Certified to Save

According to statistics published by the U.S. Environmental Protection Agency (EPA), water coolers across the U.S. consume about 6 billion kWh of electricity per year.[1] Some water coolers actually use more energy than a refrigerator.

By Eric Yeggy

Lowering energy costs with efficient water coolers

The price of electricity in my neck of the woods, near Chicago, is 15 cents per kWh. After comparing several models, I learned that a conventional water cooler can use almost twice as much electricity as an equivalent Energy Star-certified model. I did some math and calculated that an Energy Star-certified model could save me several hundred dollars. I love it when doing the right thing and being green doesn't hit me in the wallet!

Certification Strategy

The Energy Star certification program is administered through a joint cooperation between EPA and the U.S. Department of Energy (DOE). The mission in establishing this program was to reduce pollution and greenhouse gas emissions by promoting energy efficiency.

The program strategy employed the development of a trusted certification mark—the Energy Star logo—that would allow consumers to easily identify energy-efficient products. In order to make these products desirable over less efficient models, Energy Star certification schemes are developed around the following guidelines:

- Certified products should offer energy savings without sacrificing the features and performance that consumers want.
- Certified products should be competitively priced when compared to non-certified models. If they are more expensive, consumers should be able to recover their investments through lower utility bills.
- It should be possible for a variety of manufacturers to meet the certification requirements and compete using non-proprietary technology that is widely available in the marketplace.
- The energy efficiency and performance of certified products should be verified by approved laboratories.

Water Cooler Requirements

Water coolers became eligible for Energy Star certification in September 2000. The Energy Star water cooler certification scheme sets energy efficiency thresholds for models that have a hot water option and models that only have cold and cook options. In water cooler speak, "cook" means room temperature or lukewarm water that is intended for use in cooking.

To qualify for Energy Star certification, a water cooler must meet the following specifications:

- Cold only, or cook-and-cold units must use less than or equal to 0.16 kWh per day; and
- Hot-and-cold units must use less than or equal to 1.2 kWh per day.

Worldwide Success

The Energy Star certification program has been extremely successful. Statistics on market success are available on the Energy Star website (www.energystar.gov). The latest study on water coolers found a 68% market penetration of Energy Star-labeled products.[2]

The Energy Star program also is becoming popular overseas. EPA has agreements with a growing number of foreign agencies to promote certified products in Australia, Canada, Iceland, Japan, Liechtenstein, New Zealand, Norway, Switzerland, Taiwan and the European Union.

Calculating Savings

The Energy Star label is popular with consumers and businesses alike because of the obvious cost-saving advantages. You can calculate the cost of electricity needed to run water coolers in your home or office by going to the Energy Star website, typing "water cooler" into the search box and clicking on one of the water cooler savings calculator links. Filling in the form will provide you with an estimate of cost savings by comparing conventional models to Energy Star-labeled models.

The calculated savings are based on the standby energy consumption, the electricity required to maintain the water at the intended dispensing temperature when no water is being dispensed. Your actual cost savings will probably be higher because manufacturers often incorporate more efficient chilling and heating mechanisms in their Energy Star-labeled water coolers in order to meet the efficiency standards. That means a certified water

cooler will use less electricity bringing new water to the desired temperature. The savings calculators do not take this into account, which means more savings for you.

Some manufacturers also incorporate better separation of the hot- and cold-water storage areas into their designs. This reduces energy loss due to convection or unintended mixing while the unit is filling or dispensing. Storage tank insulation is another strategy used to improve efficiency.

Earning the Label

In order to obtain Energy Star certification for a water cooler, manufacturers must agree to become Energy Star partners. Any EPA-recognized certification body can guide manufacturers through the process. Interested manufacturers should follow the link for "Partner Resources" on the Energy Star website, and then follow the link for "Third-Party Certification for Products." From there, they can obtain a complete list of all the certification bodies.

The next step is product testing. The certification body will arrange testing through an approved laboratory. Manufacturers can review the list of approved laboratories on the Energy Star website. The laboratory must follow the Energy Star test method for water coolers. This protocol measures the standby power consumption of the unit after the cold water has reached 50°F and the hot water (if applicable) has reached 165°F.

Manufacturers should keep in mind that all products will be tested using the default factory settings. If a unit can accept both bottled water and plumbed-in water, it must be tested in both configurations and both configurations must pass in order to obtain certification. Every model must be tested in order to qualify—bracketing of product families is not allowed in the Energy Star water cooler scheme. Ongoing compliance is monitored through annual testing of randomly selected models. *wqp*

References

1. Information compiled by the Lawrence Berkeley National Laboratory, a DOE National Laboratory operated by the University of California, and published on the Energy Star website.

2. Energy Star website, "Energy Stars Unit Shipment and Market Penetration Report Calendar Year 2010 Summary."

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