



Meeting the Power Management Challenge: DOE Requirements, Current Status and Path Forward

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DOE Office of Environmental Policy and Assistance, HS-22

Information Management Conference

March 22, 2011



Key Drivers for Power Management



- Executive Order (EO) 13423, “Strengthening Federal Environmental, Energy, and Transportation Management” (2007)
- Council on Environmental Quality, Implementing Instructions for EO 13423 (2007)
- DOE Order 450.1A, “Environmental Protection Program” (2008)
- EO 13514, “Federal Leadership in Environmental, Energy, and Economic Performance” (2009)
- DOE Strategic Sustainability Performance Plan (SSPP) (2010)



Drivers: EO 13423 and DOE Order 450.1A



- EO 13423 and DOE O 450.1A:
 - Require power management during the operating stage of the lifecycle of electronic assets
 - Also require FEC participation or equivalent program
- DOE Order 450.1A:
 - “Enable Energy Star® features (power management capabilities) on all computers, monitors, printers, copiers, and other electronic equipment, or to the maximum degree based on mission needs”



Drivers: EO 13514 and the SSPP



- Agencies develop a deliberative planning process, including a SSPP to achieve multiple goals
- Electronic Stewardship is a goal area of the SSPP
- Power management helps achieve the overarching EO 13514 goal of GHG reduction
- Section 2.9 of DOE SSPP commits sites to establishing and implementing policies and guidance to ensure use of power management on all eligible Departmental electronic products
- Sites should report on power management in annual Site Sustainability Plans (SSPs)



Federal Electronics Challenge (FEC)



- The FEC promotes lifecycle management of electronics assets to reduce environmental impacts and energy intensity
- Efforts include:
 - Smart electronics purchasing using the EPEAT standards
 - Power management to reduce impacts of electronics while in use
 - Sound end of life disposition management
- DOE has 36 FEC Facility Partners; 23 received FEC Awards since 2004 for Green IT



DOE Status Update: Power Management Practices in FY10



- DOE annually tracks Green IT performance through the Pollution Prevention Tracking and Reporting System (PPTRS)
- In FY10, 41 sites enabled power management on non-exempt computers (desktops and laptops) and monitors
- 75% of sites report enabling power management from 90% to 100% on non-exempt monitors



DOE Sites Practicing 100% Power Management



- Bettis Atomic Power Laboratory
- EM Consolidated Business Center
- Hanford
- Headquarters
- Knolls Atomic Power Laboratory
- Legacy Management
- Los Alamos National Laboratory
- National Renewable Energy Laboratory
- Nevada Test Site
- Oak Ridge - TRU Waste Processing Center
- Oak Ridge Institute for Science and Education



DOE Sites Practicing 100% Power Management (Continued)



- Oak Ridge National Laboratory
- Office of Scientific and Technical Information
- Paducah Site
- Pantex Plant
- Portsmouth Gaseous Diffusion Plant
- Princeton Plasma Physics Laboratory
- Santa Susanna-Energy Technology Engineering Center
- Strategic Petroleum Reserve
- Thomas Jefferson National Accelerator Facility
- Western Area Power Administration
- Y-12 National Security Complex



DOE Sites Not Yet Practicing Power Management



- Brookhaven National Laboratory
- Kansas City Plant
- Lawrence Livermore National Laboratory
- Moab
- Oak Ridge Radiochemical Development Facility

(Sites answered “no” to FY2010 PPTRS Query: Energy Star on Non- Exempt Equipment?)



Program Office Performance Ratings for Power Management



PSO	% Practicing Power Management
NNSA	80%
EM	90%
SC	86%
All Others	82%



Power Management Environmental Benefits and Savings in FY10



- Projected DOE benefits for first year of Power Management implementation.

Electricity and Energy Savings	52,522,000 Kilowatt Hours
GHG Emission Savings	9,979 Metric Tons CO ₂ equivalent
Projected Dollar Savings	\$ 4,969,000



Power Management Benefits and Savings for Entire Life Cycle



Electricity and Energy Savings	212,286,000 Kilowatt Hours
Green House Gas Emission Savings	40,334 Metric Tons of CO ₂ equivalent
Dollar Savings	\$ 20,082,000



DOE Power Management Equivalent Benefits



Savings	Equivalency
Energy Savings	Electricity to power 17,742 households for one year
Green House Gas Reduction	Removing 27,087 passenger cars from the road per year



Examples of Power Management Plans Reported in 2010 SSPs



- Sandia National Laboratories - Install automated PC power management
- Brookhaven National Laboratory - Evaluate extending power management to Windows, Macintosh and Linux operating environments
- Princeton Plasma Physics Laboratory – Developing group policy for power management
- Oak Ridge National Laboratory - Investigate applications to manage power management settings on Windows laptops and Macintosh desktops
- Rocky Mountain Oil Field Testing Center - Monitor power use and educate users about power management.
- Strategic Petroleum Reserve- Research wake-on-LAN plan for power managed units



Path Forward on DOE Power Management



- DOE is striving to join the nine Federal agencies that currently report 100% power management implementation on the OMB Sustainability Scorecard
- HQ Program Elements are reviewing FY10 performance data, working with HSS and sites to improve data quality and results for next year
- Sites are encouraged to review new tools, technologies, and strategies for continual, cost-effective improvements in power management
- Sites are encouraged to seek recognition, such as FEC awards, for effective power management programs
- Sites should quantify the environmental and economic benefits of power management using the FEC calculator:
<http://www.federalelectronicschallenge.net/resources/bencalc.htm>



For Further Information



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