

Dear Rich,

Attached please find a revised copy of the presentation that I made by phone during the June meeting. Having reviewed the current analysis and proposal I feel that those comments are still relevant and need to be included in the public record. Please post this email and the presentation on the website and include them in the record for this proceeding.

The changes I have made are shown in red on the applicable slides. I have also provided a revised chart on the relative efficiency of water heaters (slide 16). The primary changes on this slide are the ranges of efficiency for gas and electric tankless water heaters. For both of these technologies, but particularly for gas tankless water heater, the efficiency varies depending on the draw volume. Small volume, intermittent draws are considerably less efficient than long continuous draws (think rinsing hands versus long showers).

To be helpful to the residential market (meaning the buyers of water heaters for use in homes regardless of how they are rated by federal test procedures), The Energy Star Residential Water Heater criteria must help the buyers increase the efficiency of their water heating choices. If the purpose is to save energy, then even relatively modest shifts in efficiency over a large number of buyers will save significant amounts of energy.

With this in mind, I recommend that fossil (natural gas, propane and oil) fired water heaters and electric resistance water heaters, both storage and tankless be included in the program. Gas tankless water heaters need to have a category that includes a buffer tank (typically electrically heated), since they are often sold that way to eliminate the problems of the "cold water sandwich." The same concern applies to all water heaters that are sold as part of a package...the entire system must have a rating so that consumers will be able to understand the value of what they are buying and so that expectations of energy savings and environmental benefits will be more realistic.

There should also be a category for hybrids of storage and tankless (large burner or element and relatively small storage tank) which are coming onto the market right now in response to some of the issues consumers have with straight tankless. There can be a separate category for this type of water heater, or it can be included in the definitions for fossil and electric resistance.

There continues to be a need for categories for more advanced water heaters such as heat pumps and solar. In both cases, the back-up or boosting technologies need to be included in the assessment of relative efficiency so that the consumer will understand the system that they are buying.

Feel free to contact me if you have any questions. The best number to reach me is 916-549-7080.

Thank you for consideration of these comments.

Sincerely, Gary Klein

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