ENERGY STAR Version 3.0 and 4.0 Furnace Specifications
Final Draft Stakeholder Comment Response Summary

REF NO.	Topic	Comment	EPA Response
1	AFUE	The definition of annual fuel utilization efficiency (AFUE) in the furnace specification should be consistent with the definition in Section 10.1 of Appendix N to Subpart B of Part 430 in the Code of Federal Regulations.	EPA has harmonized the AFUE definition with DOE definition.
2	Air Leakage	Stakeholder agrees with effective date extension for air leakage requirement.	EPA appreciates the support of AHRI and all stakeholders for their assistance and thoughtful comments through the specification development process.
3	Air Leakage	Stakeholder suggests moving Version 4.0 reference to first column since the version reference is to the ENERGY STAR requirement, not the test method.	Version 4.0 is released as a separate document from Version 3.0 and Q_{leak} will not be included in Version 3.0.
4	Basic Model	"Basic Model" is not referenced in definitions section of specification. Stakeholder feels "Basic Model Group" is more appropriate than "Product Family".	EPA has replaced "Basic Model" term with "Product Family" as the term "Product Family" is consistently used across other ENERGY STAR specifications.
5	e	The revised E_{AE} calculation in the October 2010 final rule includes E_{SO} (standby and off mode energy), which would make it hard to meet the original 2% criteria for e. If "e" is not revised, 43% of furnaces listed on the AHRI directory with a minimum AFUE of 90% and that currently meet the 2% criterion would no longer qualify. Stakeholder recommends using: e = [(EAE - ESO) x 3413]/[((EAE - ESO) x 3413) + (Ef x 1,000,000)] ≤ 2%	EPA's intention is to require efficiency standards equivalent to the original 2% criteria for "e". DOE has modified the furnace fan test method and the calculation of "e" to ensure the criteria is adjusted accordingly, such as to have no impact on model qualification.
6	e	Definition should be revised to indicate: “e” is the ratio of the furnace fan electrical consumption to the total energy consumption of the furnace during the heating mode.	EPA and DOE have revised the definition of "e" as per stakeholder's recommendation.
7	e	Definition of "e" should be shown as test method reference to an AHRI reference rather than defining it in the spec. AHRI plans to revise the "e" definition to counteract the impact of E_{SO} on E_{AE}.	DOE has revised the calculation of "e" to counteract the impact of E_{SO} on E_{AE}.
8	e	Stakeholder is of the opinion Table 2 should exclude E_{AE} and E_{AF} since these requirements are not included in the furnace specification. Further, the industry is evaluating an appropriate tolerance with respect to verification testing of "e".	Reference to E_{AE} and E_{AF} has been removed from Table 2 of the specification.
9	e	DOE has proposed changing the definition of E_{AE} to include standby and off mode electric power. Stakeholder suggests EPA clearly define which definition is being used.	EPA's intention is to require efficiency standards equivalent to the original 2% criteria for "e". DOE has modified the furnace fan test method and the calculation of "e" to ensure the criteria is adjusted accordingly, such as to have no impact on model qualification.
10	Excluded Products	Stakeholder recommends additional clarification of excluded products. Furnaces intended **only** for commercial installation… or Furnaces not approved for residential installation…	EPA has revised the excluded products section to "Furnaces intended only for commercial installation and/or with a rating of 225,000 Btu per hour..."
11	Future Revisions	Stakeholder is of the opinion EPA should explicitly inform stakeholders they reserve the right to amend the future requirements to protect the integrity of ENERGY STAR.	As mentioned in section 7, "EPA reserves the right to change this specification should technological and/or market changes affect its usefulness to consumers, industry, or the environment."
12	Future Revisions	ENERGY STAR should include a market review at least 6 months before a scheduled change will go into effect to ensure they will be inline with ENERGY STAR guiding principles.	EPA monitors U.S. and Canadian markets constantly, and informally reviews availability and differentiation of products based on eligibility requirements.
13	HDD	Stakeholder recommends modifying definition to be more precise: Heating degree days (HDD) for each state are calculated by subtracting the population-weighted daily average temperature for that state from a balance temperature of 65º F, and summing only positive values over an entire year.	EPA has revised the HDD definition as per stakeholder's recommendation.
14	Regions	Stakeholder recommends a national 92% AFUE.	Based on EPA's cost effectiveness analysis, the proposed 95% AFUE level for the U.S. North and Canada will provide a reasonable payback for the additional equipment retail price. For the U.S. South, however, additional data has led EPA to conclude that 92% AFUE units do not offer favorable payback.
15	Regions	Stakeholder recommends stating directly in the table defining regions, that the breakdown of U.S. North and U.S. South will be aligned with and follow DOE definitions for these regions. Currently, EPA's intent to align is stated in the notes section.	EPA reiterates that it intends to align with DOE in regards to the determination of regions. Should DOE publish a final rule with regions, EPA will review it and will update the specification as needed.
16	Regions	Stakeholder is pleased EPA has revisited cost effectiveness issue for southern states.	EPA appreciates the support of CEE and all stakeholders for their assistance and thoughtful comments through the specification development process.
17	Rounding	Stakeholder is of the opinion rounding requirements as currently defined could significantly impact manufacturers for Furnaces Version 3.0 and Version 4.0 as well as Most Efficient criteria. Stakeholder recommends clarifying the levels to tenths of a percent e.g. ≥ 95.0%	EPA has clarified levels to clearly indicate significant digits are to tenths of a percent. For example, U.S. North/Canada ≥ 95.0
18	Testing Requirements	Testing requirements offer two options - single sample and DOE sampling requirements. Stakeholder is of the opinion that the two options infer significantly different confidence intervals and should be limited to testing as per DOE guidance.	EPA has traditionally required manufacturers to demonstrate qualification based on the testing of one unit. The Agency recognizes the concept of confidence intervals but structures the requirements this way so manufacturers will have an incentive to factor in variability as part of the qualification process, thereby ensuring that every consumer (rather than on average) can be confident the product they buy meets the ENERGY STAR requirements. Given that testing is structured differently for purposes of minimum efficiency standards, EPA recognizes the need to offer that as an alternative.
19	Warranty	Stakeholder is of the opinion warranty requirements should be removed as these requirements do not impact performance metrics.	EPA will retain this requirement. One of EPA’s Guiding Principles for ENERGY STAR is that product performance is maintained or enhanced with greater efficiencies. As new, more efficient technologies are introduced, consumers need to be assured that ENERGY STAR qualified furnaces will be as reliable as their standard counterparts. The warranty requirement helps to provide this assurance while allowing manufacturers the flexibility to determine the appropriate length of that warranty based on their individual business principles. There are several ENERGY STAR product specifications that include warranty requirements.