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February 3, 2016

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

The Honorable Fred Upton  
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 Boilers*

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 Boilers" (RIN: 1904-AC88). We received the rule on January 19, 2016. It was published in the *Federal Register* as a final rule on January 15, 2016. 81 Fed. Reg. 2320.

The final rule adopts more stringent energy conservation standards for residential boilers. The Energy Policy and Conservation Act of 1975 (EPCA), as amended, prescribes energy conservation standards for various consumer products and certain commercial and industrial equipment, including residential boilers. EPCA also requires DOE to periodically determine whether more stringent, amended standards would be technologically feasible and economically justified and would save a significant amount of energy. DOE has determined that the amended energy conservation standards for these products would result in significant conservation of energy and are technologically feasible and economically justified.

The Congressional Review Act (CRA) requires a 60-day delay in the effective date of a major rule from the date of publication in the *Federal Register* or receipt of the rule by Congress, whichever is later. 5 U.S.C. § 801(a)(3)(A). This final rule was published in the *Federal Register* on January 15, 2016, received by the Senate on January 19, 2016, and received by the House of Representatives on January 19, 2016. 81 Fed. Reg. 2320; 162 Cong. Rec. S158 (Jan. 21, 2016); 162 Cong. Rec. H374 (Jan. 28, 2016). This final rule has a stated effective date of March 15, 2016, although the compliance date for the amended standards is required on and after January 15, 2021. Therefore, to the extent that there are provisions which purport to be effective on March 15, 2016, this final rule does not have the required 60-day delay in effective date under CRA.

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. Other than the 60-day delay in effectiveness, 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 BOILERS”  
(RIN: 1904-AC88)

(i) Cost-benefit analysis

The Department of Energy (DOE) evaluated the benefits and costs to consumers, the impact on manufacturers, the national benefits and costs, and the standby mode and off mode energy use of this final rule. In the final rule DOE presented its evaluation of the economic impacts of the adopted annual fuel utilization efficiency (AFUE) and standby mode and off mode standards on consumers of residential boilers, as measured by the average lifecycle cost (LCC) savings and the simple payback period (PBP). DOE states that the average LCC savings are positive for all product classes, and the PBP is less than the average boiler lifetime, which is estimated to be 26.6 years for gas-fired hot water boilers and electric hot water boilers, 23.6 years for gas-fired steam boilers and electric steam boilers, 24.7 for oil-fired hot water boilers, and 19.3 years for oil-fired steam boilers. DOE has not conducted an analysis of an AFUE standard level for electric boilers as the efficiency of these products already approaches 100 percent AFUE. DOE has included tables which summarize the impacts to consumers.

DOE's analysis of the impact on manufacturers states that the industry net present value (INPV) is the sum of the discounted cash flows to the industry from the base year through the end of the analysis period (2014 to 2050). Using a real discount rate of 8.0 percent, DOE estimates that the (INPV) for manufacturers of residential boilers in the base case without amended standards is \$367.83 million in 2014 dollars. DOE analyzed the impacts of AFUE energy conservation standards and standby/off mode electrical energy consumption energy conservation standards on manufacturers separately. Under the adopted AFUE standards, DOE expects that the change in INPV will range from 0.71 to 0.44 percent, which is approximately equivalent to a reduction of \$2.63 million to an increase of \$1.62 million. DOE estimates industry conversion costs from the amended AFUE standards to total \$2.27 million. Under the adopted standby mode and off mode standards, DOE expects the change in INPV will range from 0.46 to 0.12 percent, which is approximately equivalent to a decrease of \$1.71 million to an increase of \$0.45 million. DOE estimates industry conversion costs from the standby mode and off mode standards to total \$0.21 million. DOE has included tables which summarize the impacts on manufacturers.

DOE's analyses indicate that the adopted AFUE energy conservation standards for residential boilers are expected to save a significant amount of energy. Relative to the case without amended standards, the lifetime energy savings for residential boilers purchased in the 30-year period that begins in the first full year of compliance with the amended standards (2021–2050) amount to 0.16 quadrillion Btu (quads). This represents a savings of 0.6 percent relative to the energy use of these products in the case without amended standards (referred to as the no-new standards case). The cumulative net present value (NPV) of total consumer costs and savings for the amended residential boilers AFUE standards ranges from \$0.35 billion to \$1.20 billion at 7 percent and 3 percent discount rates, respectively. This NPV expresses the estimated total value of future operating-cost savings minus the estimated increased product costs for residential boilers purchased in 2021-2050. In addition, according to DOE, the amended AFUE standards for residential boilers are expected to have significant environmental benefits. DOE has included tables in the final rule which summarize the national economic benefits and costs expected to result from the adopted AFUE standards for residential boilers, as well as a table which summarizes the national economic benefits and costs expected to result from the adopted standby mode and off mode standards for residential boilers.

Based on the analyses culminating in this final rule, DOE states that it found the benefits to the nation of the standards (energy savings, positive NPV of consumer benefits, consumer LCC savings, and emission reductions) for both AFUE as well as standby mode and off mode would outweigh the burdens (loss of INPV for manufacturers and LCC increases for some consumers). DOE has concluded that the standards in this final rule represent the maximum improvement in energy efficiency that is technologically feasible and economically justified and would result in significant conservation of energy.

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

DOE identified 13 domestic manufacturers that meet the Small Business Administration's definition of a small business. Of these 13 small businesses, nine manufacture the boilers covered by this rulemaking, while the other four manufacturers rebrand imported products or products manufactured by other small companies. Before issuing this final rule, DOE states that it attempted to contact all the small business manufacturers of residential boilers it had identified. Two of the small businesses agreed to take part in a manufacturer impact analysis interview. DOE also obtained information about small business impacts while interviewing large manufacturers. DOE estimates that small manufacturers control approximately 15 percent of the residential boiler market. Based on DOE's research, three small businesses manufacture all four product classes of boilers domestically; four small businesses primarily produce condensing boiler products (and rely heat exchangers sourced from other manufacturers); and two manufacturers primarily produce oil-fired hot water boiler products. The remaining four small businesses wholesale or rebrand products that are imported from Europe or Asia, or design products and source manufacturing to a domestic firm. DOE included a table in the final rule which summarized the impacts of conversion costs on a small manufacturer. At the level adopted in the final rule notice, DOE estimates capital conversion costs of \$0.01 million and product conversion costs of \$0.05 million for an average small manufacturer. DOE estimates that an average large manufacturer will incur capital conversion costs of \$0.02 million and product conversion costs of \$0.05 million. Based on the results of its analysis, DOE recognized that small manufacturers will generally face a relatively higher conversion cost burden than larger competitors.

DOE noted that on average, small businesses will experience total conversion costs on the order of \$60,000. However, some companies will fall below and above the average. In particular, DOE has identified two small manufacturers that could experience greater conversion costs burdens than indicated by the average due to not having any products meeting the standard in one or two product classes.

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

DOE states that although the final rule does not contain a federal intergovernmental mandate, it has concluded that the final rule adopting amended and new energy conservation standards for residential boilers may require annual expenditures of \$100 million or more in any one year by the private sector. Such expenditures may include: (1) investment in research and development and in capital expenditures by residential boiler manufacturers in the years between the final rule and the compliance date for the new standards, and (2) incremental additional expenditures by consumers to purchase higher-efficiency residential boilers, starting at the compliance date for the applicable standard.

DOE notes that section 202 of UMRA authorizes a federal agency to respond to the content requirements of UMRA in any other statement or analysis that accompanies the final rule. (2 U.S.C. 1532(c)) The content requirements of section 202(b) of UMRA relevant to a private sector mandate substantially overlap the economic analysis requirements that apply under section 325(o) of EPCA and Executive Order 12,866. The supplementary information section of the final rule and the Regulatory Impact Analysis section of the technical support document for the final rule respond to those requirements. DOE states that under section 205 of UMRA, DOE is obligated to identify and consider a reasonable number of regulatory alternatives before promulgating a rule for which a written statement under section 202 is required. (2 U.S.C. 1535(a)) DOE is required to select from those alternatives the most cost-effective and least burdensome alternative that achieves the objectives of the rule unless DOE publishes an explanation for doing otherwise, or the selection of such an alternative is inconsistent with law. DOE

notes that, as required by 42 U.S.C. 6295(f) and (o), this final rule establishes amended and new energy conservation standards for residential boilers that are designed to achieve the maximum improvement in energy efficiency that DOE has determined to be both technologically feasible and economically justified.

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

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

On March 31, 2015, DOE published a notice of proposed rulemaking (NOPR). 80 Fed. Reg. 17,222. Comments were to be accepted until June 1, 2015. On May 20, 2015, DOE published an extension of the comment period through July 1, 2015. 80 Fed. Reg. 28,852. After the publication of the March 2015 NOPR, DOE received written comments on these and other issues. DOE states that it also held a public meeting in Washington, D.C., on April 30, 2015, to discuss and receive comments regarding the tools and methods DOE used in the NOPR analysis, as well as the results of that analysis. DOE states that it also invited written comments and announced the availability of a NOPR analysis technical support document. DOE received 21 comments in response to the March 2015 NOPR from a variety of commenters which it named in the final rule. DOE addressed the comments in the final rule.

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

DOE states that manufacturers of residential boilers must certify to DOE that their products comply with any applicable energy conservation standards. In certifying compliance, manufacturers must test their products according to the DOE test procedure for residential boilers, including any amendments adopted for those test procedures. DOE has established regulations for the certification and recordkeeping requirements for all covered consumer products and commercial equipment, including residential boilers. 76 Fed. Reg. 12,422 (March 7, 2011); 80 Fed. Reg. 5,099 (Jan. 30, 2015). 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 PRA. This requirement has been approved by OMB under OMB control number 1910-1400. DOE states that the public reporting burden for the certification is estimated to average 30 hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information.

Statutory authorization for the rule

The final rule is promulgated under authority provided in the Energy Policy and Conservation Act of 1975 (EPCA), Pub. L. No. 94-163 (Dec. 22, 1975) as amended by the Energy Independence and Security Act of 2007 (EISA 2007), Pub. L. No. 110-140 (Dec. 19, 2007), and the Energy Efficiency Improvement Act of 2015, Pub. L. No. 114-11 (Apr. 30, 2015), (collectively codified at 42 U.S.C. 6291- 6309), specifically 42 U.S.C. §§ 6292(a)(5), and 6292(f)(1) and (3), 42 U.S.C. §§ 6295(f)(4), and (m).

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

The final rule was reviewed by the Office of Management and Budget and found to be an economically significant regulatory action under the Order.

Executive Order No. 13,132 (Federalism)

DOE states that the 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.