

# Contracting for Efficiency:

**A Best Practices Guide for Energy-Efficient Product  
Procurement**

Prepared for the U.S. Department of Energy's  
Federal Energy Management Program

By Lawrence Berkeley National Laboratory

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## Sustainable Acquisition Requirements

The Federal Energy Management Program (FEMP) supports federal agencies in meeting federal energy and water management goals. FEMP's Energy-Efficient Product Procurement program provides guidance to agencies with regard to federal sustainable acquisition requirements related to energy and water consumption. This guidance, in turn, depends on several programs that identify the energy or water performance of various commercially-available products. These programs include:

- [ENERGY STAR](#), which labels products that meet particular energy efficiency requirements in a large number of product categories;
- [FEMP designation](#), which sets efficiency requirements for product categories not covered by ENERGY STAR;
- [EPEAT](#), which covers a number of energy and environmental characteristics for some electronics product categories;
- [FEMP Low Standby](#), which provides guidance on purchasing products with low standby power consumption (a measure of power consumption when a device is in its lowest power-consuming mode—typically when the product is switched off or not performing its primary purpose); and
- [WaterSense](#), which labels water-using products that meet particular water efficiency requirements.

Federal agencies and their contracting activities are subject to a wide range of sustainable acquisition requirements covering numerous environmental attributes beyond energy and water efficiency. Visit GSA's Green Procurement Compilation, discussed in the Resources section of this document, for comprehensive coverage of green procurement requirements.

Although federal buyers are required to purchase products that meet all of the above standards, the focus of this guide is contracting for energy-efficient products. We emphasize how to specify products covered by ENERGY STAR and FEMP efficiency requirements. The practices presented in this guide, however, can be broadly applied to other sustainable acquisition requirements.

### Federal energy performance requirements

Federal Acquisition Regulation (FAR) [Subpart 23.2](#) requires federal buyers to specify and acquire ENERGY STAR certified and Federal Energy Management Program (FEMP)-designated products for all acquisitions that include products in categories covered by either program.

The FEMP-designated and ENERGY STAR certified programs cover:

- **Heating and cooling equipment:** Including boilers, chillers, heat pumps, and package units;
- **Domestic water heating equipment:** Including gas storage, gas instantaneous, and electric resistance units;

- **Interior lighting equipment:** Including recessed, suspended, and high and low bay luminaires;
- **Exterior lighting equipment:** Including outdoor pole-mounted luminaires, wall-mounted luminaires, and parking garage luminaires;
- **Food service equipment:** Including dishwashers, fryers, ice machines, ovens, and refrigerators;
- **Information technology equipment:** Including computers, servers, uninterruptible power supplies; and
- **Additional product categories listed on page 3 of this section.**

Federal energy performance requirements are developed such that:

1. Cost-effective and significant savings can be realized without compromising the functional performance of the product;
2. The energy efficiency specifications can be achieved by more than one manufacturer; and
3. The energy efficiency specification can be measured and verified through testing.

For product categories covered by ENERGY STAR, compliant products must have earned the ENERGY STAR label, and can be identified on the ENERGY STAR Product Finder page. When writing a contract, federal buyers should require that the vendor provide ENERGY STAR certified products. For product categories covered by FEMP, products must meet or exceed the FEMP-designated efficiency level. When writing a contract, federal buyers should include the FEMP efficiency requirements and require the vendor to provide a product that meets or exceeds these levels.

### **Buying efficient equipment saves money and energy and reduces greenhouse gas emissions**

Energy-efficient products deliver the same or better service as inefficient models but use less energy. When equipment does not meet FEMP-designated and ENERGY STAR certified criteria, agencies incur losses caused by the inefficient energy performance of the equipment compared to a FEMP-designated and ENERGY STAR certified model. Buying efficient equipment saves money on energy costs and can help agencies meet energy intensity and greenhouse gas reduction goals.

### **Exceptions from the acquisition requirement**

Exceptions are available to the acquisition requirement if the head of the agency finds in writing that:

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

There are many products that meet these requirements, provided by a variety of manufacturers, and buying inefficient products usually means leaving money on the table. Exceptions to the requirement are rare.

## List of Covered Product Categories

| Product Type       | Product Category                             | Efficiency Program                       | Product Type        | Product Category                                    | Efficiency Program |
|--------------------|--|--|---------------------|---|--------------------|
| Appliances         | Air Purifiers and Cleaners                   | ENERGY STAR                              | Heating and Cooling | Ceiling Fans (Residential)                          | ENERGY STAR        |
| Appliances         | Clothes Dryers (Residential)                 | ENERGY STAR                              | Heating and Cooling | Central Air Conditioners (Residential)              | ENERGY STAR        |
| Appliances         | Clothes Washers (Commercial)                 | ENERGY STAR                              | Heating and Cooling | Electric Chillers, Air-Cooled (Commercial)          | FEMP               |
| Appliances         | Clothes Washers (Residential)                | ENERGY STAR                              | Heating and Cooling | Electric Chillers, Water-Cooled (Commercial)        | FEMP               |
| Appliances         | Dehumidifiers                                | ENERGY STAR                              | Heating and Cooling | Electric Storage Water Heaters (Residential)        | ENERGY STAR        |
| Appliances         | Dishwashers (Residential)                    | ENERGY STAR                              | Heating and Cooling | Gas Furnaces (Residential)                          | ENERGY STAR        |
| Appliances         | Freezers (Residential)                       | ENERGY STAR                              | Heating and Cooling | Gas Storage Water Heaters (Residential)             | ENERGY STAR        |
| Appliances         | Refrigerators (Residential)                  | ENERGY STAR                              | Heating and Cooling | Gas Water Heaters (Commercial)                      | ENERGY STAR        |
| IT and Electronics | Audio/Video Equipment                        | ENERGY STAR                              | Heating and Cooling | Geothermal Heat Pumps (Residential)                 | ENERGY STAR        |
| IT and Electronics | Computers: Desktop, Integrated, and Notebook | ENERGY STAR/EPEAT                        | Heating and Cooling | Light Commercial Heating and Cooling Equipment      | ENERGY STAR        |
| IT and Electronics | Computers: Workstation and Thin Client       | ENERGY STAR/EPEAT/FEMP Low Standby Power | Heating and Cooling | Room Air Conditioners (Residential)                 | ENERGY STAR        |
| IT and Electronics | Computers: Small-Scale Servers               | ENERGY STAR                              | Heating and Cooling | Solar Water Heaters (Residential)                   | ENERGY STAR        |
| IT and Electronics | Data Center Storage                          | ENERGY STAR                              | Heating and Cooling | Ventilation Fans (Residential)                      | ENERGY STAR        |
| IT and Electronics | Displays and Monitors                        | ENERGY STAR/EPEAT                        | Heating and Cooling | Whole-Home Gas Tankless Water Heaters (Residential) | ENERGY STAR        |
| IT and Electronics | Enterprise Servers                           | ENERGY STAR                              | Lighting            | Exterior Lighting                                   | FEMP               |
| IT and Electronics | Imaging Equipment                            | ENERGY STAR/EPEAT                        | Lighting            | Fluorescent Ballasts                                | FEMP               |
| IT and Electronics | Set-Top and Cable Boxes                      | ENERGY STAR                              | Lighting            | Fluorescent Lamps, General Service                  | FEMP               |
| IT and Electronics | Small Network Equipment                      | ENERGY STAR                              | Lighting            | Fluorescent Luminaires, Ceiling-Mounted             | FEMP               |
| IT and Electronics | Telephones                                   | ENERGY STAR                              | Lighting            | Fluorescent Luminaires, Suspended                   | FEMP               |
| IT and Electronics | Televisions                                  | ENERGY STAR/EPEAT                        | Lighting            | Industrial Lighting (High/Low Bay)                  | FEMP               |
| IT and Electronics | Uninterruptible Power Supplies               | ENERGY STAR                              | Lighting            | LED Luminaires, Commercial and Industrial           | FEMP               |

|                                     |   |             |          |   |             |
|-------------------------------------|---|-------------|----------|---|-------------|
| Food Service Equipment (Commercial) | Dishwashers (Commercial)                | ENERGY STAR | Lighting | Light Bulbs                             | ENERGY STAR |
| Food Service Equipment (Commercial) | Fryers (Commercial)                     | ENERGY STAR | Lighting | Light Fixtures (Residential)            | ENERGY STAR |
| Food Service Equipment (Commercial) | Griddles (Commercial)                   | ENERGY STAR | Lighting | Light Fixtures, Luminaires (Commercial) | ENERGY STAR |
| Food Service Equipment (Commercial) | Hot Food Holding Cabinets               | ENERGY STAR | Other    | Cool Roof Products                      | ENERGY STAR |
| Food Service Equipment (Commercial) | Ice Machines, Air-Cooled                | ENERGY STAR | Other    | Decorative Light Strings                | ENERGY STAR |
| Food Service Equipment (Commercial) | Ice Machines, Water-Cooled              | FEMP        | Other    | Faucets                                 | WaterSense  |
| Food Service Equipment (Commercial) | Ovens (Commercial)                      | ENERGY STAR | Other    | Pool Pumps                              | ENERGY STAR |
| Food Service Equipment (Commercial) | Refrigerated Beverage Vending Machines  | ENERGY STAR | Other    | Pre-Rinse Spray Valves                  | WaterSense  |
| Food Service Equipment (Commercial) | Refrigerators and Freezers (Commercial) | ENERGY STAR | Other    | Showerheads                             | WaterSense  |
| Food Service Equipment (Commercial) | Steam Cookers                           | ENERGY STAR | Other    | Toilets                                 | WaterSense  |
| Heating and Cooling                 | Air-Source Heat Pumps (Residential)     | ENERGY STAR | Other    | Urinals                                 | WaterSense  |
| Heating and Cooling                 | Boilers (Commercial)                    | FEMP        | Other    | Water Coolers                           | ENERGY STAR |
| Heating and Cooling                 | Boilers (Residential)                   | ENERGY STAR | Other    | Windows, Doors, and Skylights           | ENERGY STAR |

Available at: <http://energy.gov/eere/femp/covered-product-categories>

## Best Practices Guide Overview

Purchasing energy-efficient equipment can save federal agencies money and energy, reduce their greenhouse gas emissions, and allow agencies to meet procurement objectives legally required by statute and executive order. Often, however, contract actions may contain unclear information that can lead to the procurement of inefficient equipment. Contract actions include any oral or written action that results in the purchase, rent, or lease of supplies or equipment, services, or construction using appropriated dollars. This guide is focused in particular on solicitations as covered in FAR sections 13-15. Although other contract actions like Multiple Award Schedules, Government Acquisition Contracts, and employee purchases under the micro-purchase threshold are covered by procurement requirements for energy-efficient products, those types of contract actions are not the subject of this guide.

Our guide emphasizes the following broad principles:

- Solicitations should clearly communicate to contractors the requirement for energy-efficient equipment. This means that solicitations should include references to the efficiency requirement in multiple locations, rather than simply the legal requirement to include the applicable FAR clause.
- Buyers should not expect that offerors know which product categories are subject to the requirements. Buyers should take responsibility to ensure that the vendor is aware of the efficiency requirements for specific products. Buyers should include specific efficiency requirements in the same section of the contract as other product characteristics and technical specifications, rather than providing general statements requiring vendors to comply with laws and executive orders for products subject to efficiency requirements.
- Post award, equipment should be evaluated to ensure it meets the efficiency requirements specified. By requiring vendors to provide specific information on equipment, the government can verify that it meets or exceeds required efficiency levels.

### How to use this guide

The following section includes an overview of the best practice recommendations, followed by a list of resources. This guide is organized by solicitation type, including the following categories:

- [IT & Electronics Product Procurement](#)
- [Appliances Product Procurement](#)
- [Lighting Installation/Replacement Services](#)
- [Building Renovation and HVAC/Water Heating Equipment Replacement and/or Installation Services](#)
- [Architecture/Engineering and Design-Build/Design-Bid-Build Services](#)
- [Operations and Maintenance Services](#)
- [Food Services](#)

- [Laundry Services](#)

We recommend finding the example project that is most closely tied to yours and reviewing each step of the guidance. For each entry, we walk you through a three-step process to help:

1. Identify applicable covered product categories and efficiency requirements
2. Incorporate efficiency requirements into solicitations
3. Confirm the delivery of compliant products

Sample model language is also provided to adapt to specific purposes, as well as examples of real solicitations to further demonstrate how to incorporate these requirements.

*A note on project types included in this guide:*

The project examples included in this guide are designed to cover a wide range of project types that may involve the purchase of covered product categories subject to efficiency requirements. However, the examples are not exhaustive— there are certainly other contracting scenarios that may be subject to efficiency requirements that are not included in this guide. One notable omission is new construction, when buyers may have limited ability to modify existing plans for new buildings. These types of projects and others are still subject to efficiency requirements, and the principles outlined in this guide still apply. The more explicitly the buyer is able to communicate the efficiency requirement to the vendor, the more likely that the government will receive efficient products that save energy and money and reduce greenhouse gas emissions.

FEMP staff are available for technical assistance on procuring energy-efficient products. Please visit [femp.energy.gov](http://femp.energy.gov) for more information.

### Three steps to buying and verifying efficient products

#### **Step 1: Identify covered product categories and efficiency requirements**

The requirement to purchase efficient products applies if a covered product category will be delivered by the contractor, acquired by the contractor for use in a federal facility, furnished by the contractor for use by the government, specified in the design of a building or work, and/or incorporated into construction, renovation, or maintenance. For each example project type in this guide, we provide a list of the covered product categories often purchased for that project type and identify whether each is covered by ENERGY STAR or FEMP. If a product category is covered by FEMP, we list the applicable efficiency requirements. The goal here is to help you quickly identify which products are relevant for a given project type so that you can more easily communicate this information to offerors in Step 2.

#### **Step 2: Incorporate efficiency requirements into solicitations**

For each project type included in this guide, we make recommendations on how to incorporate efficiency requirements into various stages of the solicitation process and different sections of the solicitation itself. This section provides an overview of why these recommendations are important for each stage of procurement.

#### **Sources sought notices**

Even during the earlier stages of a procurement it is important that you communicate efficiency requirements to ensure that potentially interested offerors can deliver compliant products.

Incorporating efficiency into your sources sought notices to identify small business or women-owned concerns can even expand the number of potential suppliers in your procurement phase by allowing potential offerors time to ensure they can secure efficient products. When conducting market research, you should describe how you will verify that offers meet the requirements so that vendors are aware of the requirements upfront. Communicating the efficiency requirement throughout the procurement process will help ensure you receive efficient products post-award.

### ***Presolicitation notices***

Presolicitation notices provide an opportunity to notify vendors of the efficiency requirements that will apply to the procurement. This allows vendors time to bulk up their inventory of efficient products or confirm with their supply sources that they will be able to deliver efficient products. We recommend either listing the specific covered product categories included in the solicitation or including a list of all the ENERGY STAR and FEMP-designated covered product categories. There are additional materials that may be useful to include in presolicitation notices depending on the project type.

### ***Solicitation***

It is important to include efficiency requirements in multiple sections of the solicitation to emphasize the requirement and ensure that you have requested sufficient information from the vendor to verify compliance.

### **Section I: Contract clauses**

The contract clauses section includes all the clauses required by law that apply to the contract. For solicitations that included covered product categories, buyers should include FAR clause 52.223-15 – Energy Efficiency in Energy-Consuming Products, which reads:

**(a) Definition.** As used in this clause—

*Energy-efficient product*—(1) Means a product that—

(i) Meets Department of Energy and Environmental Protection Agency criteria for use of the Energy Star trademark label; or (ii) Is in the upper 25 percent of efficiency for all similar products as designated by the Department of Energy’s Federal Energy Management Program.

(2) The term “product” does not include any energy-consuming product or system designed or procured for combat or combat-related missions (42 U.S.C. 8259b).

**(b)** The Contractor shall ensure that energy-consuming products are energy efficient products (*i.e.*, ENERGY STAR ® products or FEMP-designated products) at the time of contract award, for products that are—

(1) Delivered;

(2) Acquired by the Contractor for use in performing services at a Federally-controlled facility;

(3) Furnished by the Contractor for use by the Government; or

(4) Specified in the design of a building or work, or incorporated during its construction, renovation, or maintenance.

**(c)** The requirements of paragraph (b) apply to the Contractor (including any subcontractor) unless—

- (1) The energy-consuming product is not listed in the ENERGY STAR ® Program or FEMP; or
  - (2) Otherwise approved in writing by the Contracting Officer.
- (d) Information about these products is available for—
- (1) ENERGY STAR ® at <http://www.energystar.gov/products>; and
  - (2) FEMP at [http://www1.eere.energy.gov/femp/procurement/eep\\_requirements.html](http://www1.eere.energy.gov/femp/procurement/eep_requirements.html).

Including this clause is legally required for solicitations that include energy-consuming products and is the first step in communicating to the vendor that they must deliver efficient products.

### **Section C: Statement of work**

The statement of work describes the project and is an excellent opportunity to emphasize the efficiency requirement. Although the statement of work and other descriptive sections do not typically contain detailed product information, you can communicate to offerors that energy efficiency is a priority for your project. They will know instantly upon reading the project description that the energy efficiency requirement applies.

### **Section C (or in attachments): Technical specifications**

Offerors look to the technical specifications to understand what the individual product requirements are for a given project. Technical specifications will typically include a wide range of characteristics including size, color, and various performance requirements. It is important to include efficiency requirements in the technical specifications section so that they are tied to other product characteristics. Vendors may not know the federal efficiency requirements for individual products or may be unaware that the requirement applies.

### **Section L: Instructions to offerors**

Requesting certain items from offerors will better allow you to evaluate offers for compliance with efficiency requirements. Requiring offerors to submit manufacturer cut sheets (technical descriptions generated by the manufacturer that include efficiency information) for individual products will allow the government confirm that they meet efficiency requirements. Providing energy cost information in the solicitation will allow offerors to demonstrate the cost savings associated with efficient products. Allowing offerors to submit multiple models gives them the opportunity to provide products that may exceed the stated efficiency requirements.

### **Section M: Evaluation factors**

The evaluation factors section of the solicitation outlines the factors you will consider in awarding the contract. Although purchasing efficient products is legally required, it is worthwhile to emphasize this requirement in the evaluation factors because vendors may be uncertain about the requirements. First, reiterate to vendors that offers that include products that do not meet ENERGY STAR or FEMP-designated efficiency requirements will be considered non-compliant, and you will only evaluate compliant offers. You can match the cut sheets provided to the list of covered product categories and associated efficiency information to determine if they are compliant. If a product is covered by ENERGY STAR, an ENERGY STAR certified product will be marked with the ENERGY STAR label. If the product has efficiency requirements set by FEMP, confirm that the information in the cut sheet meets these standards. When evaluating compliant offers, you may wish to go beyond a baseline level of efficiency to evaluate based on lifecycle costs. Evaluating solicitations on lifecycle cost allows vendors to

offer packages that may have higher upfront costs but will ultimately save your agency money. Evaluating based on lifecycle cost and/or the inclusion of energy-efficient products in offers can help ensure you receive offers that comply with efficiency requirements, or even exceed them.

***Step 3: Confirm the delivery of compliant products***

After issuing an award, verification is an important component of energy-efficient product procurement. There are a number of ways to verify and report on the delivery of these products. When recording the procurement in FPDS, mark it as containing energy-efficient products in the sustainability data field. As products are delivered, verify that the cut sheets provided match the products on the invoice. You can even consider requiring the vendor to report on how they are complying with the efficiency requirements.

## Resources

### Federal Energy Management Program

<http://energy.gov/eere/femp/federal-energy-management-program>

FEMP provides a wide variety of resources to help federal agencies procure energy- and water-efficient products.

#### *Covered product category list*

<http://energy.gov/eere/femp/find-product-categories-covered-efficiency-programs>

FEMP maintains a list of all the covered product categories subject to efficiency requirements.

#### *Product overview documents*

For product categories covered by FEMP and several priority categories covered by ENERGY STAR, FEMP provides product overview documents that include comprehensive guidance on federal procurements for the given product category, including a summary of efficiency requirements, a cost-effectiveness example, and additional buying considerations for the federal sector. Product overview documents can be accessed by clicking on a given product category on the covered product category list.

#### *UNSPSC and ENAC code mappings*

<http://energy.gov/eere/femp/downloads/product-codes-tracking-energy-efficient-product-purchases>

FEMP has mapped United Nations Standard Products and Services Codes (UNSPSCs) and Environmental Attribute Codes (ENACs) to the FEMP-designated and ENERGY STAR certified product categories subject to federal efficiency requirements. Federal agencies may find this mapping useful in tracking and reporting on sustainable acquisition activities.

#### *Energy and cost savings calculators*

<http://energy.gov/eere/femp/energy-and-cost-savings-calculators-energy-efficient-products>

Federal buyers can estimate energy and cost savings for energy- and water-efficient product categories using FEMP and ENERGY STAR's interactive calculators.

#### *Energy-Efficient Product Procurement Training*

FEMP's First Thursday Seminar explains executive order and Federal Acquisition Regulation requirements on purchasing products designated by FEMP and labeled by ENERGY STAR. FEMP also offers additional trainings in energy management in the federal sector, with new trainings released periodically.

<http://energy.gov/eere/femp/federal-energy-management-program-training>

## **ENERGY STAR**

<http://www.energystar.gov/>

### *Covered products list*

<http://www.energystar.gov/products>

ENERGY STAR lists all its covered product categories. Federal buyers are required to buy ENERGY STAR certified products for all products covered by ENERGY STAR.

### *Product Finder Page*

<https://www.energystar.gov/productfinder/>

ENERGY STAR maintains a database of certified products for each ENERGY STAR product category. For any given product, users can search on the Product Finder page for specific model numbers, or filter by manufacturer, size, and other product characteristics.

### *Program requirements documents*

The efficiency requirements for any given covered product category are included on the ENERGY STAR website, which can be helpful when trying to identify whether a given product is covered by an ENERGY STAR product category. The program requirements documents provide a list of included and excluded products, and provide the efficiency requirements based on various product characteristics such as size or type. Here is the program requirements document for light commercial heating and cooling products, which covers a wide range of product categories federal agencies often purchase:

[http://www.energystar.gov/sites/default/files/specs//private/lchvac\\_prog\\_req\\_v2\\_2\\_0.pdf](http://www.energystar.gov/sites/default/files/specs//private/lchvac_prog_req_v2_2_0.pdf)

Program requirements documents are updated as ENERGY STAR releases new efficiency requirements. Remember, if a product is not covered by ENERGY STAR, it may be covered by FEMP. For instance, ENERGY STAR does not cover commercial fluorescent luminaires, but FEMP does.

## **Green Procurement Compilation**

<https://sftool.gov/greenprocurement>

The General Services Administration maintains the Green Procurement Compilation, a comprehensive green purchasing resource designed for federal contracting personnel and program managers. It includes information on sustainable purchasing requirements and model contract language for a wide range of products and services. The site also includes resources for acquisition planning and verification, covering a wide range of environmental attributes.

## IT & Electronics Product Procurement

### Step 1: Identify covered product categories and efficiency requirements

Some IT & electronics products are covered by EPEAT, a standard that incorporates both efficiency requirements and additional environmental criteria. Federal buyers are required to procure products that are EPEAT-registered. Note that products that are EPEAT-registered meet ENERGY STAR efficiency requirements. A list of EPEAT-registered products is available at: <http://www.epeat.net/>.

EPEAT covers the following product categories:

- Computers (desktops, workstations, and thin clients; notebooks, integrated computers, and tablets; and small-scale servers) and displays
- Imaging equipment like copiers, printers, scanners, and multifunction devices
- Televisions

In Step 2, buyers may change “ENERGY STAR certified” to “EPEAT-registered” for products covered by EPEAT.

Other IT & electronics products not covered by EPEAT are covered by ENERGY STAR. Common products bought in the federal sector include:

- Enterprise servers
- Uninterruptible power supplies, data center storage, network equipment, and other data center equipment

Check the ENERGY STAR Product Finder page for examples of product models that have earned the ENERGY STAR label.

### Step 2: Incorporate efficiency requirements into the solicitation

| Market Research          |  |
|--------------------------|--|
| <input type="checkbox"/> | Include language in your sources sought notices that emphasizes the requirement for any IT & electronics products to be ENERGY STAR certified.   |
| Presolicitation          |  |
| <input type="checkbox"/> | Include language in the presolicitation notice that emphasizes the requirement for any IT & electronics products to be ENERGY STAR certified.  |
| <input type="checkbox"/> | If you know which covered product categories will be in your solicitation, list them here with the requirement that they be ENERGY STAR certified. Or, attach the full list of covered product categories. |

| <b>Solicitation</b>      |  |
|--------------------------|--|
| <input type="checkbox"/> | <b>Section C/Description:</b> Prioritize energy efficiency in your statement of work so offerors are immediately aware of the importance of the requirement. Mention in your statement of work that all products delivered must be ENERGY STAR certified.  |
| <input type="checkbox"/> | <b>Section C/Specifications or Section B/Supplies:</b> Specify the requirement for products to be ENERGY STAR certified in the same section as other product characteristics, like size and other features. Some IT & electronics products, such as workstations, have customizable configurations. Be sure to require an ENERGY STAR configuration when you list other product characteristics. |
| <input type="checkbox"/> | <b>Section I:</b> Include FAR clause 52.223-15 in the contract clauses section.  |
| <input type="checkbox"/> | <b>Section L:</b> Require offerors to submit a list of covered product categories included in the contract and demonstrate compliance with the ENERGY STAR requirement. This means showing that the given products are on the ENERGY STAR Product Finder page, or providing cut sheets that include the ENERGY STAR label. Allow the offeror to submit multiple products.                        |
| <input type="checkbox"/> | <b>Section M:</b> Evaluate offers based on identification of all covered product categories and demonstrated compliance with the ENERGY STAR. Emphasize that technical acceptability means products must be ENERGY STAR certified.   |

### Step 3: Verify the delivery of efficient products

Compare the invoices you receive to the cut sheets the vendor provided. Check that the delivered products are on the ENERGY STAR Product Finder page. Mark the contract as containing energy-efficient products in the sustainability data field in FPDS. Once verified, mark the delivered products as energy-efficient in property management records, if applicable.

### Additional Resources

The Green Procurement Compilation (GPC) provides an overview of buying guidance for office electronic products: <https://sftool.gov/greenprocurement/green-products/10/office-electronics/0>.

## Excellence in contracting: Department of Agriculture, Forest Service

The Department of Agriculture issued a combined synopsis/solicitation in February 2015 for plotters, a type of wide format printer. The combined synopsis/solicitation is a simplified version of a complete contract document that includes all the required specifications for a commercial product. The Department of Agriculture included a short list of specifications, including the maximum weight, memory requirements, and a statement that the plotters “must be Energy Star qualified.”

## Model Contract Language

### **Section C – Performance Work Statement/Descriptions, Specifications**

The Contractor shall comply with Sections 524 and Sections 525 of the Energy Independence and Security Act of 2007; Section 104 of the Energy Policy Act of 2005; Executive Order 13693, “Planning for Federal Sustainability in the Next Decade,” dated March 19, 2015; and the Federal Acquisition Regulation (FAR) to provide ENERGY STAR certified products in delivery of Information Technology (IT) & Electronics products.

The Contractor shall provide products that are EPEAT-registered for products covered by EPEAT or have earned the ENERGY STAR label and meet the ENERGY STAR guidelines for energy efficiency for other IT & Electronics products. The Contractor shall use these products to the maximum extent possible without jeopardizing the intended end use or detracting from the overall quality delivered to the end user. Products with different configuration options should use the ENERGY STAR configuration.

The following is a list of IT & Electronics product categories for which EPEAT-registered products are available. The most current list is available at [epeat.gov](http://epeat.gov):

- Computers and displays
- Televisions
- Imaging equipment including copiers, printers, scanners, and mailing machines

The following is a list of IT & Electronics products for which ENERGY STAR certified products are available. It is not all-inclusive and is evolving; the most current list is available at [www.energystar.gov/products](http://www.energystar.gov/products).

- Audio/video equipment
- Data center storage and enterprise servers
- Large and small network equipment
- Telephones
- Uninterruptible power supplies

The Contractor shall comply with the clause at FAR 52.223-15, Energy Efficiency in Energy-Consuming Products.

The Contractor shall report quarterly on the purchases of ENERGY STAR certified and EPEAT-registered products in the performance of this contract. The report shall include the following:

- A list of all energy consuming products purchased during the past quarter;
- A list of all ENERGY STAR certified-products purchased during the past quarter;
- Manufacturer cut sheets or other documentation that confirms the products are ENERGY STAR certified.

### **Section I – Contract Clause**

**(a) Definition.** As used in this clause—

*Energy-efficient product*—(1) Means a product that—

(i) Meets Department of Energy and Environmental Protection Agency criteria for use of the Energy Star trademark label; or

(ii) Is in the upper 25 percent of efficiency for all similar products as designated by the Department of Energy’s Federal Energy Management Program.

(2) The term “product” does not include any energy-consuming product or system designed or procured for combat or combat-related missions (42 U.S.C. 8259b).

**(b)** The Contractor shall ensure that energy-consuming products are energy efficient products (*i.e.*, ENERGY STAR ® products or FEMP-designated products) at the time of contract award, for products that are—

(1) Delivered;

(2) Acquired by the Contractor for use in performing services at a Federally-controlled facility;

(3) Furnished by the Contractor for use by the Government; or

(4) Specified in the design of a building or work, or incorporated during its construction, renovation, or maintenance.

**(c)** The requirements of paragraph (b) apply to the Contractor (including any subcontractor) unless—

(1) The energy-consuming product is not listed in the ENERGY STAR ® Program or FEMP; or

(2) Otherwise approved in writing by the Contracting Officer.

**(d)** Information about these products is available for—

(1) ENERGY STAR ® at <http://www.energystar.gov/products>; and

(2) FEMP at [http://www1.eere.energy.gov/femp/procurement/eep\\_requirements.html](http://www1.eere.energy.gov/femp/procurement/eep_requirements.html).

### **Section L – Instructions to Offerors**

In the technical proposal, the Offeror shall identify the ENERGY STAR certified and EPEAT-registered products to be purchased and supplied or used under this contract. The Offeror shall demonstrate that these products to be supplied or used under this contract comply with the ENERGY STAR guidelines.

The Offeror shall document prior experience in specifying, purchasing, and using ENERGY STAR certified and EPEAT-registered products. The Offeror shall provide a list of all relevant contracts over the past two years involving the specification, purchase, and use of ENERGY STAR certified and EPEAT-registered products.

### **Section M – Evaluation Factors for Award**

#### ***Technical Approach/Technical Evaluation Factor***

The Government will evaluate the Offeror’s technical approach with an emphasis on the identification of all ENERGY STAR certified and EPEAT-registered products to be purchased and delivered under this contract.

## Appliances Product Procurement

### Step 1: Identify covered product categories and efficiency requirements

Appliance products are covered by ENERGY STAR. Appliances commonly bought in the federal sector include:

- Clothes washers (commercial and residential)
- Clothes dryers (residential)
- Residential refrigerators, freezers, and dishwashers

Check the ENERGY STAR Product Finder page for examples of model numbers that have earned the ENERGY STAR label when buying appliances.

### Step 2: Incorporate efficiency requirements into the solicitation

| Market research          |   |
|--------------------------|---|
| <input type="checkbox"/> | Include language in your sources sought notices that emphasizes the requirement for appliances to be ENERGY STAR certified.   |
| Presolicitation          |   |
| <input type="checkbox"/> | Include language in the presolicitation notice emphasizes the requirement for appliances to be ENERGY STAR certified.   |
| <input type="checkbox"/> | If you know which covered product categories will be in your solicitation, list them here with the requirement that they be ENERGY STAR certified. Or, attach the full list of covered product categories.  |
| Solicitation             |   |
| <input type="checkbox"/> | <b>Section C/Description:</b> Prioritize energy efficiency in your statement of work so offerors are immediately aware of the importance of the requirement. Mention in your statement of work that all products delivered must be ENERGY STAR certified.   |
| <input type="checkbox"/> | <b>Section C/Specifications or Section B/Supplies:</b> Specify the requirement for products to be ENERGY STAR certified in the same section as other product characteristics, like size and other features.   |
| <input type="checkbox"/> | <b>Section I:</b> Include FAR clause 52.223-15 in the contract clauses section.   |
| <input type="checkbox"/> | <b>Section L:</b> Require offerors to submit a list of covered product categories included in the contract and demonstrate compliance with efficiency requirements. This means showing that the given products are on the ENERGY STAR Product Finder page, or providing cut sheets that include the ENERGY STAR label. Allow the offeror to submit multiple products. |
| <input type="checkbox"/> | <b>Section M:</b> Evaluate offers based on identification of all covered product categories and demonstrated compliance with requirement. Emphasize that technical acceptability means products must be ENERGY STAR certified.  |

### **Step 3: Verify the delivery of efficient products**

Compare the invoices you receive to the cut sheets the vendor provided. Confirm that the products purchased are on the ENERGY STAR Product Finder page. Mark the contract as containing energy-efficient products in the sustainability data field in FPDS. Once verified, mark the delivered products as energy-efficient in property management records, if applicable.

### **Additional Resources**

The Green Procurement Compilation provides an overview of buying guidance for appliances: <https://sftool.gov/greenprocurement/green-products/21/appliances/0>.

## **Excellence in contracting: Department of Justice, Bureau of Prisons**

The Department of Justice issued a solicitation in May 2015 for commercial washer and dryers. Commercial washers are a product category covered by ENERGY STAR. In addition to including FAR clause 52.223-15 in full text in the solicitation document, the solicitation package included a document titled “Energy Efficient Information” that included a screenshot of the covered product categories page on the FEMP website with “Clothes Washers (Commercial)” highlighted, indicating that it was subject to the efficiency requirement.

## Model Contract Language

### **Section C – Performance Work Statement/Descriptions, Specifications**

The Contractor shall comply with Sections 524 and Sections 525 of the Energy Independence and Security Act of 2007; Section 104 of the Energy Policy Act of 2005; Executive Order 13693, “Planning for Federal Sustainability in the Next Decade,” dated March 19, 2015; and the Federal Acquisition Regulation (FAR) to provide ENERGY STAR certified products in delivery of appliance products.

The Contractor shall provide products that earn the ENERGY STAR label and meet the ENERGY STAR guidelines for energy efficiency. The Contractor shall use these products to the maximum extent possible without jeopardizing the intended end use or detracting from the overall quality delivered to the end user.

The following is a list of appliances for which ENERGY STAR certified products are available. It is not all-inclusive and is evolving; the most current list is available at [www.energystar.gov/products](http://www.energystar.gov/products).

- Air purifiers and cleaners
- Clothes dryers
- Clothes washers
- Dehumidifiers
- Dishwashers
- Refrigerators and freezers

The Contractor shall comply with the clause at FAR 52.223-15, Energy Efficiency in Energy-Consuming Products.

The Contractor shall report quarterly on the purchases of ENERGY STAR certified products in the performance of this contract. The report shall include the following:

- A list of all energy consuming products purchased during the past quarter;
- A list of all ENERGY STAR certified-products purchased during the past quarter;
- Manufacturer cut sheets or other documentation that confirms the products are ENERGY STAR certified.

### **Section I – Contract Clause**

**(a) Definition.** As used in this clause—

*Energy-efficient product*—(1) Means a product that—

- (i) Meets Department of Energy and Environmental Protection Agency criteria for use of the Energy Star trademark label; or
  - (ii) Is in the upper 25 percent of efficiency for all similar products as designated by the Department of Energy’s Federal Energy Management Program.
- (2) The term “product” does not include any energy-consuming product or system designed or procured for combat or combat-related missions (42 U.S.C. 8259b).

(b) The Contractor shall ensure that energy-consuming products are energy efficient products (*i.e.*, ENERGY STAR ® products or FEMP-designated products) at the time of contract award, for products that are—

- (1) Delivered;
- (2) Acquired by the Contractor for use in performing services at a Federally-controlled facility;
- (3) Furnished by the Contractor for use by the Government; or
- (4) Specified in the design of a building or work, or incorporated during its construction, renovation, or maintenance.

(c) The requirements of paragraph (b) apply to the Contractor (including any subcontractor) unless—

- (1) The energy-consuming product is not listed in the ENERGY STAR ® Program or FEMP; or
- (2) Otherwise approved in writing by the Contracting Officer.

(d) Information about these products is available for—

- (1) ENERGY STAR ® at <http://www.energystar.gov/products>; and
- (2) FEMP at [http://www1.eere.energy.gov/femp/procurement/eep\\_requirements.html](http://www1.eere.energy.gov/femp/procurement/eep_requirements.html).

### **Section L – Instructions to Offerors**

In the technical proposal, the Offeror shall identify the ENERGY STAR certified products to be purchased and supplied or used under this contract. The Offeror shall demonstrate that these products to be supplied or used under this contract comply with the ENERGY STAR guidelines.

The Offeror shall document prior experience in specifying, purchasing, and using ENERGY STAR certified products. The Offeror shall provide a list of all relevant contracts over the past two years involving the specification, purchase, and use of ENERGY STAR certified products.

### **Section M – Evaluation Factors for Award**

#### ***Technical Approach/Technical Evaluation Factor***

The Government will evaluate the Offeror’s technical approach with an emphasis on the identification of all ENERGY STAR certified products to be purchased and delivered under this contract.

# Lighting Installation and Replacement Services

## Step 1: Identify covered product categories and efficiency requirements

There are a number of different lighting products covered by federal purchasing requirements. ENERGY STAR covers residential lighting and some commercial lighting products, including:

- Compact fluorescent and LED light bulbs
- Under-cabinet, accent, task, and downlighting (including recessed, surface mount, and pendant)

Other commercial lighting products are covered by FEMP, including:

- Exterior lighting
- Suspended luminaires
- Fluorescent luminaires (like those used in an office building)
- Industrial lighting
- LED commercial and industrial luminaires

In some cases it may be challenging to know which product category a given lighting product falls under. A good way to think about it is whether you could go buy the item at a retail store like Home Depot. If so, it is probably covered by ENERGY STAR and you should look for the ENERGY STAR label. If not, it is likely covered by FEMP. FEMP sets minimum requirements in Luminaire Efficacy Rating (LER), which is measured in lumens/watt. The efficiency requirements for FEMP-designated lighting products are included at the end of this section.

## Step 2: Incorporate efficiency requirements into the solicitation

|                          |   |
|--------------------------|---|
| <b>Market research</b>   |   |
| <input type="checkbox"/> | Include language in your sources sought notices that emphasizes the requirement for lighting equipment to be energy-efficient.  |
| <b>Presolicitation</b>   |   |
| <input type="checkbox"/> | Include language in the presolicitation notice emphasizes the requirement for lighting to be energy-efficient.  |
| <input type="checkbox"/> | If you know which covered product categories will be in your solicitation, list them here with the requirement that they be ENERGY STAR certified or meet FEMP-designated efficiency requirements. Or, attach the full list of covered product categories.  |
| <b>Solicitation</b>      |   |
| <input type="checkbox"/> | <b>Section C/Statement of Work:</b> Prioritize energy efficiency in your statement of work so offerors are immediately aware of the importance of the requirement. Mention in your statement of work that all lighting products delivered must be ENERGY STAR certified or meet FEMP-designated LER requirements. |

|                          |  |
|--------------------------|--|
| <input type="checkbox"/> | <b>Section C/Specifications:</b> Specify the requirement for products to be ENERGY STAR certified or meet FEMP-designated efficiency requirements in the same section as other product characteristics, like size and other features. Include a copy of the FEMP efficiency requirements if applicable.  |
| <input type="checkbox"/> | <b>Section I:</b> Include FAR clause 52.223-15 in the contract clauses section.  |
| <input type="checkbox"/> | <b>Section L:</b> Require offerors to submit a list of covered product categories included in the contract and demonstrate compliance with efficiency requirements. This means showing that the given products are on the ENERGY STAR Product Finder page or cut sheets that include the LER rating for FEMP-designated products. Allow the offeror to submit multiple products. |
| <input type="checkbox"/> | <b>Section M:</b> Evaluate offers based on identification of all covered product categories and demonstrated compliance with requirement. Emphasize that technical acceptability means products meet FEMP efficiency requirements or are ENERGY STAR certified.  |

### Step 3: Verify the delivery of efficient products

Compare the invoices you receive to the cut sheets the vendor provided. Ensure that lighting products covered by ENERGY STAR display the ENERGY STAR label. Ensure that for FEMP-designated products that the LER on the cut sheet meets or exceeds the efficiency requirement. Mark the contract as containing energy-efficient products in the sustainability data field in FPDS. Once verified, mark the delivered products as energy-efficient in property management records, if applicable.

### Additional resources

The Green Procurement Compilation provides an overview of buying guidance for lighting products: <https://sftool.gov/greenprocurement/green-products/22/lighting-ceiling-fans/0>.

## Excellence in contracting: Department of the Army, Army Contracting Command

In constructing a new enclosed walkway between buildings at an army depot in Pennsylvania, the Department of the Army requested information from its vendors to determine whether proposed lighting packages met FEMP and ENERGY STAR efficiency requirements. In the technical specifications describing requirements for fluorescent luminaires and other lighting products, the document required the contractor to submit documentation for ENERGY STAR certified equipment included under the specification and data indicating lumens/watt efficiency.

## FEMP efficiency requirements for lighting product categories as of June 2017

Table 1. Exterior lighting efficiency requirements

| Category                                     | Luminaire Efficacy (lumens/W) |
|--|-------------------------------|
| Fuel Pump Canopy Luminaires                  | ≥ 93                          |
| Parking Garage Luminaires                    | ≥ 106                         |
| Pole/Arm-Mounted Area and Roadway Luminaires | ≥ 106                         |
| Pole/Arm-Mounted Decorative Luminaires       | ≥ 94                          |
| Wall-Mounted Luminaires                      | ≥ 102                         |
| Bollards                                     | ≥ 45                          |

Table 2. Fluorescent luminaires efficiency requirements (LER in lumens/watt)

| Luminaire Type and Size | Optical Element | Luminaire Efficacy Rating (lumens/watt) |      |      |           |             |
|-------------------------|-----------------|---|------|------|-----------|-------------|
|                         |                 | T5HO                                    | T5   | T8   | Twin Tube | T8 U-Shaped |
| Recessed 1'x4'          | Lensed          | ≥ 56                                    | ≥ 70 | ≥ 73 |           |             |
|                         | Louvered        | ≥ 55                                    | ≥ 68 | ≥ 65 |           |             |
|                         | Other           | ≥ 69                                    | ≥ 73 | ≥ 85 |           |             |
| Recessed 2'x4'          | Lensed          | ≥ 73                                    | ≥ 80 | ≥ 89 |           |             |
|                         | Louvered        | ≥ 66                                    | ≥ 65 | ≥ 81 |           |             |
|                         | Other           | ≥ 65                                    | ≥ 75 | ≥ 88 |           |             |
| Surface-Mounted 1'x4'   | Any             | ≥ 66                                    | ≥ 69 | ≥ 82 |           |             |
| Surface-Mounted 2'x4'   | Any             | ≥ 82                                    | ≥ 78 | ≥ 78 |           |             |
| Strip Light 1'x4'       | =====           | ≥ 73                                    | ≥ 82 | ≥ 89 |           |             |
|                         |                 | T5HO                                    | T5   | T8   | Twin Tube | T8 U-Shaped |
| Recessed 2'x2'          | Lensed          | ≥ 66                                    | ≥ 69 | ≥ 72 | ≥ 71      | ≥ 75        |
|                         | Louvered        | ≥ 57                                    | ≥ 63 | ≥ 64 | ≥ 62      | ≥ 65        |
|                         | Other           | ≥ 57                                    | ≥ 70 | ≥ 64 | ≥ 63      | N/A         |
| Surface-Mounted 2'x2'   | Any             | ≥ 66                                    | ≥ 65 | ≥ 64 | ≥ 67      | ≥ 66        |

<sup>a</sup> "Other" indicates a primary optical element other than a lens or louver, such as a perforated diffuser or a combination of optical elements (not including the reflector or housing).  
<sup>b</sup> "Any" indicates any optical element.  
<sup>c</sup> N/A indicates too few models in the dataset to propose an ER for this lamp type.

**Table 3. Industrial luminaires efficiency requirements**

| <b>High Bay<sup>1</sup>, Linear, Fluorescent</b> |                        |  |                |
|--|------------------------|--|----------------|
| <b>Distribution Pattern<sup>a</sup></b>          | <b>Luminaire Size</b>  | <b>Luminaire Efficacy Rating (lumens/watt)</b> |                |
|  |                        | <b>F32T8</b>                                   | <b>F54T5HO</b> |
| Direct   | 1' x 4'                | ≥ 92   | ≥ 78           |
|  | 2' x 4'                |  | ≥ 81           |
| Semi-Direct                                      | 2' x 4'                |  | ≥ 70           |
| <b>Low Bay<sup>2</sup>, Linear, Fluorescent</b>  |                        |  |                |
| Direct and Semi-Direct                           | 1' x 4'                | ≥ 86   |                |
|  | 2' x 4'                | ≥ 85   |                |
|  | 1' x 8'                | ≥ 88   |                |
| <b>High Bay, Non-Linear, Metal Halide</b>        |                        |  |                |
| <b>Distribution Pattern</b>                      | <b>Input Watts (W)</b> | <b>Luminaire Efficacy Rating (lumens/watt)</b> |                |
|  |                        | <b>Closed</b>                                  | <b>Open</b>    |
| Direct   | < 150                  | ≥ 51   | ≥ 54           |
|  | 150 - 399              | ≥ 57   | ≥ 67           |
|  | 400 - 999              | ≥ 65   | ≥ 72           |
|  | ≥ 1000                 | ≥ 80   | ≥ 81           |
| Semi-Direct                                      | < 150                  | ≥ 65   | ≥ 68           |
|  | 150 - 399              | ≥ 63   | ≥ 80           |
|  | 400 - 999              | ≥ 74   | ≥ 81           |
|  | ≥ 1000                 | N/A <sup>b</sup>                               | ≥ 94           |
| <b>Low Bay, Non-Linear, Metal Halide</b>         |                        |  |                |
| Direct and Semi-Direct                           | < 150                  | ≥ 58   | ≥ 60           |
|  | 150 - 399              | ≥ 71   | ≥ 67           |
|  | 400 - 999              | ≥ 75   | ≥ 74           |
|  | ≥ 1000                 | N/A <sup>b</sup>                               | ≥ 81           |

<sup>a</sup> Suspended luminaires are designated into categories that differ by the percentage of light emitted in a direction above the horizontal plane of the luminaire. The categories used in this efficiency requirement include direct (0 – 10% upward component) and semi-direct (10 – 40% upward component).

<sup>b</sup> N/A indicates too few models in the dataset to propose an ER for this lamp type.

**Table 4. Suspended luminaires efficiency requirements**

| Optical Element    | Distribution Pattern <sup>a</sup> | Luminaire Efficacy Rating (lumens/watt) |      |      |
|--------------------|-----------------------------------|---|------|------|
|                    |                                   | T8                                      | T5HO | T5   |
| Lensed             | Direct                            | ≥ 81                                    | ≥ 70 | ≥ 64 |
|                    | Semi-Direct                       | ≥ 90                                    | ≥ 68 | N/A  |
|                    | General Diffuse                   | N/A <sup>c</sup>                        | N/A  |      |
|                    | Semi-Indirect                     | ≥ 93                                    | ≥ 74 |      |
|                    | Indirect                          | ≥ 87                                    | ≥ 71 |      |
| Louvered           | Direct                            | ≥ 58                                    | ≥ 51 | ≥ 56 |
|                    | Semi-Direct                       | ≥ 61                                    | ≥ 65 | N/A  |
|                    | General Diffuse                   | ≥ 69                                    | ≥ 59 |      |
|                    | Semi-Indirect                     | ≥ 87                                    | ≥ 70 |      |
|                    | Indirect                          | ≥ 76                                    | ≥ 55 |      |
| Other <sup>b</sup> | Direct                            | ≥ 93                                    | ≥ 81 | N/A  |
|                    | Semi-Direct                       | ≥ 80                                    | ≥ 70 |      |
|                    | General Diffuse                   | ≥ 73                                    | N/A  |      |
|                    | Semi-Indirect                     | ≥ 86                                    | ≥ 71 |      |
|                    | Indirect                          | ≥ 87                                    | ≥ 73 |      |

<sup>a</sup> Suspended luminaires are designated into five categories that differ by the percentage of light emitted in a direction above the horizontal plane of the luminaire. These categories are direct (0%-10% upward component), semi-direct (10%-40% upward), general diffuse (evenly around), semi-indirect (60%-90% upward) and indirect (90%-100% upward).

<sup>b</sup> Other indicates a primary optical element other than a lens or louver, such as a perforated diffuser or a combination of optical elements (not including the reflector or housing).

<sup>c</sup> N/A indicates too few models in the dataset to propose an ER for this lamp type.

**Table 5. LED luminaires efficiency requirements**

| <b>LED Luminaire Type</b>                | <b>Minimum Light Output</b> | <b>Luminous Efficacy (lumens/watt)</b> |
|--|-----------------------------|--|
| Commercial - Linear Ambient <sup>1</sup> | ≥ 375 Lumens/Foot           | ≥ 119 Lm/W                             |
| Commercial - 1'x4' Troffers              | ≥ 1,500 Lumens              | ≥ 119 Lm/W                             |
| Commercial - 2'x2' Troffers              | ≥ 2,000 Lumens              | ≥ 111 Lm/W                             |
| Commercial - 2'x4' Troffers              | ≥ 3,000 Lumens              | ≥ 115 Lm/W                             |
| Industrial – Low Bay                     | ≥ 5,000 to < 10,000 Lumens  | ≥ 109 Lm/W                             |
| Industrial – High Bay                    | ≥ 10,000 Lumens             | ≥ 128 Lm/W                             |

## Model Contract Language

### **Section C – Performance Work Statement/Descriptions, Specifications**

The Contractor shall comply with Sections 524 and Sections 525 of the Energy Independence and Security Act of 2007; Section 104 of the Energy Policy Act of 2005; Executive Order 13693, “Planning for Federal Sustainability in the Next Decade,” dated March 19, 2015; and the Federal Acquisition Regulation (FAR) to provide ENERGY STAR certified and FEMP-designated lighting products.

The Contractor shall ensure that lighting installation and/or replacement services are performed with products that meet and/or exceed ENERGY STAR certified and FEMP-designated guidelines. The Contractor shall provide products that earn the ENERGY STAR label and meet the ENERGY STAR guidelines for energy efficiency. The Contractor shall provide products that meet FEMP-designated efficiency requirements. The Contractor shall use these products to the maximum extent possible without jeopardizing the intended end use or detracting from the overall quality delivered to the end user.

The following is a list of lighting products for which ENERGY STAR certified and FEMP-designated products are available. It is not all-inclusive and is evolving; the most current list is available at [energy.gov/eere/femp/covered-product-categories](http://energy.gov/eere/femp/covered-product-categories).

- Fluorescent luminaires
- Suspended luminaires
- Exterior lighting
- Industrial luminaires
- LED luminaires

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<sup>1</sup> Includes luminaires with both direct and indirect lighting components.

- Compact fluorescent and LED light bulbs
- Commercial and residential under-cabinet, accent, task, and downlighting

The Contractor shall comply with the clause at FAR 52.223-15, Energy Efficiency In Energy-Consuming Products.

The Contractor shall report quarterly on the purchases of ENERGY STAR certified and FEMP-designated products in the performance of this contract. The report shall include the following:

- A list of all energy consuming products purchased during the past quarter;
- A list of all ENERGY STAR certified and FEMP-designated products purchased during the past quarter;
- Manufacturer cut sheets or other documentation that confirms the products comply with efficiency requirements.

### **Section I – Contract Clause**

**(a) Definition.** As used in this clause—

*Energy-efficient product*—(1) Means a product that—

(i) Meets Department of Energy and Environmental Protection Agency criteria for use of the Energy Star trademark label; or

(ii) Is in the upper 25 percent of efficiency for all similar products as designated by the Department of Energy’s Federal Energy Management Program.

(2) The term “product” does not include any energy-consuming product or system designed or procured for combat or combat-related missions (42 U.S.C. 8259b).

**(b)** The Contractor shall ensure that energy-consuming products are energy efficient products (*i.e.*, ENERGY STAR ® products or FEMP-designated products) at the time of contract award, for products that are—

(1) Delivered;

(2) Acquired by the Contractor for use in performing services at a federally-controlled facility;

(3) Furnished by the Contractor for use by the Government; or

(4) Specified in the design of a building or work, or incorporated during its construction, renovation, or maintenance.

**(c)** The requirements of paragraph (b) apply to the Contractor (including any subcontractor) unless—

(1) The energy-consuming product is not listed in the ENERGY STAR ® Program or FEMP; or

(2) Otherwise approved in writing by the Contracting Officer.

**(d)** Information about these products is available for—

(1) ENERGY STAR ® at <http://www.energystar.gov/products>; and

(2) FEMP at [http://www1.eere.energy.gov/femp/procurement/ep\\_requirements.html](http://www1.eere.energy.gov/femp/procurement/ep_requirements.html).

### **Section L – Instructions to Offerors**

In the technical proposal, the Offeror shall identify the ENERGY STAR certified and FEMP-designated products to be purchased and supplied or used under this contract. The Offeror shall

demonstrate that these products to be supplied or used under this contract comply with the ENERGY STAR guidelines and FEMP-designated guidelines.

The Offeror shall document prior experience in specifying, purchasing, and using ENERGY STAR certified and FEMP-designated lighting products. The Offeror shall provide a list of all relevant contracts over the past two years involving the specification, purchase, and use of ENERGY STAR certified and FEMP-designated lighting products.

If Offeror is going to subcontract any work, state sub's experience in the purchasing and use of ENERGY STAR certified and FEMP-designated products.

***Section M – Evaluation Factors for Award***

***Technical Approach/ Technical Evaluation Factor***

The Government will evaluate the Offeror's technical approach for fulfilling renovation work with an emphasis of the following areas:

1. Identification of all ENERGY STAR certified and FEMP-designated products to be used and installed in the performance of this contract; and
2. The Offeror's proposed past performance experience with the use of ENERGY STAR certified and FEMP-designated lighting products.

The Agency's utility price is [ ] \$/kWh for use in lifecycle cost and energy savings analysis.

## Building Renovation and HVAC/Water Heating Equipment Replacement and/or Installation Services

### Step 1: Identify covered product categories and efficiency requirements

HVAC and water heating equipment often needs to be replaced on its own or in the course of building renovation. FEMP covers many larger HVAC and water heating product categories:

- Air-cooled electric chillers
- Water-cooled electric chillers
- Commercial boilers ( $\geq 300,000$  BTU/h and  $\leq 10,000,000$  BTU/h)
- Electric resistance water heaters

Other air conditioning, space heating, and water heating equipment is covered by ENERGY STAR:

- Commercial water heaters
- Residential gas, solar, and geothermal water heaters
- Residential boilers ( $\leq 300,000$  BTU/h)
- Residential furnaces
- Commercial and residential air conditioners and heat pumps
- Room air conditioners

It is especially important to pay attention to the size of the equipment you are specifying to identify which efficiency requirements apply, or if they apply at all. For example, there are no federal efficiency requirements for some individual components of HVAC systems such as condensing units, air handling units, or HVAC controls systems. FEMP's Minimum Efficiency Requirements Tables for Heating and Cooling Product Categories, included in the appendix to this document, provide efficiency requirements for all heating and cooling equipment covered by ENERGY STAR and FEMP.

## Step 2: Incorporate efficiency requirements into the solicitation

| <b>Market research</b>   |  |
|--------------------------|--|
| <input type="checkbox"/> | Include language in your sources sought notice that emphasizes the requirement for all HVAC and water heating equipment to be FEMP-designated or ENERGY STAR certified.  |
| <b>Presolicitation</b>   |  |
| <input type="checkbox"/> | Include language in the presolicitation notice emphasizes the requirement for all HVAC and water heating equipment to be ENERGY STAR certified or FEMP-designated.   |
| <input type="checkbox"/> | If you know which covered product categories will be in your solicitation, list them here with the appropriate efficiency requirement. You can also attach the Minimum Efficiency Requirements Tables for Heating and Cooling Product Categories, which list all the covered product categories and associated efficiency requirements for HVAC equipment. |
| <b>Solicitation</b>      |  |
| <input type="checkbox"/> | <b>Section C/Statement of Work:</b> Prioritize energy efficiency in your statement of work so offerors are immediately aware of the importance of the requirement. Mention in your statement of work that HVAC and water heating equipment should be ENERGY STAR certified or meet FEMP-designated efficiency levels.                                      |
| <input type="checkbox"/> | <b>Section C/Specifications:</b> If you are specifying the equipment the vendor will use, specify the efficiency requirements in the same section as other product characteristics. You can include the Minimum Efficiency Requirements Tables for Heating and Cooling Product Categories, in this section.  |
| <input type="checkbox"/> | <b>Section I:</b> Include FAR clause 52.223-15 in the contract clauses section.  |
| <input type="checkbox"/> | <b>Section L:</b> Require offerors to submit a list of covered product categories included in the contract and demonstrate compliance with efficiency requirements. This means either showing that a product is on the ENERGY STAR Product Finder page or meets FEMP-designated efficiency requirements. Allow the offeror to submit multiple products.    |
| <input type="checkbox"/> | <b>Section M:</b> Evaluate offers based on identification of all covered product categories and demonstrated compliance with requirement. Emphasize that technical acceptability means products meet FEMP efficiency requirements or are ENERGY STAR certified.  |

## Step 3: Verify the delivery of efficient products

Confirm that the delivered products match the cut sheets provided and are ENERGY STAR certified or meet FEMP-designated efficiency requirements. Mark the contract as containing energy-efficient products in the sustainability data field in FPDS. Once verified, mark the delivered products as energy-efficient in property management records, if applicable.

### Additional Resources

The Green Procurement Compilation provides an overview of buying guidance for HVAC and other mechanical equipment: <https://sftool.gov/greenprocurement/green-products/24/hvacmechanical/0>.

FEMP has developed Minimum Efficiency Requirements Tables for Heating and Cooling Product Categories, included in the appendix of this document and on the FEMP website, for inclusion in solicitations for HVAC equipment: <http://energy.gov/eere/femp/incorporate-minimum-efficiency-requirements-heating-and-cooling-products-federal>.

## **Excellence in contracting: Department of the Interior, National Park Service**

The National Park Service issued a solicitation in August 2015 for services to procure and install a new heat pump and new air conditioner at two of its facilities. The solicitation document included a number of components to help ensure that the National Park Service would receive efficient products, such as:

1. The Instructions to Offerors required contractors to provide specifications/cut sheets for the proposed heat pump and cooling system
2. The evaluation factors defined the standard for technical acceptability as follows:  
*“Both proposed products are Energy Star rated, meeting the requirements as outlined in Energy Star.gov for Heating Seasonal Performance Factor (HSPF), Season Energy Efficiency Ratio (SEER) and Energy Efficient Ratio (EER). Specifications shall clearly define HSPF, SEER, and EER ratings.”*

## Model Contract Language

### **Section C – Performance Work Statement/Descriptions, Specifications**

The Contractor shall comply with Sections 524 and Sections 525 of the Energy Independence and Security Act of 2007; Section 104 of the Energy Policy Act of 2005; Executive Order 13693, “Planning for Federal Sustainability in the Next Decade,” dated March 19, 2015; and the Federal Acquisition Regulation (FAR) to provide ENERGY STAR certified and FEMP-designated products in performance of renovation and replacement services.

The Contractor shall ensure that building renovation and HVAC/water heating replacement/installation services are performed with products that meet and/or exceed ENERGY STAR certified and FEMP-designated guidelines. The Contractor shall provide products that earn the ENERGY STAR label and meet the ENERGY STAR guidelines for energy efficiency. The Contractor shall provide products that meet FEMP-designated efficiency requirements. The Contractor shall use these products to the maximum extent possible without jeopardizing the intended end use or detracting from the overall quality delivered to the end user.

The following is a list of HVAC/water heating products for which ENERGY STAR certified and FEMP-designated products are available. It is not all-inclusive and is evolving; the most current list is available at [energy.gov/eere/femp/covered-product-categories](https://www.energy.gov/eere/femp/covered-product-categories).

- Air Conditioners
- Boilers
- Chillers
- Furnaces
- Heat Pumps
- Water heaters

The Contractor shall comply with the clause at FAR 52.223-15, Energy Efficiency In Energy-Consuming Products.

The Contractor shall report quarterly on the purchases of ENERGY STAR certified and FEMP-designated products in the performance of this contract. The report shall include the following:

- A list of all energy consuming products purchased during the past quarter;
- A list of all ENERGY STAR certified and FEMP-designated products purchased during the past quarter;
- Manufacturer cut sheets or other documentation that confirms the products comply with efficiency requirements.

### **Section I – Contract Clause**

**(a) Definition.** As used in this clause—

*Energy-efficient product*—(1) Means a product that—

- (i)** Meets Department of Energy and Environmental Protection Agency criteria for use of the Energy Star trademark label; or

- (ii) Is in the upper 25 percent of efficiency for all similar products as designated by the Department of Energy’s Federal Energy Management Program.
  - (2) The term “product” does not include any energy-consuming product or system designed or procured for combat or combat-related missions (42 U.S.C. 8259b).
- (b) The Contractor shall ensure that energy-consuming products are energy efficient products (*i.e.*, ENERGY STAR ® products or FEMP-designated products) at the time of contract award, for products that are—
- (1) Delivered;
  - (2) Acquired by the Contractor for use in performing services at a Federally-controlled facility;
  - (3) Furnished by the Contractor for use by the Government; or
  - (4) Specified in the design of a building or work, or incorporated during its construction, renovation, or maintenance.
- (c) The requirements of paragraph (b) apply to the Contractor (including any subcontractor) unless—
- (1) The energy-consuming product is not listed in the ENERGY STAR ® Program or FEMP; or
  - (2) Otherwise approved in writing by the Contracting Officer.
- (d) Information about these products is available for—
- (1) ENERGY STAR ® at <http://www.energystar.gov/products>; and
  - (2) FEMP at [http://www1.eere.energy.gov/femp/procurement/eep\\_requirements.html](http://www1.eere.energy.gov/femp/procurement/eep_requirements.html).

**Section L – Instructions to Offerors**

In the technical proposal, the Offeror shall identify the ENERGY STAR certified and FEMP-designated products to be purchased and supplied or used under this contract. The Offeror shall demonstrate that these products to be supplied or used under this contract comply with the ENERGY STAR guidelines and FEMP-designated guidelines.

The Offeror shall document prior experience in specifying, purchasing, and using ENERGY STAR certified and FEMP designated products. The Offeror shall provide a list of all relevant contracts over the past two years involving the specification, purchase, and use of ENERGY STAR certified and FEMP designated products.

If Offeror is going to subcontract any work, state sub’s experience in the purchasing and use of ENERGY STAR certified and FEMP-designated products.

**Section M – Evaluation Factors for Award**

**Technical Approach/ Technical Evaluation Factor**

The Government will evaluate the Offeror’s technical approach for fulfilling renovation work with an emphasis of the following areas:

1. Identification of all ENERGY STAR certified and FEMP-designated products to be used and installed in the performance of this construction contract; and
2. The Offeror’s proposed past performance experience with the use of ENERGY STAR certified and FEMP-designated products in renovation or construction projects.

The Agency’s utility price is [ ] \$/kWh for use in lifecycle cost and energy savings analysis.

## Architecture/Engineering and Design-Build/Design-Bid-Build Services

### Step 1: Identify covered product categories and efficiency requirements

In the case of architecture/engineering or design-build/design-bid-build services, buyers do not have the opportunity to identify the specific equipment that will be purchased as part of the project. This means that you will need to communicate the federal efficiency requirements even more explicitly in the solicitation to ensure that you receive efficient equipment later on.

### Step 2: Incorporate efficiency requirements into the solicitation

| Market research   |
|---|
| <input type="checkbox"/> Include language in your sources sought notice that emphasizes the requirement for energy-efficient design, including efficient equipment.   |
| Presolicitation   |
| <input type="checkbox"/> Include language in your presolicitation notice that emphasizes the requirement that equipment to be included in future projects be high efficiency. You can also attach the full list of covered product categories.  |
| Solicitation  |
| <input type="checkbox"/> <b>Section C/Statement of Work/Performance Work Statement:</b> Require contractors to use life-cycle cost analysis in their design approach, and to use ENERGY STAR or FEMP-designated products when applicable. You can also attach the HVAC Equipment Efficiency Requirements table, which lists all the covered product categories and associated efficiency requirements for HVAC equipment. |
| <input type="checkbox"/> <b>Section I:</b> Include FAR clause 52.223-15 in the contract clauses section.  |
| <input type="checkbox"/> <b>Section L:</b> Require offerors to include a narrative that identifies how they intend to meet the energy-efficient purchasing requirement. In a two-phase proposal, you can request cut sheets for a selection of the proposed HVAC and lighting equipment to demonstrate compliance.  |
| <input type="checkbox"/> <b>Section M:</b> Evaluate offers based on the offeror’s ability to design a building, renovation, or repair that includes FEMP-designated and ENERGY STAR certified equipment, as applicable.   |

### Step 3: Verify the delivery of efficient products

At the 35% design phase, require a list from the contractor of the equipment expected to be used in the project that includes information that confirms it is either ENERGY STAR certified or meets FEMP efficiency requirements. Mark the contract as containing energy-efficient products in the sustainability data field in FPDS. Once verified, mark the delivered products as energy-efficient in property management records, if applicable.

### FEMP-Designated efficiency requirements

FEMP’s Minimum Efficiency Requirements Tables for Heating and Cooling Product Categories summarize all the FEMP and ENERGY STAR requirements for federal buyers for HVAC and

water heating equipment. Include this table as part of your solicitation package for vendor reference.

## Excellence in contracting: Department of Veterans Affairs, Nashville Veterans Affairs Medical Center

The Department of Veterans Affairs demonstrated how to incorporate efficiency requirements from the beginning of the procurement process in a presolicitation notice for architecture/engineering services to renovate an emergency room in October 2014. As is typical with A/E contracts, the presolicitation included information for potential offerors to submit SF330 forms to the agency. In the presolicitation notice, Veterans Affairs emphasized energy efficiency as a priority and required offerors to demonstrate their ability to meet the requirements in a number of ways, including:

1. Requiring in the Statement of Tasks that: *“Energy efficiency and cost savings shall be considered in all design decisions throughout the entire Emergency Room space.”*
2. Attaching the “TVHS Energy Requirements and Design Guide” and requiring compliance with the guide in the Basis for Design.
3. Mentioning energy conservation twice in the evaluation factors:
  - a. *“Specialized experience and technical competence in the type of work required, including, where appropriate, experience in energy conservation, pollution prevention, waste reduction, and the use of recovered materials...Provide a detailed narrative of up to 5 (maximum) relevant projects completed within the last 5 years that best illustrate overall team experience relevant to this projects scope. List projects including, where appropriate, experience in energy conservation, HVAC control and design, architectural, plumbing, electrical and civil design, project control, medical facility design work and estimating effectiveness.”*
  - b. *“Energy Conservation/Sustainable Design Experience and Credentials. List all design members who have LEED AP credentials. List examples of projects designed with minimum LEED silver certification for projects with similar size and scope.”*

Although the presolicitation notice did not specifically mention ENERGY STAR certified and FEMP-designated requirements, the agency is communicating to vendors that energy conservation and efficiency priorities, and is developing a short list of potential contractors that have already demonstrated they can meet these requirements.

## Model Contract Language

### Section C – Performance Work Statement/Descriptions, Specifications

The Contractor shall comply with Sections 524 and Sections 525 of the Energy Independence and Security Act of 2007; Section 104 of the Energy Policy Act of 2005; Executive Order 13693, “Planning for Federal Sustainability in the Next Decade,” dated March 19, 2015; and the Federal Acquisition Regulation (FAR) to provide ENERGY STAR certified and FEMP-designated products in design for renovations or new construction.

The Contractor shall prioritize the inclusion of energy-efficient equipment in developing plans and specifications for projects. A number of covered product categories are often specified in design projects, such as:

- Chillers, boilers, air conditioners, and heat pumps
- Water heaters
- Interior and exterior lighting products

The Contractor shall specify products that earn the ENERGY STAR label and meet the ENERGY STAR guidelines for energy efficiency and/or that meet FEMP-designated efficiency requirements. A full list of product categories subject to efficiency requirement is available at the most current list is available at [energy.gov/eere/femp/covered-product-categories](http://energy.gov/eere/femp/covered-product-categories). The Contractor shall include these products in design to the maximum extent possible without jeopardizing the intended end use or detracting from the overall quality delivered to the end user.

### Section I – Contract Clause

**(a) Definition.** As used in this clause—

*Energy-efficient product*—(1) Means a product that—

- (i) Meets Department of Energy and Environmental Protection Agency criteria for use of the Energy Star trademark label; or
  - (ii) Is in the upper 25 percent of efficiency for all similar products as designated by the Department of Energy’s Federal Energy Management Program.
- (2) The term “product” does not include any energy-consuming product or system designed or procured for combat or combat-related missions (42 U.S.C. 8259b).

**(b)** The Contractor shall ensure that energy-consuming products are energy efficient products (*i.e.*, ENERGY STAR ® products or FEMP-designated products) at the time of contract award, for products that are—

- (1) Delivered;
- (2) Acquired by the Contractor for use in performing services at a Federally-controlled facility;
- (3) Furnished by the Contractor for use by the Government; or
- (4) Specified in the design of a building or work, or incorporated during its construction, renovation, or maintenance.

**(c)** The requirements of paragraph (b) apply to the Contractor (including any subcontractor) unless—

- (1) The energy-consuming product is not listed in the ENERGY STAR ® Program or FEMP; or
- (2) Otherwise approved in writing by the Contracting Officer.

(d) Information about these products is available for—

- (1) ENERGY STAR ® at <http://www.energystar.gov/products>; and
- (2) FEMP at [http://www1.eere.energy.gov/femp/procurement/eep\\_requirements.html](http://www1.eere.energy.gov/femp/procurement/eep_requirements.html).

### ***Section L – Instructions to Offerors***

In the technical proposal, the Offeror shall include a narrative that describes how the contractor intends to include lifecycle cost analysis and ENERGY STAR certified/FEMP-designated products in the design approach.

The Offeror shall document prior experience in specifying, purchasing, and using ENERGY STAR certified and FEMP-designated products. The Offeror shall provide a list of all relevant contracts over the past two years involving the design of new construction or renovation that included the use of ENERGY STAR certified and FEMP-designated products.

If Offeror is going to subcontract any work, state sub’s experience in the purchasing and use of ENERGY STAR certified and FEMP-designated products.

### ***Section M – Evaluation Factors for Award***

#### ***Technical Approach/ Technical Evaluation Factor***

The Government will evaluate the Offeror’s technical approach for fulfilling design work with an emphasis of the following areas:

1. The Offeror’s ability to incorporate efficiency into building design, renovation, and repair as described in the Offeror’s narrative; and
2. The Offeror’s proposed past performance experience with the incorporation of ENERGY STAR certified and FEMP-designated products in design and/or construction for buildings, renovations, and/or repairs.

The Agency’s utility price is [ ] \$/kWh for the Offeror’s use in lifecycle cost and energy savings analysis.

## Operations and Maintenance Services

### Step 1: Identify covered product categories and efficiency requirements

Almost any covered product category could be included under an operations and maintenance (O&M) contract, whether for a specific product type (e.g. HVAC equipment) or O&M of a building overall. However, in the case of O&M services, the government does not always have the opportunity to identify the specific equipment that may be purchased over the course of the contract. Although O&M services do not explicitly call for purchases of new equipment, there may be times when the O&M contractor replaces equipment. In these cases, it is important that you have communicated the requirement to use only FEMP-designated or ENERGY STAR certified equipment.

### Step 2: Incorporate efficiency requirements into the solicitation

| Market research          |   |
|--------------------------|---|
| <input type="checkbox"/> | Include language in your sources sought notice that emphasizes the agency’s interest in minimizing energy use in the maintenance and operation of buildings and equipment.  |
| Presolicitation          |   |
| <input type="checkbox"/> | Include language in your presolicitation notice that emphasizes the requirement for equipment to be maintained to achieve high efficiency. You can also attach the full list of covered product categories.                           |
| Solicitation             |   |
| <input type="checkbox"/> | <b>Section C/Statement of Work/Performance Work Statement:</b> Require contractors to use lifecycle cost analysis in making decisions about investment in products, and to use ENERGY STAR or FEMP-designated products as applicable. |
| <input type="checkbox"/> | <b>Section I:</b> Include FAR clause 52.223-15 in the contract clauses section.   |
| <input type="checkbox"/> | <b>Section L:</b> Require offerors to include a narrative that identifies how they intend to meet the energy-efficient purchasing requirement.  |
| <input type="checkbox"/> | <b>Section M:</b> Evaluate offers based on the offeror’s proposed sustainability plan and ability to maintain products efficiently and purchase efficient products as needed.   |

### Step 3: Verify the delivery of efficient products

Require the contractor to report quarterly on any equipment installed that is subject to efficiency requirements. Once verified, mark the delivered products as energy-efficient in property management records, if applicable.

## Excellence in contracting: Department of the Navy, Naval Facilities Engineering Command

The Department of the Navy's Naval Facilities Engineering Command issued a solicitation in June 2015 for maintenance services on HVAC equipment. The solicitation included requirements for the contractor to purchase efficient products and utilize lifecycle cost analysis in multiple contract sections. For example, in a subsection of Section C on Management and Administration, the documented stated: *"The Contractor shall use lifecycle cost analysis in making decisions about investments in products, services, construction and other projects to lower Federal Government's costs and reduce energy consumption. The Contractor shall elect lifecycle cost effective Energy Star and other energy-efficient products when acquiring energy-using products. For product groups where Energy Star labels are not yet available, select products that are in upper 25 percent of energy efficiency as designated by the Federal Energy Management Program."*

Although the Navy did not have information on which specific products could potentially be purchased over the lifetime of the contract, the solicitation communicated clearly to the contractor that energy efficiency was a priority and that any procurements of energy-consuming products would be subject to efficiency requirements.

### Model Contract Language

#### **Section C – Performance Work Statement/Descriptions, Specifications**

The Contractor shall comply with Sections 524 and Sections 525 of the Energy Independence and Security Act of 2007; Section 104 of the Energy Policy Act of 2005; Executive Order 13693, "Planning for Federal Sustainability in the Next Decade," dated March 19, 2015; and the Federal Acquisition Regulation (FAR) to provide ENERGY STAR certified and FEMP-designated products in performance of operation and maintenance services.

The Contractor shall maintain the building or equipment in such a way to ensure that energy savings are maximized. Any replacement equipment required in the operation and maintenance of the building or equipment shall meet and/or exceed ENERGY STAR certified and FEMP-designated guidelines. The Contractor shall provide products that earn the ENERGY STAR label and meet the ENERGY STAR guidelines for energy efficiency. The Contractor shall provide products that meet FEMP-designated efficiency requirements. The Contractor shall use these products to the maximum extent possible without jeopardizing the intended end use or detracting from the overall quality delivered to the end user.

The following is a list of product types for which ENERGY STAR certified and FEMP-designated products are available.

- Heating and cooling products
- Water heating equipment
- IT & electronics

- Lighting products
- Appliances
- Commercial food service equipment

The Contractor shall comply with the clause at FAR 52.223-15, Energy Efficiency In Energy-Consuming Products.

The Contractor shall deliver a quarterly efficiency report that includes the following:

- A list of all energy consuming products purchased during the past quarter;
- A list of all ENERGY STAR certified and FEMP-designated products purchased during the past quarter;
- Manufacturer cut sheets or other documentation that confirms the products comply with efficiency requirements.

### **Section I – Contract Clause**

**(a) Definition.** As used in this clause—

*Energy-efficient product*—(1) Means a product that—

(i) Meets Department of Energy and Environmental Protection Agency criteria for use of the Energy Star trademark label; or

(ii) Is in the upper 25 percent of efficiency for all similar products as designated by the Department of Energy’s Federal Energy Management Program.

(2) The term “product” does not include any energy-consuming product or system designed or procured for combat or combat-related missions (42 U.S.C. 8259b).

**(b)** The Contractor shall ensure that energy-consuming products are energy efficient products (*i.e.*, ENERGY STAR ® products or FEMP-designated products) at the time of contract award, for products that are—

(1) Delivered;

(2) Acquired by the Contractor for use in performing services at a Federally-controlled facility;

(3) Furnished by the Contractor for use by the Government; or

(4) Specified in the design of a building or work, or incorporated during its construction, renovation, or maintenance.

**(c)** The requirements of paragraph (b) apply to the Contractor (including any subcontractor) unless—

(1) The energy-consuming product is not listed in the ENERGY STAR ® Program or FEMP; or

(2) Otherwise approved in writing by the Contracting Officer.

**(d)** Information about these products is available for—

(1) ENERGY STAR ® at <http://www.energystar.gov/products>; and

(2) FEMP at [http://www1.eere.energy.gov/femp/procurement/eep\\_requirements.html](http://www1.eere.energy.gov/femp/procurement/eep_requirements.html).

### **Section L – Instructions to Offerors**

In the technical proposal, the Offeror shall identify the ENERGY STAR certified and FEMP-designated products to be supplied and purchased or used under this contract. The Offeror shall

demonstrate that these products to be supplied or used under this contract comply with the ENERGY STAR guidelines and FEMP-designated guidelines.

The Offeror shall document prior experience in specifying, purchasing, and using ENERGY STAR certified and FEMP designated products. The Offeror shall provide a list of all relevant contracts over the past two years involving the specification, purchase, and use of ENERGY STAR certified and FEMP-designated products.

If Offeror is going to subcontract any work, state sub's experience in the purchasing and use of ENERGY STAR certified and FEMP-designated products.

### ***Section M – Evaluation Factors for Award***

#### ***Technical Approach/ Technical Evaluation Factor***

The Government will evaluate the Offeror's technical approach for fulfilling O&M work with an emphasis of the following areas:

1. Identification of all ENERGY STAR certified and FEMP-designated products to be used and installed in the performance of this operation and maintenance contract; and
2. The Offeror's proposed past performance experience with the use of ENERGY STAR certified and FEMP-designated products in operation and maintenance projects.

The Agency's utility price is [ ] \$/kWh for the Offeror's use in lifecycle cost and energy savings analysis.

## Food Services

### Step 1: Identify covered product categories and efficiency requirements

Food service solicitations often include one or more of the following covered product categories:

- Commercial refrigerators and freezers
- Commercial fryers
- Commercial griddles
- Ice machines, air-cooled or water-cooled
- Commercial ovens
- Hot food holding cabinets
- Commercial steamers or steam cookers

All of these covered product categories are covered by ENERGY STAR, with the exception of water-cooled ice-machines, which are covered by FEMP. For products covered by ENERGY STAR, you can find a list of certified products on the ENERGY STAR Product Finder page. Efficiency requirements for water-cooled ice-machines are included at the end of this section and on the FEMP website.

Many of these same items are also frequently procured as product purchases, rather than in the context of food services. The structure will be similar to that described in the Appliances section of this guide.

### Step 2: Incorporate efficiency requirements into the solicitation

| Market research          |   |
|--------------------------|---|
| <input type="checkbox"/> | Include language in your sources sought notices that emphasizes the requirement for any kitchen equipment to be ENERGY STAR certified or FEMP-designated.   |
| Presolicitation          |   |
| <input type="checkbox"/> | Include language in the presolicitation notice emphasizes the requirement for any food service equipment to be ENERGY STAR certified or FEMP-designated.  |
| <input type="checkbox"/> | If you know which covered product categories will be in your solicitation, list them here with the appropriate efficiency requirement. Or, attach the full list of covered product categories.  |
| Solicitation             |   |
| <input type="checkbox"/> | <b>Section C/Statement of Work:</b> Prioritize energy efficiency in your statement of work so offerors are immediately aware of the importance of the requirement. Mention in your statement of work that food service equipment should be ENERGY STAR certified or meet FEMP-designated efficiency levels.   |
| <input type="checkbox"/> | <b>Section C/Specifications:</b> If you are specifying the equipment the vendor will use, specify the efficiency requirements in the same section as other product characteristics. For example, when you state the required dimensions of a refrigerator, you should also require it to be ENERGY STAR certified. If you are not specifying the equipment the contractor will use, be sure to attach the list of covered product categories. |

|                          |   |
|--------------------------|---|
| <input type="checkbox"/> | <b>Section I:</b> Include FAR clause 52.223-15 in the contract clauses section.   |
| <input type="checkbox"/> | <b>Section L:</b> Require offerors to submit a list of covered product categories included in the contract and demonstrate compliance with efficiency requirements. This means either showing that a product is on the ENERGY STAR Product Finder page or meets FEMP-designated efficiency requirements. Allow the offeror to submit multiple products. |
| <input type="checkbox"/> | <b>Section M:</b> Evaluate offers based on identification of all covered product categories and demonstrated compliance with requirement. Emphasize that technical acceptability means products meet FEMP efficiency requirements or are ENERGY STAR certified.   |

### Step 3: Verify the delivery of efficient products

Confirm that the delivered products match the cut sheets provided and are ENERGY STAR certified, or, if a water-cooled ice machine is delivered, meets FEMP-designated efficiency levels. Mark the contract as containing energy-efficient products in the sustainability data field in FPDS. Once verified, mark the delivered products as energy-efficient in property management records, if applicable.

### FEMP-Designated efficiency requirements as of January 2016

Table 6. Water-cooled ice machine efficiency requirements

| WCIM Type           | Ice Harvest Rate         | Energy Use             | Potable Water Use     |
|---------------------|--------------------------|------------------------|-----------------------|
| Self Contained Unit | 50 to 100 lb/24 hours    | 8.1 kWh/100 lb or less | Requirement Suspended |
| Self Contained Unit | 101 to 150 lb/24 hours   | 7.3 kWh/100 lb or less | Requirement Suspended |
| Self Contained Unit | 151 to 200 lb/24 hours   | 6.6 kWh/100 lb or less | Requirement Suspended |
| Self Contained Unit | > 200 lb/24 hours        | 6.5 kWh/100 lb or less | Requirement Suspended |
| Ice Making Head     | 50 to 300 lb/24 hours    | 5.3 kWh/100 lb or less | Requirement Suspended |
| Ice Making Head     | 301 to 400 lb/24 hours   | 4.8 kWh/100 lb or less | Requirement Suspended |
| Ice Making Head     | 401 to 500 lb/24 hours   | 4.3 kWh/100 lb or less | Requirement Suspended |
| Ice Making Head     | 501 to 750 lb/24 hours   | 4.1 kWh/100 lb or less | Requirement Suspended |
| Ice Making Head     | 751 to 1,435 lb/24 hours | 3.5 kWh/100 lb or less | Requirement Suspended |
| Ice Making Head     | > 1,436 lb/24 hours      | 3.4 kWh/100 lb or less | Requirement Suspended |

### Model Contract Language

The Green Procurement Compilation has sample contract language for cafeteria & food services that incorporates efficiency requirements as well as other sustainable acquisition requirements. The model contract language is available here: <https://sftool.gov/greenprocurement/green-services/9/cafeteria-food-services>.

## Laundry Services

### Step 1: Identify covered product categories and efficiency requirements

Commercial and residential clothes washers are both covered by ENERGY STAR. Residential dryers are also covered by ENERGY STAR, although there is currently no efficiency requirement for commercial dryers.

### Step 2: Incorporate efficiency requirements into the solicitation

| Market research          |  |
|--------------------------|--|
| <input type="checkbox"/> | Include language in your sources sought notices that emphasizes the requirement for laundry equipment to be ENERGY-STAR certified.   |
| Presolicitation          |  |
| <input type="checkbox"/> | Include language in the presolicitation notice emphasizes the requirement for any laundry equipment to be ENERGY STAR certified.   |
| Solicitation             |  |
| <input type="checkbox"/> | <b>Section C/Statement of Work:</b> Prioritize energy efficiency in your statement of work so offerors are immediately aware of the importance of the requirement. Mention in your statement of work that laundry equipment should be ENERGY STAR certified or meet FEMP-designated efficiency levels.               |
| <input type="checkbox"/> | <b>Section C/Specifications:</b> If you are specifying the equipment the vendor will use, specify the efficiency requirements in the same section as other product characteristics. For example, when you state the required dimensions of a clothes washer, you should also require it to be ENERGY STAR certified. |
| <input type="checkbox"/> | <b>Section I:</b> Include FAR clause 52.223-15 in the contract clauses section.  |
| <input type="checkbox"/> | <b>Section L:</b> Require offerors to submit a list of covered product categories included in the contract and demonstrate compliance with efficiency requirements. This means showing that a product is on the ENERGY STAR Product Finder page. Allow the offeror to submit multiple products.                      |
| <input type="checkbox"/> | <b>Section M:</b> Evaluate offers based on identification of all covered product categories and demonstrated compliance with requirement. Emphasize that technical acceptability means products are ENERGY STAR certified.   |

### Step 3: Verify the delivery of efficient products

Confirm that the delivered products match the cut sheets provided and are ENERGY STAR certified. Mark the contract as containing energy-efficient products in the sustainability data field in FPDS. Once verified, mark the delivered products as energy-efficient in property management records, if applicable.

### Model Contract Language

The Green Procurement Compilation has sample contract language for laundry services that incorporates efficiency requirements as well as other sustainable acquisition requirements. The

model contract language is available here: <https://sftool.gov/greenprocurement/green-services/8/laundry-services>.

## **Excellence in contracting: Department of the Navy, United States Marine Corps**

The United States Marine Corps posted a solicitation for the purchase, installation, and maintenance of laundry equipment at a base. The solicitation included FAR clause 52.223-15 and required washers to be ENERGY STAR certified in the same section of the contract as other equipment details like washer size and color.

## Conclusion

The examples shown above reflect common projects that may include efficient products, but the topics covered in this guide are by no means exhaustive. Regardless of the product or project type, procurement teams can apply the same approaches outlined in this guide to communicate efficiency requirements to vendors, specify efficient products, and verify the delivery of compliant equipment. Similar principles can be used for other project types or contract vehicles. Key recommendations from this guide include:

- Incorporate efficiency into the entire procurement process, from acquisition planning to verification;
- Check the FEMP and ENERGY STAR websites for current lists of covered product categories and buying guidance;
- Specify efficiency requirements in the same solicitation sections as other technical information; and
- Request information from vendors to evaluate bids based on compliance with efficiency requirements and verify the delivery of efficient products post-award.

We hope procurement officials find this guide useful for purchasing efficient products. If buyers have any questions about specific procurements, please feel free to contact FEMP staff. Visit [femp.energy.gov](http://femp.energy.gov) for more information.

## Appendix A: Minimum efficiency requirements tables for heating and cooling product categories

FEMP created tables that mirror American Society of Heating, Refrigerating and Air-Conditioning Engineers (ASHRAE) 90.1-2013 tables, which include minimum efficiency requirements for FEMP-designated and ENERGY STAR certified heating and cooling product categories. These can be attached to presolicitation notices and solicitations in a wide variety of procurement types, including building renovation, construction, and design.

### Air-Source Heat Pumps (Residential), Central Air Conditioners (Residential), Geothermal Heat Pumps (Residential), and Light Commercial Heating and Cooling Equipment

| Electrically Operated Unitary Heat Pumps: Minimum Efficiency Requirements  |                                  |                                 |                                 |  |
|--|----------------------------------|---------------------------------|---------------------------------|--|
| Equipment Type   | Size Category                    | Heating Section Type            | Subcategory or Rating Condition | Minimum Efficiency                         |
| Air-cooled (cooling mode)  | <65,000 Btu/h                    | All                             | Split system                    | 14 SEER; 11 EER; 8.2 HSPF (three phase)    |
|  |                                  |                                 |                                 | 14.5 SEER; 12 EER; 8.2 HSPF (single phase) |
|  |                                  |                                 | Single package                  | 14 SEER; 11 EER; 8.0 HSPF (three phase)    |
|  |                                  |                                 |                                 | 14 SEER; 11 EER; 8.0 HSPF (single phase)   |
|  | ≥65,000 Btu/h and <135,000 Btu/h | Electric resistance (or none)   | Split system and single package | 11.3 EER; 11.4 IEER; 3.35 COP              |
| ≥135,000 Btu/h and <240,000 Btu/h  | Electric resistance (or none)    | Split system and single package | 10.9 EER; 11 IEER; 3.25 COP     |  |
| ≥240,000 Btu/h <sup>a</sup>  | Electric resistance (or none)    | Split system and single package | 9.5 EER; 10.6 IEER              |  |
| Geothermal, closed loop water-to-air   |                                  |                                 |                                 | 17.1 EER; 3.6 COP (single phase)           |
| Geothermal, open loop water-to-air   |                                  |                                 |                                 | 21.1 EER; 4.1 COP (single phase)           |
| Geothermal, closed loop water-to-water   |                                  |                                 |                                 | 16.1; 3.1 COP (single phase)               |
| Geothermal, open loop water-to-water   |                                  |                                 |                                 | 20.1; 3.5 COP (single phase)               |
| Geothermal, DGX  |                                  |                                 |                                 | 16.0 EER; 3.6 COP (single phase)           |
| <sup>a</sup> Heat pumps with size equal to or greater than 240,000 Btu/h are not covered by federal purchasing requirements. Minimum efficiency presented is consistent with ASRHAЕ 90.1-2013. |                                  |                                 |                                 |  |

## Central Air Conditioners and Light Commercial Heating and Cooling Equipment

| Electrically Operated Unitary Air Conditioners: Minimum Efficiency Requirements |  |                               |                                 |                                     |
|---|--|-------------------------------|---------------------------------|-------------------------------------|
| Equipment Type  | Size Category                                  | Heating Section Type          | Subcategory or Rating Condition | Minimum Efficiency                  |
| Air conditioners, air-cooled  | <65,000 Btu/h                                  | All                           | Split system                    | 14.5 SEER and 12 EER (single phase) |
|   |  |                               |                                 | 14 SEER and 12 EER (three phase)    |
|   |  |                               | Single package                  | 14 SEER and 11 EER (single phase)   |
|   |  |                               |                                 | 14 SEER and 11 EER (three phase)    |
|   | ≥65,000 Btu/h and <135,000 Btu/h               | Electric resistance (or none) | Split system and single package | 11.7 EER and 11.8 IEER              |
|   |  | All other                     | Split system and single package | 11.5 EER and 11.6 IEER              |
|   | ≥135,000 Btu/h and <240,000 Btu/h              | Electric resistance (or none) | Split system and single package | 11.7 EER and 11.8 IEER              |
|   |  | All other                     | Split system and single package | 11.5 and 11.6 IEER                  |
|   | ≥240,000 Btu/h and <760,000 Btu/h <sup>a</sup> | Electric resistance (or none) | Split system and single package | 12.4 EER and 13.6 IEER              |
|   |  | All other                     | Split system and single package | 12.2 EER and 13.4 IEER              |
|   | ≥760,000 Btu/h <sup>a</sup>                    | Electric resistance (or none) | Split system and single package | 12.2 EER and 13.5 IEER              |
|   |  | All other                     | Split system and single package | 12.0 EER and 13.3 IEER              |

<sup>a</sup> Air conditioners with size equal to or greater than 240,000 Btu/h are not covered by federal purchasing requirements. Minimum efficiency presented is consistent with ASRHA 90.1-2013.

## Boilers (Residential) and Boilers (Commercial)

| Gas- and Oil-Fired Boilers: Minimum Efficiency Requirements |                                       |  |                             |                    |
|---|---------------------------------------|--|-----------------------------|--------------------|
| Equipment Type  | Subcategory or Rating Condition       | Size Category (Input)                  | Efficiency Metric           | Minimum Efficiency |
| Boilers, hot water  | Gas-fired                             | <300,000 Btu/h                         | AFUE                        | 90%                |
|   |                                       | ≥300,000 Btu/h and ≤2,500,000 Btu/h    | E <sub>t</sub> <sup>a</sup> | 95%                |
|   |                                       | >2,500,000 Btu/h and ≤10,000,000 Btu/h | E <sub>t</sub>              | 94%                |
|   |                                       | >10,000,000 Btu/h <sup>b</sup>         | E <sub>c</sub>              | 82%                |
|   | Oil-fired                             | <300,000 Btu/h                         | AFUE                        | 87%                |
|   |                                       | ≥300,000 Btu/h and ≤2,500,000 Btu/h    | E <sub>t</sub>              | 85.5%              |
|   |                                       | >2,500,000 Btu/h and ≤10,000,000 Btu/h | E <sub>t</sub>              | 86%                |
|   |                                       | >10,000,000 Btu/h <sup>b</sup>         | E <sub>c</sub>              | 84%                |
| Boilers, steam  | Gas-fired                             | <300,000 Btu/h                         | AFUE                        | 90%                |
|   | Gas-fired (all, except natural draft) | ≥300,000 Btu/h and ≤2,500,000 Btu/h    | E <sub>t</sub>              | 81%                |
|   |                                       | >2,500,000 Btu/h and ≤10,000,000 Btu/h | E <sub>t</sub>              | 83%                |
|   |                                       | >10,000,000 Btu/h <sup>b</sup>         | E <sub>t</sub>              | 79%                |
|   | Gas-fired, natural draft              | ≥300,000 Btu/h and ≤2,500,000 Btu/h    | E <sub>t</sub>              | 81%                |
|   |                                       | >2,500,000 Btu/h and ≤10,000,000 Btu/h | E <sub>t</sub>              | 83%                |
|   |                                       | >10,000,000 Btu/h <sup>b</sup>         | E <sub>t</sub>              | 77%                |
|   | Oil-fired                             | <300,000 Btu/h                         | AFUE                        | 87%                |
|   |                                       | ≥300,000 Btu/h and ≤2,500,000 Btu/h    | E <sub>t</sub>              | 84%                |
|   |                                       | >2,500,000 Btu/h and ≤10,000,000 Btu/h | E <sub>t</sub>              | 85.5%              |
|   |                                       | >10,000,000 Btu/h <sup>b</sup>         | E <sub>t</sub>              | 81%                |

<sup>a</sup> Thermal efficiency (E<sub>t</sub>) is based on Hydronics Institute, Method to Determine Efficiency of Commercial Space Heating Boilers (HI BTS-2000, Rev. 06.07).

<sup>b</sup> Boilers with input greater than 10,000,000 Btu/h are not covered by federal purchasing requirements. Minimum efficiency presented is consistent with ASRHA 90.1-2013 Table 6.8.1-6.

## Electric Chillers, Air-Cooled and Water-Cooled

| Water-Chilling Packages: Minimum Efficiency Requirements  |                   |             |   |   |
|---|-------------------|-------------|---|---|
| Equipment Type  | Size Category     | Units       | Minimum Efficiency                        |   |
|   |                   |             | Path A (Full-Load Optimized Applications) | Path B (Part-Load Optimized Applications) |
| Air-cooled  | <150 t            | EER (Btu/W) | ≥10.40 FL                                 | ≥9.70 FL                                  |
|   |                   |             | ≥13.69 IPLV                               | ≥15.81 IPLV                               |
| Air-cooled  | ≥150 t            | EER (Btu/W) | ≥10.50 FL                                 | ≥9.70 FL                                  |
|   |                   |             | ≥14.00 IPLV                               | ≥16.10 IPLV                               |
| Water-cooled, electrically operated positive displacement | <75 t             | kW/t        | ≤0.73 FL                                  | ≤0.78 FL                                  |
|   |                   |             | ≤0.60 IPLV                                | ≤0.50 IPLV                                |
| Water-cooled, electrically operated positive displacement | ≥75 t and <150 t  | kW/t        | ≤0.72 FL                                  | ≤0.75 FL                                  |
|   |                   |             | ≤0.56 IPLV                                | ≤0.49 IPLV                                |
| Water-cooled, electrically operated positive displacement | ≥150 t and <300 t | kW/t        | ≤0.65 FL                                  | ≤0.68 FL                                  |
|   |                   |             | ≤0.54 IPLV                                | ≤0.44 IPLV                                |
| Water-cooled, electrically operated positive displacement | ≥300 t and <600 t | kW/t        | ≤0.61 FL                                  | ≤0.62 FL                                  |
|   |                   |             | ≤0.52 IPLV                                | ≤0.41 IPLV                                |
| Water-cooled, electrically operated positive displacement | ≥600 t            | kW/t        | ≤0.56 FL                                  | ≤0.58 FL                                  |
|   |                   |             | ≤0.50 IPLV                                | ≤0.38 IPLV                                |
| Water-cooled, electrically operated centrifugal           | <150 t            | kW/t        | ≤0.61 FL                                  | ≤0.69 FL                                  |
|   |                   |             | ≤0.55 IPLV                                | ≤0.44 IPLV                                |
| Water-cooled, electrically operated centrifugal           | ≥150 t and <300 t | kW/t        | ≤0.61 FL                                  | ≤0.63 FL                                  |
|   |                   |             | ≤0.55 IPLV                                | ≤0.40 IPLV                                |
| Water-cooled, electrically operated centrifugal           | ≥300 t and <400 t | kW/t        | ≤0.56 FL                                  | ≤0.59 FL                                  |
|   |                   |             | ≤0.52 IPLV                                | ≤0.39 IPLV                                |
| Water-cooled, electrically operated centrifugal           | ≥400 t and <600 t | kW/t        | ≤0.56 FL                                  | ≤0.58 FL                                  |
|   |                   |             | ≤0.50 IPLV                                | ≤0.38 IPLV                                |
| Water-cooled, electrically operated centrifugal           | ≥600 t            | kW/t        | ≤0.56 FL                                  | ≤0.58 FL                                  |
|   |                   |             | ≤0.50 IPLV                                | ≤0.38 IPLV                                |

## Gas Storage Water Heaters, Gas Water Heaters, Heat Pump Water Heaters, and Solar Water Heaters

| Water-Heating Equipment: Performance Requirements  |                                  |                                 |   |
|--|----------------------------------|---------------------------------|---|
| Equipment Type   | Size Category (Input)            | Subcategory or Rating Condition | Performance Required  |
| Electric storage water heaters   | ≤24 A and ≤250 V                 | Heat pump ≤55 gal               | EF <sup>a</sup> ≥2.0 and FHR ≥50 gal/h                                    |
|  |                                  | Heat pump >55 gal and ≤120 gal  | EF ≥2.2 and FHR ≥50 gal/h   |
| Gas storage water heaters  | ≤75,000 Btu/h                    | ≥20 gal and ≤55 gal             | EF ≥0.67 and FHR ≥67 gal/h  |
|  |                                  | >55 gal and ≤100 gal            | EF ≥0.77 and FHR ≥67 gal/h  |
|  | >75,000 Btu/h                    | >100 gal and ≤140 gal           | TE ≥0.94 or EF ≥0.93 and SL ≤0.84 * [(input rate/800) + 100√volume] Btu/h |
| Gas instantaneous water heaters  | ≥50,000 Btu/h and <200,000 Btu/h | <4,000 (Btu/h)/gal              | EF ≥0.90 and GPM ≥2.5 over a 77-deg rise                                  |
|  | ≥200,000 Btu/h                   | ≥4,000 (Btu/h)/gal              | TE ≥0.94 or EF ≥0.93  |
| Solar water heaters  | ≤75,000 Btu/h                    | Electric backup                 | SEF ≥1.8  |
|  |                                  | Gas backup                      | SEF ≥1.2  |
| <sup>a</sup> Energy factor (EF) is an efficiency ratio of the energy supplied in heater water divided by the energy input to the water heater. |                                  |                                 |   |

## Gas Furnaces

| Warm-Air Furnaces: Minimum Efficiency Requirements  |                             |                                 |                            |
|---|-----------------------------|---------------------------------|----------------------------|
| Equipment Type  | Size Category (Input)       | Subcategory or Rating Condition | Minimum Efficiency         |
| Warm-air furnace, gas fired   | <225,000 Btu/h              | Maximum capacity                | ≥95.0% (U.S. North/Canada) |
|   |                             |                                 | ≥90.0% (U.S. South)        |
| Warm-air furnace, oil fired   | ≥225,000 Btu/h <sup>a</sup> | Maximum capacity                | 80% E <sub>t</sub>         |
|   | <225,000 Btu/h              | Maximum capacity                | ≥85% AFUE                  |
|   | ≥225,000 Btu/h <sup>a</sup> | Maximum capacity                | 81% E <sub>t</sub>         |
| <sup>a</sup> Furnaces with input equal to or greater than 225,000 Btu/h are not covered by federal purchasing requirements. Minimum efficiency presented is consistent with ASRHAE 90.1-2013. |                             |                                 |                            |

## Room Air Conditioners

| Electrically Operated Room Air Conditioners: Minimum Efficiency Requirements |                                 |                                 |                        |
|--|---------------------------------|---------------------------------|------------------------|
| Equipment Type   | Size Category (Input)           | Subcategory or Rating Condition | Minimum Efficiency     |
| Room air conditioners with louvered sides                                    | <6,000 Btu/h                    | -                               | 11.2 EER and 11.0 CEER |
|  | ≥6,000 Btu/h and <8,000 Btu/h   | -                               | 11.2 EER and 11.0 CEER |
|  | ≥8,000 Btu/h and <14,000 Btu/h  | -                               | 11.3 EER and 11.2 CEER |
|  | ≥14,000 Btu/h and <20,000 Btu/h | -                               | 11.2 EER and 11.1 CEER |
|  | ≥20,000 Btu/h                   | -                               | 9.8 EER and 9.8 CEER   |
| Room air conditioners without louvered sides                                 | ≤8,000 Btu/h                    | -                               | 10.4 EER and 10.2 CEER |
|  | ≥8,000 Btu/h and <20,000 Btu/h  | -                               | 9.8 EER and 9.7 CEER   |
|  | ≥20,000 Btu/h and <28,000 Btu/h | -                               | 9.8 EER and 9.7 CEER   |
|  | ≥28,000,000 Btu/h               | -                               | 9.8 EER and 9.8 CEER   |
| Room air-conditioner heat pumps with louvered sides                          | <20,000 Btu/h                   | -                               | 10.4 EER and 10.3 CEER |
|  | ≥20,000 Btu/h                   | -                               | 9.8 EER and 9.8 CEER   |
| Room air-conditioner heat pumps without louvered sides                       | <14,000 Btu/h                   | -                               | 9.8 EER and 9.7 CEER   |
|  | ≥14,000 Btu/h                   | -                               | 9.2 EER and 9.1 CEER   |
| Room air conditioner, casement only  | All capacities                  | -                               | 10.0 EER and 9.9 CEER  |
| Room air conditioner, casement slider  | All capacities                  | -                               | 10.9 EER and 10.8 CEER |

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