



NRDC Comments on the ENERGY STAR Product Specification for Residential Water Heaters, Version 2.0: Draft 2

David B. Goldstein – Energy Program Co-Director
Natural Resources Defense Council (NRDC)

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On behalf of the Natural Resources Defense Council (NRDC) and its more than 1.3 million members and e-activists we respectfully submit our comments on the ENERGY STAR Product Specification for Residential Water Heaters, Version 2.0: Draft 2. NRDC offers the following comments on the specification.

NRDC appreciates the effort that ENERGY STAR staff have put into trying to optimize the specification of equipment in a complex system in which design issues that go beyond the water heater itself affect how efficient the product ends up being in practice. NRDC believes that ENERGY STAR has done a good job in developing a nuanced specification in the absence of a good test procedure for whole-house domestic water heater energy. As you are probably aware, DOE is considering revising the standards program's test procedure to account better for, among other things, the *in situ* performance of instantaneous water heaters compared to storage units. We urge the programs to work together to improve the test procedure in such a way that it serves both mandatory and voluntary programs. We further urge you to work with stakeholders to develop a whole-house hot water modeling test that can be used to improve home energy ratings and energy code compliance algorithms. The whole-house model would account for losses in the distribution system, and enable both a better analysis of where instantaneous water heaters save energy but also where more thoughtful supply piping could reduce losses.

NRDC supports the main directions and conclusions of Version 2.0 Draft 2 with one change: we urge ENERGY STAR to also allow all small water heaters designed to provide potable hot water to homes to qualify regardless of whether their input rate is less than or greater than 75,000 BTU/h. Many of the most efficient residentially-intended and -marketed products are slightly over this threshold in input rate. These products, which represent the majority of condensing water heaters available today, were unintentionally excluded from eligibility for the Section 25C tax credit passed by Congress in 2005 but were subsequently added.

Operationally, this would require a modification to Section 1.A.a.i of Draft 2 to eliminate the input rate limit or raise it to an appropriate level, and changing the specification of EF in Section 3.B.a to include an alternate rating for Thermal Efficiency. We suggest that the

level be 90 percent to harmonize with the Section 25C level and to encourage manufacturers to market their existing condensing products rather than worsening their performance to allow lower costs. (A 90 percent thermal efficiency is about equivalent to an 80 EF and thus is higher than the equivalent of the proposed 67 EF.) The other requirements, such as warranty, would continue to apply. Perhaps the relevant safety standard is different.

NRDC believes that the ENERGY STAR specification should require condensing water heaters soon, although we agree that it would be premature to do so effective in 2012. But we believe that including these “commercial” units (as defined in terms of the test procedure, rather than in terms of practical application) in this specification makes sense since their clear intended market is homes.

We also think it would send precisely the wrong message to allow an EF 67 non-condensing unit to be ENERGY STAR labeled and then compete with a more efficient condensing water heater that is *ineligible* for the label.

NRDC agrees with Draft 2’s proposal to consolidate the gas condensing and non-condensing categories into one.

In addition, NRDC shares ENERGY STAR’s concern that an instantaneous electric water heater spec may be inappropriate since in most cases it will perform worse than a heat pump storage unit. Perhaps this is true in all cases, since it would have to make up for a greater than factor of two difference in heat provision efficiency. NRDC agrees that a binary system may not be up to making recommendations concerning this situation, and the only safe conclusion to this premise is that there should not be an ENERGY STAR spec for a system with a recovery efficiency as low as 1. We are also concerned that in terms of greenhouse gas emissions and source energy it will underperform even a minimum-standards gas or propane water heater.