the Advanced Research Projects Agency-Energy, known as ARPA-E. ARPA-E supports high-risk, high-reward research projects that could fundamentally transform the ways we use and produce energy. If successful, these projects could create the foundation for entirely new industries. For example, companies and

research teams are working toward a prototype of a battery that has double the energy density and one third the cost of batteries in 2010, bacteria that convert carbon dioxide and electricity to make fuel for cars, grid scale electricity storage, and other potentially game-changing breakthroughs.

- **Catalyzing Private Sector Investment:** With ARPA-E investments of $40 million total, 11 companies have advanced their technologies and attracted more than $200 million in private investment.

- **Battery Breakthrough:** Last month, Envia Systems, a company supported by ARPA-E, announced that it doubled the world record in energy density for a rechargeable lithium ion battery cell, a breakthrough which could dramatically reduce its cost.

The Recovery Act also included $1.7 billion for the Office of Science to help keep the United States at the forefront of science and technology, which is critical to our economic competitiveness in the 21st century. These funds support cutting-edge research, a strong scientific workforce, and infrastructure improvements to our national laboratory facilities so we have the modern tools we need to lead in science and discovery.

- **Energy Frontier Research Centers:** The Recovery Act invested $277 million in the Department's Energy Frontier Research Centers, which are mostly university-led teams working to solve specific scientific problems that are blocking clean energy development. The EFRCs, which are also supported by annual appropriations, are making strong progress. So far, the EFRCs have published more than 1,000 peer-reviewed papers and filed more than 90 patent applications or patent/invention disclosures. Researchers are reporting multiple breakthroughs in areas ranging from advanced battery technology and solar energy to solid-state lighting and nuclear power.

- **Upgrading Science User Facilities:** The Recovery Act included nearly $400 million for much-needed user facility upgrades across the national laboratories to help the United States stay at the forefront of research. Among other projects, investments are supporting advanced networking, light source improvements, and the Environmental Molecular Sciences Laboratory.

- **Acceleration of Ongoing Construction Projects:** The Recovery Act included nearly $340 million to accelerate ongoing construction projects such as the National Synchrotron Light Source II.

Reducing Environmental Risks

One of the Energy Department's top priorities is to protect public health and the environment by cleaning up the legacy of our nation's nuclear weapons program. The Recovery Act included $6 billion to accelerate cleanup work across the country.

- **Reducing our environmental footprint:** Thanks to Recovery Act funding, the Department has made significant progress cleaning up hazardous, radioactive legacy

waste from the Manhattan Project and the Cold War. By the end of 2011, the program had permanently cleaned up more than 600 square miles of contaminated land, reducing its geographic footprint by 66 percent and far exceeding our goal of a 40 percent reduction.

Conclusion

The Department of Energy's Recovery Act efforts are working: they've created jobs and put us in a stronger position to compete in the $260 billion global clean energy economy. Last year — for the first time since 2008 — the United States reclaimed the title from China as the world's leader in total clean energy investments.

This welcome news comes with a huge caveat, however. Our comeback is due in large part to programs and tax incentives that have expired or are set to expire soon.

America has reached a crossroads and members of Congress have a big decision to make: We can play to win in the clean energy race — investing in America's workers, industries, and innovations — or we can wave the white flag and cede leadership to other countries that are investing in these industries.

Trillions of dollars will be invested in clean energy in the coming decades, and countries around the world are moving aggressively to seize this economic opportunity.

I believe the United States can and must win this race. The Recovery Act gave us a strong foundation to build on, but we must move forward with fierce urgency. Thank you, and now I welcome your questions.

Secretary of Energy Steven Chu

As United States Secretary of Energy, Dr. Steven Chu is charged with helping implement President Obama's ambitious agenda to invest in clean energy, reduce our dependence on foreign oil, address the global climate crisis, and create millions of new jobs.

Dr. Chu is a distinguished scientist and co-winner of the Nobel Prize for Physics (1997). He has devoted his recent scientific career to the search for new solutions to our energy challenges and stopping global climate change - a mission he continues with even greater urgency as Secretary of Energy.

Prior to his appointment, Dr. Chu was the Director of the Department of Energy's Lawrence Berkeley National Lab, where he led the lab in pursuit of alternative and renewable energy technologies. He also taught at the University of California as a Professor of Physics and Professor of Molecular and Cell Biology. Previously, he held positions at Stanford University and AT&T Bell Laboratories.

Dr. Chu's research in atomic physics, quantum electronics, polymer and biophysics includes tests of fundamental theories in physics, the development of methods to laser cool and trap atoms, atom interferometry, the development of the first atomic fountain, and the manipulation and study of polymers and biological systems at the single molecule level. While at Stanford, he helped start Bio-X, a multi-disciplinary initiative that brings together the physical and biological sciences with engineering and medicine.

The holder of 10 patents, Dr. Chu has published nearly 250 scientific and technical papers. He remains active with his research group and has recently published work on general relativity and single molecule biology and biophysics that includes sub-nanometer molecular imaging with optical microscopy, cadherin adhesion, neural vesicle fusion, and nerve growth factor transport. About 30 alumni of his research group have gone on to become professors in their own right and have been recognized by dozens of prizes and awards.

Dr. Chu is a member of the National Academy of Sciences, the American Philosophical Society, the Chinese Academy of Sciences, Academia Sinica, the Korean Academy of Sciences and Technology and numerous other civic and professional organizations. He received an A.B. degree in mathematics, a B.S. degree in physics from the University of Rochester, and a Ph.D. in physics from the University of California, Berkeley as well as honorary degrees from 15 universities.

Dr. Chu was born in Saint Louis, Missouri in 1948. He is married to Dr. Jean Chu, who holds a D.Phil. in Physics from Oxford and has served as chief of staff to two Stanford University presidents as well as Dean of Admissions. Secretary Chu has two grown sons, Geoffrey and Michael, by a previous marriage.

In announcing Dr. Chu's selection, President Obama said, "The future of our economy and national security is inextricably linked to one challenge: energy. Steven has blazed new trails as a scientist, teacher, and administrator, and has recently led the Berkeley National Laboratory in pursuit of new alternative and renewable energies. He is uniquely suited to be our next Secretary of Energy as we make this pursuit a guiding purpose of the Department of Energy, as well as a national mission." Dr. Chu was sworn into office as the 12th Secretary of Energy on January 21, 2009.