

**Appliance Standards Awareness Project  
American Council for an Energy-Efficient Economy  
Alliance to Save Energy  
Consumer Federation of America  
National Consumer Law Center**

March 1, 2019

Mr. Daniel Simmons  
Assistant Secretary  
Energy Efficiency and Renewable Energy  
U.S. Department of Energy  
1000 Independence Ave. SW  
Washington, DC 20585-0121

**Re: Energy Conservation Standards for Residential Furnaces and Commercial Water Heaters;  
Docket No. EERE-2018-BT-STD-0018**

Dear Assistant Secretary Simmons:

This letter constitutes comments of the Appliance Standards Awareness Project, American Council for an Energy-Efficient Economy, Alliance to Save Energy, Consumer Federation of America, and National Consumer Law Center regarding the gas industry petition published in the Federal Register on November 1, 2018 (83 Fed Reg 54883). We strongly urge the Department to reject the petition because it would effectively eliminate the potential for future energy efficiency standards that could save enormous amounts of natural gas and money for American consumers and businesses. The petition is also contrary to law.

In the petition, the gas industry seeks withdrawal of two proposed rules affecting natural gas appliances: residential furnaces and commercial water heaters. Each of the proposed rules would set efficiency performance levels that would require some types or sizes of covered products to use condensing technology. The gas industry also seeks an interpretive rule that would effectively eliminate the consideration of condensing technology from any future rulemaking affecting natural gas products.

The actions sought by the petitioners would harm American consumers and businesses by eliminating consideration of condensing-level standards that have the potential to save billions of dollars. DOE has properly analyzed condensing technology in previous rulemakings through rigorous economic analyses that fully account for the costs and savings. These analyses allow DOE to evaluate whether improved standards make sense. Further, the petitioners' legal arguments, which are the sole basis for the petition, do not withstand scrutiny and must be rejected. Finally, both Canada and Great Britain have

successfully implemented condensing-level standards, demonstrating the feasibility of national standards set at condensing equipment performance levels.

**A. The petition would harm consumers and businesses by eliminating DOE’s consideration of the most important technology for saving natural gas.**

About half of all US homes use natural gas or propane for space and water heating. In 2015, these households spent a total of \$45 billion on natural gas and propane for their space and water heating needs, averaging \$655 per year for homes using natural gas as their main space heating fuel and more than \$1,200 per year for those using propane.<sup>1</sup> Improving the efficiency of this equipment can significantly reduce household energy bills. Many businesses also use natural gas and propane for water and space heating.

As shown in multiple DOE rulemakings, condensing technology is the single most significant efficiency improvement for reducing the energy use of natural gas<sup>2</sup> space and water heating appliances. For most DOE-regulated space and water heating appliances, there is little to no improvement possible short of the shift to condensing technology. With condensing technology, which is already in wide use, gas use for a given appliance can generally be reduced by between 10 and 20%.

New standards reflecting condensing-level performance for a range of natural gas space and water heating appliances have the potential to save US consumers and businesses billions of dollars over the next thirty years while reducing US energy use by about 13 quads. This estimate includes potential savings from the proposed furnace and commercial water heater standards plus future condensing-level standards for other products that DOE could adopt as described in the following paragraphs.

According to DOE, the proposed furnace rule issued in fall 2016 would save about \$700 for the average furnace buyer over the life of the furnace after accounting for all costs. Altogether, the proposed standards would save consumers \$5.6 to \$21.7 billion while saving 2.9 quads of energy over DOE’s thirty-year analysis period (81 Fed Reg 65720). For the commercial water heater proposed rule, DOE estimated that the typical business using a commercial gas-fired storage water heater, the most common class, would save about \$1,400 over the equipment’s life, again accounting for all costs. For all equipment classes, savings would total to between \$2.3 and \$6.8 billion while saving 1.8 quads of energy over the thirty-year analysis period (81 Fed Reg 34440).

Based on information from prior DOE rulemakings, ASAP estimated in 2016 that potential future standards for a range of natural gas heating products could save another 8 quads of energy and reduce consumer and business utility bills by over \$100 billion by 2050.<sup>3</sup>

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<sup>1</sup> US Energy Information Administration, 2015 Residential Energy Consumption Survey, available at <https://www.eia.gov/consumption/residential/index.php>

<sup>2</sup> Natural gas-fired and propane-fired equipment are very similar and they tend to be treated identically for regulatory purposes. Our comments with respect to gas-fired products apply equally to propane-fired products.

<sup>3</sup> ASAP analysis based on deLaski, A., J. Mauer et. al., “Next Generation Standards: How the National Energy Efficiency Standards Program Can Continue to Drive Energy, Economic and Environmental Benefits.” 2016. Available at [https://appliance-standards.org/sites/default/files/Next%20Gen%20Report%20Final\\_1.pdf](https://appliance-standards.org/sites/default/files/Next%20Gen%20Report%20Final_1.pdf). Products evaluated included residential and commercial gas-fired furnaces, boilers and water heaters.

Each of these potential future standards is based on efficiency levels attained by using condensing technology. The petition seeks to eliminate DOE consideration of condensing technology in the ongoing rulemakings for residential furnaces and commercial water heaters and all other natural gas heating appliances. The petition would therefore sacrifice all the savings from these potential future standards.

**B. DOE has properly analyzed condensing technology by fully accounting for the costs and savings.**

In each rulemaking for natural gas heating products conducted over the past twenty years, under both Republican and Democratic Administrations, DOE has evaluated condensing technology as a potential path for improving product efficiency. DOE has refined and improved its analyses in response to its own research and comments by the petitioners and many others filed in multiple dockets. DOE's evaluation entails full consideration of all costs, including installation costs and impacts on commonly-vented appliances. For example, in the 2016 supplemental proposed rule for furnaces, DOE included the installation costs associated with replacing a non-condensing furnace with a condensing furnace including adding a new flue vent, adding a combustion air vent for direct vent installations, concealing vent pipes in certain indoor installations, and condensate removal. DOE also included the costs of chimney relining or vent resizing to address orphaned water heaters in common venting situations (e.g. where the existing furnace is commonly vented with a gas water heater). DOE's installation cost calculations encompassed single-family (both detached and attached), multi-family, and mobile home dwellings as well as commercial building types. The analysis also considered the various locations where furnaces are installed (basements, crawlspaces, garages, attics, and indoor locations).

DOE also evaluates fuel switching. When the relative costs of competing technologies such as gas furnaces and electric heat pumps change, some fraction of consumers will change their choice. The larger the cost impact, the greater the likelihood that a consumer will change their heating equipment choice. DOE's approach is to estimate the portion of consumers who will change and the effect on their economic outcomes. For example, DOE estimated that 6.8% of furnace buyers would switch to electric heating equipment (primarily electric heat pumps) with the supplemental proposed rule published in fall 2016. The impact of this fuel switching was fully evaluated in the analysis.<sup>4</sup>

DOE's analyses provide granular information on the economic impacts of each potential standard level on consumers, including averages and medians and the range of potential impacts on individual consumers. DOE estimates the portion of consumers who would save money with a standard and those who would be worse off. DOE uses this information, along with other statutory factors,<sup>5</sup> to decide whether the benefits of a potential standard level outweigh the costs. In some cases, DOE has

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<sup>4</sup> We are not aware of installation scenarios where it is not technically feasible to install a condensing product. But, even if the petitioners were to identify one or a few cases that are so costly as to be financially impractical or even impossible, the affected consumer can select a more cost-effective heating equipment option. In general, that option will be an electric heat pump. DOE's analysis, by incorporating fuel-switching, incorporates outcomes where the consumer chooses to switch equipment types in response to the effect of a new standard on market options.

<sup>5</sup> Utility impacts are among the other factors DOE considers. (42 U.S. Code 6295(o))

adopted condensing-level standards (e.g., for residential gas water heaters over 55 gallons) and in others selected standards that fall short of condensing levels (e.g., residential boilers).

The gas industry's petition seeks to short-circuit DOE's evaluation of the economic and energy-saving impacts of potential higher standards with an across-the-board policy that would prevent DOE from even considering standards based on condensing technology. The gas industry's approach would tie DOE's hands, denying the agency the capability to make the evaluations and decisions that Congress intended when it charged DOE with keeping standards up-to-date.

**C. The appliance standards law provides no legal basis for the petitioners' requested interpretation.**

The petition is based solely on a legal argument that has been thoroughly considered and rejected by DOE on multiple prior occasions. The gas industry has sought a DOE determination that condensing technology cannot be used to justify improved standards since at least 2004. The industry has made these arguments in various dockets for residential and commercial natural gas space and water heating products. In each docket, DOE has considered the legal, technical and economic arguments put forth. DOE has repeatedly determined (during both the Bush and Obama administrations) that condensing technology must be evaluated along with other technologies in considering potential new standard levels.

The comments filed by Earthjustice in response to this petition explain why DOE cannot legally conclude that the appliance standards law prohibits standards reflecting condensing-level performance. Although the petition does not request that DOE establish separate product classes for condensing and non-condensing products, the petitioners have sought such separate classes previously, and separate classes are a logical extension of the current petition. DOE has considered such product class requests from the gas industry many times in the past and, after consideration, always rejected the request. (See for example, 80 Fed. Reg. 13138, "DOE has no statutory basis for defining a separate product class based on venting and drainage characteristics.") The Earthjustice comments explain in detail DOE's previous determinations that separate classes are not warranted or permitted. We support and join in those comments.

**D. Canada and Great Britain have successfully implemented condensing-level standards.**

Notably, two countries have condensing-level standards and, to our knowledge, have had no problems implementing these standards. Canada has had a condensing-level standard in place for residential furnaces since 2009 and recently proposed to increase the efficiency level from 90 AFUE to 95 AFUE, and Great Britain has had a condensing-level standard for residential boilers since 2005. The successful implementation of these standards in these two countries demonstrates their feasibility for the United States.

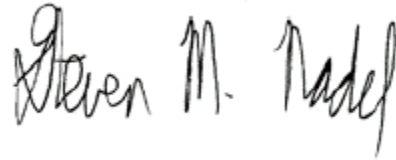
**Summary**

The gas industry petition would forestall DOE consideration of improved standards for natural gas space and water heating products. DOE should reject the petition because the requests are contrary to law and would prevent DOE from even considering standards that could provide enormous savings for consumers and businesses.

Sincerely,



Andrew deLaski  
Executive Director  
Appliance Standards Awareness Project



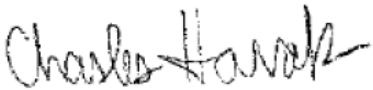
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