

ENERGY SERIES: What about the Laundry Area?

Robert "Bobby" Grisso, Extension Engineer, Biological Systems Engineering
Martha A. Walker, Ph.D, Community Viability Specialist, Central District

Why Should I Worry About Energy Use in the Laundry Room?

The laundry room can be a big consumer of energy—more than 1,000 kilowatt-hours (kWh) a year—and water—and a big producer of unwanted heat and humidity in summer. It makes good sense to think about both the location and the appliances in it if you want to run an energy-efficient laundry. And there are new washers and dryers on the market now that make it easier than ever to do so.

Where Should the Laundry Area be Located?

If possible, try to avoid putting the washer and dryer in spaces that are heated or air-conditioned. The dryer vent will allow warm, humid outside air to enter the home in summer and cold air to enter in the winter. And both the dryer and washer will make your air conditioner work harder because of the heat and moisture produced during washing and drying cycles. If you do have a conditioned laundry room, install a closable fresh-air intake vent to the dryer along with a closable dryer exhaust vent. These vents will keep unconditioned outdoor air from coming in and keep conditioned air from going out, when the dryer is off.

How Can I Be More Energy Efficient with My Current Washing Machine?

About 90% of the energy used for washing clothes is used for heating the water, and the typical household does nearly 400 loads of laundry a year at about 40 gallons of water per load. So to reduce the amount of energy used to wash and dry a load of clothes, you need to use cooler water and use less water.

What Should I Look for With Regard to Energy Efficiency in a New Clothes Washer?

Washers come in two designs: front-loading and the more familiar top-loading version. ENERGY STAR® models are available in both designs, either of which will be more energy and water efficient than non-ENERGY STAR® models. Front-loading machines are similar to the washers used in laundromats. These horizontal-axis or tumble-action machines repeatedly lift and drop clothes, instead of moving clothes around a central axis. Top-loading washers use sensor technology to closely control the incoming water temperature. To reduce water consumption, they spray clothes with repeated high-pressure rinses to remove soap, rather than soaking them in a full tub of rinse water. Be aware that although the terms are frequently used interchangeably, “front-loading” and “horizontal axis” are not always the same. There are top-loading horizontal axis machines available.

Beginning January 1, 2007, all ENERGY STAR® residential clothes washers must meet the minimum Modified Energy Factor (MEF) of 1.72 for ENERGY STAR® models. The MEF measures the energy used during the washing process, including machine energy, water heating energy, and dryer energy. Higher the MEF corresponds to more efficient clothes washer.

In addition, new ENERGY STAR® models have a maximum Water Factor (WF) of 8.0. The WF measures the gallons of water used per cycle per cubic foot (for example, a 3.0 cubic foot washer using 27 gallons per cycle has a water factor of

9.0). The lower the WF, the less water the machine uses.

When comparing EnergyGuide labels look at the tub capacity printed on the label. Determine the tub capacity of the washer needed with *your* laundry needs in mind. A large-capacity machine is probably not the best choice for a two adult household that produces less laundry than one with four children in the family.

What Should I Look for With Regard to Energy Efficiency in a New Clothes Dryer?

Clothes dryers too have become more energy efficient. Look for models that have a moisture sensor and automatic shutoff feature; this helps prevent over drying, which not only wastes energy but also is hard on clothes. The best models have moisture sensors in the drum; lower priced models have thermostats that “infer” dryness by measuring the temperature of the exhaust air. Either is a much better deal for you than the older, timer-only machines; compared to them, you can save 10% with a temperature-sensing control and 15% with a moisture-sensing control.

Both electric and gas-fired dryers are available. New gas-fired models are required to have electronic ignition, which is more efficient than pilot lights.

Note that there are neither EnergyGuide labels nor ENERGY STAR[®] ratings of clothes dryers as most dryers use similar amounts of energy. However, they are rated by Energy Factor (EF). An EF rating is somewhat similar to miles per gallon for a car. But, in this case, it is the measure of pounds of clothing per kilowatt-hour of electricity. The federal standard minimum EF for a standard capacity electric dryer is 3.01. For gas dryers, the minimum EF is 2.67. The rating for gas dryers is provided in kilowatt-hours even though the primary source of fuel is natural gas.

The exhaust system of the dryer is extremely important. Try to have as short and straight a duct to the outside as possible, and make sure the duct is made of smooth metal—some building codes have requirements for both maximum length and material. Flexible vinyl duct should be avoided because it restricts airflow, can be crushed, and may not stand up to the high temperatures of the dryer.

Developed as part of the NASULGC/DOE Building Science Community of Practice.

DISCLAIMER – This piece is intended to give the reader only general factual information current at the time of publication. This piece is not a substitute for professional advice and should not be used for guidance or decisions related to a specific design or construction project. This piece is not intended to reflect the opinion of any of the entities, agencies or organizations identified in the materials and, if any opinions appear, are those of the individual author and should not be relied upon in any event.