

Improve Energy Efficiency with Energy Efficient Appliances

Builder Guide



DESCRIPTION

Household appliances account for approximately 24% of residential energy consumption. Substantial energy savings can be achieved by installing energy efficient appliances in new homes. These savings are long lasting since appliances often last over ten years.

Federal appliance efficiency standards (National Appliance Energy Conservation Act or NAECA) prescribe minimum efficiency levels for 13 classes of home appliances. NAECA standards are set by DOE and are periodically reviewed. In many cases, these efficiency standards are significantly more stringent than existing average efficiency levels, but considerably lower than available high efficiency models.

Refrigerators use the most energy of any household appliance. The average refrigerator in use today consumes over 1,300 kilowatt-hours (kWh) of electricity per year. NAECA compliant refrigerators use about 700 kWh per year, and high efficiency models are available that use less than 300 kWh per year. These models use smaller, high efficiency compressors, advanced insulation, and manual defrost or improved automatic defrost cycles.

The electricity consumed by clothes washers exceeds 1,000 kWh per year. Approximately 90% of this energy is used to heat water. High efficiency **horizontal axis clothes washers** (common in European homes and Laundromats) use about one third the hot water of the typical top-loading models.

High efficiency **clothes dryers** use higher spin speeds and moisture sensors to prevent over drying. The higher spin speeds extract more water from the clothing, reducing the heating energy requirement of the appliance. Also, heat pump and other innovative dryer designs are emerging which can create additional savings.

High Efficiency Appliances Reduce Household Energy Costs

Appliance	Existing	New (NAECA min)	High Efficiency Model
Refrigerator/Freezers	\$93	\$61	\$24
Clothes Washers	\$78	\$70	\$43
Clothes Dryers	\$85	\$77	\$71
Dishwashers	\$50	\$40	\$29
Total	\$306	\$248	\$167
Overall Savings		19%	45% (33%*)

* compared to NAECA minima.

Approximately 80% of the energy consumed for dishwashing is used by the hot water heater to heat water to 140°F. Because this high water temperature is needed by dishwashers to clean effectively, most hot water heaters are set to maintain 140°F. New, energy efficient **dishwashers** are equipped with a temperature boost feature. This feature raises the incoming water temperature by 20°F, allowing the hot water heater to be kept at 120°F. This lower setting reduces overall household water heating costs considerably without sacrificing dishwasher effectiveness, and reduces the risk of scalding.



BENEFITS

Providing energy efficient appliances can cost-effectively reduce a home's overall appliance energy consumption up to 40%. Additionally, energy efficient appliances can offer higher quality components with longer warranties.

Energy efficient appliances can save up to 40%.

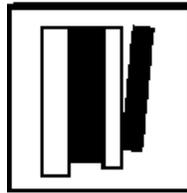
Energy efficient refrigerators provide up to 40% energy savings compared to standard models, and even more when replacing old units. Other savings include up to 66% for horizontal axis clothes washers, and 20% for energy efficient clothes dryers, dishwashers, and cooking appliances. The combined savings of these energy efficient appliances can be 40%.

Higher quality equipment increases the value of homes.

Energy efficient appliances often represent state-of-the-art technologies that can increase the resale value of homes. Higher quality appliances may also come with manufacturers extended warranties and a longer useful lifetime.

Quieter operation of equipment.

Smaller compressors used on energy efficient refrigerators and smaller, more efficient motors on other appliances can decrease annoying noise and vibration. With quieter appliances, homeowners experience an improvement in the quality of their indoor environment.



RESOURCES

- DOE's Energy Efficiency and Renewable Energy Clearinghouse (EREC) maintains a host of information on energy efficient appliances and appliance efficiency standards. Call 1-800-363-3732 or browse the File Libraries on the EREC web site: <http://erecbbs.nciinc.com>
- The Consumer Guide to Home Energy Savings*, 1996. Available from the American Council for an Energy Efficient Economy (ACEEE) at (510) 549-9914.
- Homemade Money*, 1995. Available from the Rocky Mountain Institute at (970) 927-3851.
- AHAM Guide to the National Energy Appliance Energy Conservation Act*, 1993. Order by calling the Association of Home Appliance Manufacturers at (312) 984-5800. A fax-back service for free documents is also available at (312) 984-9950.