



[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Part 430

[Docket No. EERE-2015-BT-STD-0003]

RIN: 1904-AD49

Energy Conservation Standards for Pool Heaters

AGENCY: Office of Energy Efficiency and Renewable Energy, Department of Energy.

ACTION: Notice of data availability (NODA).

SUMMARY: The U.S. Department of Energy (DOE) has completed a preliminary analysis for purposes of considering energy conservation standards for electric pool heaters. At this time, DOE is not proposing energy conservation standards for electric pool heaters. However, it is publishing this analysis so stakeholders can review the analysis's output and the underlining assumptions and calculations that might ultimately support a proposed standard. DOE encourages stakeholders to provide any additional

data or information that may improve the analysis. The analysis is now publicly available at on the DOE website.

DATES: DOE will accept comments, data, and other information regarding this rulemaking no later than **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**. See section IV, “Public Participation,” of this document for details.

ADDRESSES: The direct heating equipment and pool heater docket (EERE-2015-BT-STD-0003) is available for review at www.regulations.gov. It includes relevant Federal Register notices, the Request for Information, public comments, and other relevant documents/materials. All documents in the docket are listed in the www.regulations.gov index. However, not all documents listed in the index may be publicly available, such as information that is exempt from public disclosure. The www.regulations.gov webpage contains instructions on how to access all documents in the docket, including public comments.

Also, the DOE web page for pool heaters (which includes additional information about existing standards and test procedures, and the history and impacts of previous DOE regulatory actions for these products) may be viewed at http://www1.eere.energy.gov/buildings/appliance_standards/product.aspx/productid/47 and contains links to the aforementioned docket.

For detailed instructions on submitting comments and additional information on the rulemaking process, see section IV, “Public Participation,” of this document. For further information on how to submit a comment or to review other public comments and the docket contact Ms. Brenda Edwards at (202) 586-2945 or by email:

Brenda.Edwards@ee.doe.gov.

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For information on how to submit or review public comments, contact Ms. Brenda Edwards, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies, EE-5B, 1000 Independence Avenue SW., Washington, DC 20585-0121. Telephone: (202) 586-2945. Email: Brenda.Edwards@ee.doe.gov.

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I. Authority

Title III, Part B¹ of the Energy Policy and Conservation Act of 1975 (“EPCA” or “the Act”), Pub. L. 94-163 (*codified at* 42 U.S.C. 6291-6309) sets forth a variety of provisions designed to improve energy efficiency and establishes the Energy Conservation Program for Consumer Products Other Than Automobiles.² This program includes most major household appliances (collectively referred to as “covered products”), including the two covered products that are the subject of this rulemaking

¹ For editorial reasons, upon codification in the U.S. Code, Part B was redesignated as Part A.

² All references to EPCA in this document refer to the statute as amended through the Energy Efficiency Improvement Act, Pub. L. 114-11 (April 30, 2015).

process: direct heating equipment (DHE) and pool heaters.³ (42 U.S.C. 6292(a)(9) and (11)) Under EPCA, this energy conservation program generally consists of four parts: (1) testing; (2) labeling; (3) establishing Federal energy conservation standards; and (4) certification and enforcement procedures.

EPCA prescribes specific energy conservation standards for pool heaters and direct heating equipment. (42 U.S.C. 6295(e)(2), (3)) EPCA directed DOE to conduct two cycles of rulemakings to determine whether to amend its standards for direct heating equipment and pool heaters. (42 U.S.C. 6295(e)(4)) The statute further requires DOE to publish a notice of proposed rulemaking including new proposed standards or a notice of determination that the standards for a product need not be amended no later than 6 years after issuance of any final rule establishing or amending standards for that product. (42 U.S.C. 6295(m)(1)) DOE last promulgated a final rule on April 16, 2010, amending its energy conservation standards for direct heating equipment and pool heaters, constituting the first of these two required rulemakings. 75 FR 20112. The current rulemaking satisfies the statutory requirements under EPCA to conduct a second round of review of the DHE and pool heater standards. (42 U.S.C. 6295(e)(4)(B)) Additionally, this rulemaking will satisfy the requirement for DOE to publish a notice of proposed

³ A “pool heater” means “an appliance designed for heating nonpotable water contained at atmospheric pressure, including heating water in swimming pools, spas, hot tubs and similar application.” (42 U.S.C. 6291(25)) This definition of coverage does not specify a fuel type, and so electric pool heaters are considered to be covered products under EPCA even though energy conservation standards are not currently established.

rulemaking containing proposed standards or a notice of determination that the standards for direct heating equipment and pool heaters do not need to be amended by April 16, 2016. (42 U.S.C. 6295(m)(1)) If DOE were to publish a notice of proposed rulemaking containing proposed amendments to its standards for either direct heating equipment or pool heaters, DOE would be required to issue a final rule amending the standards no later than 2 years after issuance of the notice. (42 U.S.C. 6295(m)(3)(A))

EPCA also provides criteria for prescribing amended standards for covered products generally, including direct heating equipment and pool heaters. As indicated above, any such amended standard must be designed to achieve the maximum improvement in energy efficiency that is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) Additionally, EPCA provides specific prohibitions on prescribing such standards. DOE may not prescribe an amended standard for any of its covered products for which it has not established a test procedure. (42 U.S.C. 6295(o)(3)(A)) Further, DOE may not prescribe a standard if DOE determines by rule that such standard would not result in “significant conservation of energy,” or “is not technologically feasible or economically justified.” (42 U.S.C. 6295(o)(3)(B)) EPCA also provides that in deciding whether a standard is economically justified for covered products, DOE must, after receiving comments on the proposed standard, determine whether the benefits of the standard exceed its burdens by considering, to the greatest extent practicable, the following seven factors:

1. The economic impact of the standard on manufacturers and consumers of the products subject to the standard;
2. The savings in operating costs throughout the estimated average life of the covered products in the type (or class) compared to any increase in the price, initial charges, or maintenance expenses for the covered products that are likely to result from the imposition of the standard;
3. The total projected amount of energy (or, as applicable, water) savings likely to result directly from the imposition of the standard;
4. Any lessening of the utility or the performance of the covered products likely to result from the imposition of the standard;
5. The impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the imposition of the standard;
6. The need for national energy and water conservation; and
7. Other factors the Secretary of Energy (Secretary) considers relevant. (42 U.S.C. 6295(o)(2)(B)(i)(I)–(VII))

In addition, EPCA, as amended, establishes a rebuttable presumption that any standard for covered products is economically justified if the Secretary finds that “the additional cost to the consumer of purchasing a product complying with an energy

conservation standard level will be less than three times the value of the energy (and as applicable, water) savings during the first year that the consumer will receive as a result of the standard,” as calculated under the test procedure in place for that standard. (42 U.S.C. 6295(o)(2)(B)(iii))

EPCA also contains what is commonly known as an “anti-backsliding” provision. (42 U.S.C. 6295(o)(1)) This provision mandates that the Secretary not prescribe any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. EPCA further provides that the Secretary may not prescribe an amended standard if interested persons have established by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States of any product type (or class) with performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as those generally available in the United States at the time of the Secretary’s finding. (42 U.S.C. 6295(o)(4)) Under 42 U.S.C. 6295(q)(1), EPCA specifies requirements applicable to promulgating standards for any type or class of covered product that has two or more subcategories. Under this provision, DOE must specify a different standard level than that which applies generally to such type or class of product that has the same function or intended use, if DOE determines that the products within such group: (A) consume a different kind of energy from that consumed by other covered products within such type (or class); or (B) have a capacity or other performance-related feature which other products within such type (or class) do not have

and such feature justifies a higher or lower standard than applies or will apply to the other products. (42 U.S.C. 6295(q)(1)) In determining whether a performance-related feature justifies such a different standard for a group of products, DOE must consider “such factors as the utility to the consumer of such a feature” and other factors the Secretary deems appropriate. Id. Any rule prescribing such a standard must include an explanation of the basis on which DOE established such higher or lower level. (42 U.S.C. 6295(q)(2))

Section 310(3) of the Energy Independence and Security Act of 2007 (EISA 2007; Pub. L. 110–140) amended EPCA to prospectively require that energy conservation standards address standby mode and off mode energy use. Specifically, when DOE adopts new or amended standards for a covered product after July 1, 2010, the final rule must, if justified by the criteria for adoption of standards in section 325(o) of EPCA, incorporate standby mode and off mode energy use into a single standard if feasible, or otherwise adopt a separate standard for such energy use for that product. (42 U.S.C. 6295(gg)(3)) On December 17, 2012 DOE promulgated a final rule amending its test procedures for vented direct heating equipment and pool heaters to incorporate standby and off-mode energy consumption. 77 FR 74559. The amendments related to standby and off-mode energy consumption were not required for purposes of compliance until the compliance date of the next standards final rule for those products. Id. This rulemaking, if amended standards are ultimately adopted, would serve as the next energy conservation standards rulemaking subsequent to these test procedure amendments, and

therefore this rulemaking will take into account standby and off-mode energy consumption.

Finally, Federal energy conservation requirements for covered products generally supersede State laws or regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6297(a)–(c)) DOE can, however, grant waivers of Federal preemption for particular State laws or regulations, in accordance with the procedures and other provisions of section 327(d) of the Act. (42 U.S.C.6297(d))

Before proposing a standard, DOE typically seeks public input about the analytical framework, models, and tools that it will use to evaluate standards for the product or equipment at issue and the results of preliminary analyses DOE performed for that product or equipment. This NODA announces the availability of the preliminary Technical Support Document (TSD), which details the preliminary analyses and summarizes the preliminary results of DOE’s analyses for electric pool heaters.

II. History of Energy Conservation Standards Rulemaking for Pool Heaters

A. Background

Currently, energy conservation standards are established for vented home heating equipment (a form of direct heating equipment) and gas-fired pool heaters. (10 CFR 430.32(i) and (k)) DOE last amended its energy conservation standards for pool heaters and direct heating equipment through a final rule published in the Federal Register (FR)

on April 16, 2010 (hereafter referred to as the “April 2010 final rule”). 75 FR 20112. (codified at 10 CFR 430.32(i) and (k)). Compliance with the amended standards was required beginning on April 16, 2013. Id. As described above in section I, EPCA directed DOE to conduct two cycles of rulemakings regarding standards for DHE and pool heaters, and this rulemaking satisfies the statutory requirements under EPCA to conduct a second round of review of the DHE and pool heater standards. (42 U.S.C. 6295(e)(4)(B)) To initiate this rulemaking, DOE issued a Request for Information (RFI) in the Federal Register on March 26, 2015 (hereafter “March 2015 RFI”). 80 FR 15922. Through this RFI, DOE requested data and information pertaining to its technical and economic analyses for direct heating equipment and pool heaters.

In addition to determining whether energy conservation standards for vented home heating equipment and gas-fired pool heaters should be amended, DOE is considering during this rulemaking whether it is appropriate to establish energy conservation standards for electric pool heaters, including both electric resistance pool and spa heaters as well as electric heat pump pool heaters. As described in section I, although energy conservation standards for electric pool heaters have not previously been set, the definition of coverage for pool heaters found at 42 U.S.C. 6291(25) does not specify a fuel type, and therefore all pool heaters (including electric) are considered covered products under EPCA. Among other topics, the March 2015 RFI sought data and information pertaining specifically to electric pool heaters, including electric resistance pool and spa heaters as well as electric heat pump pool heaters. Since energy conservation standards have not previously been established for electric pool heaters,

DOE is publishing this preliminary analysis for electric pool heaters in order to solicit feedback regarding the methodologies used and results obtained based on information collected during the March 2015 RFI public comment period and preliminary confidential manufacturer interviews, among other sources. DOE does not plan to publish a similar preliminary analysis for vented home heating equipment and gas-fired pool heaters. DHE product offerings have not markedly changed since the final rule analysis in 2010 (with the exception of condensing technology for fan-type wall furnaces). Additionally, DOE has performed testing on vented home heating equipment (a subset of DHE) and through this process has built sufficient knowledge, in combination with the previous rulemaking analyses and the March 2015 RFI, to forgo a preliminary analysis for these products. DOE requests comment on its determination to forgo a preliminary analysis for these products and notes that interested parties will have the opportunity to comment on DOE's analyses for vented home heating equipment and gas-fired pool heaters during the Notice of Proposed Rulemaking (NOPR) phase of the rulemaking process.

DOE completed a separate test procedure rulemaking for direct heating equipment and pool heaters by publishing in the Federal Register a final rule on January 6, 2015. 80 FR 792. (*Codified at* 10 CFR Part 430, Subpart B, Appendix P) Any energy conservation standards for pool heaters of any fuel type adopted as part of this rulemaking would be based on the updated test procedure.

B. Current Rulemaking Process

As indicated above, in initiating this rulemaking DOE published a Request for Information on March 26, 2015. Among other topics, DOE solicited data and information pertaining to electric resistance and electric heat pump pool and spa heaters. Comments received since publication of the March 2015 RFI have helped DOE identify issues and collect data related to the preliminary analyses for electric pool heaters. Chapter 2 of the preliminary TSD summarizes and addresses the comments received in response to the March 2015 RFI.

III. Summary of the Analyses Performed by DOE

For the electric pool heaters covered in this rulemaking, DOE conducted in-depth technical analyses in the following areas: (1) engineering; (2) markups to determine product price; (3) energy use; (4) life-cycle cost and payback period; and (5) national impacts. The preliminary TSD that presents the methodology and results of each of these analyses is available at

http://www1.eere.energy.gov/buildings/appliance_standards/rulemaking.aspx?ruleid=113

DOE also conducted, and has included in the preliminary TSD, several other analyses that support the major analyses or are preliminary analyses that will be expanded upon for a NOPR if DOE determines that amended energy conservation standards are technologically feasible, economically justified, and would save a

significant amount of energy, based on the information available to DOE. These analyses include: (1) the market and technology assessment; (2) the screening analysis, which contributes to the engineering analysis; and (3) the shipments analysis, which contributes to the life-cycle cost (LCC) and payback period (PBP) analysis and national impact analysis (NIA). In addition to these analyses, DOE has begun preliminary work on the manufacturer impact analysis and has identified the methods to be used for the LCC consumer subgroup analysis, the emissions analysis, the employment impact analysis, the regulatory impact analysis, and the utility impact analysis. DOE will expand on these analyses in the NOPR.

A. Market and Technology Assessment

When initiating an analysis of potential energy efficiency standards for a residential product, DOE develops information for the products and characterizes the market and industry structure, evaluating both current and historical information. This activity is primarily based on a review of publicly-available information.

When evaluating and establishing energy conservation standards, DOE generally divides covered products into product classes by the type of energy used or by capacity or other performance-related features that affect efficiency. DOE has tentatively decided to differentiate between electric pool heaters and electric spa heaters on the basis that each of these two products have different characteristics which have the potential of affecting efficiency. Specifically, electric spa heaters often have space constraints which would

impede the use of higher efficiency technologies. DOE therefore considered two product classes – electric pool heaters and electric spa heaters – for this preliminary analysis. DOE recognizes that electric spa heaters, being integral to the construction of a spa or hot tub, use electric resistance heating elements due to space constraints and DOE has tentatively determined that heat pump technology is therefore not a viable option for electric spa heaters. DOE did not analyze electric spa heaters because it did not identify technologies that would measurably increase the integrated thermal efficiency of these products. DOE does, however, consider electric resistance to be a baseline technology for the electric pool heater product class, since electric resistance heaters are available at capacities that could serve a pool and electric heat pumps represent an improvement in efficiency over these products.

Energy conservation standards may be proposed later in the rulemaking for either, both, or neither of these potential product classes in addition to gas-fired pool heaters. (42 U.S.C. 6295(q)) Alternatively, DOE could propose different product classes than those analyzed in its preliminary analysis if comments, information, or additional analysis be provided that suggest doing so would be more appropriate for the pool and spa heater market. Chapter 3 of the preliminary TSD addresses the market and technology assessment.

B. Engineering Analysis

The engineering analysis establishes the relationship between the manufacturer selling price and efficiency levels of the products that DOE is evaluating as potential energy conservation standards. This relationship serves as the basis for cost-benefit calculations for individual consumers, manufacturers, and the Nation. The engineering analysis identifies representative baseline products, which is the starting point for analyzing technologies that provide energy efficiency improvements. “Baseline” refers to a model or models having features and technologies typically found in minimally-efficient products currently available on the market and, for products already subject to energy conservation standards, a model that just meets the current standard. After identifying the baseline models, DOE estimated manufacturer selling prices by using a consistent methodology and pricing scheme that includes material costs and manufacturer markups. DOE used these inputs to develop manufacturer selling prices for the baseline and more-efficient designs. Later, in the markups analysis to determine the installed price, DOE converts these manufacturer selling prices into installed prices. Chapter 5 of the preliminary TSD discusses the engineering analysis.

C. Markups to Determine Commercial Consumer Prices

DOE derives consumer installed prices based on manufacturer markups, retailer markups, distributor markups, contractor markups (where appropriate), and sales taxes. In deriving these markups, DOE determines the major distribution channels for product sales, the markup associated with each party in each distribution channel, and the

existence and magnitude of differences between markups for baseline products (baseline markups) and higher-efficiency products (incremental markups). DOE calculates both overall baseline and overall incremental markups based on the product markups at each step in each distribution channel. Chapter 6 of the preliminary TSD addresses the markups analysis.

D. Energy Use Analysis

The energy use analysis provides estimates of the annual energy consumption of electric pool heaters. The energy use analysis seeks to estimate the range of energy consumption of products that meet each of the efficiency levels considered in a given rulemaking as they are used in the field. DOE uses these values in the LCC and PBP analyses and in the NIA. Chapter 7 of the preliminary TSD addresses the energy use analysis.

E. Life-Cycle Cost and Payback Period Analyses

The LCC and PBP analyses determine the economic impact of potential standards on individual consumers. The LCC is the total cost to the consumer of purchasing, installing, and operating the considered pool heater over the course of its lifetime. The LCC analysis compares the LCCs of products designed to meet possible energy conservation standards with the LCC of the products likely to be installed in the absence of standards. DOE determines LCCs by considering: (1) total installed cost to the purchaser (which consists of manufacturer selling price, distribution chain markups, sales

taxes, and installation cost); (2) the operating cost of the product (energy cost and maintenance and repair cost); (3) product lifetime; and (4) a discount rate that reflects the real consumer cost of capital and puts the LCC in present-value terms. The PBP represents the number of years needed to recover the increase in purchase price (including installation cost) of higher-efficiency products through savings in the operating cost of the products. PBP is calculated by dividing the incremental increase in installed cost of the higher-efficiency products, compared to the baseline products, by the annual savings in operating costs. Chapter 8 of the preliminary TSD addresses the LCC and PBP analyses.

F. National Impact Analysis

The NIA estimates the national energy savings (NES) and the net present value (NPV) of total consumer costs and savings expected to result from amended standards at specific efficiency levels (referred to as candidate standard levels). DOE calculated NES and NPV for each candidate standard level for electric pool heaters as the difference between a base-case forecast (without amended standards) and the standards-case forecast (with standards). DOE determined national annual energy consumption by multiplying the number of units in use (by vintage) by the average unit energy consumption (also by vintage). Cumulative energy savings are the sum of the annual NES determined for the lifetime of the products shipped from 2022-2051. This 30-year analysis period begins in 2022, the expected first full year of compliance with the amended standards. The NPV is the sum over time of the discounted net savings each

year, which consists of the difference between total operating cost savings and increases in total installed costs. Critical inputs to this analysis include shipments projections, estimated product lifetimes, product installed costs and operating costs, product annual energy consumption, the base case efficiency projection, and discount rates. Chapter 10 of the preliminary TSD addresses the NIA.

IV. Public Participation

DOE invites input from the public on all the topics described above. The preliminary analytical results are subject to revision following further review and input from the public. A complete TSD is available for this analysis, and the Executive Summary of the TSD identifies specific issues on which DOE seeks comment. The final rule establishing any amended energy conservation standards will contain the final analytical results and will be accompanied by a final rule TSD.

The TSD is available at:

http://www1.eere.energy.gov/buildings/appliance_standards/rulemaking.aspx?ruleid=113

. DOE is also interested in receiving views concerning other relevant issues that participants believe would affect energy conservation standards for this equipment or that DOE should address in the NOPR.

DOE welcomes all interested parties to submit in writing by **[INSERT DATE 45 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**

comments, data, and other information on matters addressed in the TSD and on other matters relevant to consideration of energy conservation standards for pool heaters.

After the closing of the comment period, DOE will consider all timely-submitted comments and additional information obtained from interested parties, as well as information obtained through further analyses. Afterward, DOE will publish either a determination that standards for electric pool heaters need not be established or a NOPR proposing to establish those standards. The NOPR would include proposed energy conservation standards for the products covered by the rulemaking, and members of the public would be given an opportunity to submit written and oral comments on the proposed standards.

A. Submission of Comments

DOE will accept comments, data, and other information regarding this rulemaking no later than the date provided at the beginning of this document. Please submit comments, data, and other information as provided in the **ADDRESSES** section. Submit electronic comments in WordPerfect, Microsoft Word, PDF, or text (ASCII) file format and avoid the use of special characters or any form of encryption. Comments in electronic format should be identified by the Docket Number EERE-2015-BT-STD-0003 and/or RIN 1904-AD49 and, wherever possible, carry the electronic signature of the

author. No telefacsimiles (faxes) will be accepted.

Pursuant to 10 CFR 1004.11, any person submitting information that he or she believes to be confidential and exempt by law from public disclosure should submit two copies: one copy of the document including all the information believed to be confidential and one copy of the document with the information believed to be confidential deleted. DOE will make its own determination as to the confidential status of the information and treat it according to its determination.

Factors of interest to DOE when evaluating requests to treat submitted information as confidential include: (1) a description of the items; (2) whether and why such items are customarily treated as confidential within the industry; (3) whether the information is generally known by or available from other sources; (4) whether the information has previously been made available to others without obligation concerning its confidentiality; (5) an explanation of the competitive injury to the submitting person which would result from public disclosure; (6) a date upon which such information might lose its confidential nature due to the passage of time; and (7) why disclosure of the information would be contrary to the public interest.

V. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this notice of data availability of the preliminary technical support document.

Issued in Washington, DC, on October 15, 2015.

Kathleen B. Hogan
Deputy Assistant Secretary for Energy Efficiency
Energy Efficiency and Renewable Energy

[FR Doc. 2015-27203 Filed: 10/23/2015 08:45 am; Publication Date: 10/26/2015]