

Energy-Efficient Product Procurement for Federal Agencies

The U.S. Department of Energy (DOE) Federal Energy Management Program (FEMP) supports Federal agencies in identifying energy- and water-efficient products that meet Federal acquisition requirements, conserve energy, save taxpayer dollars, and reduce environmental impacts. This is achieved through technical assistance, guidance, and efficiency requirements for energy-efficient, water-efficient, and low standby power products.

Federal Mandates

Recognizing the benefits of energy-efficient products, Congress and multiple Presidents passed several laws and regulations mandating their purchase by Federal agencies, including:

- The Energy Policy Act (EPA) of 2005 [amending the National Energy Conservation Policy Act (NECPA) Section 8259b] and Executive Order (E.O.) 13423 both require Federal agencies to purchase energy-consuming products that are ENERGY STAR® qualified or meet FEMP-designated efficiency requirements.

In this Document

- Federal Mandates
 - Covered Product Categories
 - Exceptions
- Impacts of Energy-Efficient Product Procurement
- Efficiency Requirements
 - FEMP-Designated Products
 - ENERGY STAR Qualified Products
 - Low Standby Power Products
 - WaterSense Labeled Products
- Available FEMP Assistance
 - Online Resources
 - Additional Resources



FEMP helps Federal agencies evaluate energy-consuming products to select the most efficient, life-cycle cost effective options. *Photo credit: iStock 11881809*

- EPA 2005 mandates Federal agencies to incorporate energy efficiency criteria into relevant contracts and specifications.
- The Energy Independence and Security Act (EISA) of 2007 [amending NECPA Section 8259b], E.O. 13423, and E.O. 13221 require Federal agencies to purchase energy-consuming products with a low standby power level of 1 watt or less.
- E.O. 13514 requires 95 percent of new contract actions, task orders, and delivery orders for products and services to be energy efficient, water efficient, bio-based, environmentally preferable [Electronic Product Environmental Assessment Tool (EPEAT) certified], non-ozone depleting, contain recycled content, or non-toxic or less toxic alternatives where such products meet agency performance requirements.

These procurement requirements are codified in the Federal Acquisition Regulations (FAR) Part 23. FAR Part 23 also requires agencies to include a clause from FAR Part 52.223-15 in all contracts and solicitations when acquiring or specifying energy-consuming products.

DOE and the U.S. Environmental Protection Agency (EPA) sponsor four programs with the authority to identify appropriate product types and set performance levels according to these requirements. These programs include FEMP-designated products, ENERGY STAR, low standby power products, and WaterSense labeled products. A complete list of product types along with additional resources are outlined in this publication.

Covered Product Categories

Federal regulations (10 CFR 436) state that the above mandates apply to only energy-consuming products within a product category covered by ENERGY STAR or FEMP. Other energy-consuming product categories do not have to meet these mandates, in which case agencies may use any products that meet their needs. A list of covered product categories is provided later in this document. Agencies should carefully check program criteria for exclusions.

Exceptions

EPA 2005 Section 104(c) lists procurement exceptions also listed in FAR Part 23.204. "An agency is not required to procure an ENERGY STAR or

Guidance for Manufacturers and Vendors

FEMP designates product efficiency requirements and not specific products. Only products meeting program-referenced testing procedures may be characterized as meeting FEMP efficiency requirements. Manufacturers are encouraged to attain verification from an independent third party.

Manufacturers should characterize products as “meeting FEMP-designated efficiency requirements” and not as a “FEMP-designated product.” All manufacturers are strongly encouraged to accompany such claims with a link to the appropriate FEMP website reference. For example:

This product meets FEMP-designated efficiency requirements for PRODUCT CATEGORY, placing it in the top 25 percent of equivalent products for energy efficiency. Visit www.femp.energy.gov/procurement for more information.

Guidance for Federal Procurement Officers

FEMP designates efficiency requirements for product categories, but not specific products. To determine if a product meets FEMP-designated efficiency requirements, compare manufacturer efficiency data to the FEMP efficiency requirements. It is then recommended that agencies ensure the required test procedure has been used and performed/verified by an independent third party.

Find energy-efficient product requirements and test procedures on the FEMP website at www.femp.energy.gov/procurement.

FEMP-designated product if the head of the agency determines in writing that:

- a) No ENERGY STAR or FEMP-designated product is reasonably available that meets the functional requirements of the agency; or
- b) No ENERGY STAR or FEMP-designated product is cost effective over the life of the product taking energy cost savings into account.”

Impacts of Energy-Efficient Product Procurement

Federal acquisition of energy-efficient products can save energy, save money, reduce environmental impacts, and institutionalize change.

Energy Savings: EISA 2007 requires Federal agencies to reduce energy consumption intensity each year compared to a fiscal year (FY) 2003 baseline. Purchasing energy-efficient products is often a cost-effective energy conservation measure (ECM) to help agencies meet this mandate.

Cost Savings: Federal purchasers may assume that products meeting ENERGY STAR and FEMP-designated efficiency requirements are life-cycle cost effective. In this context, life-cycle cost effective means the operating cost savings for an energy-efficient product during its functional lifetime is equal to or greater than any additional costs at the time of purchase. Identifying, purchasing, and properly installing these products in Federal facilities results in reduced energy and water consumption and life-cycle cost savings. Due to their higher return on investment (ROI), efficient products cost Federal agencies less to operate, saving taxpayer dollars.

Reduced Environmental Impact: The combustion of fossil fuels to generate energy emits greenhouse gas emissions, such as carbon dioxide (CO₂), nitrous oxide (NO_x), and sulfur dioxide (SO₂). Procuring energy-efficient products decreases energy usage and its resulting pollutant emissions, lessening the

impact Federal agencies have on the environment.

Water efficiency is also an integral part of a comprehensive resource management plan. Due to prolonged droughts and increasing demand, water is becoming scarcer for several Federal facilities across the U.S. Water also requires significant amounts of energy for treatment and delivery. Using water-efficient products helps agencies meet reduction goals, ensure adequate water supplies, and save energy.

Institutionalize Change: The Federal Government is the largest buyer of energy and water consuming products. By setting high performance standards for these products, Federal procurement requirements can institutionalize change and potentially shift entire markets to a greater level of efficiency. This increases the availability of energy- and water-efficient products and reduces costs for all consumers.

Purchasing Specifications

DOE and the U.S. Environmental Protection Agency (EPA) sponsor four programs with the authority to identify covered product categories and set efficiency levels:

- FEMP-designated products
- ENERGY STAR
- Low standby power products
- WaterSense labeled products

FEMP designates efficiency requirements within covered product categories that offer significant energy savings for the Federal Government. ENERGY STAR and WaterSense aim for significant savings on a national basis and tend to focus on consumer products. Different from ENERGY STAR and WaterSense, FEMP does not designate or label specific products.

A complete list of covered product categories and additional resources are provided later in this document.

FEMP-Designated Product Categories

FEMP product efficiency requirements set minimum efficiency levels for product categories that have the potential to generate significant Federal energy savings.

Federal agencies use a wide variety of energy-consuming products. While many are covered by the ENERGY STAR program, some are not. Congress authorized FEMP to designate energy-efficient product efficiency levels for Federal purchases and requires Federal agencies to specify or select only products meeting these efficiency levels where applicable.

FEMP and ENERGY STAR share a core set of guiding principles with slight differences. The FEMP guiding principles for setting energy efficiency requirements include:

- Significant energy savings can be realized on a Federal Government basis.
- Products meeting FEMP product efficiency requirements may be assumed to be life-cycle cost effective.
- Energy efficiency can be achieved with several technology options, at least one of which is non-proprietary.
- Product energy consumption and performance can be measured and verified with industry-recognized testing standards.
- Setting Federal requirements can effectively differentiate products and institutionalize energy efficiency.

Having identified a product category that meets these guiding principles, FEMP collects market data (performance and price) for and is statutorily required to set energy efficiency levels at the top 25 percent of the product category. FEMP then compares the life-cycle cost of the top 25 percent against the least efficient or base models. If the combination of purchase price and operating cost discounted over the life of the product is less for the top 25 percent than the base models, this product category is eligible for designation.

The final step is for FEMP to verify that products meeting the top 25 percent requirement are available from three or more sources. In most cases, Federal purchasers are required to consider multiple sources when justifying a purchase.

When a product type has successfully completed this process, FEMP issues efficiency requirements and guidelines that encourage Federal agency acquisition and use.

FEMP does not label or otherwise recognize specific products as being efficient. Rather, FEMP publishes the required efficiency level for a product category, and any individual product that meets that efficiency level qualifies. Federal procurement officials are required to specify or select only those products that meet the designated efficiency levels.

Additional information is available at www.femp.energy.gov/procurement.

ENERGY STAR Qualified Products

ENERGY STAR is a voluntary product-labeling program to identify and promote energy efficiency and reduce greenhouse gas emissions. A joint DOE and EPA program, ENERGY STAR helps buyers save money and protect the environment through energy-efficient products and practices. ENERGY STAR focuses on the consumer market, but may set specifications for commercial equipment. Also, some specifications may be applicable to certain Federal facilities, such as housing, break rooms, and shower facilities. Additional information is available at www.energystar.gov.

Low Standby Power Products

Some devices consume electricity when they appear to be turned off. This power consumption is known as standby power and can be a significant contributor to product energy use. FEMP sets purchasing specifications for low standby power and publishes manufacturer-supplied standby

power data information in the FEMP Standby Power Data Center. This online resource lists products and their standby power usage. Additional information is available at www.femp.energy.gov/standby.

WaterSense Labeled Products

WaterSense is an EPA-sponsored partnership program that promotes water efficiency and enhances the market for water-efficient products, programs, and



practices. Products carrying the WaterSense label perform well, help save money, and encourage innovation in manufacturing. By reducing

water use, WaterSense products can also reduce the energy associated with moving, heating, and cooling water. WaterSense focuses on the consumer market and not all specifications cover commercial-level equipment. Additional information is available at www.epa.gov/watersense.

FEMP Assistance

FEMP dedicates staff and resources to inform Federal buyers, procurement officials, energy managers, and facility engineers of the reasons and requirements to buy energy-efficient products. Several online and other resources are available.

Online Resources

Technical documents, fact sheets, and Web-based tools are available to facilitate product selection, including:

Covered Product Category Efficiency Requirements: For each FEMP-designated product type, as well as some ENERGY STAR products, FEMP provides:

- Designated efficiency requirements for Federal purchases.
- Tips to help buyers select the right product, size it properly, install it correctly, and use it effectively.
- A cost-effectiveness example to aid buyers in estimating savings.

For More Information

Federal Energy Management Program

www.femp.energy.gov

FEMP Product Procurement

www.femp.energy.gov/procurement

FEMP Energy Cost Calculators

www.femp.energy.gov/calculators

FEMP Standby Power Data Center

www.femp.energy.gov/standby

ENERGY STAR

www.energystar.gov

WaterSense Program

www.epa.gov/watersense

Lawrence Berkeley National Laboratory

www.lbl.gov

Federal Supply Sources General Services Administration

www.gsa.gov/advantage

Defense Logistics Agency

www.dla.mil

www.dliss.dla.mil/emall.asp

Contacts

Amanda Sahl

Federal Energy Management Program
202-586-1662

amanda.sahl@ee.doe.gov

Chris Payne

Lawrence Berkeley National
Laboratory
202-488-2252

ctpayne@lbl.gov

- Additional resources to research each product type more thoroughly.

FEMP efficiency requirements are available at www.femp.energy.gov/procurement.

Cost Calculators: FEMP offers online calculators for some product categories that help buyers estimate life-cycle energy, water, and cost savings. The calculators allow users to input utility rates and operating conditions to more accurately estimate savings at their facilities. Energy cost calculators are available at www.femp.energy.gov/calculators.

Standby Power Data Center: FEMP is responsible for identifying product types that use standby power and setting appropriate efficiency levels for Federal purchases. The FEMP Standby Power Data Center provides information on these products. A unique feature of this site is a database of manufacturer-reported standby power measurements for products often sold to Federal customers. The database indicates which products meet standby power requirements. The FEMP Standby Power Data Center is online at www.femp.energy.gov/standby.

Additional Resources

In addition to online resources, FEMP staff works directly with Federal agencies on a variety of issues, such as:

Guide Specifications: Some agencies have guide or master specifications that provide explicit requirements for materials and equipment to be used in construction or renovation of Federal facilities. FEMP works with agencies to incorporate performance levels for energy-efficient products into these guide specifications. A number of guide specifications, such as the Unified Facilities Guide Specifications and Federal Guide for Green Construction,

contain efficiency levels for many FEMP-designated products. Both of these guide specifications are available from the Whole Building Design Guide at www.wbdg.org.

Federal Supply Catalogs: FEMP works with the U.S. General Services Administration (GSA) and the Defense Logistics Agency (DLA) to meet EAct 2005 Section 104 requirement to “clearly identify and prominently display ENERGY STAR qualified or FEMP-designated products” in their online listings and catalogs. In addition, FEMP is available to assist Federal supply sources in becoming guaranteed compliance suppliers.

Outreach and Training: FEMP offers presentations and training on energy-efficient product procurement to Federal agencies. These services are available and considered upon request. Live and on-demand sessions are also available on the FEMP website at www.femp.energy.gov/training.

Product Procurement Working Group: FEMP leads an interagency working group dedicated to increasing the procurement of efficient products throughout the Federal sector. Several meetings are held each year to discuss issues and resolve problems surrounding Federal procurement requirements and purchasing efficient products. Learn more about working group meetings at www.femp.energy.gov/technologies/eep_workinggroup.html.

U.S. DEPARTMENT OF
ENERGY

Energy Efficiency &
Renewable Energy

EERE Information Center
1-877-EERE-INFO (1-877-337-3463)
www.eere.energy.gov/informationcenter

Printed with a renewable-source ink on paper containing at least 50% wastepaper, including 10% post consumer waste.

FEMP facilitates the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship.

DOE/GO-102011-3360 • August 2011

FEMP
Federal Energy Management Program

Covered Product Categories

The following product categories are found frequently in Federal facilities. Federal purchases in these categories MUST meet relevant efficiency requirements.

Space Heating and Cooling:

- Boilers (Commercial) ▲
- Central Air Conditioners ■
- Chillers:
 - Air-Cooled Electric ▲
 - Water-Cooled Electric ▲
- Heat Pumps:
 - Air-Source ■
 - Ground-Source ■

Commercial Water Heating:

- Gas Water Heaters ▲

Building Envelope:

- Cool Roofing Products ■

Food Service Equipment:

- Dishwashers (Commercial) ■
- Fryers ■
- Griddles ■
- Hot Food Holding Cabinets ■
- Ice Machines:
 - Air-Cooled ■
 - Water-Cooled ▲
- Ovens ■
- Refrigerators and Freezers (Commercial) ■
- Steam Cookers ■
- Pre-Rinse Spray Valves ▲

Lighting:

- Fluorescent Tube Lamps ▲
- Fluorescent Ballasts ▲
- LED Lighting (Commercial) ■
- Light Bulbs:
 - Compact Fluorescent (CFLs) ■
 - Light Emitting Diodes (LEDs) ■
- Luminaires:
 - Fluorescent ▲
 - Downlight (Commercial) ▲
 - Industrial (High-Bay) ▲

Legend of Covered Product Categories

- ENERGY STAR
- ▲ FEMP-Designated
- ◆ Low Standby Power
- EPEAT

Office Equipment:

- Computers ■◆●
- Displays and Monitors ■●
- Enterprise Servers ■
- Imaging Equipment:
 - Copiers ■◆
 - Digital Duplicators ■
 - Fax/Printer Machines ■◆
 - Mailing Machines ■
 - Multifunction Devices ■◆
 - Printers ■◆
 - Scanners ■
- Televisions (TV) ■

Other:

- Clothes Washers (Commercial) ■
- Vending Machines ■
- Water Coolers ■

Other ENERGY STAR Covered Product Categories

The following product categories may be found in Federal facilities. Federal purchases in these categories MUST meet relevant efficiency requirements.

Heating and Cooling:

- Room Air Conditioners ■
- Central Air Conditioners (Residential) ■
- Boilers (Residential) ■
- Fans:
 - Ceiling ■
 - Ventilation ■
- Gas Furnaces ■
- Air-Source Heat Pumps (Mini-Split) ■

Water Heating:

- Electric Resistance Storage ▲
- Heat Pump ■
- Gas Condensing (Residential) ■
- Storage ■
- Whole-Home Tankless (Instantaneous) ■
- Solar ■

Building Envelope:

- Windows, Doors, and Skylights ■

Lighting:

- Light Fixtures ■
- Decorative Light Strings ■

Appliances:

- Clothes Washers (Residential) ■
- Room Dehumidifiers ■
- Dishwashers (Residential) ■
- Refrigerators (Residential) ■
- Freezers (Residential) ■
- Room Air Cleaners and Purifiers ■
- Microwave Ovens ◆

Electronics:

- Audio/Video ■◆
- Battery Chargers ■
- Cordless Phones ■◆
- Set-Top and Cable Boxes ■

WaterSense Plumbing:

- Faucets, Showerheads, Toilets, and Urinals