

Energy Efficient Product Procurement (EEPP)

FEMP Designated, ENERGY STAR Certification, and the Law



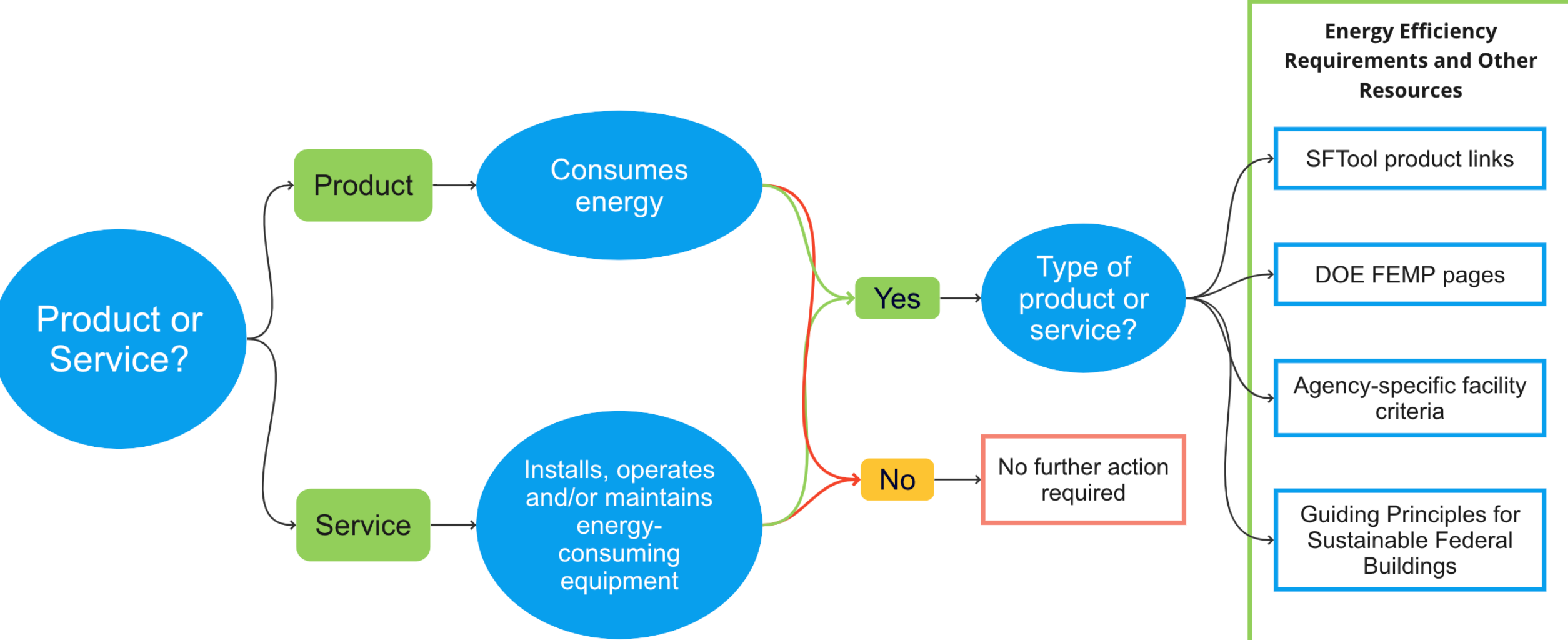
Energy Efficient Purchasing Requirements

- Agencies **must** purchase ENERGY STAR Certified or FEMP Designated Products
 - EPA's ENERGY STAR Certification and FEMP's program cover different products.
- Federal acquisition rules apply to **all federal purchases** whether purchased directly by a federal agency or on behalf of a federal agency and/or for use on federal property. This includes, but is not limited to:
 - Service contracts
 - Performance contracts
 - P-card purchases
- If it uses energy, it is subject to energy efficiency purchasing requirements.

Exceptions: Energy Efficiency Purchasing Requirements

- Exceptions to the energy efficiency purchasing requirements are limited and **must be documented** in the acquisition package.
- **Two sample exceptions are:**
 - No product meets the functional requirements and is either certified by ENERGY STAR or meets the efficiency standard designated by FEMP.
 - There is not a life cycle cost-effective product that is either certified by ENERGY STAR or meets the efficiency standard designated by FEMP.
- **Some less common products are not covered by either program. Even though it is not a covered product, purchasers are encouraged to consider energy efficiency.**
 - Current examples: specialty equipment such as microscopes, X-ray machines, etc.

Energy Efficiency Requirements for Acquisition



Finding and Selecting a Compliant Boiler

ENERGY STAR Certified or FEMP Designated?

Program	Boiler Type	Size (Input)	Output	Gas-Fired	Oil-Fired
ENERGY STAR	Residential	Less than 300 MBH	Hot Water	≥ 90.0%	≥ 87.0%
	Packaged Boiler / Small Commercial	300 MBH – 2,500 MBH	Hot Water	≥ 94.0%	N/A
FEMP	Large Commercial	2,500 MBH – 10,000 MBH	Hot Water	≥ 96.0%	≥ 89.0%
			Steam	≥ 83.0%	≥ 85.5%

The ENERGY STAR program certifies individual products.

- FEMP designates the minimum efficiency standard for covered products.
- The efficiency standard represents the top 25% of products available on the market.
- Each product efficiency standard is updated every two years.

Products

Boilers

- [Product Details](#)
- [Legal Requirements](#)
- [Life Cycle Cost Savings](#)
- [Additional Guidance](#)
- [Guiding Principles](#)

- [Air Conditioner Coil Cleaners](#)
- [Air Conditioning, Central](#)
- [Air Conditioning, Room](#)
- [Chillers](#)
- [Commercial Gas Water Heaters](#)
- [Control Optimization System for Chiller Plants](#)
- [Cooler, Indirect Evaporative](#)
- [Ductless Heating and Cooling](#)
- [Furnaces](#)
- [Heat Pumps, Air-Source](#)
- [Heat Pumps, Geothermal or Ground-Source](#)
- [Honeycomb Solar Thermal Collector](#)
- [HVAC Maintenance Products](#)
- [Industrial Process Air Conditioning](#)
- [Light Commercial Heating and Cooling](#)

Boilers

Last Updated: 08/26/23

[Click to see brand name products that meet these requirements](#)



Visual Search

A self contained fuel burning appliance of less than 200,000 Btu per hour energy input, for supplying low pressure steam or hot water for space heating applications. A heating unit that meets this definition and also provides hot water for domestic or other use is considered a boiler for purposes of this agreement.

PRODUCT DETAILS

* Federal agencies are required by statute to purchase products as designated or specified under this program.
 ** Federal agencies are required to purchase sustainable products and services meeting EPA's Recommendations to the maximum extent practicable.

PRODUCT TYPE	PROCUREMENT INFO	WHERE TO BUY
Biomass Boiler, Wood-Pellet-Fired	GSA's Green Proving Ground	Buy on GSA Advantage!
Condensing	GSA's Green Proving Ground	Buy on GSA Advantage!
Commercial	FEMP * Sample Contract Language Energy Star * Sample Contract Language	Buy on GSA Advantage!
Residential	Energy Star * Sample Contract Language	Buy on GSA Advantage!

Boiler Information

FEMP Product Selection Guidance

Showing 1 to 17 of 17 entries (filtered from 85 total entries)

Product Type -

- Appliances and Food Service
- Electric Vehicle Products
- Electronics and Information Technology
- Heating and Cooling
- Lighting
- Other
- Water Consuming Devices

Efficiency Program -

- ENERGY STAR
- EPEAT
- FEMP Designated

COVERED PRODUCT CATEGORY	PRODUCT TYPE	EFFICIENCY PROGRAM
Air-Source Heat Pumps (Residential)	Heating and Cooling	ENERGY STAR
Boilers (Residential)	Heating and Cooling	ENERGY STAR
Boilers, Large (Commercial)	Heating and Cooling	FEMP Designated
Boilers, Small (Commercial)	Heating and Cooling	ENERGY STAR
Ceiling Fans (Residential)	Heating and Cooling	ENERGY STAR
Central Air Conditioners (Residential)	Heating and Cooling	ENERGY STAR
Electric Chillers, Air-Cooled (Commercial)	Heating and Cooling	FEMP Designated
Electric Chillers, Water-Cooled (Commercial)	Heating and Cooling	FEMP Designated
Electric Resistance Storage Water Heaters	Heating and Cooling	FEMP Designated; Suspended Product Category
Gas Furnaces (Residential)	Heating and Cooling	ENERGY STAR

Boilers, Large (Commercial) – FEMP Designated

This acquisition guidance was updated in September 2022.

Find Product Efficiency Requirements

Federal purchases of commercial boilers must meet or exceed the minimum efficiency requirements and thermal efficiencies listed in Table 1. These efficiency levels can be voluntarily adopted by non-federal organizations, institutions, and purchasers.

Product Class	Rated Capacity	Fuel	Heating Medium	Efficiency* (%)
Large Gas-Fired Hot Water	>2,500,000 Btu/h and \leq 10,000,000 Btu/h	Gas	Hot Water	$E_c \geq 96.0$
Large Gas-Fired Steam	>2,500,000 Btu/h and \leq 10,000,000 Btu/h	Gas	Steam	$E_t \geq 83.0$
Large Oil-Fired Hot Water	>2,500,000 Btu/h and \leq 10,000,000 Btu/h	Oil	Hot Water	$E_c \geq 89.0$
Large Oil-Fired Steam	>2,500,000 Btu/h and \leq 10,000,000 Btu/h	Oil	Steam	$E_t \geq 85.5$

*Both thermal efficiency (E_t) and combustion efficiency (E_c) are based on 10 CFR Part 431.86 - Uniform test method for the measurement of energy efficiency of commercial packaged boilers.

Is it Lifecycle Cost Effective?

Make a Cost-Effective Purchase: Reduce Operating Costs by Buying a FEMP-Designated Product

FEMP has calculated that a 3,000,000 Btu/h gas-fired hot water commercial boiler meeting the required combustion efficiency level of 96.0% E_c saves money if priced no more than \$105,000 above the base model. The best available model saves the average user more: \$118,111 in lifetime energy costs. Table 2 compares three types of product purchases and calculates the lifetime cost savings of purchasing efficient models. Federal purchasers can assume products that meet FEMP-designated efficiency requirements are life cycle cost-effective.

Performance	Base Model	Required Model	Best Available
Combustion Efficiency	82.0%	96.0%	98.0%
Annual Energy Use (therms/yr)	45,000	38,438	37,653
Annual Energy Cost (\$/yr)	\$26,738	\$22,839	\$22,373
Lifetime Energy Cost (25 year)	\$723,428	\$617,928	\$605,318
Lifetime Energy Cost Savings	=====	\$105,500	\$118,110

Is it Lifecycle Cost Effective?

TABLE 2. LIFETIME SAVINGS FOR EFFICIENT 3,000,000 BTU/H GAS-FIRED, HOT WATER BOILERS

Performance	Base Model	Required Model	Best Available
Combustion Efficiency	82.0%	96.0%	98.0%
Annual Energy Use (therms/yr)	45,000	38,438	37,653
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Lifetime Energy Cost Savings	=====	\$105,500	\$118,110
Lifetime Energy Cost Savings	=====	=====	\$13,111

Comparison Against the Base Model

Base Model $\eta=82\%$ vs Required Model $\eta=96\%$

Lifetime Energy Savings = \$105,500

Therefore, it is life cycle cost effective to purchase a boiler that is 96% efficient if it costs no more than \$105,500 than the boiler that is 82% efficient.

Base Model $\eta=82\%$ vs Best Available $\eta=98\%$

Lifetime Energy Savings = \$118,110

Therefore, it is life cycle cost effective to purchase a boiler that is 98% efficient if it costs no more than \$118,110 than the boiler that is 96% efficient.

Comparison Against the Required Model

Required Model $\eta=96\%$ vs Best Available $\eta=98\%$

Lifetime Energy Savings = \$13,111

Therefore, it is life cycle cost effective to purchase a boiler that is 98% efficient if it costs no more than \$13,111 than the boiler that is 96% efficient.

How FEMP Supports Agencies

- Energy Efficient Product Selection Guidance and Other Technical Resources
- Training Resources
 - Take Five Videos
 - Buying a Heat Pump
 - Buying Energy-Efficient Lighting
 - Energy Efficiency Requirements for Acquisition
 - What is Energy Efficiency [Coming Soon]
 - Full-Length Trainings
 - FEMP Whole Building Design Guide (WBDG)

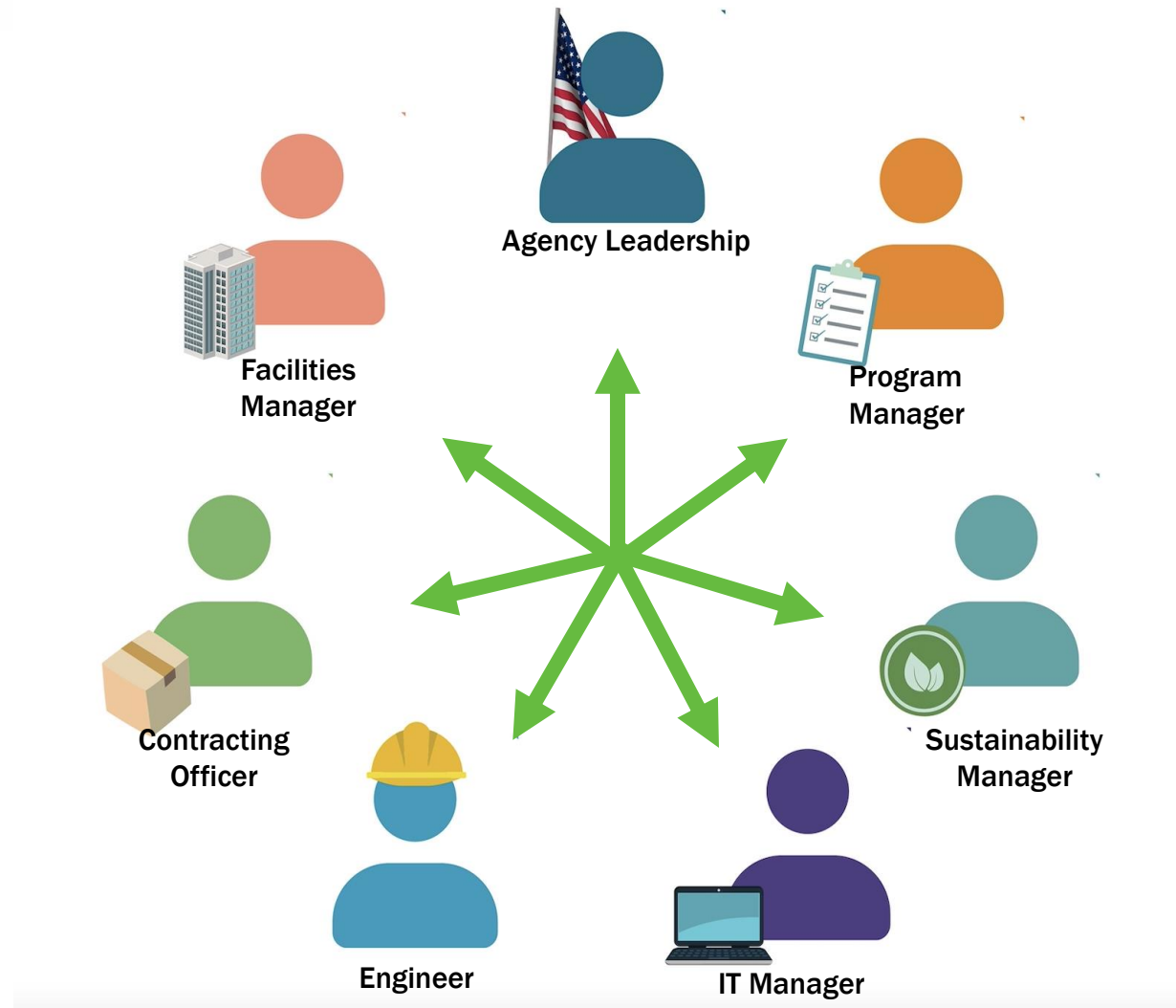
BUYING A HEAT PUMP



BUYING ENERGY-EFFICIENT LIGHTING



Who is responsible for meeting sustainable purchasing requirements?



Questions?

Key Links for More Information

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GSA's Sustainable Facilities Tool
SFTool.gov



ENERGY STAR Products
www.ENERGY STAR.gov/products

FEMP's Energy Efficient Product Procurement Page (EEPP)
www.energy.gov/femp/search-energy-efficient-products