



U.S. DEPARTMENT OF  
**ENERGY**

Energy Efficiency &  
Renewable Energy

# FEMP Tech Deployment Tools – ISWG Update

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# FY15 FEMP Products + Technology Web Redesign

- Better connect Federal Agencies with technology/product information and provide useful deployment guidance related to those technologies/products.
- Organize site by Technology category, not mix of programs.
- Combine multiple “lists” of technologies/products for easier understanding and clarity.
- Include Climate zone data and regional locator feature for case studies.

# Two “NEW” FEMP Online Tools

- FEMP released two new online tools to help agencies choose energy- and water-efficient technologies and products for deployment in federal facilities.

## #1 - FEMP Tech & Products Database

- Searchable database of technologies and products.
- Database will combine all existing FEMP product lists (FEMP Designated Products, Promising Technologies and EnergyStar featured products).
- Connect each technology/product with related FEMP/DOE programs, guidance, campaigns, funding sources.
- LINK - <http://www.energy.gov/eere/femp/efficient-technologies-and-products-federal-facilities>

## #2 – FEMP Tech Demo Map

- Interactive searchable map and database of case studies completed/hosted by FEMP.
- Interactive map with climate zone overlay, includes multiple filters that allow user to search for case studies based on technology and/or Agency.
- Will allow BTO/Commercial projects/case studies to be displayed as well. (*later phase*)
- LINK - <http://www.energy.gov/eere/femp/maps/technology-deployment-case-studies>

# Products & Technologies Content

Home » Energy-Efficient Products and Energy-Saving Technologies

## ENERGY-EFFICIENT PRODUCTS AND ENERGY-SAVING TECHNOLOGIES

Located on the  
FEMP Products  
& Technologies  
Section



- FEMP Home
- About the Federal Energy Management Program
- Laws & Requirements
- Project Financing
- Reporting & Data
- Training
- Technical Assistance
- Products & Technologies**
  - Energy-Efficient Products
  - Technology Deployment
- Renewable Energy Projects
- Facilities
- Fleets
- Institutional Change
- Awards
- Publications
- Case Studies
- Tools
- News
- Contact Us

The Federal Energy Management Program (FEMP) provides information about energy-efficient products and promising new energy-saving technologies that can help agencies meet federal **laws and requirements**. Explore this section to learn about:

- **Energy- and water-efficient products:** Find products covered by federal efficiency programs, product purchasing specifications, and more.

**Technology deployment:** Search for commercially available technologies and products with high energy- and cost-savings potential.

FEMP also offers information about planning **renewable energy** technology projects.



### FEMP CONTACTS

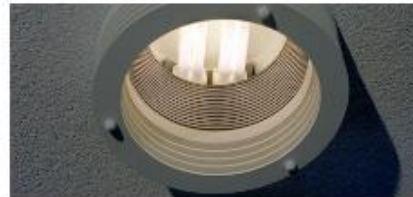
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### TRAINING

[Energy-Efficient Products and Technologies](#)

### ENERGY-EFFICIENT PRODUCTS



- Find products
- Product purchasing requirements
- Energy and cost savings calculators
- Sample contract language

### TECHNOLOGY DEPLOYMENT



- Search for efficient technologies
- Case studies
- Technology performance data
- Outdoor solid-state lighting

1) Search for efficient technologies

2) Case Studies



# Tool #1 - Efficient Technologies and Products for Federal Facilities

## EFFICIENT TECHNOLOGIES AND PRODUCTS FOR FEDERAL FACILITIES

FEMP Home

About the Federal Energy Management Program

Laws & Requirements

Project Financing

Reporting & Data

Training

Technical Assistance

Products & Technologies

Energy-Efficient Products

Technology Deployment

Renewable Energy Projects

Facilities

Fleets

Institutional Change

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The Federal Energy Management Program (FEMP) provides a one-stop shop for finding energy- and water-efficient technologies and products that can help agencies meet federal facility goals and requirements.

Find technologies and products by category or efficiency program below, or use the [advanced search](#) to sort by program, topic, or campaigns and resources.

### CASE STUDIES



### TECHNOLOGIES AND PRODUCTS BY CATEGORY



Heating and Cooling



Lighting



Metering



Plug Loads: Appliances and Electronics



Water



Windows and Building Envelope

SEARCH TECHNOLOGIES & PRODUCTS

### TOOLS

Technology Performance Exchange

Energy and Cost Savings Calculators for Energy-Efficient Products

FEMP Acquisition Guidance for Lighting Products

Products & Technologies are pre-sorted by category.

# Tool #1 - Efficient Technologies and Products for Federal Facilities

New layout allows better comparison of relevant programs and quick overview descriptions.

## SEARCH FOR EFFICIENT TECHNOLOGIES AND PRODUCTS FOR FEDERAL FACILITIES

The Federal Energy Management Program provides information and resources about energy- and water-efficient **technologies and products** that can help agencies meet federal facility goals and requirements. Search for technologies and products by choosing an efficiency program or topic below.

Search:

**PROGRAM**

- ENERGY STAR
- EPEAT
- FEMP Designated
- FEMP Low Standby Power
- FEMP Promising Technologies
- WaterSense

**TOPIC**

- Heating and Cooling
- Lighting
- Plug Loads: Appliances and Electronics
- Water
- Windows and Building Envelope

**SEARCH RESULTS**

Showing 1 to 10 of 81 entries

PRODUCT	PROGRAM	TOPIC	DESCRIPTION
<a href="#">Air Cleaners and Purifiers</a>	ENERGY STAR	Plug Loads: Appliances and Electronics	ENERGY STAR certified room air purifiers are 40% more energy efficient than standard models. Sometimes referred to as room air cleaners, these portable appliances remove fine particles, such as dust and pollen, from indoor air.
<a href="#">Air-Source Heat Pumps (Residential)</a>	ENERGY STAR	Heating and Cooling	ENERGY STAR qualified residential air-source heat pumps are about 9% more efficient than standard new models and 20% more efficient than older models. FEMP's acquisition guidance and associated ENERGY STAR product specifications apply to air-source heat pumps that operate on single-phase current and have capacities less than 65,000 British thermal units per hour (Btu/h).
<a href="#">Audio/Video Equipment</a>	ENERGY STAR	Plug Loads: Appliances and Electronics	ENERGY STAR certified audio and video equipment is up to 60% more efficient than conventional equipment, and includes soundbars, MP3 speaker docking stations, receivers and amplifiers, and DVD and Blu-ray players.
<a href="#">Auto Sash Fume Hoods</a>	FEMP Promising Technologies	Plug Loads: Appliances and Electronics	Laboratory fume hoods exhaust large volumes of conditioned air that must be re-supplied to the building with 100% outdoor air.
<a href="#">Boilers (Commercial)</a>	FEMP Designated	Heating and Cooling	FEMP designated commercial boilers must meet or exceed minimum efficiency requirements and can save up to \$30,000 in lifetime energy costs. FEMP's efficiency requirements apply to gas- or oil-fired, low-pressure hot water or steam boilers used in commercial space heating applications with a rated capacity between 300,000 and 10,000,000 Btu/hour.
<a href="#">Boilers (Residential)</a>	ENERGY STAR	Heating and Cooling	ENERGY STAR certified boilers have annual fuel utilization efficiency (AFUE) ratings of 87% or greater for oil boilers and 90% or greater for gas boilers. They can be up to 12% more efficient than models that simply meet the federal minimum standard for energy efficiency.

User can filter by Program or Topic

# Tool #1 - Efficient Technologies and Products for Federal Facilities

## PROMISING TECHNOLOGY: AUTO SASH FUME HOODS

- FEMP Home
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Laboratory fume hoods exhaust large volumes of conditioned air that must be resupplied to the building with 100% outdoor air. A single fume hood consumes approximately the same energy annually as three average households. Fume hoods have sliding transparent doors called sashes that reduce the ventilation rate when they are fully closed. However, the occupants might forget to close a sash when the fume hood is not in use; this wastes significant amounts of energy. Automatic sash closure systems use an occupancy sensor control system to mitigate this problem by closing the sash when it detects no occupants.



### WHAT IS A PROMISING TECHNOLOGY?

The Federal Energy Management Program's (FEMP) Promising Technologies List provides information about promising new and underused energy-saving technologies that are available for federal and commercial buildings. To identify promising technologies, FEMP performed a rigorous analysis with the Prioritization Tool, an analytical tool developed by the Building Technologies Office (BTO).



### CASE STUDIES



SEARCH TECHNOLOGIES & PRODUCTS

More standard FEMP description of products

Identifies what ECMs could work

Accordion toggles

- Allows for larger amounts of text with out having to scroll
- Standardize list for every technology we feature

### TECHNOLOGY CONSIDERATIONS

- Multiple suppliers offer this technology.
- A fume hood requires a variable-air-volume exhaust system.
- Installation requires significant testing and approval because of indoor air quality concerns.
- A fume hood may reduce energy consumption associated with venting conditioned air through a fume hood by 40%–50%.

### ENERGY-SAVING POTENTIAL

- Site energy-savings potential for the federal sector (trillion Btu): 23.4
- Avoided carbon dioxide emissions potential (million tons): 2.3

Implementing of this measure across the federal sector would provide energy savings that are equivalent to the site energy consumption of 17,000 average-sized office buildings.

Note: Savings were calculated using the BTO Prioritization Tool.

### ENERGY CONSERVATION MEASURES

Energy conservation measures (ECMs) are technologies implemented to reduce the energy conservation of a building. This technology applies to the following ECM category:

Appliance, plug load reductions.

### RESOURCES FOR IMPLEMENTATION

Documents >

Websites and Tools >

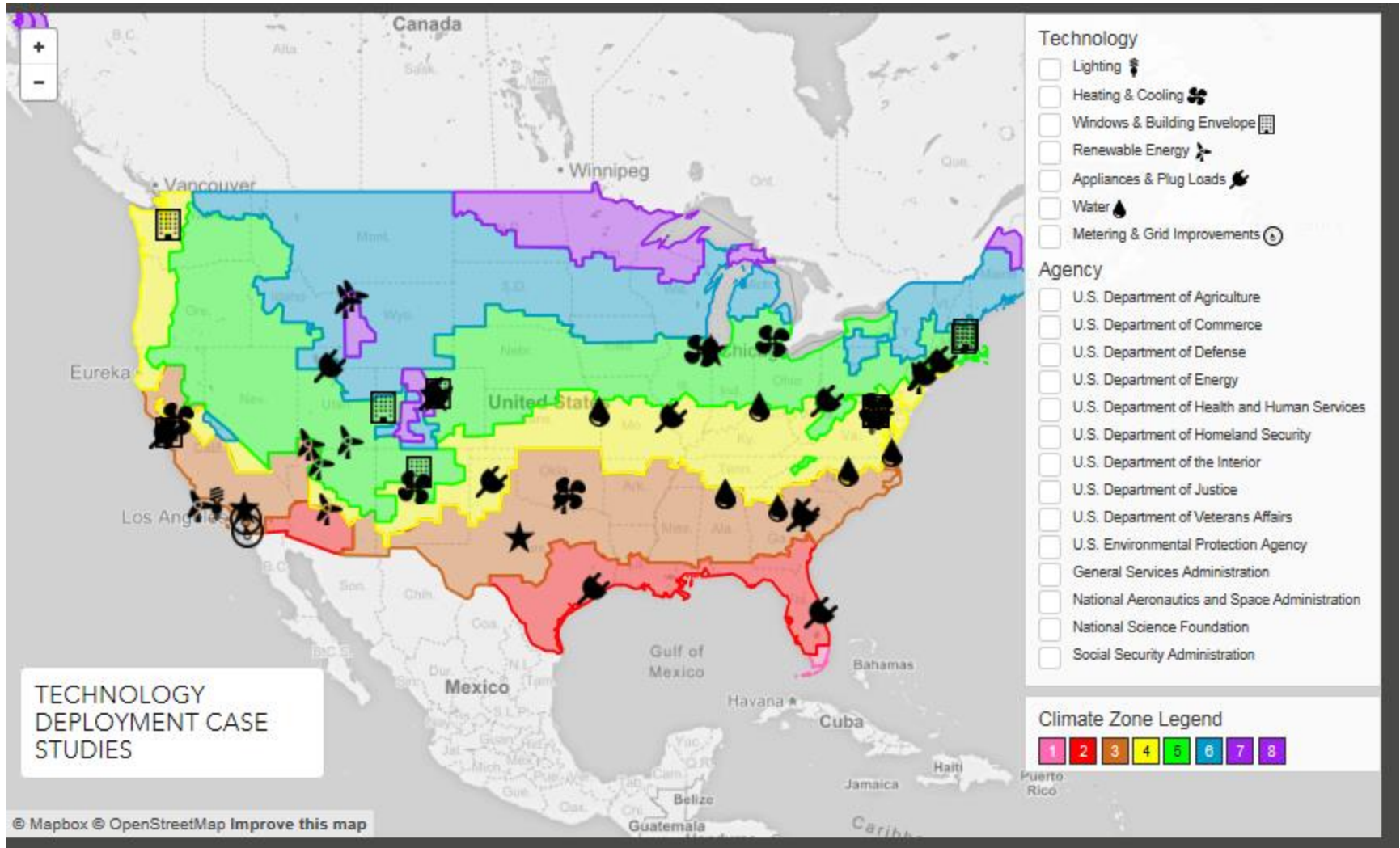
Manufacturers >

Training >

Laws and Requirements >

Quick links to related pages

# Tool #2 – Technology Deployment Case Study Map





# Tool #2 – Technology Deployment Case Study Map

Site, Project and Location

Technology

Short project description

Cost savings from project

Case Study List Link

**Pantex Plant Uses Super Energy Savings Performance Contract to Save Energy Costs**  
Amarillo, TX

**Technology:** Appliances & Plug Loads  
**Description:** The U.S. Department of Energy's (DOE's) Pantex Plant in Amarillo, Texas used the Super ESPC to save energy costs. The shining star of the new technologies implemented was the new energy management control system (EMCS). The other technologies implemented included upgrading the lighting; consolidating and centralizing a distributed chilled water and steam distribution system; replacing rooftop heating, ventilating, and air-conditioning (HVAC) units; and installing a solar domestic water heating system, water heater resets, controls for preheat coils, and an ozone laundry system.  
**Savings:**  
\$480,000/year  
[More information](#)

**Technology**

- Lighting
- Heating & Cooling
- Windows & Building Envelope
- Renewable Energy
- Appliances & Plug Loads
- Water
- Metering & Grid Improvements

**Agency**

- U.S. Department of Agriculture
- U.S. Department of Commerce
- U.S. Department of Defense
- U.S. Department of Energy
- U.S. Department of Health and Human Services
- U.S. Department of Homeland Security
- U.S. Department of the Interior
- U.S. Department of Justice
- U.S. Department of Veterans Affairs
- U.S. Environmental Protection Agency
- General Services Administration
- National Aeronautics and Space Administration
- National Science Foundation
- Social Security Administration

**Climate Zone Legend**

1 2 3 4 5 6 7 8

# Tool #2 – Technology Deployment Case Study Map

## Full Project Details

- Location
- Climate Zone
- Agency
- Contractor/Developer
- Construction Type
- Technology Type
- Energy Savings
- Description
- Link to Full Case Study

- **Description:** ERI and the U.S. Coast Guard determined areas of potential energy savings and designed a retrofit to upgrade inefficient equipment and infrastructure. Efficiency measures used included boiler controls for fuel systems, new computer controls, an oxygen trim, a system to preheat the makeup water before it reaches the boiler, and upgrades in lighting and storm doors throughout the base. [Read the full case study.](#)

### PANTEX PLANT USES SUPER ENERGY SAVINGS PERFORMANCE CONTRACT TO SAVE ENERGY COSTS

- **Location:** Pantex Plant, Amarillo, Texas
- **Climate Zone:** 4B
- **Agency:** U.S. Department of Energy
- **Contractor/Developer:** NORESKO
- **Construction Type:** Retrofit
- **Technology Type:** Appliances and plug loads: energy efficiency
- **Energy Savings:** \$480,000/year
- **Description:** DOE's Pantex Plant in Amarillo, Texas, used the Super Energy Savings Performance Contract to save energy costs. The shining star of the new technologies implemented was the new energy management control system. The other technologies implemented included upgrading the lighting; consolidating and centralizing a distributed chilled water and steam distribution system; replacing rooftop heating, ventilating, and air-conditioning units; and installing a solar domestic water heating system, water heater resets, controls for preheat coils, and an ozone laundry system. [Read the full case study.](#)



### BUREAU OF INDIAN AFFAIRS REDUCES ENERGY COSTS BY REPLACING INEFFICIENT LIGHTING AND AGING BUILDING EQUIPMENT AND INSTALLING RENEWABLE ENERGY SYSTEMS AT SHERMAN INDIAN SCHOOL

- **Location:** Sherman Indian School, Riverside, California
- **Date Implemented:** 2000
- **Climate Zone:** 3B
- **Agency:** U.S. Department of the Interior—Bureau of Indian Affairs (BIA)
- **Contractor/Developer:** SEMPRA Energy Solutions
- **Construction Type:** Retrofit
- **Technology Type:** Appliances and plug loads: energy efficiency
- **Capital Costs:** \$12 million
- **Energy Savings:** \$30,000/year
- **FEMP Promising Technology Categories:** Lighting, ventilation
- **Description:** BIA used Super Energy Savings Performance Contracts at schools and facilities throughout the country to save energy and associated costs. The measures implemented included lighting retrofits and additional exterior lighting; installation of a 6.9-kilowatt PV system; heating, ventilation, and air-conditioning (HVAC) modifications; time clock controls for the weight room, HVAC, and water well pump; and soundproofing, ventilation controls, and pest control. [Read the full case study.](#)



# Questions?

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<http://www.energy.gov/eere/femp/energy-efficient-products-and-energy-saving-technologies>