

ORNL and General Electric Collaborate on Superefficient Water Heater



With the GE® Hybrid Water Heater are, left, Henry Eng, GE general manager, Global Products, and Andy Karsner, DOE assistant secretary for Energy Efficiency and Renewable Energy.

Oak Ridge National Laboratory (ORNL) and General Electric (GE) have collaborated to finalize, test, and market the first product from a major brand to meet the Department of Energy's (DOE's) new Energy Star criteria for electric heat-pump water heaters.

The GE® Hybrid Water Heater is affordable and designed to be 50 percent more energy efficient than a standard 50-gallon electric model, which should help reduce carbon emissions associated with standard electric storage water heaters. ORNL and GE entered into a cooperative research and development agreement to jointly test and market the units.

The initiative follows DOE's announcement of the first Energy Star criteria for water heaters. Energy Star labels on appliances help consumers identify the most energy-efficient products available. According to DOE projections, Energy Star water heaters are expected to save Americans some \$780 million in utility costs and eliminate 4.2 million tons of carbon dioxide emissions in 5 years.

"This is a real-life example of how the public and private sectors are working together to accelerate bringing new energy-efficient technology solutions to the marketplace," said DOE Assistant Secretary for Energy Efficiency and Renewable Energy Andy Karsner. "Commercialization of Energy Star water heaters will give Americans another way to make smart choices to save money and energy."

Water heating accounts for 12 percent of U.S. home energy consumption. Because about 4.5 million electric storage water heaters are purchased annually, millions of consumers will have the opportunity to cut their electric water heating bills in half with a modest investment that will pay for itself in a few years. The synergy among DOE Energy Star goals, ORNL science and technology capabilities, and GE has made efficient water heating a fertile area for substantial energy savings.

Patrick Hughes, director of ORNL's Building Technologies Research and Integration Center, said DOE has raised the bar for energy efficiency through the Energy Star program, and GE has risen to the challenge. "These are the kinds of products that must emerge at affordable prices if zero-energy homes are to become a reality," Hughes said.

The latest generation of heat-pump water heaters is more durable and reliable, easier to install, and less expensive than initial ones. The newest model can easily be installed by a plumber to replace an existing water heater. The installed cost will be about \$400 more than for a conventional 50-gallon water heater, but energy savings in about 2 years could cover the additional purchase cost.

Testing and analysis on the new heat-pump water heaters will be conducted in ORNL's Building Technologies Research and Integration Center and at field sites. The work is supported by GE and DOE's Building Technologies Program within the Office of Energy Efficiency and Renewable Energy.

