BEFORE THE
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
UNITED STATES DEPARTMENT OF ENERGY

Energy Conservation Program: Enforcement of Regional Standards for Residential Furnaces and Central Air Conditioners and Heat Pumps	**EERE-2011-BT-CE-0077** **RIN 1904-AC68**

COMMENTS OF THE AIR CONDITIONING CONTRACTORS OF AMERICA, ALLIANCE TO SAVE ENERGY, AMERICAN COUNCIL FOR AN ENERGY-EFFICIENT ECONOMY, AMERICAN GAS ASSOCIATION, APPLIANCE STANDARDS AWARENESS PROJECT, CONSUMER FEDERATION OF AMERICA, NATIONAL CONSUMER LAW CENTER, NATURAL RESOURCES DEFENSE COUNCIL, AND PLUMBING, HEATING, COOLING CONTRACTORS – NATIONAL ASSOCIATION ON REGIONAL STANDARDS ENFORCEMENT FRAMEWORK DOCUMENT

Pursuant to the Notice of Data Availability[1] issued by the Department of Energy (DOE or Department) seeking comment on the Regional Standards Enforcement Framework Document,[2] the Air Conditioning Contractors of America (ACCA), Alliance To Save Energy, American Council for an Energy-Efficient Economy (ACEEE), American Gas Association (AGA), Appliance Standards Awareness Project (ASAP), Consumer Federation of America, National Consumer Law Center, Natural Resources Defense Council (NRDC), and Plumbing, Heating, Cooling Contractors – National Association (collectively, the Furnace Waiver Design Group) submit the following comments.

The Furnace Waiver Design Group is a collaborative effort of key stakeholders that share a common interest in a well-designed process of providing waivers from the new regional furnace efficiency standards for those limited situations where the installation of condensing furnaces in existing buildings is infeasible or prohibitively expensive due to the physical characteristics of the building and regulatory restrictions. An effective waiver policy will enhance the public benefits that DOE expects from the regional furnace efficiency standards established in the Direct Final Rule.[3] The Group offers

[1] Notice of Data Availability: Enforcement of Regional Standards for Residential Furnaces and Central Air Conditioners and Heat Pumps, 76 Fed. Reg. 76,328 (Dec. 7, 2011).
[2] Regional Standards Enforcement Framework Document (Framework Document), available at http://www1.eere.energy.gov/buildings/appliance_standards/pdfs/furncac_regstnd_enforceframework.pdf.
[3] DOE estimates that the Direct Final Rule will save on the order of 3.2 quadrillion btus of energy and enhance consumer welfare by up to $17 billion over 30 years. *See* Direct Final Rule: Energy Conservation

comments and a proposed approach on the furnace waiver mechanism; individual members of the group may file separate comments on other aspects of the Framework Document.

I. EXECUTIVE SUMMARY

The Furnace Waiver Design Group is a diverse group of key stakeholders representing furnace installers, energy efficiency advocates, environmental advocates, consumer advocates, and natural gas utilities. The members of the group have a strong common interest in the development and implementation of a workable process for waiving the new regional furnace standards in those limited circumstances where the characteristics of the building or applicable local regulations would cause the installation of a condensing furnace in an existing building to be infeasible or prohibitively expensive.

Principles for Design of Waiver Policy. To address their common concerns, the participants in the Group agreed to the following design principles for a waiver policy:

- DOE should establish a furnace installation waiver provision as part of the Regional Standards Enforcement Plan that DOE is required to establish by rule.

- Waivers from the regional furnace standard should be available only for furnace replacements in existing buildings (including, for example, conversions of oil-fired furnaces to natural gas furnaces), and should not be available for new construction.

- The waiver policy must be specific, limited, fair, easily enforced, and protect against fraud and abuse, and should maintain the integrity and intent of the regional standard with regard to securing efficiency gains.

- Use of a waiver should not place additional compliance obligations on the building owner. The waiver process should not substantially increase the time required by an installer to replace a furnace.

- A waiver should be available under a blanket pre-approval where specified conditions are met. Qualified installers must evaluate whether waiver conditions are met before installing a furnace below 90 AFUE in the Northern region, and document that finding using a standardized form submitted to DOE.

- Waiver qualification and documentation requirements should not add a significant time burden to furnace installation. Documentation and reporting/record retention policies should provide a basis for periodically reviewing the use and effectiveness of the waiver process, revising the process as needed, auditing compliance and pursuing enforcement if there is knowing misuse of the waiver.

Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps, 76 Fed. Reg. 37,408, 37,412, 37,516 (June 27, 2011) (Direct Final Rule). The proposed waiver policy is consistent with achieving these significant savings and may enhance overall consumer benefit.

- A waiver should be available only to cases where characteristics of the building or regulatory restrictions would cause condensing furnace installation to be infeasible or prohibitively expensive. A waiver is not intended to address each instance where the life-cycle cost of a complying furnace would likely be negative, or to overcome the difficulty of financing a furnace replacement.

- The waiver qualification criteria should be clearly defined, so eligibility can be easily determined by the installer. Installer documentation of eligibility shall document physical characteristics of the building that lead to high installation costs.

- In order to make waiver eligibility determinations, contractors must first receive appropriate training and certification.

- DOE should establish an enforcement system for the waiver based on consultation with stakeholders.

- After the waiver process has been put in place, the program should be evaluated periodically by DOE and stakeholders to evaluate its effectiveness and any needed modifications.

Furnace Waiver Design Group Proposal. With these shared principles, the Group proposes the following waiver policy design details:

- A waiver should be granted for any instance where a qualified installer determines and documents that the eligibility criteria are satisfied. No case-specific application to, or action by, DOE should be required.

- The waiver criteria should be:

    1. The installation must be in an existing building as a replacement for an existing furnace; and

    2. (a) The installation of a condensing furnace in that building is technically infeasible or precluded by applicable state or local regulatory requirements (*e.g.*, building codes, historic preservation ordinances, zoning ordinances); or

       (b) the incremental cost of installing a condensing furnace versus a noncondensing furnace (excluding the cost of the furnace itself) is greater than a specified threshold (set in the $1000 to $1200 range, which corresponds to the 90^{th} to 95^{th} percentile range of incremental furnace installation costs in DOE's analysis), due to documented characteristics or conditions in the building.

- DOE should consider whether any adjustments to the incremental installation cost threshold (*e.g.*, for regional labor cost variation, inflation) are appropriate, while recognizing the benefit of avoiding undue complexity.

- The installer should be required to document eligibility for the waiver on a standardized form, to be subsequently submitted to DOE, before installing a noncondensing furnace in the Northern region. A prototype form for this purpose is attached.

- Installers making waiver eligibility determinations should be required to have appropriate training and certification.

- In order to ensure that the waiver policy is working as intended – ensuring that relief is provided to avoid significant hardship, but not creating an unwarranted "loophole" to excuse compliance in ordinary circumstances – DOE and stakeholders should periodically review (at least every two years) experience with the waiver policy to determine whether any adjustment (*e.g.*, to the threshold incremental installation cost or documentation requirements) is appropriate. Any substantive changes to the waiver policy should be promulgated only after appropriate notice and opportunity for public comment.

DOE also should commit to address concerns about the special difficulties low income households may have in facing increased first costs for furnace replacement. DOE should consider options for providing targeted grants or other financial assistance, using Low Income Home Energy Assistance Program (LIHEAP), Weatherization or other available Federal funding.

II. BACKGROUND

As required by the Energy Policy and Conservation Act, as amended, DOE has initiated a rulemaking process to establish a regional standard enforcement plan for newly promulgated regional energy efficiency standards governing residential furnaces, central air conditioners, and heat pumps.[4] The first step in that process was the issuance of a Regional Standards Enforcement Framework Document for public comment. The Framework Document discusses the possibility of a regional furnace standard waiver, and invites comment:

> The Department is aware of concerns by several interested parties regarding the implementation of regional standards for residential furnaces and the potential for select customers to have "stranded" appliances that share venting with a furnace and possibly higher installation costs. For example, there could be an instance where the furnace installation is concentrically vented in the middle of the residence and alteration of the flue to accommodate a condensing furnace could require significantly altering the location of the existing vent pipe and modifications to the residence.
>
> The Department is sensitive to these types of situations and is open to considering alternatives to mitigate the unintended consequences of a condensing standard for residential furnaces in the Northern region for a select subset of installations that

[4] 42 U.S.C. §6295(o)(6)(G)(ii).

> may be severely impacted. One possible approach to prevent any unintended result would be to allow a waiver process, in which a party would request a waiver of the regional standard. This approach could function as a new waiver process or could build upon DOE's existing waiver process, which is administered through DOE's Office of Hearing and Appeals. In this case, a party, such as a contractor, could apply for a waiver on an installation-specific basis, providing detailed information demonstrating the need for a furnace that does not meet the applicable regional standard. Information would likely include details about the existing appliances that may be affected by the new venting requirements, the existing venting location, the new venting requirements, the installation costs, the product(s) being purchased, and about the need for such a waiver for each installation that seeks to install a less-efficient furnace. DOE would review the information and either grant or deny the waiver application to the contractor for a given installation. If DOE approved the waiver, DOE would publish the specific installation information with a waiver number. DOE specifically requests comment on the need for a waiver process and, if necessary, the types of information it should consider collecting, what, if any, of this information should be withheld from public access and whether a waiver should be a "post installation approval" or available for all installation scenarios identical to one for which DOE had previously granted a waiver.[5]

Stakeholders in this Furnace Waiver Design Group were among the interested parties that raised the need for a waiver process with the Department, and we appreciate the discussion of a possible waiver in the Framework Document as a means for furthering the public dialog.

At the December 16th public meeting on the Framework Document, AGA spoke in favor of a regional furnace standard waiver, and outlined principles for such a waiver that had been agreed to by ACCA, the Alliance to Save Energy, ACEEE, AGA, ASAP and NRDC.[6] As promised in the December statement, these comments provide further detail on key elements of a regional furnace standard waiver policy.

III. COMMENTS

A. DOE Should Establish a Process for Providing Waivers from the New Regional Furnace Standard

The diverse stakeholders in the Group came together to develop and support DOE adoption of a workable waiver policy applicable to situations where characteristics of the building and local regulatory restrictions would cause the installation of condensing furnaces in the Northern region to be infeasible or prohibitively expensive. Such a waiver policy is critical for several reasons. First, as a matter of consumer protection, it

[5] Framework Document at 9-10.

[6] *See* Statement of Jim Kibler of AGL Resources on behalf of AGA at the December 16, 2011 public meeting held by DOE. The agreed-to principles are summarized in the Executive Summary to these comments.

is important to provide an opportunity for practical relief to the limited number of building owners who might be unduly burdened by the regional standard's requirement to install condensing furnaces. To be clear, the idea is not to provide relief to all building owners who might face an installation cost increase, but rather to provide relief to those on the "tail of the distribution" who would face significant incremental installation costs. Second, without availability of a waiver in the extreme cases where installation costs are very high, there is a risk (some of us believe it is a significant risk) that those building owners will choose to switch to electric heating instead of installing a high-efficiency condensing furnace, which may have consequent adverse net impacts on overall efficiency, economy, and environmental quality. Third, lack of a waiver option may encourage building owners to forego needed furnace replacement even where continued operation of an old furnace may raise safety issues. Thus, consumer, energy efficiency and environmental interests all argue for the development of a simple and workable waiver policy.

B. Waivers Should Be Available Where Pre-Determined Criteria are Met and Eligibility is Documented by the Installer

The waiver policy will not be workable if an installer or building owner must apply for a waiver, and DOE must take some action to consider and grant the waiver, before the installation of a noncondensing furnace can proceed. As a practical matter, furnaces are often replaced in existing buildings when they fail, and there is simply not time for any administrative application and decision process – the furnace must be replaced promptly.

Thus, the Group believes strongly that the waiver policy should be structured so that a waiver is available in any situation where the installer documents that the pre-determined criteria for the waiver are satisfied. The waiver eligibility criteria, and the documentation requirements, should be established in the regional standards enforcement plan rulemaking. Both the waiver criteria and the documentation requirements should be simple, with the documentation submitted to and retained by DOE for post-installation evaluation and compliance purposes.

The Framework Document suggests that DOE might consider using the existing Office of Hearings and Appeals (OHA) exceptions process for granting regional furnace standard waivers. The existing OHA process is not a practical alternative, because the hearing-oriented administrative procedures would not permit decisions to be rendered in the timeframes required.

The Framework Document asks whether DOE should make waivers available "for all installation scenarios identical to one for which DOE has previously granted a waiver."[7] The Group believes that the approach proposed in these comments – in which DOE specifies simple eligibility criteria in advance and trained/certified installers document waiver eligibility based on these criteria on a case-by-case basis – is a much more practical approach.

[7] Framework Document at 10.

C. Waiver Criteria

1. Only for Furnace Replacement or Retrofit in Existing Buildings

The waiver should be available only for replacement of existing furnaces in existing buildings. New construction would not be eligible.

2. Regulatory Restrictions

In certain circumstances, it is possible that restrictions contained in building codes, historic preservation ordinances, or other regulatory restrictions in combination with specific conditions in a building may effectively preclude replacement of noncondensing furnace with a condensing furnace.

If regulatory restrictions are the basis for a waiver determination, the installer is to document the source of the regulatory restriction, and any further explanation needed to demonstrate that the installation of a condensing furnace could not be done consistent with regulatory requirements.

3. Incremental Installation Cost

The stakeholders in the Group agree that a waiver should be available where condensing furnace installation costs are unreasonable or prohibitively high due to the physical characteristics of the building. A key question is what constitutes unreasonable or prohibitively high installation costs.

The Group considered a number of alternative formulations, and concluded that the best cost criterion is one based on the incremental cost of installation of a condensing furnace, excluding the cost of the furnace itself. Incremental installation cost would be the cost of installing a condensing furnace minus the cost of installing a noncondensing furnace in that building.

We considered other formulations. For instance, one could consider the total cost of furnace plus installation, rather than simply installation cost. However, the relative cost of the furnace equipment itself does not go to the determination of whether the characteristics of the particular building make installation of a condensing furnace particularly expensive. Moreover, the furnace equipment costs would not be expected to vary dramatically from building-to-building based on particular circumstances. Thus, we would recommend using a cost criterion that looks at relative installation costs, exclusive of the cost of the furnace itself.[8]

[8] However, in order to reduce opportunities for possible gaming in which the cost of installation is artificially inflated and the cost of the furnace is discounted, we recommend that the price of the furnace also be reported to DOE.

One could also base a cost criterion on the absolute installation cost of the condensing furnace. This has the advantage of simplicity, in the sense that it does not require documentation of the installation cost of the noncondensing furnace, and does not require the calculation of the difference between the cost of installing a condensing furnace and the cost of installing a noncondensing furnace. However, we concluded that incremental installation cost is a better measure of whether costs are prohibitive. First, the installer would need to determine an installation price for a noncondensing furnace in any case, if the waiver was to apply and a noncondensing furnace was to be installed.

Second, there may be circumstances where installation of both condensing and noncondensing furnaces would be high (*e.g.*, because of a high-cost market, a high-cost installer, or challenging installation conditions). Use of an incremental installation cost criterion instead of a criterion based on absolute installation cost for a condensing furnace helps reduce the influence of such factors. Thus, we recommend use of a cost criterion based on the difference between the cost of installation of a condensing furnace and the cost of installation of a noncondensing furnace.

a. Incremental Installation Cost Threshold

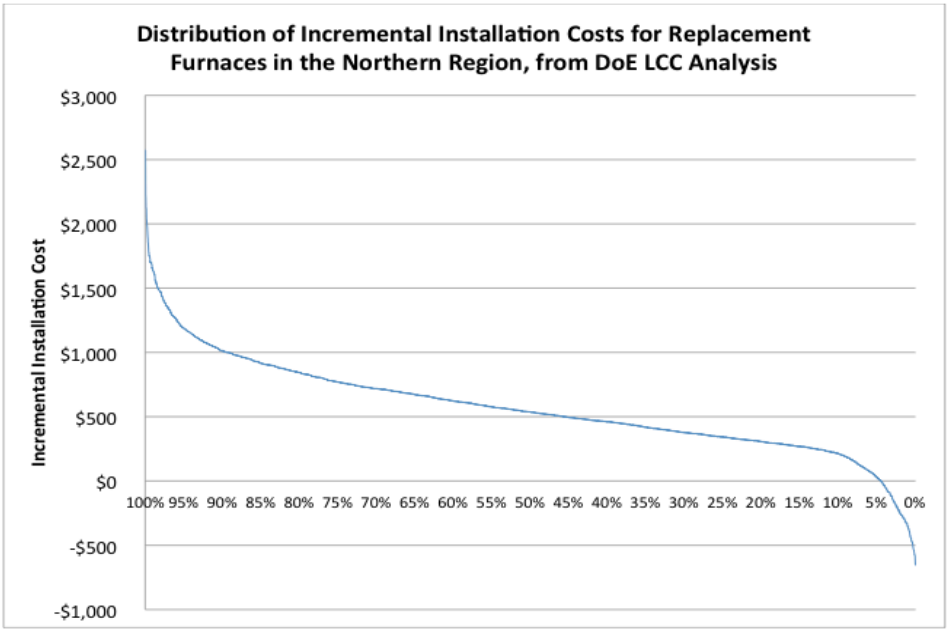
The incremental installation cost criterion for waiver eligibility should be set at a level where condensing furnace installation costs are unreasonable or prohibitively high relative to the cost of installation of a non-condensing furnace.

The only comprehensive analysis of furnace installation costs for both condensing and non-condensing models is the DOE Furnace Installation Analysis Worksheet.[9] The spreadsheet shows the results of some 10,000 simulations of furnace costs and economics. Of the 10,000 runs, about 45% are for replacement units in the Northern region.

Based on consideration of detailed modeling data summarized in the DOE Worksheet, we recommend that the incremental installation cost criterion be set in the $1000 to $1200 range. This range corresponds to the 90th to 95th percentile of incremental installation costs in the Northern region, and is approximately double the median incremental installation cost. This threshold value is at a point on the incremental cost curve (see Figure 1) where incremental installation costs begin to rise rapidly.

[9] DOE Furnace Installation Analysis Worksheet, available at: http://www1.eere.energy.gov/buildings/appliance_standards/residential/furnaces_boilers.html.

Figure 1.



b. Possible Adjustments to Incremental Installation Cost Threshold

DOE should consider whether any adjustments to the incremental installation cost threshold are appropriate. For instance, the threshold value could be adjusted for regional labor cost variation, or could be adjusted over time for inflation. In deciding whether to include such adjustments, DOE should consider whether such adjustments would substantially improve the targeting of waiver relief, and if so, whether the benefit of that improvement outweighs the additional complexity in implementation.

D. Documentation Requirements

The Group recommends that DOE develop a simple standardized form and/or web interface for documenting waiver eligibility and recording related information, and reporting that information to DOE. A prototype Waiver Determination form is attached as Attachment A. We would be pleased to help DOE develop the best format and specific content for an effective final form.

1. Regulatory Issues

If regulatory restrictions are the basis for a waiver determination, the installer should specify the source of the regulatory restriction on the Waiver Determination form, and provide any further explanation needed to demonstrate that the installation of a condensing furnace could not be done consistent with regulatory requirements.

If a building permit is required for the work, the installer should also specify the building permit number and date of issuance.

2. Physical Characteristics Driving Condensing Furnace Installation Costs

In documenting a waiver eligibility determination, the installer should be required to provide information about the physical characteristics of the building and proposed installation that are responsible for significant incremental installation costs. The Direct Final Rule identifies a number of such condensing furnace installation cost drivers, including flue venting, combustion air venting, concealing vent pipes, addressing orphaned water heaters (updating flue vent connectors, vent resizing and chimney relining), and condensate removal.[10]

The Group has developed a prototype for a Waiver Determination form, attached as Attachment A. The goal is to provide a simple, standardized form for documenting eligibility for waiver. The prototype form asks the installer to describe the problematic physical characteristics of the existing building and measures required to address them if a condensing furnace were to be installed. This information is necessary as a basis for the incremental installation cost calculation associated with these measures. The need for one or more of these measures is not, by itself, sufficient justification for a waiver. Instead, this information is collected to support a determination that the incremental installation costs of installing a condensing furnace are prohibitive.

3. Project Cost Data

For waivers based on incremental installation costs, in order to determine eligibility for a waiver, an installer will need to prepare a cost estimate for installing a condensing (90% AFUE) furnace and a cost estimate for installing a non-condensing (80% AFUE) furnace. The prototype form requires these two estimates and a calculation of the cost difference. While the waiver will depend on incremental installation cost, both furnace price and installation cost are listed on the form to help in determining if gaming may be occurring.

4. Other Documentation Requirements

The waiver documentation form should include additional information including: the name and address of the installer; license number of the installer (where license is required); the name and address of the building owner; and information about the furnace installed, including permit information where applicable, and the manufacturer, model number, serial number, capacity and efficiency.

DOE should ensure that if a waiver determination is made by the installer, the installer provides the building owner written notice that they are receiving a less-efficient furnace than Federal standards for the region generally require,[11] and obtains the building

[10] Direct Final Rule, 76 Fed. Reg. at 37,473-74, Tables IV.12 and IV.13.

[11] Some Group members will be requesting that DOE require installers to note that the less-efficient furnace will have higher operating costs. There was not consensus on this point within the Group.

owner's consent. A standard form or fact sheet should be developed to inform consumers of the waiver determination and the basis of the determination.

5. Confidential Business Information

The Group contemplates that DOE would receive from the installer a waiver determination report that includes the types of information described above. Importantly, information about specific customers or project pricing constitutes confidential business information of the installer. Thus, these reports must not be released by DOE under the Freedom of Information Act or otherwise.

To enable appropriate program oversight, waiver data should be made available to interested researchers in a format that excludes any data that could identify a particular building owner or installer. This data would enable analysis across all waiver determinations and help identify potential problems.

E. Installer Training on Waiver Eligibility Determinations

Installers documenting waiver eligibility should be required to receive appropriate training on the new regional standard, the waiver policy, the criteria for waiver, and the required documentation. Relying on qualified installers to make eligibility determinations will help ensure the integrity of the waiver process and protect the interests of the building owner.

We recommend that DOE require that any installer that wants to be able to make waiver eligibility determinations must successfully complete a DOE-approved training and certification program. DOE should work with equipment manufacturers, gas utilities and installer trade organizations to ensure that reasonable training and certification options on the waiver program are available. There need to be sufficient opportunities and pathways for interested installers to get the training and certification needed to employ the waiver, and training and certification options must accommodate the needs of smaller installers that constitute a significant share of the market. Creating an on-line training option would address concerns about accessibility for small and remote installers.

DOE may determine that certain existing certification programs – such as the North American Technician Excellence (NATE) Gas Furnace Certifications program, the ACCA-QA program, and comparable local certification programs – provide sufficient training on the waiver program so that a certified installer is sufficiently trained to make waiver eligibility determinations.

One final measure DOE should consider is adding a requirement that the noncondensing furnace selected under the waiver be installed to the ANSI/ACCA 5 QI-2010 (HVAC Quality Installation Specification). This would ensure proper on installation of furnaces under the waiver.

F. Periodic Review of Waiver Mechanism

DOE, in consultation with stakeholders, should periodically review the effectiveness of this new waiver mechanism and evaluate whether adjustments should be considered. This periodic review is an opportunity to evaluate whether the process is providing the desired relief in cases where the regional standard results in prohibitive installation costs, or whether waivers are being used where they do not appear warranted.

In order to evaluate the policy, DOE should make available for public review information about the waiver eligibility determinations that have been reported, including information on location (zip code), basis for waiver (*i.e.*, regulatory restriction, installation cost), incremental installation cost, and date of installation. This information should be available to researchers in a "sanitized" database (*i.e.*, without reference to specific addresses and installers) so that independent analysis of waivers can be conducted. It would also be useful to have information about the distribution of waivers among installers (with installer identity masked). The goal is to make sufficient information available to allow stakeholders to make an assessment of how the waiver program is working and how it can be improved.

In order to provide a forum for such a review, the Group suggests that DOE commit to hold a public meeting to review activity under the waiver policy at least every two years.

As noted above, we would expect DOE to promulgate the waiver policy, including elements such as the incremental installation cost threshold, by rule in the regional standards enforcement plan rulemaking. Any significant modification of the promulgated waiver policy should also be undertaken by notice and comment rulemaking, so all parties have an opportunity to comment on proposed changes. The stakeholders in this Group plan to be constructive partners with DOE in maintaining oversight of the waiver process and identifying any changes that may be appropriate. We would urge DOE to be willing to act promptly to undertake any necessary course corrections identified by the Group consistent with regulatory procedural requirements, and to address any problems that are preventing needed relief for building owners or are undermining the savings from the regional standard.

G. Low Income Homeowners

The members of the Group share a concern about how the regional furnace standards might affect some low income homeowners. Some, facing higher first costs for furnace replacement, may choose to continue using old existing systems that are inefficient and potentially unsafe, or to switch to less efficient heating sources such as resistance electric heating.

We have a common interest in ensuring that low income households have access to safe, efficient natural gas furnace replacements. We therefore urge DOE to consider, in conjunction with implementation of the new regional standards, steps that the Federal

government can take to address this concern, including use of LIHEAP and Weatherization funds and any other possible sources of financial assistance to ensure that low income households can receive the long-term benefits of efficient natural gas furnaces.[12]

IV. CONCLUSION

The Air Conditioning Contractors of America, Alliance to Save Energy, American Council for an Energy-Efficient Economy, American Gas Association, Appliance Standards Awareness Project, Consumer Federation of America, National Consumer Law Center, Natural Resources Defense Council, and Plumbing, Heating and Cooling Contractors – National Association appreciate the opportunity to work with the Department to develop a workable waiver mechanism for the regional furnace standard. We urge the Department to consider the proposal for a waiver policy outlined above, and further urge the Department to incorporate a proposal along these lines in the Notice of Proposed Rulemaking. If our Group or any of its members can be of assistance to the Department as it pursues this important initiative, please let us know.

Respectfully submitted,

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[12] If such financial assistance cannot be made available, some Group members would encourage DOE to consider whether financial hardship of the homeowner should be an independent basis for waiver eligibility. There was not consensus on this point within the Group.

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Attachment A:

PROTOTYPE FORM FOR
DETERMINATION OF ELIGIBILITY FOR WAIVER OF REGIONAL FURNACE STANDARD

DETERMINATION OF ELIGIBILITY FOR WAIVER OF REGIONAL FURNACE STANDARD

This document is to be used to determine and document eligibility for a waiver from the regional furnace efficiency standard, and to report the installation of a non-condensing natural gas furnace in the Northern region to the U.S. Department of Energy. This form will be reviewed and maintained by DOE staff for purposes of verifying installations; this form will not be made publicly available.

INSTALLATION ADDRESS	
Owner's Name: Street Address: City, ST ZIP Code: Installation date:	Permit Number (if applicable): Date issued: Issuing Authority – Name: Address: Phone:
INSTALLER	
Name: Street Address: City, ST ZIP Code: Phone:	License or Home Improvement Contractor Number: (If applicable) Certification: Expiration Date:
FURNACE INFORMATION	
Manufacturer: Model Number: Description:	AFUE Rating: Input Capacity: Serial Number:

WAIVER ELIBIGILITY

A non-condensing natural gas furnace (i.e., AFUE <90) may not be installed in Alaska, Connecticut, Idaho, Illinois, Indiana, Iowa, Kansas, Maine, Massachusetts, Michigan, Minnesota, Missouri, Montana, Nebraska, New Hampshire, New Jersey, New York, North Dakota, Ohio, Oregon, Pennsylvania, Rhode Island, South Dakota, Utah, Vermont, Washington, West Virginia, Wisconsin, and Wyoming, after May 1, 2013 unless the conditions for waiver are satisfied.

Is the furnace installation a replacement of an existing furnace in an existing building?

YES ☐ NO ☐

(If "no" then waiver is not available. If "yes" then continue to A. or B. below.)

A. TECHNICAL FEASIBILITY

Is installation of condensing furnace technically feasible?

YES ☐ NO ☐ (If "no" then eligible for waiver based on feasibility)

If "no," check all that apply:

☐ Required vent length exceeds maximum length recommended by manufacturer

☐ No code-compliant roof or wall location is available for vent discharge

☐ No vent routing is possible to any discharge location

☐ Remaining multi-tenant common vent would be out of compliance with code requirements

☐ Unable to dispose of condensate in any manner

☐ Regulatory preclusion (specify requirement of building code, zoning ordinance, or historical preservation law that precludes installation.

☐ Other (please specify)

B. INCREMENTAL INSTALLATION COST			
	FURNACE COST	INSTALLATION COST	TOTAL PROJECT COST
90% AFUE FURNACE COST			
80% AFUE FURNACE COST			
DIFFERENCE IN COST			

Building characteristics that contribute to condensing furnace installation cost:

Check all that apply:

☐ Vent length exceeds 20 feet Number of feet required:_____

☐ Exceeds 1 interior wall, ceiling, or floor penetration Number of penetrations:_____

☐ Interior masonry or concrete wall or ceiling penetrations

☐ Exterior wall penetration exceeds typical stud wall, box sill, siding, and/or 1 layer face brick

☐ Roof penetration exceeds typical joist, sheeting, and single roofing material

☐ Structural changes to enclose condensate or vent piping

☐ Condensate disposal requires plumbing modifications for an acceptable receptor

☐ Freeze protection of condensate system

☐ Other (attach explanation)

Is the difference between the estimated furnace installation cost for a condensing furnace (excluding cost of furnace) and the installation cost for a non-condensing furnace (excluding cost of furnace) equal or greater than $1,100?

YES ☐ NO ☐

(If "yes" then eligible for waiver based on cost)

Based on the criteria specified above, the installer certifies that the building
☐ is
☐ is not
eligible for a waiver of the requirement to install a condensing furnace.

A copy of this determination must be submitted to:

U.S. Department of Energy
Building Technologies Program
Independence Ave. SW
Washington, DC 20585-0121

The installer certifies that the information provided above is correct and is aware of the provisions contained in 18 U.S.C. 1001, which prohibit knowingly making false statements to the Federal Government.

Installer Signature/Date:

_____