

RESIDENTIAL NATURAL GAS WATER HEATING



Overview: CEE's High-Efficiency Residential Gas Water Heating Initiative was launched in January 2008 to encourage market adoption of high-efficiency water heaters. Initiative participants promote common performance levels for efficient equipment and work with manufacturers, consumers, and the supply chain to encourage proper installation practices and consumer choices.

About this Market: Water heating represents a major use of energy in North American homes with the potential for significant natural gas savings. In the U.S., water heating accounts for approximately 15 percent of residential energy consumption, making it the third largest energy end-use in homes. In Canada, water heating is estimated to be the second largest residential energy end use, accounting for nearly 22 percent of household energy consumption. Storage units are the most common type of water heater with over 95 percent of the market share. Gas fired water heaters accounted for 4.38 million units and electric water heaters accounted for 4.47 million units in 2007. Unit sales of gas tankless water heaters were approximately 254,600 in 2006.

How the CEE Gas Water Heating Initiative Works: By adopting and promoting specifications for energy efficient residential gas water heaters, the initiative is increasing consumer demand, supply chain promotion, and manufacturing production of high-efficiency products. Participants promote higher-efficiency equipment through rebates and consumer and installer education. The initiative sets NOx emission requirements for each of the water heating product categories, which are voluntary except where required by law.

The storage water heater specification has three tiers that can be used to promote different levels of efficiency. The specification for tankless water heaters has one tier level, but may be updated in the future as new high-efficiency products enter the market. To assist efficiency program administrators, contractors, and consumers in identifying high-efficiency equipment, CEE maintains lists of storage and tankless water heaters that meet the CEE specifications.

Initiative Participation

Initiative participants use rebates to promote residential gas storage and tankless water heaters that meet or exceed CEE specifications. Initiative participants are also required to conduct consumer and contractor education regarding the benefits of efficient gas storage and tankless water heating equipment. Participants undertake the awareness-building aspects of the initiative, making use of communication messages developed by the CEE Gas Committee

Expected Energy Savings: Depending upon the region, on average, high-efficiency storage water heaters can save homeowners between 7 percent and 14 percent on their energy bills per year in comparison to standard efficiency water heaters. Similarly, high-efficiency storage water heaters that use condensing technologies can save approximately 23 percent, and tankless water heaters can save approximately 30 percent, depending upon location and proper installation and use.

Market Barriers: There are several barriers to increasing market penetration of efficient, gas fired storage and tankless water heaters. It is often the case that many plumbers, builders, developers, and retailers do not have the appropriate marketing tools or do not see the value in selling high-efficiency. The higher upfront cost can deter potential buyers despite lower annual operating costs.

FACT SHEET

Consumers are also often unaware of the benefits of investing in high-efficiency products and rely upon their plumber or builder to make their water heating decisions. Providing reliable sources of information to help consumers and the supply channel make more informed choices about water heating is one important way to educate the market.

CEE RESIDENTIAL GAS WATER HEATING INITIATIVE

High-efficiency specifications for
RESIDENTIAL GAS STORAGE AND TANKLESS WATER HEATERS

Terms of usage below

Energy Factor (EF) performance level

	Storage ≤75,000 Btu/h
Tier 0	≥0.62 EF
Tier 1	≥0.67 EF
Tier 2	≥0.80 EF

	Tankless >50,000 and <200,000 Btu/h
Tier 1	≥0.82 EF (w/ electronic ignition)

Optional Criteria NOx Emissions

Storage ≤75,000 Btu/h	10 ng per joule of heat output or 15 ppm at 3% O ₂ or less
Tankless >75,000 Btu and <200,000 Btu/h	40 ng per joule of heat output or 55 ppm at 3% O ₂ or less

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FACT SHEET

