



United States Department of Energy

Electricity Delivery and Energy Reliability

How DOE is Organized to Provide Leadership on Electricity Delivery

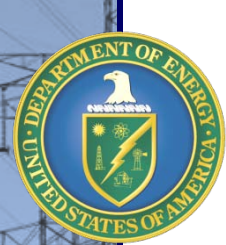


Patricia Hoffman

Assistant Secretary

Presentation to the DOE Electricity Advisory Committee

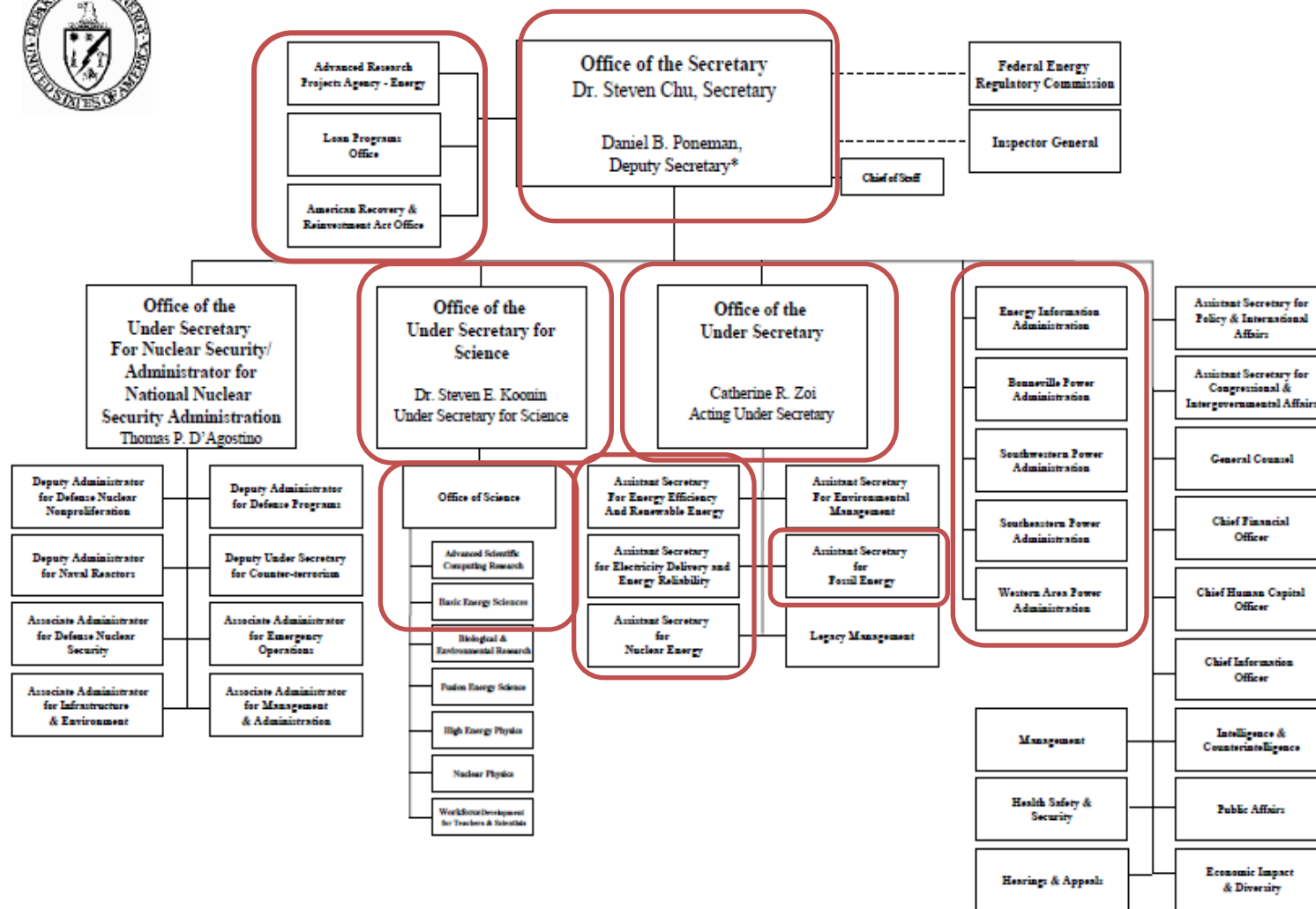
October 29, 2010

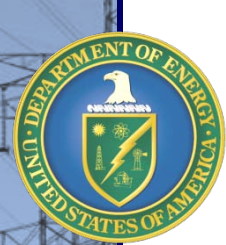


DOE Organizational Chart



DEPARTMENT OF ENERGY

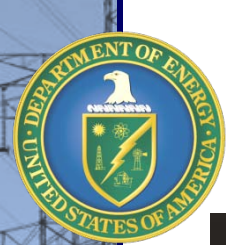




OE's Mission

Lead National efforts to modernize the electric grid; enhance security and reliability of the energy infrastructure; and mitigate the effect of, and facilitate recovery from, disruptions to the energy supply.



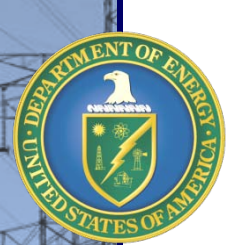


Implementing OE's Mission



Public – Private partnerships:

- Stimulate investment in electric and energy infrastructure
- Expand partnerships with States on topics of joint interest
- Advance the state of scientific development
- Improve grid analytic and visualization capabilities
- Deepen consideration of security and resiliency measures in energy infrastructure

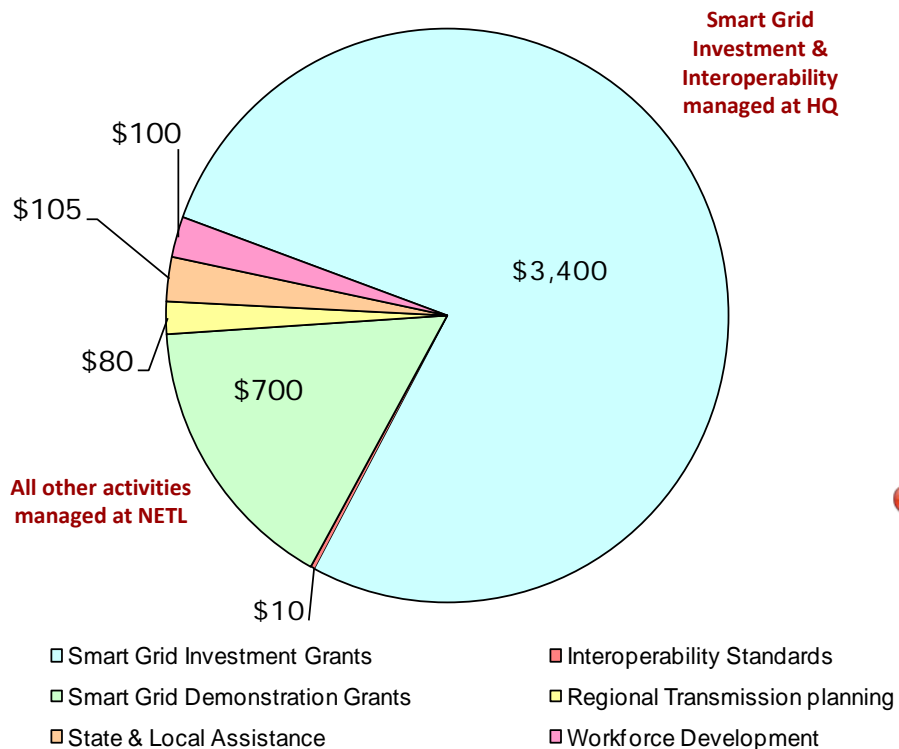


OE and the Recovery Act

\$4.5 billion Appropriated - 33 times OE's FY09 base appropriation

Recovery Act Funding by Program

\$ in millions



New programs created by statute:

2007 Energy Infrastructure Security Act:

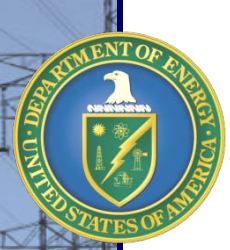
- Smart Grid Investment Grants (Sec. 1306)
- Smart Grid Regional Demonstrations (Sec.1304)

Recovery Act Directed Programs:

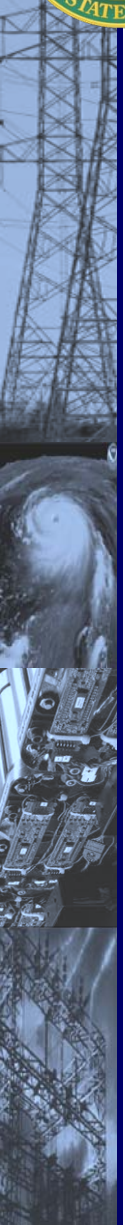
- Workforce Training - \$100M
- Regional Transmission Planning - \$80M
- Interoperability Standards - \$10M

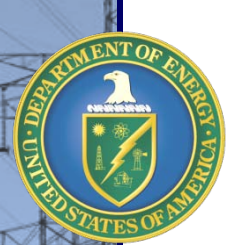
Additional OE initiatives:

- State & Local Energy Assurance
- State Regulatory Assistance



Program Details

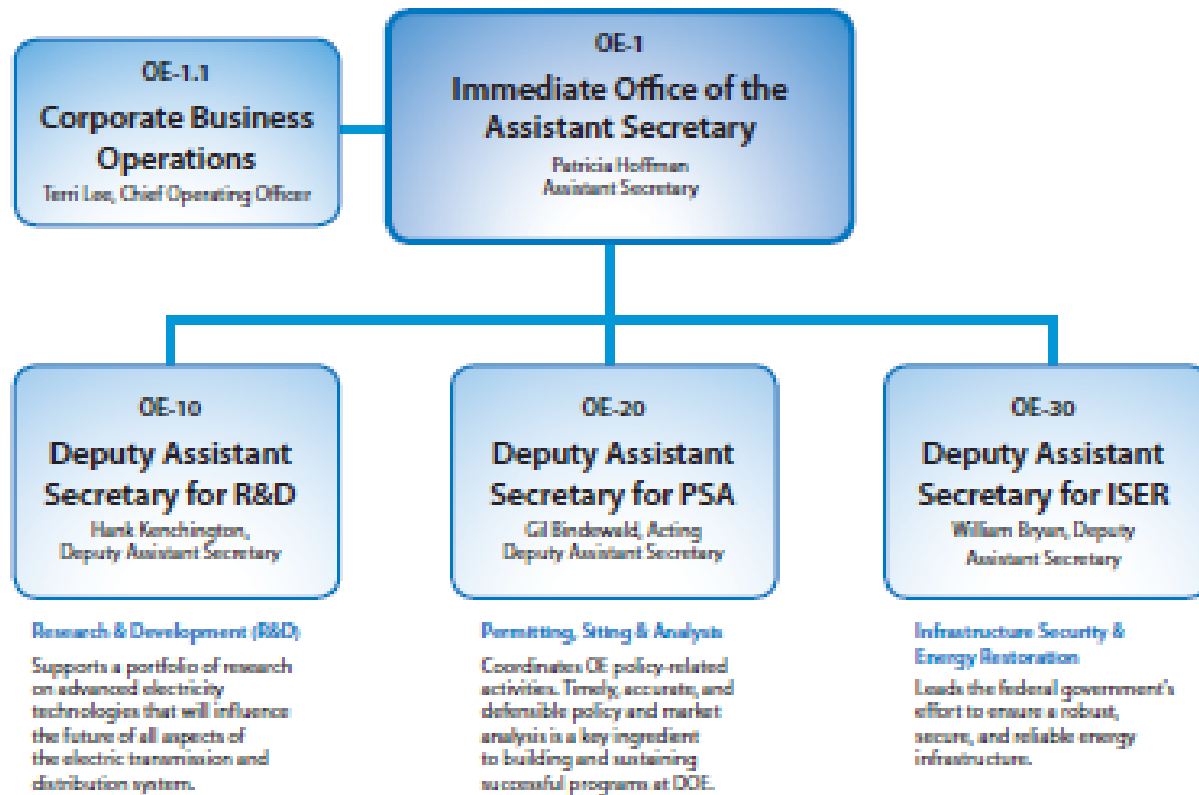


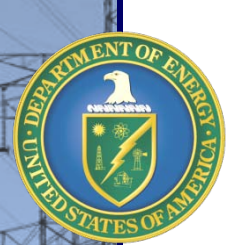


OE Organizational Chart

OFFICE OF ELECTRICITY DELIVERY AND ENERGY RELIABILITY

Organizational Structure





Research and Development

- **Clean Energy Transmission and Reliability**

- *Transmission Reliability and Renewables Integration*: Develop technologies and tools for the transmission system to improve situational awareness and enable operational response to changing system and market conditions.
- *Transmission Efficiency*: Develop advanced technologies to reduce electricity losses across the T&D system
- *Advanced Modeling Grid Research*: Develop new models and computational techniques that consider dynamic effects upon the power system and provide the flexibility necessary to cost-effectively meet demand for reliable, affordable electricity.

- **Smart Grid Research and Development**

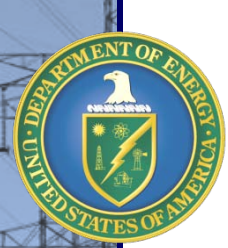
- *Smart Grid R&D*: Conducts R&D to integrate advanced information, communication, and control technologies into electric distribution systems
- *Power Electronics*: Develop cost-effective, grid-scale power electronics systems to improve grid efficiency and performance.

- **Energy Storage**

- Develop large scale, stationary energy storage systems to improve the reliability, flexibility, and cost effectiveness of the existing grid, emerging Smart grids and support high penetration of renewables generation sources.

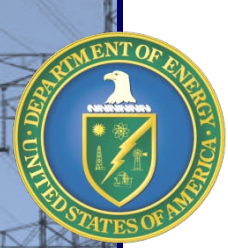
- **Cyber Security for Energy Delivery Systems**

- Develop advanced technologies to build a resilient energy infrastructure that can survive cyber attacks without loss of critical energy services through a comprehensive, integrated program.



Permitting, Siting and Analysis

- **Transmission Provisions of EPOA 2005**
- **International Regulatory Program**
- **State Regulatory Assistance**
- **Interconnection-wide Planning**



Infrastructure Security and Energy Restoration

- **Emergency Preparedness, Response, and Restoration**
- **Analysis and Situational Awareness**
- **Physical and Cyber System Assurance**
- **Global Energy Interdependencies**

