STATEMENT OF

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BEFORE THE

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Mr. Chairman, Ranking Member Frelinghuysen, Members of the Subcommittee, thank you for the opportunity to testify on the President's Fiscal Year (FY) 2011 budget request for the Office of Energy Efficiency and Renewable Energy (EERE).

The President's FY 2011 budget request includes $2.355 billion for EERE, approximately $113 million (five percent) more than the FY 2010 appropriation. This represents an almost doubling of the budget request since FY 2006.[1] The FY 2011 budget will also help us leverage and build on the $16.8 billion EERE received under the American Recovery and Reinvestment Act (Recovery Act).

EERE's balanced portfolio of research, development, demonstration and deployment (RDD&D) and commercialization activities is helping to unleash unprecedented growth in renewable energy and efficiency technologies. This is only part of the story here – tax credits, loan guarantees, and other instruments are playing a substantial role in this growth.

Renewable energy capacity (excluding large-scale hydropower) has grown by 150 percent during the last eight years,[2] and the U.S. now leads the world in wind energy capacity and production.[3] Biofuels production has reached record levels, with the U.S. producing over 10 billion gallons annually.[4] In addition to energy supply gains, energy efficiency technologies have contributed to a 15 percent reduction in energy intensity (energy consumption per dollar of gross domestic product) for the U.S. economy since 2000.[5]

EERE continues to work to amplify these trends. With the continued leveraging of EERE technologies, EERE estimates that the achievement of all its program performance goals would significantly reduce U.S. net oil imports by over 50 percent, reduce carbon dioxide emissions by over 15 percent, save consumers over 20 percent on energy costs,

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[1] Internal EERE analysis of 10-Year budget trend FY 2002-2011

[2] Calculated based on year 2008 (38,493 MW capacity) compared with year 2000 (15,572 MW capacity) Renewable energy here includes wind, biomass, geothermal, solar thermal and photovoltaics. Source: U.S. Energy Information Administration. *Electric Power Annual 2008*. January 21, 2010. http://www.eia.doe.gov/cneaf/electricity/epa/epaxlfile1_1.pdf

[3] By the end of 2009, U.S. installed capacity was 35,159 MW. Source: American Wind Energy Association. *Year End 2009 Market Report*. January 2010. http://www.awea.org/publications/reports/4Q09.pdf
Wind generation in Germany, the country with the next largest capacity, reached 25,777 MW in 2009. Source: European Wind Energy Association. *Wind in Power: 2009 European Statistics*. February 2010. http://www.ewea.org/fileadmin/ewea_documents/documents/statistics/general_stats_2009.pdf
China's wind generation capacity increased in 2009 to a total of 25.1 GW which is now very close to Europe's capacity of 74,767 MW (source: Global Wind Energy Council, http://www.gwec.net/index.php?id=30&no_cache=1&L=rmduzbfytclp&tx_ttnews[tt_news]=247&tx_ttnews[backPid]=97&cHash=e7f10ef71a, Accessed March 5, 2010

[4] Data from U.S. Energy Information Administration, *Monthly Energy Review December 2009* and includes fuel ethanol and biodiesel production, and is projected to reach 10.7 million gallons for 2009. This reflects a 15 percent increase from 2008.

[5] The value of 15% is from 2008 data published by U.S. Energy Information Administration / Monthly Energy Review. December 2009.

and reduce primary energy consumption extrapolated to 2050 relative to EIA's baseline projections.[6]

Cumulatively, between 2011 and 2050, if technology leveraged by EERE programs can meet their program goals, they would help the U.S. reduce oil imports by approximately 30 billion barrels (approaching 10 years' worth of current passenger vehicle use),[7] save consumers and businesses more than $6 trillion in energy costs, and displace nearly 30 billion metric tons of carbon dioxide emissions and over 350 quadrillion British thermal units of primary energy.[8]

Some examples of noteworthy EERE program office accomplishments include:

- **The Industrial Technologies Program** won three *R&D 100* awards in 2009, continuing a history of being recognized for its work in Materials Science and Energy Intensive Process research activities. The *R&D 100*, also known as the "Oscars of Innovation," identifies the most promising technology products each year. DOE 2009 winners include the development of *ThermoMagnetic Processing for Heat Treating*, a transformational materials processing technology that offers significant energy savings through the elimination of heat treatment steps and the use of superconducting magnets. The Save Energy Now effort conducted more than 2,400 assessments from 2006 through November 2009 that identified potential energy and cost savings for manufacturers. The more than 2,200 plants with completed reports identified over $1.3 billion in potential cost savings per year, with $231 million per year already implemented and $437 million per year underway or scheduled.

- **The Federal Energy Management Program** (FEMP) helped Federal agencies save over 110 trillion lifecycle Btus, more than twice FEMP's annual target. In FY 2009, Super Energy Service Performance Contract (ESPC) awards are expected to generate project investments exceeding $440 million with a corresponding cumulative guaranteed energy savings of 85 trillion BTUs. These figures relate to FY 2009 investments and cumulative guaranteed savings over the contract term from the task order schedules.

- **Building Technologies Program** has addressed the Congressional finding that the program was late on issuing energy conservation standards and will issue final rules for six types of appliances in FY 2010, advance the work necessary to issue final rules for ten types of appliances in FY 2011, and continue to update test procedures and standards for additional product types. On September 30, 2009, the Environmental Protection Act (EPA) and DOE signed a Memorandum of Understanding (MOU) to more clearly define the Energy Star and the National

[6] Baseline projections are taken from U.S. Energy Information Administration, Office of Energy Markets and End Use. *Annual Energy Review*. Washington. June 2009. http://www.eia.doe.gov/aer/pdf/aer.pdf
[7] U.S. Energy Information Administration, Office of Energy Markets and End Use. *Annual Energy Review*. Washington. June, 2009. http://www.eia.doe.gov/aer/pdf/aer.pdf
[8] http://www1.eere.energy.gov/ba/pba/program_benefits.html

Building Rating Program between the two agencies. A Governing Council will ensure that work programs between EPA and DOE are complementary (and not duplicative) and leverage federal dollars to achieve maximum energy efficiency. [9] The program is demonstrating important advancements in new home construction (40% overall savings), new commercial building construction (50% overall savings), commercial building retrofits (30% overall savings), and for a number of the technologies that go into these buildings.

- **Biomass and Biorefinery Systems R&D** continues to make progress on integrated biorefinery projects at various scales and phases of construction, with 1.4 million gallons per year (mgpy) of cellulosic ethanol production capacity in Louisiana which is a demonstrated project and 2.5 mgpy biofuel capacity coming on line in Georgia in FY 2010 in support of the Energy Independence and Security Act (EISA) Renewable Fuel Standard (RFS) targets. The Georgia project is commercial in scope. An additional four biorefineries will move into the construction phase in FY2010 and plan to reach operating capacities of up to 37 mgpy (25 mgpy cellulosic ethanol and 11 mgpy FT Liquids as a diesel replacement) in FY2012 in Kansas, Iowa and Wisconsin. All of the projects named are funded by EERE. The program evaluated hundreds of applications and made awards to 5 Feedstock Logistics projects and 3 USDA-DOE joint solicitation projects in 7 states. The program produced multiple reports, including an updated intermediate blends testing report and a draft algae technology roadmap, to be finalized in FY2010. A series of workshops were also held to explore new initiatives in biopower and bioproducts, as well as obtain key stakeholder input to the high-yield scenario as part of the forthcoming update to the 2005 Billion-Ton Study.

- **The Vehicle Technologies Program** accelerated activities focused on developing and demonstrating plug-in hybrid components (batteries, electric motors, and power electronics) and vehicles. In FY 2009, the program also demonstrated a 44 percent improvement in engine efficiency over a comparable gasoline engine with a passenger diesel engine, modeled a passenger vehicle weight reduction of 40 percent, and supported efforts to begin commercialization of a lithium-ion battery supported by DOE.

- **The Geothermal Technologies Program** partnered with industry, the National Laboratories, and universities to achieve significant advancements in R&D. Significant FY 2010 accomplishments included:
    - Developing a Seismic Imaging Tool at Sandia National Laboratory;
    - Successfully testing Nano-Tracers at Stanford University;
    - Advancing “Spallation Drilling” (a process that promises much faster hard-rock drilling); and

[9] http://www.natresnet.org/hotnews/EPA_DOE_Agreement.pdf

- Generating electricity from hot water co-produced at Rocky Mountain Oil Field Test Center, a first for the U.S. Currently treated as a waste product, the majority of "co-produced" geothermal resources are warm enough to generate electricity. This could provide additional value streams to extend the life of mature oil and gas fields, while adding a significant, clean source of electricity to America's energy portfolio.

- **The Solar Energy Technologies Program** worked with the private sector to develop modules producing over 40 percent more power per unit area than typical silicon-based modules, while reducing total system costs and producing more power in constrained locations like residential rooftops. A new 1.5 megawatt (MW) dish/engine power plant in Phoenix, Arizona, demonstrated a world record 31.2 percent solar-to-grid system conversion efficiency.

- **The Water Power Program** competitively selected over 30 partnerships with leading technology and project developers that will facilitate the deployment and testing of marine and hydrokinetic power systems and components, reduce technology costs and improve system performance, reduce deployment costs by leveraging environmental performance data, and determine the available, extractable energy from U.S. water resources. The program also launched an extensive research platform to test the Nation's first wave and tidal power systems, designed open-ocean renewable energy test facilities, and identified opportunities for increased incremental generation at hydroelectric facilities and non-electricity generating dams.

- **The Wind Energy Program** is using Recovery Act funds to establish large blade and gearbox testing facilities which will accommodate the rapid growth in wind turbine size and demand over the next two decades. These testing facilities will help enhance the performance, durability, and reliability of utility-scale wind turbines. The Wind Energy Program has been conducting independent testing and certification of distributed wind turbine technology since FY 2008. This activity will promote the widespread deployment of distributed wind energy by providing the information consumers and small businesses need to confidently invest in small wind turbines. For more than a decade, the program has partnered with industry to develop innovative concepts, components, and prototypes primarily for residential, farm, and industrial applications.

- **The Weatherization and Intergovernmental Activities Program** increased utilization of energy savings performance contracting, sustainable energy efficiency finance mechanisms, renewable energy certificate trading programs, and energy efficiency based utility incentives. The program also expanded the green workforce in the residential energy retrofit and other energy-related fields. The Weatherization Assistance Program is one of the largest and most technically advanced residential energy retrofit providers. Funds are allocated on a formula basis and awarded to States, U.S. Territories, the District of Columbia, and Native American tribal governments to increase the energy efficiency of homes occupied

by low-income families. These agencies, in turn, contract with almost 900 local governmental or nonprofit agencies to deliver weatherization services to low-income clients in their areas. The FY 2011 target is to weatherize 33,484 low-income homes with regular appropriations.

EERE GOALS – FY 2011

Six overarching themes drive the FY 2011 EERE budget request, including:

1. Demonstrating large scale, quickly deployed, barrier busting replicable renewable generation facilities;

2. Rapidly building on and leveraging Recovery Act investments in renewable energy and energy efficiency technologies. Much of the requested increase is dedicated towards support of research and development and innovation. The mission of EERE is to undertake research and deployment activities advancing technologies to meet the growing global demand for clean, reliable, sustainable, and affordable energy services, and to reduce energy consumption;

3. Demonstrating Federal leadership in energy efficiency, reducing GHG emissions and increasing the use of renewable energy by the Department;

4. Transforming the technology, infrastructure and landscape of the Nation's transportation systems with new vehicles and new fuels;

5. Making America's manufacturing, construction, and other industries the most innovative and productive in the world; and

6. Supporting the education and training needed to give Americans with the skills needed by these new businesses—including use of state of the art training technology.

FY 2009-2011 BUDGET TABLE
ENERGY EFFICIENCY AND RENEWABLE ENERGY[10]

	FY 2009		FY 2010	FY 2011	FY 11 VS FY 10	
Programs	**Current Approp.**	**Current Recovery**	**Current Approp.**	**Congressional Request**	**$ Change**	**Percent Change (rounded)**
Biomass and Biorefinery R&D	214,215	777,138	220,000	220,000	0	0%
Vehicles Technologies	267,143	2,795,749	311,365	325,302	+13,937	4%
Hydrogen and Fuel Cell Technologies	164,638	42,967	174,000	137,000	-37,000	-21%
Geothermal Technology	43,322	393,106	44,000	55,000	+11,000	25%
Solar Energy	172,414	115,963	247,000	302,398	+55,398	22%
Water Power	39,082	31,667	50,000	40,488	-9,512	-19%
Wind Energy	54,370	106,932	80,000	122,500	+42,500	53%
Building Technologies	138,113	319,186	222,000	230,698	+8,698	4%
Federal Energy Management Program	22,000	22,388	32,000	42,272	+10,272	32%
Industrial Technologies	88,196	261,501	96,000	100,000	+4,000	4%
Weatherization and Intergovernmental	516,000	11,544,500	270,000	385,000	+115,000	43%
RE-ENERGYSE	0	0	0	50,000	+50,000	NA
Program Direction	127,620	80,000	140,000	200,008	+60,008	43%
Program Support	18,157	21,890	45,000	87,307	+42,307	94%
Facilities and Infrastructure	76,000	258,920	19,000	57,500	+38,500	203%
Congressionally-Directed Activities	228,803	0	292,135	0	-292,135	-100%
Use of Prior Year Balances	-13,238	0	0	0	0	NA
TOTAL, EERE	2,156,865[a]	16,771,907	2,242,500	2,355,473	+112,973	5%

[a]SBIR/STTR funding transferred to the Office of Science in FY 2009 was $19,327,840 for SBIR and $2,347,160 for STTR respectively.

PROGRAM SUMMARIES FOR FY 2011

Biomass and Biorefinery Systems Research and Development

The FY 2011 budget request of $220 million remains level to continue research development and deployment (RDD&D) investments supporting EISA and RFS targets. This builds on approximately $800 million of Recovery Act funds announced last May to accelerate advanced biofuels research and development and to provide additional funding for commercial-scale biorefinery demonstration projects.[11] The FY 2011 request for algal biofuels is approximately $4 million, and is intended to continue activities started in FY 2010 and include 1) resource assessments of the algae production inputs; 2)

[10] The FY 2011 Request for the Small Business Innovation Research Program and the Small Business Technology Transfer Program is a combined $25,821,000

[11] http://www1.eere.energy.gov/biomass/news_detail.html?news_id=12488

environmental assessments of the impacts of growing algae at scale, and 3) research of problems with the feedstock-fuel conversion interface. The results of this funding will inform activities being conducted within the Recovery Act funded Algal Biofuels Consortium and the pilot and demonstration facilities dedicated to algal biofuels.

Strategic analysis and sustainability activities provide critical quantitative data, validation, and risk and feasibility assessments to inform programmatic decision-making and strategic planning. The program is launching an effort for biopower in FY 2011 through an initiative involving large commercial demonstration projects comparable to biorefineries at scale. As with the program's biorefinery projects, this new initiative will address the entire supply chain from feedstock cultivation to large scale power generation, providing clean energy solutions for an emerging low carbon economy. The Biomass Program proposes subprogram restructurings in order to better highlight these and other key activities.

Building Technologies

The FY 2011 budget request of $230.7 million allocates an additional $8.7 million (4 percent) above FY 2010 appropriated levels to the high-priority Building Technologies Program's efforts. By working to make new and existing homes and buildings more energy efficient, DOE is helping to deliver significant primary energy savings today. With even greater future savings in the pipeline, the program is building the foundation for significant future reductions in the carbon footprint of the built environment. R&D for residential and commercial buildings integration focuses on reducing building energy requirements and incorporating renewable energy systems to enable commercial production of net zero energy homes and buildings by 2020 and 2025, respectively. The portfolio of energy efficiency components research, aligned to reduce building electrical loads, includes solid state lighting, more affordable efficient windows, and more efficient heating, ventilation, air conditioning, and refrigeration. The program pursues market transformation activities by developing and disseminating model building codes that are 30 percent more efficient than current codes in both the residential and commercial sectors. The program will continue to clear the backlog of rulemakings for appliances and commercial equipment and meet Energy Policy Act of 2005 (EPAct 2005) and EISA requirements. ENERGY STAR® activities will focus on developing product test procedures and accelerating verification processes. The Energy Efficient Building Systems Design Innovation Hub, initiated in FY 2010, will continue to go beyond advanced research on building components and develop systems models that optimize and integrate components to provide increased energy savings through synergistic functionality.

Federal Energy Management Program (FEMP)

The FY 2011 budget request of $42.3 million allocates an additional $10.3 million (32 percent increase) above FY 2010 appropriated levels to assist Federal Agencies in meeting the requirements of statutory and executive energy conservation goals, including direction provided by Executive Order 13514 to reduce their GHG emissions. FEMP's

continued support of agencies' efforts to become more energy efficient, less reliant on nonrenewable energy sources, and decrease water use will help them achieve these goals. FEMP provides assessments, audits, training, rulemaking, coordination, access to alternative private financing, and leadership across the Federal government so it can achieve its legislated and executive mandates. FEMP supports efforts by DOE to meet or exceed all energy and water goals.

Hydrogen and Fuel Cell Technologies

The FY 2011 budget request of $137 million represents a $37 million (21 percent) reduction from the FY 2010 appropriated levels. This request allows a balanced portfolio of transportation solutions and a continued focus on battery and advanced vehicle approaches for more near-term impacts while maintaining a strong effort in key areas of hydrogen and fuel cell R&D. Hydrogen fuel cells provide power that can be cleanly produced from a wide range of abundant domestic energy resources, including renewable resources (such as biofuels and by-products from biomass) and natural gas, which can lead to substantial reductions in CO_2 emissions and petroleum consumption. The program will invest in reducing the cost and improving the durability and performance of fuel cell systems by addressing stack components such as catalysts and membranes, as well as the balance of plant components, degradation, and water transport. The program will also invest in hydrogen fuel R&D, with a goal to reduce the capital cost of hydrogen production from renewable resources by 80 percent by 2015.

Geothermal Technologies Program

The FY 2011 request of $55 million, an increase of $11 million (25 percent) over FY 2010 appropriated levels, focuses on extracting heat from the earth through enhanced geothermal systems (EGS) that could provide up to 100,000 MW of electric power by 2050. Investments support research and demonstrations of EGS technology at different geological field sites to increase reservoir production rates and lifetimes and complement accelerated activities enabled by the Recovery Act.

Industrial Technologies Program

The FY 2011 request of $100 million is a $4 million (4 percent) increase over FY 2010 appropriated levels. It supports a critical expansion of the "Save Energy Now" (SEN) initiative necessary for realizing the program's goal of reducing industrial energy intensity by 25 percent over 10 years through voluntary collaborative partnerships. This goal is inspired by EPAct 2005, which required that each of these partnerships have, as a goal, at least a 2.5 percent per year reduction in energy intensity during the period from 2007 through 2016. Through SEN, 2,421 energy use assessments were completed from 2006 through November 2009, identifying energy cost savings of more than $1.3 billion annually that would also avoid 11.7 million metric tons of carbon dioxide emissions. Additionally, the program will continue to conduct industry-specific and crosscutting RD&D activities, ranging from ultra-high efficiency boiler systems to innovative low-energy chemical membrane systems and the development of cutting-edge

nanotechnologies. Another major program focus will be the development of energy-efficient combined heat and power systems. The Manufacturing Energy Systems subprogram will be initiated to serve as knowledge development and dissemination centers organized around distinct manufacturing areas with critical technical needs.

REgaining our ENERGY Science and Engineering Edge (RE-ENERGYSE)

DOE requests $50 million for RE-ENERGYSE through EERE. An additional $5 million for RE-ENERGYSE is included in the DOE Office of Nuclear Energy's FY 2011 request. This program will focus on creating a highly skilled U.S. workforce dedicated to developing and implementing advanced energy technologies, processes, and systems that can help the U.S. accelerate its transition to a low carbon economy. Through a competitive process, this program will provide fellowships, internships, and other hands-on research opportunities for undergraduate, graduate, and post-doctoral students focusing on clean energy and innovative new energy systems. The program will also support the development of interdisciplinary professional masters programs in advanced energy systems and management. RE-ENERGYSE will also dedicate resources to technical training to equip workers with the skills needed to enter clean energy jobs in the near-term, as well as for K-12 students to ensure a pipeline of inspired and well-educated individuals prepared to solve our Nation's greatest energy and climate change challenges. Included in the EERE request for RE-ENERGYSE is $5 million for the DOE-sponsored Solar Decathlon which joins 20 college and university teams in a competition biannually to design, build, and operate the most attractive and energy-efficient solar-powered house. EERE proposes to move funding for this event from the Building Technologies Program budget line.

Solar Energy

DOE's FY 2011 request of $302.4 million represents an additional $55.4 million (22 percent) over the FY 2010 appropriation to enable the U.S. to compete in the global marketplace with cost-competitive solar energy by 2015. The photovoltaic (PV) subprogram is advancing module and system manufacturing technologies to achieve higher performance and lower-cost products with faster throughput and continuing reliability research to increase the lifetime of PV components and systems, and prove the bankability of new PV technologies. The Concentrated Solar Power (CSP) subprogram is developing low-cost systems with thermal storage to compete in the intermediate and baseload power markets, assisting industry deployment by identifying land environmentally suitable for utility-scale solar projects, addressing issues related to water consumption and transmission, and launching a demonstration of new CSP technologies that could lead to over one gigawatt of projects. The Systems Integration subprogram addresses the technical barriers to wide scale deployment of solar technologies by modeling performance and analyzing effects on the grid, developing new technologies that connect with the smart grid, testing field systems, measuring the solar resource to assess variability, and developing and implementing codes and standards. The Market Transformation subprogram is reducing installed cost and increasing market penetration of solar technologies by training solar installers, and providing information and technical

assistance to key stakeholders such as States, utilities, and local governments on how to develop policies and business models that accelerate adoption of solar energy.

Vehicle Technologies

The FY 2011 budget request of $325.3 million, a $14 million (4.5 percent) increase over FY 2010 appropriated levels, significantly increases the emphasis on technologies facilitating cost effective plug-in hybrid electric vehicles (PHEVs), and deployment activities to develop infrastructure for transportation electrification. PHEVs will reduce oil use beyond standard hybrid configurations by enabling electricity to become a significant transportation fuel. PHEVs can operate in electric-only mode for up to 40 miles—meeting the needs of most drivers for commuting and short distance driving. Operating in an electric mode produces no tail-pipe emissions and consumes no petroleum. Vehicle Technologies also conducts R&D on strong light-weight body and chassis materials, advanced combustion, and fuels.

Water Power

The FY 2011 request is $40.5 million, a $9.5 million (19 percent) decrease from FY 2010. The requested amount is sufficient to continue and build upon activities started in FY 2010, as well as to begin to support the development of cost-effective incremental hydropower opportunities identified in 2010. FY 2011 is a critical year for the Water Power program to test marine and hydrokinetic (MHK) devices and identify clean generation opportunities at hydroelectric facilities and dams not currently producing electricity. The program plans to invest up to $10 million in public-private partnerships for the development and testing of innovative device designs to support establishing baseline costs of energy and performance for different MHK technologies. The program's main conventional hydropower investment in FY 2011 will enable increased generation and deployment of innovative water technologies within existing private and public hydropower facilities and at non-powered dams.

Wind Energy

The FY 2011 budget request of $122.5 million is a $42.5 million (53 percent) increase over FY 2010. It includes up to $49 million to "jump start" the domestic offshore wind industry and to ensure that U.S. manufacturing and engineering firms achieve a position of global leadership in that industry. In FY 2011, the program will work to mitigate the barriers that have thwarted U.S. offshore development to date, which can be overcome through a concerted national effort with technical leadership from DOE. DOE will support demonstration activities to reduce the environmental, technical, regulatory, and public acceptance risks of offshore wind deployment, as well as R&D of wind resource prediction tools, load modeling, and other technical tasks which facilitate domestic manufacturing and deployment. The program will continue its detailed testing and analysis of wind turbine drivetrains and blades to improve reliability, manufacturing processes and materials, aerodynamics, and aeroacoustics.

Weatherization and Intergovernmental Program Activities

The Weatherization and Intergovernmental Program's FY 2011 budget request is $385 million, a $115 million (43 percent) increase above FY 2010. The request will continue to accelerate sustainable energy integration and clean energy deployment in partnership with States, U.S. Territories, the District of Columbia, and Native American tribal governments. The State Energy Program supports the expanding State role in utility, renewable energy, building code policies, and other high impact energy projects. Tribal Energy Activities support feasibility assessments, planning, and implementation of clean energy projects on Tribal lands. The Weatherization Assistance Program, through a State-managed network of local weatherization providers, supports home energy retrofits for low-income families and career development opportunities for workers. At a time of economic stress, the program has provided assistance to some of the most poverty stricken portions of our population.

Facilities and Infrastructure

The Facilities and Infrastructure FY 2011 budget request is $57.5 million, an increase of $38.5 million (203 percent) over FY 2010. This line item supports operations and maintenance for the National Renewable Energy Laboratory (NREL), a single-purpose laboratory dedicated to R&D for energy efficiency, renewable energy, and related technologies. Sponsored by EERE as a Federally-funded research and development center, NREL provides EERE, as well as DOE's Office of Science and the Office of Electricity Delivery and Energy Reliability, with world-class R&D, expert advice, and objective programmatic counsel. The NREL complex is currently home to 1,850 researchers, engineers, analysts, and administrative staff, plus visiting professionals, graduate students, and interns on a 632-acre campus located at three major sites in or near Golden, Colorado. The request includes $38.5 million to pay for the construction of the Energy Systems Integration Facility (ESIF). The 130,000-square-foot building, to be located southeast of the existing Science & Technology Facility, will house a variety of research that aims to overcome technical barriers to adding new renewable energy generation systems to the electrical grid. As planned, the ESIF will be a multi-story building that will provide laboratory and office space for approximately 200-250 NREL researchers and support staff.

Program Direction

The FY 2011 budget request for Program Direction totals $200 million, an increase of $60 million (43 percent) above the FY 2010 appropriation. This increase is intended to allow the Office to more effectively manage its programs and projects in support of National energy security and carbon reduction goals. Recent increases in funding provided by Congress to help address these goals have led to corresponding increases in the workload associated with programs, contracts, grants, cooperative agreements, and administrative activities which present significant implementation and oversight challenges for DOE. EERE recognizes the need to ramp up its Federal workforce and contract support services to effectively administer its expanded programs, accelerate the

pace at which activities are implemented, and respond to demands for technical assistance, oversight, transparency, and accountability. The requested staffing level provides sufficient Federal employees and support services to execute both regular appropriations and residual Recovery Act activities.

Program Support

The FY 2011 budget request for Program Support totals $87.3 million, an increase of $42.3 million (94 percent) over FY 2010. The requested Program Support funds will cover essential cross-cutting activities, including commercialization, to increase speed and scale of market penetration of EERE technologies. Funds will also support analysis of energy systems and utility policy (efficiency and renewable), evaluate program performance, continue international programs, modernize EERE's use of information technology to make processes and information more accessible, strengthen the peer review process and external reviews of our operations, and other activities.

CONCLUSION

This FY 2011 budget request will help EERE pursue our mission of advancing technologies and related practices to help meet the growing demand for clean, reliable, sustainable, and affordable energy services, and to reduce energy consumption. Full funding for EERE programs will help continue to reduce GHG emissions, generate stable jobs here at home, and enhance our economic and national security by providing additional non-carbon domestic sources of energy.

Mr. Chairman, I appreciate your leadership in providing the resources we need to accomplish our shared goal of creating a clean energy economy. I would be pleased to respond to your questions.