Federal Energy Management Program

FEMP Designated Product:
Commercial Steam Cookers

Leading by example, saving energy and taxpayer dollars in federal facilities

Purchasing Specifications for Energy-Efficient Products

Legal Authorities

Federal agencies are required by the Energy Policy Act of 2005 (P.L. 109-58) and Federal Acquisition Regulations (FAR) Subpart 23.2 to specify and buy ENERGY STAR®-qualified products or, in categories with no ENERGY STAR label, FEMP-designated products which are among the highest 25 percent of equivalent products for energy efficiency.

Performance Requirements for Federal Purchases

Steamer Type and Capacity	Cooking Energy Efficiency[a]	Idle Energy Rate[b]
Gas, 3-Pan	38% or greater	6,250 Btu/hour or less
Gas, 4-Pan	38% or greater	8,350 Btu/hour or less
Gas, 5-Pan	38% or greater	10,400 Btu/hour or less
Gas, 6-Pan	38% or greater	12,500 Btu/hour or less
Electric, 3-Pan	50% or greater	400 watts or less
Electric, 4-Pan	50% or greater	530 watts or less
Electric, 5-Pan	50% or greater	670 watts or less
Electric, 6-Pan	50% or greater	800 watts or less

a) Cooking energy efficiency is defined as the ratio of the energy absorbed by the food to the total energy input to the cooking device. Based on the full-load potato efficiency test prescribed by ASTM's *Standard Test Method for the Performance of Steam Cookers* (F1484).

b) Idle energy rate is the amount of energy an appliance uses to maintain a stabilized operating temperature.

Buying Energy-Efficient Commercial Steam Cookers

This purchasing specification applies to pressure and atmospheric (pressureless) commercial steam cookers (also known as steamers). When buying steam cookers through commercial sources, select products that are ENERGY STAR-qualified (see For *More Information*), all of which meet the *Performance Requirements* shown above. Most manufacturers and retailers display the ENERGY STAR logo on complying models. For models not displaying this logo, check the manufacturer's literature (Web site, operating manual) to determine if the cooking energy efficiency and idle energy rate meet this *Specification*.

The federal supply sources for commercial steam cookers are the General Services Administration (GSA) and Defense Logistics Agency (DLA). GSA sells steam cookers through its Multiple Awards Schedules program and on-line shopping network, *GSA Advantage!* DLA offers them through the Defense Supply Center Philadelphia and online through DoD *EMall*. Note that not all steam cookers sold by GSA and DLA are ENERGY STAR-qualified and some products that do qualify may not be indicated as such. When buying through these sources, check the models you are considering against the list of qualified products on the ENERGY STAR web site to assure that they meet this *Specification*.

Performance requirements apply to all forms of procurements, including: guide and project specifications; construction, renovation, repair, maintenance and energy service contracts; lease agreements and solicitations for offers. Energy performance requirements should be included in all evaluations of solicitation responses. Model language to assist agencies with incorporating these performance requirements into procurement documents is available at http://www.eere.energy.gov/femp/procurement/eep_modellang.html.

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Agencies can claim an exception to these requirements through a written finding that no ENERGY STAR-qualified or FEMP-designated product is available to meet the functional requirements, or that no such product is life-cycle cost-effective for the specific application.

Buyer Tips

Features to look for when buying energy-efficient steam cookers include forced convenction, vacuum pumps, closed systems and compartmental insulation. Steam cookers idle approimately 75% of the time so improved control strategies, such as standby mode, can save substantial amounts of energy.

Connectionless steamers are equipped with a built-in reservoir which eliminates the need for a water supply and drain lines. Water is added and drained manually. The advantage of this design is that steam can not escape (i.e., through the drain line) from the compartment. While conectionless steamers are very efficient, they can increase cook times. If fast cook times are not essential, conectionless steamers are a good choice.

User Tips

Implement an equipment start-up/shut-down schedule. For multiple compartment steamers, turn off unused compartments during slow periods. Since most steamers can be preheated within 20 minutes, secondary compartments can be turned off without significantly impacting food service operations.

Cost-Effectiveness Example

Performance	Base Model	Required	Best Available[a]
Cooking Energy Efficiency	30%	50%	74%
Idle Energy Rate	600 watts	400 watts	160 watts
Annual Energy Use	11,600 kWh	4,980 kWh	2,670 kWh
Annual Energy Cost	$700	$300	$160
Lifetime Energy Cost[b]	$6,170	$2,640	$1,410
Lifetime Energy Cost Savings	**-**	**$3,530**	**$4,760**

a) More efficient products may have been introduced to the market since this specification was published. Information on the *Best Available* model was obtained from the August 2006 ENERGY STAR commercial steam cooker products list (see *For More Information*).

b) Lifetime energy cost is the sum of the discounted value of the annual energy costs and an assumed steam cooker life of life of 12 years. Future energy price trends and a discount rate of 3.0% are based on federal guidelines (effective from April, 2006 to March, 2007).

Cost-Effectiveness Assumptions

This example is based on an electric connectionless steamers with a 3-pan capacity operating for 12 hours a day, 365 days per year, with one preheat cycle and cooking 100 pounds of food. The assumed electric price is $0.06 per kilowatt-hour, the federal average electricity price in the US.

Using the Cost-Effectiveness Table

In the example above, the *Required* steam cooker is cost-effective if its purchase price is no more than $3,530 above the price of the *Base Model*. The *Best Available* model is cost-effective if its price is no more than $4,760 above the that of the *Base Model*.

What if my Electricity Price is Different?

ENERGY STAR has an Excel-based cost calculators for both electric and gas steam cookers on its Web site. Go to http://www.energystar.gov/index.cfm?c=steamcookers.pr_steamcookers, and click on "Savings Product Calculator" in the right hand column. Input the product information and rate for electricity or natural gas at your facility. The output section will automatically display results that more accurately reflect your situation.

April 2007

For More Information:

EERE Information Center
1-877-EERE-INF or 1-877-337-3463
www.eere.energy.gov/femp/procurement/

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General Services Administration
General Products Center
Fort Worth, TX
(817) 978 - 4545
www.fss.gsa.gov/

Defense Logistics Agency
www.dla.mil/
www.emall.dla.mil/

Defense Supply Center Philadelphia
(800) DLA-BULB or (215) 737-7950
www.dscp.dla.mil/

The Food Service Technology Center publishes fact sheets and test reports on commercial kitchen equipment.
(925) 866-2844
www.fishnick.com/

The North American Association of Food Equipment Manufacturers has information on standards, guidelines, and other publications on commercial kitchen equipment.
(312) 821-0201
www.nafem.org/

American Society for Testing and Materials (ASTM) has test standards for food service equipment.
(610) 832-9585
www.astm.org/

The Lawrence Berkeley National Laboratory and Food Services Technology Center provided supporting analysis for this recommendation.
(202) 646-7950

A Strong Energy Portfolio for a Strong America

Energy efficiency and clean, renewable energy will mean a stronger economy, cleaner environment, and greater energy independence for America. Working with a wide array of state, community, industry, and university partners, the U.S. Department of Energy's Office of Energy Efficiency and Renewable Energy invests in a diverse portfolio of energy technologies.

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