ASAP | APPLIANCE STANDARDS AWARENESS PROJECT

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Updated standards for home furnaces proposed by DOE in March would be the biggest natural gas saving efficiency standard ever established.

Q&A APPLIANCE STANDARDS QUESTIONS AND ANSWERS

Facts about DOE's Proposed New Furnace Standards

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Biggest natural gas saving standards

Updated standards for home furnaces proposed by the Department of Energy (DOE) in March would be the biggest natural gas saving efficiency standards ever established. The new standards, which set a minimum efficiency for all new furnaces sold in the United States, would cut energy waste, netting consumers more than $600 on average over the life of their furnace relative to basic furnaces sold today.

Less energy wasted up the chimney

The updated standards cover non-weatherized gas-fired furnaces (the type usually installed in a basement, attic, or utility closet) and mobile home gas furnaces. DOE proposes to increase efficiency to 92% AFUE (annual fuel utilization efficiency) from the current 80% AFUE standard. While this is a major improvement, it relies on widely used and thoroughly demonstrated "condensing furnace" technology. "Condensing" furnaces capture waste heat from flue gases, using that heat to warm the home instead of sending it up the chimney.

$4 billion to $19 billion in consumer savings

On a national level, furnaces meeting the proposed standards sold over 30 years would save 3.1 quadrillion Btus (quads) of energy—enough to meet the gas and propane heating needs of all of New England for 17 years—and net savings of $4 billion (7% discount rate) to $19 billion (3% discount rate) for consumers. The proposed standards would decrease natural gas consumption by 13% compared to basic furnaces sold today. The proposed new standards also include modest electricity savings by reducing "standby" losses.

Even stronger efficiency levels could further cut energy waste

DOE analysis shows that the proposed 92% AFUE standards would yield average lifetime operating savings[1] of about $1100 and average net savings (accounting for increased up-front costs) of more than $600 relative to basic furnaces sold today. Increasing standard levels to 95% AFUE would yield average lifetime operating savings of more than $1300 and average net savings of more than $750. On a nationwide basis, total energy savings would increase to 4.4 quads over 30 years of sales, an increase of more than 40% over the DOE proposal.

Condensing furnaces are a proven technology

Canada implemented condensing furnace standards in 2009 and these standards have been a huge energy-savings success story. Although condensing furnaces already have about a 40% market share in the U.S. according to DOE, many consumers lack the time or information needed to choose to upgrade to a more efficient furnace, especially if they are doing an emergency replacement of a furnace that has failed during the heating season. Many others are renters who do not get to choose the furnace installed in their home, but do get stuck with needlessly high bills. National standards are a proven approach for spreading the benefits of energy-saving technologies.

[1] Present value in 2013$

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The current furnace standards were set by DOE 28 years ago and are woefully outdated.

Solutions for difficult installations

When replacing an old furnace, a venting system upgrade is often required – this is true whether it is an 80% AFUE model or a high-efficiency model. However, a small portion of consumers may face unusually high installation costs when replacing an 80% furnace with a condensing product. Fortunately, new venting technologies are bringing down the cost of venting condensing furnaces in even the most difficult circumstances, and as discussed below, it's reasonable to expect that costs will be even lower than estimated. That said, efficiency advocates are working with industry stakeholders to explore approaches that would allow some non-condensing furnaces to be sold in special circumstances. While the updated standards make good sense in any case, such an approach might deliver even greater economic benefits overall, and provide an attractive option for the small number of households with particularly difficult installation problems.

Gas utility concerns addressed in DOE analysis

DOE first set a condensing furnace standard in 2011, but a lawsuit brought by the American Public Gas Association (APGA) forced DOE to re-do the process. APGA and the American Gas Association complained that DOE had failed to account for consumers who may switch to electric heating options, such as heat pumps, if the installed price of a gas furnace went up. They also complained that DOE had not accurately modeled gas prices. In the latest rulemaking (as with all rulemakings), DOE actively sought stakeholder input and published rigorous technical and economic analyses, including analyses of the impacts on consumers and manufacturers. DOE addressed each of the gas industry's concerns in these detailed analyses underlying the proposed standard.

Trends show equipment prices often drop after initial bump

Research has shown that products subject to efficiency standards often see a bump in purchase price after standards become effective before settling down to a price closer to, and sometimes less than, the pre-standards purchase price. In addition, retrospective analyses[2] show that DOE often overestimates the impact of efficiency standards on product price. If installed prices for high-efficiency furnaces end up lower than DOE projections as has been the case for previous DOE analyses, the net savings for consumers will go up.

Decades of delay in updating standard

The current furnace standards were set by Congress 28 years ago and are woefully outdated at 78% AFUE. Standards adopted by DOE in 2007 and due to take effect later this year (80%) are obsolete before they go into effect as nearly all furnaces on the market today meet that standard level. Further delays will sacrifice consumer savings and result in increased energy waste

DOE decision expected in 2016

Under the settlement in the APGA lawsuit, DOE must complete final furnace standards by April 2016. The compliance date will be five years after publication of the final rule, giving manufacturers and installers ample time to prepare.

[2] Dale, L. Antinori, M., McNeil, M., McMahon, J., and Fujita, S. 2009. Retrospective Evaluation of Price Trends. Energy Policy.
Nadel, S. and deLaski, A. 2013. *Appliance Standards: Comparing Predicted and Observed Prices.* Washington DC: ACEEE and ASAP.