

Energy Star Compliance  
E. Fabrizio 11/28/07

### Energy Star Compliance, 2nd draft comments

It is obvious that Energy Star is not remaining “Fuel Neutral” with the exclusion of electric tankless and tank water heaters. Presently, customers desiring an energy star appliance with electric, as a sole energy source would only have a heat pump water heater to choose from. With shipments last year of less than 2000 for the electric heat pump water heater, this basically eliminates the use of electric energy for a water-heating source.

You state that for electric instantaneous, a savings of 9.5% is insignificant. This savings is calculated from federal standards of electric tank vs. tankless. Utilizing your estimates,

- Shipments of 4.8 million electric water heaters last year.
- If just 10% of the nation’s changed to instantaneous, this would result in an aggregate energy savings to nearly 203,040,000 kWh savings.
- 203,040,000 savings is significant

Current federal testing does not quantify standby loss. Energy factors are basically calculated on input versus output, flowing water. You can significantly increase your savings by also adding “real-time” savings of standby loss for instantaneous heating.

- Standby loss is not considered in the energy savings calculations, which is large contributor of the total savings, and a viable parameter. Compared to an electric tank vs. instantaneous:
  - Hope Park Cabin study results (intermittent usage) determined 40% kWh savings by independent testing of the park staff
  - House study results (daily usage) determined 14% kWh savings by independent testing from a local power company
  - DOE report dated year 2000 has estimated 20% kWh savings

Gas tank heaters meet the energy star criteria with a 12% savings in energy, which equates to \$43/ year savings.

- This consumer savings of gas tank heaters is below an actual house study which demonstrated savings of 14% in electrical energy using a electric instantaneous, which equates to \$44/year using your nationwide estimate \$0.104kWh.
- Using DOE report dated 2000 at 20% savings, this would greater, and equate to \$62/year.

Provisions have been made from the original performance criteria to adapt to a certain category. For example, heat pumps are allowed to deliver only 50 gallons on 1st hour rating to comply with energy star criteria. However, electric instantaneous is required to meet an output demand equivalent to 33.8 kW but only allowing 12kW maximum input.

For referance, using lower flow rates (conserving water) shower, 1.6 gpm flow, 57 deg f inlet, 108 deg f outlet, kW required is 11.9 kW. This also meets the maximum 12kW limit, and would not require an upgrade of 100 amps to 200-amp service.

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