ELECTRIC TANKLESS WATER HEATERS

“ENERY STAR”

Partners and Shareholders

Meeting June 5,2007

Electric Tankless “Energy Star” Objectives

- Electric tankless water heater technology can meet all of the “Energy Star” objectives.
- The qualification criteria for each technology category should put primary influence on “energy efficiency”

- Example: electric air conditioning with 16 SEER, 12.5 EER receives the energy star label + a $600.00 rebate

“Energy Star” Criteria

- Each technology should have its own specific set of criteria established to meet “Energy Star” objective

Example

- The flow rate criteria is 3.5 gpm minimum: however, the solar category has a provision for a flow rate of 55 gph maximum on delivery

- Electric tankless can meet draft criteria, without energy input restrictions. (currently 3.5gpm, 77°F rise not exceeding 12 kW)
- Note: there is no energy input restrictions on gas tankless water heaters
- Using a lower flow rate (conserving water, energy,and kW demand) shower of 2 gpm, with 57°F inlet yielding 108°F outlet, requires 14.9kW

Electric Tankless Water Heater needs its own defined criteria

- The minimum criteria for electric tankless category should be:

- Minimum energy factor of 0.98
- Minimum flow of 2.0 gpm at 51° F rise
- Minimum ten year warranty

Performance of Electric Tankless Water Heaters

- Electric tankless water heaters should be included in the “Energy Star” program based on the following:
- Gas tankless qualify for the tax credit with a power factor of only 0.80 or higher, with no energy limitations.
- Electric tankless are excluded with highest rating of 0.99
- Gas tankless energy input is not limited to 12kw=(40,968BTU/hr)
- Electric tankless reduces “Scale” build up (no maintenance needed even in hard water regions)
- Compact size eliminates time and energy needed to deliver hot water to the fixture

DOCUMENTED ENERGY SAVINGS

- DOE reports has estimated
  - 10%-20% kWh savings for standby loss (tank vs. tankless). Ref:www.eren.doe.gov/consumerinfo/refbriefs/bc1.html
  - 24%-34% kWh savings for homes that use 41 gpd or less Ref:www.eere.energy.gov/consumer/your_home/waterheating
- Hope State Park cabin study (intermittent usage) determined 40% kWh savings by local utility company and park staff
- Residential house study (daily usage) determined 14% kWh saving by northeast power company

CONCLUSION
“Energy Star” Proposed Critera for Electric Tankless Water Heaters

- Extremely high efficiency rating of 0.99, greater than any conventional electric tank and gas tank and tankless water heaters
- Documented annual cost saving of between 15% and 40% compared to tank vs. electric tankless water heaters
- New installations can start saving energy immediately
- Existing installations can run 14.9kw on 100-amp service. Additional capacity can be achieved with appropriate electrical service upgrade
- New and retro fit installations can reap substantial cost saving and space savings with no capacity limitations