

## **Commentary Summary for the Preliminary ENERGY STAR Water Heater Meeting**

**April 16, 2003**

### ***Introduction, General ENERGY STAR Program Comments and Questions***

- This discussion was meant to be an informal fact finding meeting. There will be more detailed and formal discussions once DOE has released draft criteria later in the summer.
- *What has the success of the program been?* In some markets, ENERGY STAR has become the “defacto” standard, especially where no trade or government standard exists
  - *Is there a precedent for including new technologies in ENERGY STAR before they have a significant market share?* CFLs and front loading clothes washers were labeled at less than 1% market share – but the technology was not necessarily “new technology”.
- The updating of ENERGY STAR standards relative to federal or trade standards or the emergence of new technology was discussed.

### ***Discussion on Electric Storage: Advanced Technologies & Resistance Units***

- No major comments were made on the suggested ENERGY STAR efficiency levels
  - Participants noted that current product offerings would change dramatically this year as new standard becomes effective.
  - A new GAMA directory will be available later in April allowing for another evaluation of efficiency levels.
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- Some participants suggested that DOE might want to consider adding criteria beyond energy efficiency to address performance/quality concerns with advanced technology, similar to what DOE has done on CFLs.
- The main question was whether advanced WH technologies would be the only ENERGY STAR qualifying products *or* the best performing electric resistance storage water heaters along with the advanced technologies.
- Some participants suggested ignoring the large electrical resistance market and qualifying only advanced water heating technologies would ignore the mass market and reduce potential energy savings.
- EF measurement accuracy for electric storage units was discussed. The implication for ENERGY STAR would be that if criteria were set for electric resistance units at .93 vs. .90 EF, for example, that the EF measurements would

- need to be accurate in order to ensure meaningful savings. Representatives from NRCANADA said that they were looking at the test method.
- The limited, proposed efficiency gain of 3% was discussed.
  - ACEEE stated that they had held focus groups to discuss water heating technologies and those consumers didn't have a problem accepting new technologies.
  - DOE R&D efforts have focused on development of a "drop-in" HPWH product that could be used as a replacement to electric resistance. To date, DOE efforts have supported promotion of HPWH products based on electricity rates, water use and climate.

### **Solar Water Heaters**

- The economic viability of SWHs for the average consumer was a concern to some participants.
- SWH trade groups are eager to label their products to lend further credibility to their highly efficient products.
- Concerns arose about the high capital cost and limited regions where SWHs may be applied – it was pointed out that not all homes in the US are good candidates for solar water heating.
- The accuracy of the SWH capital cost were discussed – some suggested that DOE should do more analytical work on the incremental costs of solar systems, especially looking at differences in costs for new construction vs. retrofit applications and the costs of bulk purchasing for new developments
- Few utilities are currently offering rebates.
- SWHs are difficult to install requiring special skills
  - SRCC commented they are beginning a SWH installer/contractor certification program that will help the industry assure product quality
- Some commented that the solar industry is relatively dormant but could ramp up quickly to meet new demand, especially in partnership with large manufacturers of storage technologies.
- Currently, the infrastructure for installing and maintaining solar systems does not seem to be self-sustaining in some parts of the country that have had active markets in the past.

### **Heat Pump Water Heaters**

- The economic viability of HPWHs for the average consumer was a concern also.
- HPWH may be more widely applied across the country and are more affordable than solar, but still have high capital costs.
- Reliability issues were cited

- Longer warranties to help alleviate this problem were discussed but manufacturers stated longer warranties mean higher product cost exacerbating the high capital HPWH cost

### ***Instantaneous Water Heaters***

- Primarily Gas IWHs were discussed; no comments on the proposed exclusion of electric IWHs were made.
- Manufacturers pointed out IWHs are not an emerging technology, but an emerging market in the United States. Europe and Japan have used IWHs for years, only in recent years have the products been gaining market in the US.
- Gas grid demand was discussed, but no major problems have been encountered by manufacturer given the Gas IWH's high gas demand
- IWHs with input rating around 100,000 Btu/hr were adequate for a single water-heating load; approximately 200,000 Btu/hr input units better served two simultaneous loads.
- The IWH market is nearly split between new construction and replacement
- IWH manufacturers cited available gas condensing, power vented product with EF>0.9 in foreign markets, they may come to the US soon

### ***Gas Storage***

- Gas condensing storage WHs were discussed, but both Rheem and AO Smith commented they did not manufacturer residential units, but do offer commercial units at 99% efficiencies.
- Residential condensing WH product would have high capital cost limiting the market.
- The limited 7% efficiency gain proposed was discussed.

### ***Specific Comments on DOE Analysis Paper***

- Comments were made on the baseline chosen for savings calculations. Choosing the Federal Government's 64.3 gallons per day standard were questioned given better, more current usage figures ranging from 40 to 50 gallon a day and also varying by family size or application. Additionally, some suggested that reduced water usage resulting from new Federal clothes washer standards should be taken into account.
- The field of data used was discussed for IWH and storage. Questions arose on the accuracy of the number of ENERGY STAR qualifying units at the proposed efficiency levels.