

Topic	Comment	EPA/DOE Response
Sunset Boilers Spec		
General	We agree with EPA that the existing specification cannot be left in place and urge EPA to discontinue the gas specification completely.	Thanks for your comments.
Qualification Criteria		
General	We support the proposed specification requirements of 90 AFUE for gas boilers and 87 AFUE for oil fired boilers. As EPA indicates, the market share for ENERGY STAR boilers has grown consistently since the specification was first developed and reached over 50 percent in 2012, which is well above the target market share for ENERGY STAR products. This market share is likely to continue to grow, especially given that the new federal minimum standards which took effect in September 2012 are close to the current ENERGY STAR criteria. There are also many higher-efficiency boilers available on the market, including at levels higher than the proposed specification, making the specification ripe for updating.	Thanks for your comments.
	EPA has conducted a thorough investigation of the life expectancy of condensing boilers and we are unaware of any data that contradicts its conclusion.	Thanks for your comments.
	Maintenance costs will be significantly higher and service life expectancy significantly less for condensing boilers when compared to atmospheric boilers – as a result, potential savings in energy use will not materialize as promised. An empirical study the likes of which the EPA and Energy Star are requesting on fuel savings and maintenance costs in order to make better informed policy decisions, would be too costly for private organizations to undertake. By their very nature, condensing boilers handle flue gas condensate which is acidic. Use of stainless steel or other “corrosion resistant” materials for the heat exchanger mitigate, but do not necessarily eliminate, long term damage cause by these acids. In the absence of other data, we think the best predictor of boiler life expectancy is manufacturer’s warranties. These warranties are based on what the manufacturers themselves think are reasonable life expectancies. [In general, condensing boiler warranties are not as long as cast-iron boiler warranties.]	EPA took further steps to investigate claims that the service life is shorter and the maintenance costs are higher for condensing boilers, including talking to regulators in Europe. Even with this broader investigation, there was conflicting evidence on both sides. As for utility interest, 39 utilities and energy efficiency program sponsors in the US offer their customers incentives for condensing boilers.
AFUE	We also reiterate our concern of using AFUE as the sole metric and ignoring the system design when discussing energy efficiency and appropriate heating appliances.	EPA shares this concern and hopes in the future to be able to address it.
Installation Cost/Payback Analysis		
General	Approximately 90% of residential boilers are installed as replacements. We are not completely sure what EPA means by “deep retrofits”, but we think it is fair to say that the vast majority of replacement boilers are installed with minimal changes to the heating system and, unless required by code or by the boiler manufacturer’s instructions, minimal changes to the venting system. We therefore think that the comparative installation costs we originally provided to EPA (copy attached) remain valid. EPA should make decisions about setting the specifications based on the relative cost of condensing versus noncondensing equipment at present, not what EPA anticipates they will be in the future. EPA’s argument that rebates will offset the installed costs of condensing boilers is a circular one since most of these rebates are based on the EPA specification itself and will be present at whatever point EPA sets the specification.	The estimated costs and savings for high efficiency boilers varied widely, depending on the source, which made payback analysis particularly difficult for boilers. It is clear that there are some cases where an ENERGY STAR condensing boiler will not be a good fit, and EPA will do our utmost to educate consumers about this. However, it was equally clear that there are cases where condensing boilers are an excellent choice.
Test Method		
General	As the Draft 2 document noted, on July 1, 2013, DOE issued a final rule on the Residential Furnace and Boiler efficiency test procedure to incorporate additional equations to calculate AFUE for two-stage and modulating condensing furnaces and boilers when manufacturers omit the heat-up and cool-down tests during testing. We have not received any ratings changes for the residential boilers listed in AHRI’s efficiency certification program that indicate that these revised calculations have caused the ratings of any condensing gas boilers to drop below 90.0%.	Thank you for the input.

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	<p>We continue to maintain that CFR section 430.23(n)(2), referenced in Section 3) B. c. does not specify that the AFUE is rounded to the nearest whole number. That section states that the AFUE shall be expressed in percent but provides no explicit directions regarding rounding. The values of 90% and 90.7% are both expressed in percent and both satisfy the provision of section 430.23(n)(2) as it is written. Until DOE officially and clearly resolves this confusion there is no harm in modifying this specification to recognizing what has been the practice for at least the past 20 years; that is the reporting of AFUE rounded to the nearest tenth of a percent.</p>	<p>EPA will continue to follow DOE practices in rounding. If DOE changes their practice, EPA will update the specification to follow suit.</p>