

Public Comments of the American Gas Association

U. S. Environmental Protection Agency (EPA): “ENERGY STAR Program Requirements, Product Specification for Furnaces, Eligibility Criteria FINAL DRAFT, Version 3.0 and 4.0”

May 9, 2011

Introduction

The American Gas Association (AGA) is pleased to submit comments in response to proposed revisions to the ENERGY STAR Program Requirements covering product specifications for furnaces. AGA supports the ENERGY STAR program for energy efficient products and has been an active participant in previous ENERGY STAR activities in development of product specifications, most importantly in the promulgation of requirements for residential water heaters by the U. S. Department of Energy (DOE) during its time as the Federal lead on developing ENERGY STAR product specifications.

The American Gas Association, founded in 1918, represents 199 local energy companies that deliver clean natural gas throughout the United States. There are more than 70 million residential, commercial and industrial natural gas customers in the U.S., of which 91 percent — more than 64 million customers — receive their gas from AGA members. AGA is an advocate for natural gas utility companies and their customers and provides a broad range of programs and services for member natural gas pipelines, marketers, gatherers, international natural gas companies and industry associates. Today, natural gas meets almost one-fourth of the United States' energy needs.

AGA supports a range of diverse energy efficiency standards for buildings, appliances, and equipment consistent with AGA's "Position Statement on Building and Appliance Energy Codes and Standards" shown in Exhibit 1. In particular, AGA supports energy efficiency codes and standards that are: (1) technologically feasible and economically justified measures that benefit consumers, and (2) effective in reducing overall U. S. greenhouse gas (GHG) emissions.

AGA's comments provided here supplement comments provided to EPA in December on Version 2.0 of the draft Eligibility Criteria.

Comments

U. S. Department of Energy (DOE) Minimum Efficiency Standards Revision and Technical Support Document

In issuing the FINAL DRAFT Eligibility Criteria, EPA is not maintaining its commitment to “delay the furnace revision process... to allow better coordination with DOE,” which is issuing revised cost effectiveness analysis results for these products under its Technical Support Document (TSD) for federal minimum efficiency standards. “When the TSD comes out, we would be very

interested in your initial impressions as to its accuracy.”¹ As of April 26th, 2011 the TSD has not been issued, so comparison of EPA’s cost effectiveness analysis with the DOE analysis could not be made. The practical impact of this action is that the potential cost effectiveness of need eligibility criteria associated with both the regional AFUE requirement of 95% in Northern U. S. climates and additional requirements on cabinet leakage cannot be assessed on the basis of life cycle-cost (LCC) effectiveness or simple payback, both of which are assessed in previous TSDs for residential furnaces and, most recently, for alternative minimum efficiency thresholds in Northern climates. In the absence of this information, stakeholders can have little assurance that the Northern regional efficiency requirement in particular would be cost effective for a significant percentage of consumers, especially since EPA has not published its own final analysis of these measurements of economic justification.

AGA believes that EPA’s proposal for regional ENERGY STAR eligibility Criteria anticipates DOE promulgation of minimum efficiencies standards for these products following the same regional scheme. The EPA proposal represents incremental energy efficiency requirements over what it expects will be the DOE minimum efficiencies, expected to be delivered in a Direct Final Rule. However, DOE has not issued this rulemaking or supporting TSD at the time of the EPA proposal. Even if it does so by the time of the deadline for these comments, the Direct Final Rule minimum efficiencies is likely to be challenged under the statutory provisions of the DOE authority allowing for presenting arguments for withdrawing a Direct Final Rule. AGA expects that challenges of a Direct Final Rule emphasizing regional minimum furnace efficiencies would be based on DOE’s TSD. But since the TSD is yet to be published, the need to pursue this approach cannot be assessed. EPA should be waiting for DOE’s proposal and economic justification for its revised minimum efficiencies for furnaces prior to proposing a similar regional scheme.

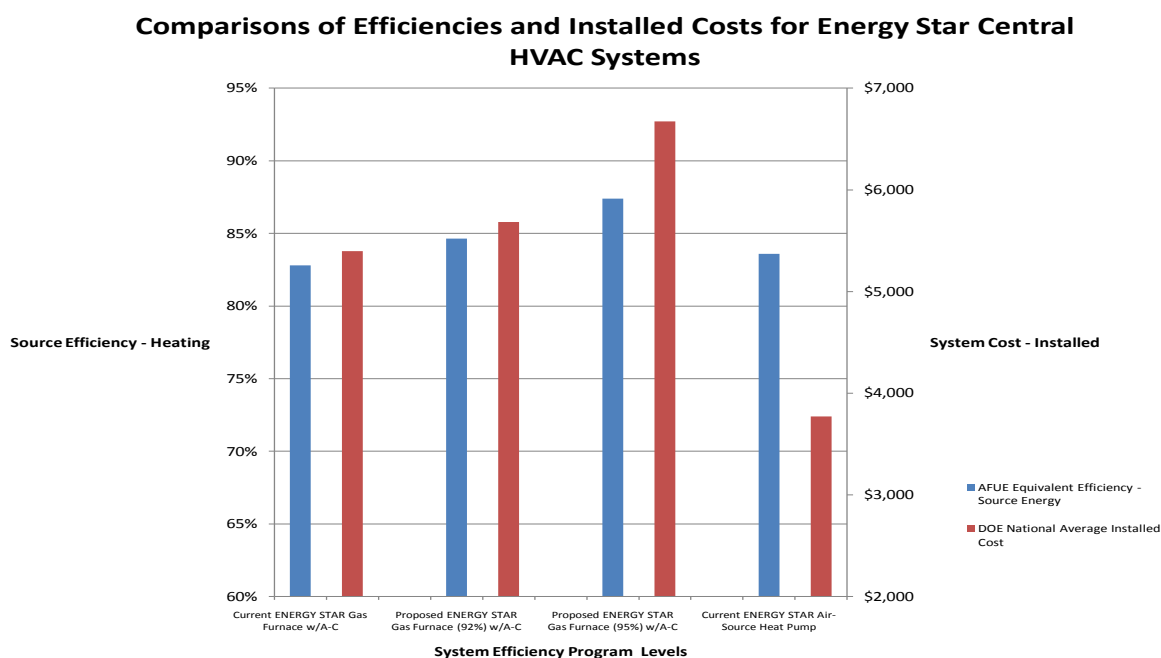
AGA reiterates its position that the EPA scheme for regional Eligibility Criteria based on higher minimum AFUEs in the Northern U. S. is not directly enforceable and transfers the burden of enforcement to entities other than EPA. AGA understands from the webinar discussions that EPA believes that labeling is enough for enforcement. In fact, this approach only leaves EPA out of the chain of enforcement, unlike the use and enforcement of labeling requirements for other ENERGY STAR products. The responsibility of enforcement is linked to installation of these products and, as such, represents an unfunded mandate placed upon state and local jurisdictions for enforcement of EPA’s labels.

Equity of EPA’s Revised AFUE Thresholds for Furnaces Relative to Competing ENERGY STAR Products

AGA reiterates its position that the eligibility requirements place natural gas furnace-heated HVAC systems at a disadvantage to competing heat pump technologies within the ENERGY STAR program based on relative installed costs and relative energy efficiencies measured as source energy. The current EPA proposal of 95% or greater for the “U. S. North” exacerbates a competitive disadvantage for gas heating relative to competing electric heating systems. ***This requirement for gas furnaces imposes a requirement to achieve heating efficiencies that***

¹ “Residential Furnaces: Stakeholder Webinar,” January 6, 2011, Washington, DC.

is 14% higher, on a source energy basis compared to the ENERGY STAR requirements for competing ENERGY STAR-rated air-source heat pumps. In addition, the proposed gas furnace minimums for ENERGY STAR carry an associated estimated cost premium, installed, compared to competing air-source heat pumps. Using data from the DOE Technical Support Documents (TSDs) for the 2007 minimum efficiency rulemaking for furnaces² and the preliminary TSD for 2010 for heat pumps and air-conditioners,³ **the cost premium for a 95% furnace is estimated to be 77% over competing heat pumps.** In making this cost comparison as it did in its previous comments, AGA used the DOE national installed cost estimates for Efficiency Level 4 split system heat pumps (14.5 SEER/8.15 HSPF) shown in Table 8.4.21 of the TSD and the national installed cost estimates for both coil-only air conditioners (rated at 14.5 SEER) shown in Table 8.4.9 and furnaces from the furnace rulemaking TSD (rated at 96% AFUE) shown in Table 11.2.4. Inclusion of coil-only air conditioner installed cost with furnace costs is necessary for comparison of systems with similar functionality. The comparison for source energy efficiencies and installed costs is illustrated in the figure below.



As a result, the proposed minimum efficiency requirements for gas furnaces would impose a significant installed cost bias within the ENERGY STAR program against gas furnaces in favor of electric heat pumps, with lower efficiency and high associated carbon footprints due to the current electric generation mix in the U. S. Current uses of the ENERGY STAR label for rebates and other incentives do not account for these disparities in efficiencies and installed

² "Technical Support Document: Energy Efficiency Program for Consumer Products: Energy Conservation Standards for Residential Furnaces and Boilers," U. S. Department of Energy, September 2007.

³ "Preliminary Technical Support Document (TSD): Energy Efficiency Program for Consumer Products and Industrial Equipment: Residential Central Air Conditioners and Heat Pumps," U. S. Department of Energy, March 2010.

costs and would promote a bias against gas heating systems carrying the ENERGY STAR label compared to competing ENERGY STAR electric heat pumps.

Beyond comparisons of ENERGY STAR products, EPA needs to recognize the increased potential for electric resistance heating systems, and their associated source energy efficiencies and carbon contributions, as a builder and consumer alternative to higher-cost ENERGY STAR gas furnaces since electric resistance heating, including electric furnaces, are unregulated. In installing electric heating systems with an ENERGY STAR labeled air conditioner, customers are likely to claim ENERGY STAR status of their HVAC system, regardless of the status of the heating system.

EPA's Retention of 90% AFUE as a Minimum Threshold for "U. S. South"

AGA supports EPA's decision to retain the 90% AFUE minimum threshold for "U. S. South" based on AGA's analysis that this minimum efficiency is likely to be the most economically justified threshold for a significant population of consumers. DOE's publication of a revised TSD will help assess the justification of this decision for the revised Eligibility Criteria. AGA reiterates its position that a single national ENERGY STAR efficiency requirement within its Eligibility Criteria is the most economically justifiable and equitably enforceable efficiency approach. AGA again supports a minimum of 90% AFUE within the Eligibility Criteria.

Furnace Cabinet Leakage Requirement

EPA's new proposal for cabinet leakage limitations within the Eligibility Criteria are outside the design certification requirements for the product (ANSI Z21.47) and other consensus-based means of design certification testing. The recent issuance of ANSI/ASHRAE Standard 193 provides the basis for the test method for this requirement, but this standard is not part of design certification. Furthermore, AGA and other organizations believe that experience with this test method is insufficient at this time to support inclusion within ANSI Z21.47. It would be premature to introduce a requirement based on this test method without experience of applying it across the range of furnace products, which would be an essential step in developing design certification standard requirements. The cabinet leakage requirement should not be incorporated until the test method is verified and a sufficient program is in place to ensure the reliability and reproducibility of performance to this requirement.

Recommendations

For the reasons expressed in the comments above, AGA strongly recommends that the Eligibility Criteria be delayed until the DOE TSD is issued and sufficient time for its review in light of the EPA proposals. AGA also strongly recommends that EPA initiate review of its heat pump ENERGY STAR eligibility requirements to consider HSPF requirements for ENERGY STAR heat pumps that are generally equivalent to source energy efficiencies of EPA's Eligibility Criteria for furnaces. These equivalencies should include HSPF minimums following the

regional scheme for furnaces if regional efficiency criteria are issued for furnaces. While increasing heat pump HSPF requirements alone are not likely sufficient to address installed cost biases against furnace-heating HVAC systems, general equivalency of source energy (and resulting greenhouse gas emissions) performance will help EPA better achieve its energy efficiency and climate goals.

This concludes AGA's comments on the FINAL DRAFT: Version 3.0 and 4.0 requirements. AGA looks is prepared to discuss its comments with EPA in the near future.

Respectfully submitted,
AMERICAN GAS ASSOCIATION
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Exhibit 1.

**What We Are For
American Gas Association (AGA) Positions
On Building and Appliance Energy Codes and Standards**

AGA's positions on building and appliance energy codes and standards support:

- 1) Technologically feasible and economically justified measures that benefit consumers, *and***
- 2) Measures that reduce overall U.S. greenhouse gas emissions.**

AGA does *not* support energy efficiency measures that lead to net increases in U.S. greenhouse gas emissions.

- 1. AGA supports (1) measurement of energy consumption and efficiency and (2) development of efficiency approaches based on full-fuel-cycle and source energy evaluation of fossil fuel-fired and transport system energy losses.**
- 2. AGA supports all energy efficiency codes and standards that are “technologically feasible and economically justified,” consistent with federal statutory requirements for minimum efficiency standards for appliances and equipment.**
- 3. AGA supports coherent use of minimum efficiency codes and standards with market based approaches and incentives to achieve market transformation and economically justified levels of end use efficiency (i.e., an “energy efficiency portfolio” approach), recognizing that individual methods have both limitations and potentials for unintended consequences including increased energy consumption and emissions.**
- 4. AGA supports incentives including tax credits, tax deductions, and utility-based rebates and subsidies for energy efficient appliances and equipment commensurate with the opportunities to reduce energy consumption and emissions.**
- 5. AGA supports adoption of performance-based approaches for appliances and buildings as the most efficient means of achieving energy efficiency and emissions objectives. Performance-based approaches are superior to simplistic prescriptive requirements, which may not achieve equitable results across energy types.**
- 6. AGA support codes that permit consideration of full energy choice in performance rating and the specification and selection of appliances and equipment as a means of achieving the most economically efficient energy and emissions savings.**
- 7. AGA supports expansion of use of renewable energy in buildings by supporting installation of natural gas as a primary backup energy source.**
- 8. AGA supports research, development, and demonstration (RD&D) of new energy efficient natural gas appliances and equipment as a means of extending the efficient use of natural gas resources, reducing the emissions contributions from natural gas end use, and helping consumers control costs of energy services.**