

Facilitating Sound, Cost-Effective Federal Energy Management

With more than 350,000 energy-using buildings and structures and 600,000 road vehicles, the federal government is our nation's largest energy consumer. Federal agencies have a tremendous opportunity to reduce greenhouse gas (GHG) emissions in their own operations and provide energy management leadership to the nation.

Federal agencies have shown strong results from their energy management. From 1975 to 2015, the federal government has decreased the energy intensity of its buildings by more than 40%. Furthermore, in 2015, 8.7% of the federal government's electricity use came from renewable sources. Agencies also have challenging goals through 2025 established in Executive Order 13693 *Planning for Federal Sustainability in the Next Decade*. These goals include reducing GHG emissions by 40% in FY 2025 compared to 2008 and ensuring that at least 30% of federal electricity consumption is generated from renewable sources by 2025.

The Federal Energy Management Program (FEMP) provides agencies and organizations the information, tools, and assistance they need to achieve their energy-related requirements and goals through the following initiatives.

Making Performance Contracting Business as Usual

FEMP supports federal agencies by assisting with identifying, obtaining, and implementing project funding. Project



FEMP promotes energy- and water-saving measures in federal buildings. This government facility conserves energy by using passive solar to capture light and heat from the sun and saves water by landscaping with native plants. *Photo by Heather Lammers, NREL/PIX 17515*

funding mechanisms allow federal agencies to save energy without upfront capital costs or special congressional appropriations. These funding tools include energy savings performance contracts (ESPCs), utility energy service contracts, on-site renewable power purchase agreements, and various federal and state energy incentives programs.

From December 2011 to May 2016, agencies invested \$3.1 billion in efficiency projects in federal government facilities using performance-based contracts.

FEMP also develops tools to standardize performance contracting. A cutting-edge tool for federal, as well as state and local performance contracts, eProject Builder standardizes the collection, calculation, and reporting of performance data. The tool produces ESPC task order schedules and provides a secure online system for easily accessing, tracking, and reporting ESPC project data through the life of the contract for a portfolio of projects.

Executing Strategic Leadership Projects

Developing Renewable Energy:

FEMP provides tools and resources to analyze renewable energy opportunities and install projects. For example, the Renewable Energy Optimization is a planning platform that sites can use to identify and prioritize cost-effective and technically viable renewable energy opportunities at a single site or across a portfolio. By using renewable energy resources, organizations can meet energy management regulations, conserve natural resources, and increase the nation's energy independence and security.

Managing Low Carbon Fleets: The federal fleet consists of approximately 600,000 domestic vehicles, of which, more than 37% are alternative fuel vehicles (AFVs). Individual agency vehicle fleets are subject to congressional and executive order requirements that address GHG emissions reductions, AFV acquisitions, alternative fuel use, petroleum reduction, and deployment of alternative fuel infrastructure.

FEMP provides guidance on and assistance for organizations implementing and managing energy-efficient and AFV Fleets. These efforts also encompass helping the agencies meet fleet sustainability requirements, including reducing fleet-wide per mile GHG emissions 30% by FY 2025 relative to a FY 2014 baseline and ensuring zero-emissions vehicles and plug-in hybrid vehicles account for 20% of all new agency passenger vehicle acquisitions by FY 2020 and for 50% by FY 2025.

Using Sustainable Design Practices to Create High-Performance Buildings:

FEMP provides information and sustainable design best practices to achieve energy and water efficiency. These practices span new construction, retrofit projects, and operations and maintenance. FEMP service areas include:

- Data Centers
- Laboratories
- Metering
- Operations and Maintenance
- Sustainable Building and Campuses
- Water Efficiency
- Energy Efficient Product Procurement.



At the U.S. Fish and Wildlife Service’s award-winning Northeast Regional Office Building, a 108 kilowatt net-metered photovoltaic array installed on the cool roof provides at least 12% of the building’s power. *Photo by Liz Dawson, U.S. Fish and Wildlife Service*

Developing Public-Private Initiatives and Federal Partnerships: FEMP facilitates strategic challenges to demonstrate leadership. Public and private sector partners in the Better Buildings Data Center Challenge commit to increasing the energy efficiency of their building portfolios (with a spotlight on data centers) by at least 20% within 10 years. Partners in the Data Center Accelerator commit to increasing the energy efficiency of at least one of their data centers within five years. As of June 2016, partners include more than 35 federal and private sector data center operators representing a 300 MW savings commitment.

FEMP also delivers innovative methods of customer service by developing services specifically targeted at federal large campuses, which account for nearly 75% of federal facility energy use. In addition to strategic technical assistance approaches, FEMP helps achieve meaningful change in an organization through strategic one-year engagements with agencies. These deep-dive partnerships allow for specific needs of an agency to be addressed to help them improve progress toward meeting their sustainability goals and requirements.

Providing Project Funding through Grants: The Assisting Federal Facilities with Energy Conservation Technologies (AFFECT) program provides direct funding to agencies to develop first-of-a-kind clean energy projects. For the FY 2014 and FY 2015 AFFECT awards combined, agencies submitted plans to leverage \$23 of project investment for each dollar of FEMP project funding.

Providing Recognition, Training, and Leadership

Energy managers learn to implement energy-saving strategies, gain recognition for outstanding achievements, and stay informed about the federal government’s



Drivers at DOE’s National Renewable Energy Laboratory charge federal electric vehicles at this on-site charging site to meet petroleum reduction requirements. *Photo by Mike Simpson, NREL/PIX 18870*

progress in meeting energy-management goals through FEMP training, communications, and outreach. FEMP also tracks and reports on government-wide progress toward goals and provides strategic engagement with other agencies on policy issues.

FEMP provides nationally accredited training by the International Association for Continuing Education and Training; organizes the Energy Exchange, a training event with more than 1,600 public and private sector attendees; and hosts the Federal Energy and Water Management Awards, which have honored thousands of federal employees since 1981 for outstanding initiative, perseverance, and creativity. Through these efforts, FEMP helps organizations make sustainability a natural part of how they operate at all levels—while continuing to meet their mission goals.