

The U.S. Department of Energy's (DOE) Federal Energy Management Program (FEMP) facilitates the Federal Government's implementation of sound, cost-effective energy management and investment practices to enhance the nation's energy security and environmental stewardship.

# PURCHASING SPECIFICATIONS FOR ENERGY-EFFICIENT PRODUCTS

## Low Standby Power

### Legal Authorities

Federal agencies are required by the National Energy Conservation Policy Act (P.L. 95-619), Executive Order 13423, and Federal Acquisition Regulations (FAR) Subpart 23.2 and 53.223 to specify and buy ENERGY STAR®-qualified products or, in categories not included in the ENERGY STAR program, FEMP-designated products. FEMP-designated products are among the highest 25 percent of equivalent products for energy efficiency.

Agencies are required by the Energy Independence and Security Act of 2007 and Executive Order 13221 to purchase products with a standby power level of 1 watt or less.



Performance Requirements for Federal Purchases	
Product Type	Required Standby Level
Office Equipment	
Desktop Computer	2 watts or less
Integrated Computer	2 watts or less
Laptop Computer	1 watt or less
Workstation	2 watts or less
Computer Monitor	1 watt or less
Printer	1 watt or less
Copier	1 watt or less
Scanner	1 watt or less
Fax/Printer	1 watt or less
Multifunction Device	1 watt or less
Docking Station	2 watts or less
Cordless Phone	2 watts or less
Answering Machine	2 watts or less
Audio/Video Products	
TV	1 watt or less
TV/VCR/DVD Combo	1 watt or less
DVD Player	1 watt or less
Consumer Audio	1 watt or less
Major Appliances	
Microwave Oven	2 watts or less

### Buying Products with Low Standby Power

This *Specification* applies to products in the *Product Types* listed above. When purchasing products of a type listed above, specify or select products that meet the *Performance Requirement* shown. Electronic products that are not listed above are required to meet a standby power level of 1 watt or less unless such a product is not available or is not cost-effective in the intended application. In that case, the buyer should seek a product with the lowest-available standby power level.

When buying or specifying a product listed in the table above for which an ENERGY STAR program exists, make sure that the product is **both** ENERGY STAR-qualified **and also** meets the required standby power level. Some, but not all, ENERGY STAR-qualified products have low standby power levels that meet the *Performance Requirements*. FEMP maintains an online database of products that meet the requirements of this *Purchasing Specification*. For a current list

For More Information:

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- FEMP Product Procurement**  
[www.femp.energy.gov/procurement](http://www.femp.energy.gov/procurement)
- FEMP Standby Power Data Center**  
[www.femp.energy.gov/standby](http://www.femp.energy.gov/standby)
- Lawrence Berkeley National Laboratory**  
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[www.lbl.gov](http://www.lbl.gov)
- ENERGY STAR**  
888-782-7937  
[www.energystar.gov](http://www.energystar.gov)
- International Electrotechnical Commission (IEC)**  
[www.iec.ch](http://www.iec.ch)
- Federal Supply Sources**
- General Services Administration**  
[www.gsa.gov/advantage](http://www.gsa.gov/advantage)
- Defense Logistics Agency**  
[www.dla.mil](http://www.dla.mil)  
[www.dlis.dla.mil/email.asp](http://www.dlis.dla.mil/email.asp)

of models, go to the Standby Power Data Center at [femp.energy.gov/standby](http://femp.energy.gov/standby) and click on the “Search Database” link.

Buyer Tips

Some devices consume electricity when they appear to be turned off. This power consumption is known as standby power, and it occurs for a variety of reasons. In some cases, standby power allows the device to receive signals from a remote control, network, or soft key-pad. In others, standby power is consumed because the external power supply or some internal circuit is not disconnected when the device is turned off.

The formal definition used by FEMP of standby power is the power consumed by a product when in the lowest power consuming mode. This typically occurs when the product is switched off or not performing its primary purpose.

Note that some organizations use the term standby power to refer to all low-power modes. FEMP does not consider standby power a mode, but rather a level of power consumption that occurs when a device is in the lowest power consuming mode.

Cost-Effectiveness Example: 100 Computer Monitors			
Performance	Base Model	Required	Best Available
Energy Consumption (watts)	200 watts	100 watts	0 watts
Annual Energy Use (kWh/year)	1,200 kWh	600 kWh	0kWh
Annual Energy Cost	\$96	\$48	\$0
Lifetime Energy Cost	\$356	\$178	\$0
Lifetime Energy Cost Savings	—	\$178	\$356

Cost-Effectiveness Assumptions

*Annual Energy Use* is based on the manufacturer-declared standby power level as measured by the International Electrotechnical Commission (IEC) test procedure 62301 v1.0 - 2005 and an assumed 6,000 hours per year in the lowest power consuming mode. *Annual Energy Cost* assumes a Federal electricity price of \$0.08 per kilowatt-hour (kWh). *Lifetime Energy Cost* is the sum of the discounted value of *Annual Energy Cost* based on average usage and an assumed product life of four years. Future electricity price trends and discount rates are based on Federal guidelines.

Using the Cost-Effectiveness Table

In the example above, an agency purchase of 100 computer monitors at the *Required* standby level of 1 watt is cost-effective if the total purchase is no more than \$178 above the price of the *Base Model* with a standby level of 2 watts. The *Best Available* model, with a standby level of 0 watts, is cost-effective if its purchase price is no more than \$356 above the price of the *Base Model*. Products with low standby power typically do not cost more to purchase.

What If My Electricity Price or Operating Hours Are Different?

To adjust this cost-effectiveness rule of thumb for a different electricity price, multiply the typical lifetime energy cost savings above by this ratio: (Your price in ¢/kWh) ÷ (8.0¢/kWh). To adjust for the hours a device is consuming power at the standby power level, multiply the typical lifetime energy cost savings above by this ratio: Your hours ÷ 6,000 hours.