



441 G St. N.W.  
Washington, DC 20548

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January 26, 2017

The Honorable Lisa Murkowski  
Chairman  
The Honorable Marie Cantwell  
Ranking Member  
Committee on Energy and Natural Resources  
United States Senate

The Honorable Greg Walden  
Chairman  
The Honorable Frank Pallone, Jr.  
Ranking Member  
Committee on Energy and Commerce  
House of Representatives

Subject: *Department of Energy: Energy Conservation Program: Energy Conservation Standards for Residential Central Air Conditioners and Heat Pumps*

Pursuant to section 801(a)(2)(A) of title 5, United States Code, this is our report on a major rule promulgated by the Department of Energy (DOE) entitled “Energy Conservation Program: Energy Conservation Standards for Residential Central Air Conditioners and Heat Pumps” (RIN: 1904-AD37). We received the rule on January 11, 2017. It was published in the *Federal Register* as a direct final rule on January 6, 2017. 82 Fed. Reg. 1786. The effective date of this rule is May 8, 2017, unless adverse comment is received by April 26, 2017. If no such adverse comments are received, compliance with this final rule will be required for central air conditioners and heat pumps as specified in this final rule starting on January 1, 2023.

The direct final rule amends the energy conservation standards for residential central air conditioners and heat pumps. The amended standards correspond to the recommended trial standard level (TSL) and are expressed in terms of Seasonal Energy Efficiency Ratio (SEER), Energy Efficiency Ratio (EER), and Heating Seasonal Performance Factor (HSPF). The amended standards are the same as those recommended by the Central Air Conditioners Appliance Standards and Rulemaking Federal Advisory Committee Working Group.

Enclosed is our assessment of DOE’s compliance with the procedural steps required by section 801(a)(1)(B)(i) through (iv) of title 5 with respect to the rule. Our review of the procedural steps taken indicates that DOE complied with the applicable requirements.

If you have any questions about this report or wish to contact GAO officials responsible for the evaluation work relating to the subject matter of the rule, please contact Shirley A. Jones, Assistant General Counsel, at (202) 512-8156.

signed

Robert J. Cramer  
Managing Associate General Counsel

Enclosure

cc: Daniel Cohen  
Assistant General Counsel for Legislation,  
Regulation and Energy Efficiency  
Department of Energy

REPORT UNDER 5 U.S.C. § 801(a)(2)(A) ON A MAJOR RULE  
ISSUED BY THE  
DEPARTMENT OF ENERGY  
ENTITLED  
“ENERGY CONSERVATION PROGRAM: ENERGY CONSERVATION  
STANDARDS FOR RESIDENTIAL CENTRAL  
AIR CONDITIONERS AND HEAT PUMPS”  
(RIN: 1904-AD37)

(i) Cost-benefit analysis

The Department of Energy (DOE) analyzed the costs and benefits of this direct final rule. This analysis indicated that the energy conservation standards being adopted in this direct final rule for central air conditioners and heat pumps would save a significant amount of energy. Relative to the case without amended standards, DOE estimates the lifetime energy savings for central air conditioners and heat pumps purchased in the 30-year period that begins in the anticipated first full year of compliance with the amended standards (2023-2052) amount to 3.2 quadrillion British thermal units (Btu), or quads. According to DOE, this represents a savings of 2.6 percent relative to the energy use without the amended standards. DOE estimates that the cumulative national net present value (NPV) of total consumer costs and savings for the amended standards for central air conditioners and heat pumps ranges from \$2.5 billion (at a 7 percent discount rate) to \$12.2 billion (at a 3 percent discount rate). DOE’s NPV estimate represents the total value of future operating-cost savings minus the estimated increased product and installation costs for central air conditioners and heat pumps purchased in 2023-2052.

In addition, DOE expects the rule to yield significant environmental benefits. DOE estimated the rule to result in cumulative emission reductions (over the same period as for energy savings) of 188.3 million metric tons (Mt) of carbon dioxide (CO<sub>2</sub>), 100.8 thousand tons of sulfur dioxide (SO<sub>2</sub>), 350.3 thousand tons of nitrogen oxides (NO<sub>x</sub>), 842.4 thousand tons of methane (CH<sub>4</sub>), 2.114 thousand tons of nitrous oxide (N<sub>2</sub>O), and 0.372 tons of mercury (Hg). DOE estimated that the cumulative reduction in CO<sub>2</sub> emissions through 2030 amounts to 13.3 Mt, which is equivalent to the emissions resulting from the annual electricity use of 1.2 million homes.

DOE also expressed the benefits and costs of the amended energy conservation standards, for central air conditioners and heat pumps sold in 2023-2052, in terms of annualized values. Using a 7 percent discount rate for benefits and costs other than CO<sub>2</sub> reduction (for which DOE used a 3 percent discount rate along with the average social cost of carbon (SCC) series that uses a 3 percent discount rate (\$40.6/t in 2015)), DOE estimated the cost of the central air conditioners and heat pumps standards adopted in this rule to be \$741 million per year in increased equipment costs, while estimated the benefits will be \$1,041 million per year in reduced equipment operating costs, \$337 million per year in CO<sub>2</sub> reductions, and \$22 million per year in reduced NO<sub>x</sub> emissions. In this case, DOE calculated the net benefit would amount to \$659 million per year. Using a 3 percent discount rate for all benefits and costs and the average SCC series that uses a 3 percent discount rate (\$40.6/t in 2015), DOE estimated the cost of the central air conditioners and heat pumps standards being adopted in this rule to be \$747 million per year in increased equipment costs, while estimated the benefits to be \$1,488 million per year in reduced equipment operating costs, \$337 million per year in CO<sub>2</sub> reductions, and

\$32 million per year in reduced NO<sub>x</sub> emissions. In this case, DOE calculated the net benefit would amount to \$1,110 million per year.

(ii) Agency actions relevant to the Regulatory Flexibility Act (RFA), 5 U.S.C. §§ 603-605, 607, and 609

DOE prepared a regulatory flexibility analysis for this direct final rule which included (1) a description of reasons why action is being considered; (2) objectives of, and legal basis for, the rule; (3) a description and estimated number of small entities regulated; (4) a description and estimate of compliance requirements; (5) any duplication, overlap, and conflict with other rules and regulations; and (6) significant alternatives to the rule.

(iii) Agency actions relevant to sections 202-205 of the Unfunded Mandates Reform Act of 1995, 2 U.S.C. §§ 1532-1535

DOE concluded that this direct final rule may require expenditures of \$100 million or more by the private sector. DOE determined that this rule would establish amended energy conservation standards for central air conditioners and heat pumps that are designed to achieve the maximum improvement in energy efficiency that DOE has determined to be both technologically feasible and economically justified. DOE discussed alternatives considered.

(iv) Other relevant information or requirements under acts and executive orders

Administrative Procedure Act, 5 U.S.C. §§ 551 et seq.

DOE stated that the this direct final rule reflects the culmination of a DOE rulemaking that included the following notices and stakeholder comments thereon: November 2014 request for information, August 2015 notice of data availability, and the 2015-2016 Appliance Standards and Rulemaking Federal Advisory Committee central air conditioners and heat pumps working group negotiations. 79 Fed. Reg. 65,603 (Nov. 5, 2014); 80 Fed. Reg. 52,206 (Aug. 28, 2015); 80 Fed. Reg. 40,938 (July 14, 2015). DOE also published a notice of proposed rulemaking proposing standards that are identical to those contained in this direct final rule. 82 Fed. Reg. 1608 (Jan. 6, 2017).

Paperwork Reduction Act (PRA), 44 U.S.C. §§ 3501-3520

DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including central air conditioners and heat pumps. The collection-of-information requirement for the certification and recordkeeping is subject to review and approval by the Office of Management and Budget (OMB) under the Act. This information collection requirement has been approved by OMB under OMB Control Number 1910-1400.

Statutory authorization for the rule

DOE promulgated this direct final rule under the authority of sections 6291 to 6309 of title 42 and section 2461 note of title 28, United States Code.

Executive Order No. 12,866 (Regulatory Planning and Review)

OMB determined that this direct final rule is economically significant under the Order. DOE submitted the rule to OMB for review.

Executive Order No. 13,132 (Federalism)

DOE determined that this direct final rule will not have a substantial direct effect on the states, on the relationship between the national government and the states, or on the distribution of power and responsibilities among the various levels of government.