

Office of Electricity Delivery and Energy Reliability

(discretionary dollars in thousands)

	FY 2008 Current Approp.	FY 2009 Current Approp.	FY 2009 Current Recovery	FY 2010 Congressional Request	FY 2010 vs. FY 2009	
					\$	%
Office Of Electricity Delivery & Energy Reliability						
Electricity Delivery & Energy Reliability						
Research and development.....	82,826	84,721	—	174,000	+89,279	+105.4%
Operations and analysis.....	11,451	11,451	—	—	-11,451	-100.0%
Permitting, siting and analysis.....	—	—	—	6,400	+6,400	N/A
Infrastructure security & energy restoration(HS).....	—	—	—	6,188	+6,188	N/A
Program direction.....	17,603	21,180	22,500	21,420	+240	+1.1%
Congressionally directed projects.....	24,290	19,648	—	—	-19,648	-100.0%
Smart grid investment program (EISA 1306).....	—	—	3,375,700	—	—	—
Smart grid regional and energy storage demos.....	—	—	700,000	—	—	—
Workforce development.....	—	—	100,000	—	—	—
Interoperability standards and framework.....	—	—	10,288	—	—	—
Interconnection planning and analysis.....	—	—	80,000	—	—	—
Other recovery act.....	—	—	211,512	—	—	—
Total, Electricity Delivery & Energy Reliability.....	136,170	137,000	4,500,000	208,008	+71,008	+51.8%

The FY 2010 Office of **Electricity Delivery and Energy Reliability (OE)** budget request is \$208.0 million, \$71.0 million more than the FY 2009 Appropriation. This increase reflects increased investments in research and development, particularly in energy storage, smart grid technologies, and cyber security areas. OE will also establish one of the Department's multi-disciplinary Energy Innovation Hubs (Hubs) that specifically focuses on Grid Materials, Devices, and Systems. The FY 2010 budget proposes a budget structure change to better align with the Department's priorities to establish a clean, secure energy future.

The FY 2010 request continues to support the efforts of the Research and Development program, the Permitting, Siting, and Analysis program, and the Infrastructure Security and Energy Restoration program to modernize the electric grid, enhance security and reliability of the energy infrastructure, and facilitate recovery from disruptions to the energy supply. The proposed budget provides a balanced and diverse portfolio of activities, including:

Research and Development (\$174.0 million)

- In FY 2010 the research and development program's portfolio is comprised of four subprograms:
 - **Clean Energy Transmission and Reliability (\$42.0 million):** Funding focuses on advancing transmission-driven technologies that will improve grid reliability, efficiency, and security. It supports research both to expand the capabilities of a phasor measurement unit based network and to mitigate alternating current energy losses in second-generation High Temperature Superconducting wire.
 - **Smart Grid Research and Development (\$67.0 million):** Will promote the development of an efficient, fully integrated "smart grid" system by adapting and integrating advanced technologies to modernize the Nation's electric delivery network for enhanced operational intelligence and connectivity. FY 2010 activities include research in advanced control methods; developing smart grid functionalities for renewable systems, plug-in hybrid electric vehicles and other end use applications; developing a simulation tool for Smart Grid systems for industry and policy makers; and establishing the new Grid Materials, Devices, and Systems Hub to focus on smart material-based sensors and devices.
 - **Energy Storage (\$15.0 million):** FY 2010 funding advances the development of energy storage technologies such as the acceleration of materials and device research, field tests and modeling, and analysis that will reduce power disturbances and peak electricity demand and will improve system flexibility to reduce adverse effects to users.
 - **Cyber Security for Energy Delivery Systems (\$50.0 million):** FY 2010 activities will continue the test bed assessment of SCADA/EMS systems, develop computational modeling to build trustworthy systems as a transition strategy for legacy systems, and research smart grid technologies to develop secure systems that can withstand cyber attacks.

Permitting, Siting and Analysis (\$6.4 million)

- Funding will support electricity grid modernization by providing technical and financial assistance to States, regional entities, and other Federal agencies to develop and improve policies, market mechanisms, State

laws, and programs that facilitate the development of the electricity infrastructure required to access clean energy resources; issuing permits for international transmission lines and electricity exports; and implementing other responsibilities under the Energy Policy Act of 2005 such as recommending energy corridor designations.

Infrastructure Security and Energy Reliability (\$6.2 million)

- Funding will support efforts to enhance the security of our Nation's critical energy infrastructure from all threats and hazards. Funding continues infrastructure reliability activities including advancements in power outage and restoration visualization and modeling, assistance to states and local government emergency response activities, and application of a robust systems analysis to identify critical assets and interdependencies.

Program Direction (\$21.4 million)

- FY 2010 funding supports salaries/benefits, travel, support services and other related expenses. It also provides costs for 19 FTEs located at NETL that are counted in Fossil Energy that perform work for OE.