ASAP | APPLIANCE STANDARDS AWARENESS PROJECT

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Q & A APPLIANCE STANDARDS QUESTIONS AND ANSWERS

AC, Heat Pump and Gas Furnace Standards

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> The new standards will save enough electricity to power 8.7 million U.S. homes for a year and enough gas to heat 62 million homes for a year.

What is an efficiency standard?

Congress established initial minimum efficiency standards for many residential and commercial products and charged the U.S. Department of Energy (DOE) with periodically updating them. These standards apply to new products manufactured for sale in the United States.

The new standard covers which products?

In June 2011, DOE issued updated standards for residential central air conditioners and heat pumps (CAC & HP) and residential gas furnaces (weatherized and non-weatherized).

Have standards for these products been set before?

Initially set by Congress in 1987, national standards for these products went into effect in 1992. Updated DOE standards for CAC & HP went into effect in 2006. A 2006 lawsuit settlement set a June 30, 2011 deadline for revised CAC & HP standards. DOE updated the residential furnace standards in 2007 but the standard was so weak that several states and efficiency advocates sued DOE. Another court settlement required DOE to issue new furnace standards by June 30, 2011.

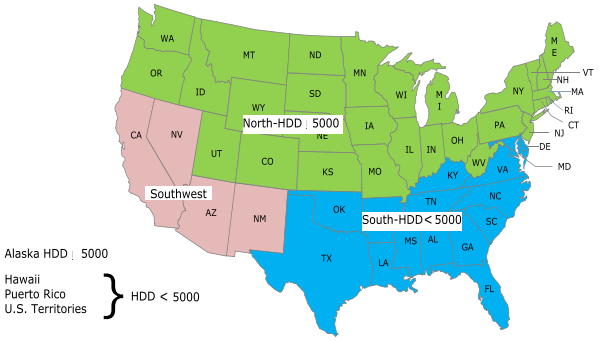
How were the new standards determined?

Source: Carrier

The new standards are based on levels agreed to by a coalition of energy efficiency proponents and air conditioner and furnace manufacturers, the latter represented by the Air-Conditioning, Heating, and Refrigeration Institute (AHRI).

The groups agreed to jointly support the first-ever regional standards for furnaces and central air conditioners, reflecting the differing needs for heating and cooling efficiency. Link to Agreement

AC-HP-Furnace Agreement Map



What is the standard?

DOE set standards which divide the country into three regions for central air conditioners and heat pumps and two regions for most furnaces. The criteria are based on the number of heating degree days and the climate (hot-dry vs. humid). For non-weatherized gas furnaces (i.e. the most common type) , the standard in the South and Southwest is 80% annual fuel utilization efficiency (AFUE); in the North (states with greater than or equal to 5000 heating degree days) the standard is 90% AFUE, essentially requiring a condensing furnace. The current national standard is 78% AFUE.

Central air conditioners in the south will be required to have a SEER (Seasonal Energy Efficiency Ratio) of 14, up from the present value of 13 (the north will remain at 13). Additionally, a minimum EER (Energy Efficiency Ratio) is specified for air conditioners in the hot-dry states (AZ, CA, NM, NV), which helps to ensure efficiency under that region's conditions.

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Standards for heat pumps, which provide both heating and cooling, remain one level for the entire country. They increase from the current level of 13 SEER and 7.7 heating season performance factor (HSPF) to 14 SEER and 8.2 HSPF. Standards for weatherized furnaces (products typically installed in attics or elsewhere outside the conditioned space of a home) also remain a single level for the nation and increase from 78 to 81% AFUE. AFUE, SEER and HSPF are measures of heating or cooling output relative to energy input.

What are the national savings and benefits from the new standards?

According to DOE, the AC and heat pump standards will save about 156 billion kilowatt hours of electricity over 30 years, or roughly enough to power 8.7 million typical U.S. homes for one year. The furnace standards will save about 31 billion therms of natural gas over 32 years, or about enough to heat 62 million typical U.S. homes for one year. Global warming carbon dioxide emissions will be cut by up to 143 million metric tons over 30 years, an amount about equal to the annual emissions of 25 million passenger vehicles. Emissions of smog-forming nitrogen oxides will be reduced by 124 thousand tons and mercury emissions cut by 338 pounds. Net dollar savings for consumers will reach about $18.7 billion.

What is the impact of this rulemaking on consumers?

Although the average installed cost of a new furnace, AC or heat pump is estimated to increase some as a result of the standards, this cost is more than outweighed by energy bill savings over the life of the product. According to DOE, the typical buyer will net about $150 in savings over the life of a new air conditioner meeting the standard, a heat pump buyer will net about $146 and a furnace buyer will net $571 compared to a product just meeting the current standard. A typical northern furnace buyer will save about $54 per year on heating bills, a typical southern air conditioner owner will save about $22 per year and an average heat pump buyer will save $29.

How prevalent are the products now?

According to DOE, about 20% of split system central air conditioners sold today are SEER 14 or above. About 30% of split system heat pumps sold today would meet the new standards. Nearly all furnaces sold today meet or exceed 80% AFUE. About one-half of current sales on a national basis are 90% AFUE or better. In the northern region, it is closer to 70%. In just the past ten years alone about 7.5 million condensing furnaces went into replacement installations in the U.S.

What is the timeline for the new standards?

New standards for non-weatherized furnaces will take effect on May 1, 2013. Standards for air conditioners, heat pumps, and weatherized furnaces will take effect on January 1, 2015.

Link to DOE Furnace, Air Conditioner and Heat Pump Page Direct Final Rule page:
http://www1.eere.energy.gov/buildings/appliance_standards/residential/residential_furnaces_cac_hp_direct_final_rule.html