



April 27, 2010

Ms. Brenda Edwards  
U.S. Department of Energy  
Building Technologies Program  
Mailstop EE-2J  
Room 1J-018  
1000 Independence Avenue, SW.  
Washington, DC 20585-0121

Re: Energy Conservation Standard Rulemaking for Residential Furnaces

Docket Number: EE-2009-BT-STD-0022  
Regulatory Information Number (RIN): 1904-AC06.

Dear Ms. Edwards:

Thank you for the opportunity to comment on the Department of Energy's Rulemaking Analysis Plan (RAP) for Residential furnaces. As the Department launches into their latest effort to develop revised standard levels for furnaces, Northeast Energy Efficiency Partnerships (NEEP) is eager to offer our perspectives on several important issues, including the Consensus Agreement ("Agreement")

NEEP is a regional nonprofit organization founded in 1996 whose mission is to promote the efficient use of energy in homes, buildings, and industry in New England, New York, and the Mid-Atlantic states through regionally coordinated programs and policies that increase the use of energy efficient products, services and practices, and help achieve a cleaner environment and a more reliable and affordable energy system.

NEEP is an original participant in the drafting of the Consensus Agreement which involved a broad group of both industry and advocacy partners. We would like to reiterate our support for the standard levels and procedural improvements recommended in that document, and urge the Department to implement the recommendations through a Direct Rule. Beyond communicating our continued support for the Agreement, NEEP would also like to address a couple of concerns we are aware some industry groups (i.e. American Gas Association) are raising as reasons why the standard levels recommended in the "Agreement" may have negative consequences. These issues also recently surfaced in a related docket involving the state of Massachusetts' Waiver from federal preemption in order to implement a 90% AFUE minimum efficiency standard for residential gas furnaces.

In a letter of support for the Waiver, NEEP explained why, as a co-signer of the Consensus Agreement, the standard levels recommended in the Agreement represented our preferred outcome. However, considering the uncertainty around the reopened furnace rulemaking, the waiver continues to serve as a sort of insurance policy for Massachusetts and its residents. By adopting the Agreements' recommendations, the Department would not only ensure Massachusetts get the much improved standard it seeks to implement, but would provide many northern states with the same standard, and associated benefits.

According to the transcript from the public workshop on March 31, 2010 that NEEP was unfortunately unable to attend, the American Gas Association (AGA) continued to make statements that are unsupported. Echoing several points made in my comments to the DOE on the Massachusetts furnace waiver (attached), I'd like to share my perspectives again on a couple of important issues that are relevant to this discussion as well.



- Likelihood of the “northern tier” standard resulting in fuel switching
- Cost Effectiveness of more aggressive “northern tier” efficiency standard in retrofit applications, and suggestions that the more aggressive standards be limited to new construction applications.

#### Likelihood of improved “northern tier” standard resulting in fuel switching

Quoting from a recent letter the American Gas Association (AGA) sent to Senators Bingaman and Murkowski regarding the proposed S. 3059, National Energy Efficiency Enhancement Act of 2010;

“AGA has serious concerns about the likely negative impact of the provisions of Section 2(e) (page 14) of the bill with respect to furnaces, especially as they pertain to the replacement market. Our primary concern is that Section 2(e) would require that furnaces manufactured on or after May 1, 2013, for use in “northern” states must have an Annual Fuel Utilization Efficiency (AFUE) of at least 90 percent. While laudable, this mandate could ultimately encourage consumers to either switch to oil or electric furnaces, or repair rather than replace their furnace or, worse yet, not make the needed changes on the common-vented water heater venting system, which could result in a safety hazard.

To prevent this unintended consequence from occurring, AGA proposes that the bill be amended so that the requirements for a 90 percent AFUE furnace would apply only to new construction and not replacement furnaces. Further, AGA proposes making the effective date January 1, 2015.”

It is my understanding that these concerns extend to both the Massachusetts’ waiver effort and to the proposed consensus agreement. Are their concerns legitimate? In order to verify their assertions I reviewed some data on equipment costs and installation costs from the 2007 TSD for gas and oil furnaces (no analysis for electric furnaces) ([Appendix C, Engineering Analysis Cost and Efficiency Tables](#));

*Incremental costs between proposed baseline 90% AFUE gas furnaces and current baseline (78%) oil furnaces;*

- No incremental equipment cost, in fact baseline oil furnaces cost roughly \$2000 versus \$1,600 for the 90% AFUE gas furnaces.

*In the case of retrofits;*

- Installation costs for 90% AFUE gas furnace? \$1,066 (only \$250 more than a baseline 80% AFUE gas furnace)
- Installation costs for baseline oil furnace? \$575
- Incremental installation cost: ~\$500

One big cost is not accounted for- Oil furnaces require an oil storage tank. DOE did not include this in their analysis and it does not appear AGA factored this cost in either. From a quick survey of a number of oil furnace installers, oil storage units range in installed cost (equipment and labor) of \$1,500 to \$2,000. Any incremental installation costs would be overwhelmed by the upfront cost of installing a new storage tank.

Any likelihood of gas furnace users making a switch to electric furnaces (heat pumps), I would suggest, is quite low. There are very few electric furnaces currently in the market. The current state of the technology additionally includes performance issues in the colder, northern climates. Any assertions



from industry groups regarding this scenario should be supported by clear, complete cost analysis, which it currently is not.

Based on information available regarding economics, we cannot find any substantive reason that would drive consumers, due to a more aggressive gas furnace standard, to switch from gas-fueled technologies to either oil-fueled or electric.

**Cost Effectiveness of more aggressive “northern tier” efficiency standard in retrofit applications, and suggestions that the more aggressive standards be limited to new construction applications.**

AGA has continuously pointed to issues around venting and the unaccounted expense of retooling venting infrastructure for more efficient condensing furnaces. DOE, in fact, has been factoring in these costs associated with venting when a non-condensing unit is replaced with a condensing in their last furnace rulemaking. The AGA is correct when they state that condensing units do not represent direct replacements. There is additional cost associated with re-venting the furnace intake/flue, as well as the adjustments necessary to the “common vent” of a water heater. With these costs included, [DOE's LCC analysis](#) in 2007 demonstrated cost effectiveness at the 90 percent AFUE level for a majority of consumers even when the scope included all geographical regions (27 percent incur a net benefit, 36 percent incur no impact, 37 percent of consumer would incur a net cost, average savings of \$55).

It must be highlighted that the Consensus Agreement recommends the 90 percent AFUE for only the northern states. The [Subgroup analysis](#) that was conducted in 2007 for consumers in northern states with over 5000 Heating Degree Days, demonstrated a markedly improved cost effectiveness in this region (31 percent incur a net benefit, 47 percent incur no impact, 23 percent of consumer would incur a net cost, with an average savings of \$178). These numbers include both new construction applications and retrofit applications. If according to the DOE analysis ([Market and Technology Assessment](#)), approximately 70 percent of all furnace sales are to retrofit projects, you would expect average savings to be dragged down by significant supposed negative savings on the retrofit applications. We clearly do not see this in the analysis. Although the numbers are not broken out by retrofit/new construction, you can infer from the available data that the majority of retrofit applications will be cost effective at the Agreement levels for northern locations.

We would also reject any proposal that would limit a revised standard to new construction. Since, approximately 70 percent of furnace sales are into the replacement market, exempting such a large fraction of the market is a compromise that would undermine far too much of the projected energy savings.

The consensus agreement, developed by a broad group of stakeholders from industry and advocacy, represents a well designed roadmap for the Department to consider. It is clear that most of the objections being raised by groups outside of the agreement are an illegitimate attempt to block cost effective standards from being implemented. I therefore strongly urge you to make the Massachusetts waiver moot by formalizing the Consensus Agreement by the October 2010 deadline (MA waiver deadline), if not sooner.



Thank you for your consideration.

Sincerely,

A handwritten signature in black ink that reads "Susan E. Coakley". The signature is fluid and cursive, with "Susan E." on the first line and "Coakley" on the second line.

Susan E. Coakley, Executive Director