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[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Part 430

[EERE-2021-BT-STD-0031]

RIN 1904-AF19

**Energy Conservation Program: Energy Conservation Standards for Oil, Electric,
and Weatherized Gas Consumer Furnaces**

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

ACTION: Notification of availability of preliminary technical support document and request for comment.

SUMMARY: The U.S. Department of Energy (“DOE”) announces the availability of the preliminary analysis it has conducted for purposes of evaluating the need for amended energy conservation standards for non-weatherized oil-fired furnaces (“NWOFs”), mobile home oil-fired furnaces (“MHOFs”), weatherized gas furnaces (“WGFs”), weatherized oil-fired furnaces (“WOFs”), and electric furnaces (“EFs”). The analysis is set forth in the Department’s accompanying preliminary technical support document (“TSD”) for this rulemaking. DOE will hold a public meeting via webinar to discuss and receive comment on the preliminary analysis. The meeting will cover the analytical framework, models, and tools used to evaluate potential standards; the results of preliminary analyses performed by DOE; the potential energy conservation standard

levels derived from these analyses (if DOE determines that proposed amendments are necessary); and other relevant issues. In addition, DOE encourages written comments on these subjects.

DATES: *Comments:* Written comments and information will be accepted on or before, **[INSERT DATE 60 DAYS AFTER DATE OF PUBLICATION IN THE *FEDERAL REGISTER*].**

Meeting: DOE will hold a webinar on Monday, December 19, 2023, from 1:00 p.m. to 4:00 p.m. See section IV, “Public Participation,” for webinar registration information, participant instructions and information about the capabilities available to webinar participants.

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at *www.regulations.gov*, under docket number EERE–2021–BT–STD-0031. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2021-BT-STD-0031, by any of the following methods:

- 1) *Email: OEWGFurnaces2021STD0031@ee.doe.gov. Include the docket number EERE-2021-BT-STD-0031 in the subject line of the message.*
- 2) *Postal Mail: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, Mailstop EE-5B, 1000 Independence*

Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 287-1445. If possible, please submit all items on a compact disc (“CD”), in which case it is not necessary to include printed copies.

- 3) *Hand Delivery/Courier: Appliance and Equipment Standards Program, U.S. Department of Energy, Building Technologies Office, 950 L’Enfant Plaza, SW., 6th Floor, Washington, DC, 20024. Telephone: (202) 287-1445. If possible, please submit all items on a CD, in which case it is not necessary to include printed copies.*

No telefacsimiles (“faxes”) will be accepted. For detailed instructions on submitting comments and additional information on this process, see section IV of this document.

To inform interested parties and to facilitate this rulemaking process, DOE has prepared an agenda, a preliminary TSD, and briefing materials, which are available on the DOE website at: <https://www.regulations.gov/document/EERE-2021-BT-STD-0031-0011>.

Docket: The docket for this activity, which includes *Federal Register* notices, comments, webinar transcripts, and other supporting documents/materials, is available for review at www.regulations.gov. All documents in the docket are listed in the www.regulations.gov index. However, some documents listed in the index, such as those containing information that is exempt from public disclosure, may not be publicly available.

The docket web page can be found at *www.regulations.gov/docket/EERE-2021-BT-STD-0031*. The docket web page contains instructions on how to access all documents, including public comments in the docket. See section IV.D of this document for information on how to submit comments through *www.regulations.gov*.

FOR FURTHER INFORMATION CONTACT:

Ms. Julia Hegarty, U.S. Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies, EE-5B, 1000 Independence Avenue, SW., Washington, DC 20585-0121. E-mail: *ApplianceStandardsQuestions@ee.doe.gov*.

Ms. Kathryn McIntosh, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-2002. E-mail: *Kathryn.McIntosh@hq.doe.gov*.

For further information on how to submit a comment, review other public comments and the docket, or participate in the webinar, contact the Appliance and Equipment Standards Program staff at (202) 287-1445 or by e-mail: *ApplianceStandardsQuestions@ee.doe.gov*.

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I. Introduction

A. Authority

The Energy Policy and Conservation Act, as amended (“EPCA”),¹ authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. (42 U.S.C. 6291–6317) Title III, Part B² of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles. These products include NWOs, MHOs, WGOs, WOs, and EOs (collectively, oil, electric, and weatherized gas consumer furnaces), the subject of this document. (42 U.S.C. 6292(a)(5)) EPCA prescribed initial energy conservation standards for these products (42 U.S.C. 6295(f)(1) - (2)), and directed DOE to conduct two cycles of rulemakings to determine whether to amend these standards. (42 U.S.C. 6295(f)(4)) EPCA further provides that, not later than 6 years after the issuance of any final rule establishing or amending a standard, DOE must publish either a notification of determination that standards for the product do not need to be amended, or a notice of proposed rulemaking (“NOPR”) including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m)(1)) Not later than three years after issuance of a final determination not to amend standards, DOE must publish either a notice of determination that standards for the product do not need to be amended, or a NOPR including new proposed energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m)(3)(B)) DOE must make the analysis on which a

¹ All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Pub. L. 116-260 (Dec. 27, 2020), which reflect the last statutory amendments that impact Parts A and A-1 of EPCA.

² For editorial reasons, upon codification in the U.S. Code, Part B was redesignated Part A.

determination is based publicly available and provide an opportunity for written comment. (42 U.S.C. 6295(m)(2)).

Under EPCA, any new or amended energy conservation standard must be designed to achieve the maximum improvement in energy efficiency that DOE determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) Furthermore, the new or amended standard must result in a significant conservation of energy. (42 U.S.C. 6295(o)(3)(B))

DOE is publishing this Preliminary Analysis to collect data and information to inform its decision consistent with its obligations under EPCA.

B. Rulemaking Process

DOE must follow specific statutory criteria for prescribing new or amended standards for covered products, including oil, electric, and weatherized gas consumer furnaces. As noted, EPCA requires that any new or amended energy conservation standard prescribed by the Secretary of Energy (“Secretary”) be designed to achieve the maximum improvement in energy efficiency (or water efficiency for certain products specified by EPCA) that is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) Furthermore, DOE may not adopt any standard that would not result in the significant conservation of energy. (42 U.S.C. 6295(o)(3))

The significance of energy savings offered by a new or amended energy conservation standard cannot be determined without knowledge of the specific

circumstances surrounding a given rulemaking.³ For example, , some covered products and equipment have most of their energy consumption occur during periods of peak energy demand. The impacts of these products on the energy infrastructure can be more pronounced than products with relatively constant demand. Accordingly, DOE evaluates the significance of energy savings on a case-by-case basis, taking into account the significance of cumulative FFC national energy savings, the cumulative FFC emissions reductions, and the need to confront the global climate crisis, among other factors.

DOE has initially determined the energy savings for the candidate standard levels evaluated in this preliminary analysis rulemaking are “significant” within the meaning of 42 U.S.C. 6295(o)(3)(B).

To determine whether a standard is economically justified, EPCA requires that DOE 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 the 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,

³Procedures, Interpretations, and Policies for Consideration in New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment, 86 FR 70892, 70901 (Dec. 13, 2021).

initial charges, or maintenance expenses for the covered products that are likely to result from the standard;

- 3) The total projected amount of energy (or as applicable, water) savings likely to result directly from the standard;
- 4) Any lessening of the utility or the performance of the products likely to result from 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 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))

DOE fulfills these and other applicable requirements by conducting a series of analyses throughout the rulemaking process. Table I.1 shows the individual analyses that are performed to satisfy each of the requirements within EPCA.

Table I.1 EPCA Requirements and Corresponding DOE Analysis

EPCA Requirement	Corresponding DOE Analysis
Significant Energy Savings	<ul style="list-style-type: none"> • Shipments Analysis • National Impact Analysis • Energy Use Analysis
Technological Feasibility	<ul style="list-style-type: none"> • Market and Technology Assessment • Screening Analysis • Engineering Analysis
Economic Justification:	
1. Economic impact on manufacturers and consumers	<ul style="list-style-type: none"> • Manufacturer Impact Analysis • Life-Cycle Cost and Payback Period Analysis • Life-Cycle Cost Subgroup Analysis • Shipments Analysis
2. Lifetime operating cost savings compared to increased cost for the product	<ul style="list-style-type: none"> • Markups for Product Price Analysis • Energy Use Analysis • Life-Cycle Cost and Payback Period Analysis
3. Total projected energy savings	<ul style="list-style-type: none"> • Shipments Analysis • National Impact Analysis
4. Impact on utility or performance	<ul style="list-style-type: none"> • Screening Analysis • Engineering Analysis
5. Impact of any lessening of competition	<ul style="list-style-type: none"> • Manufacturer Impact Analysis
6. Need for national energy and water conservation	<ul style="list-style-type: none"> • Shipments Analysis • National Impact Analysis
7. Other factors the Secretary considers relevant	<ul style="list-style-type: none"> • Employment Impact Analysis • Utility Impact Analysis • Emissions Analysis • Monetization of Emission Reductions Benefits⁴ • Regulatory Impact Analysis

Further, EPCA establishes a rebuttable presumption that a standard 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

⁴ On March 16, 2022, the Fifth Circuit Court of Appeals (No. 22-30087) granted the federal government’s emergency motion for stay pending appeal of the February 11, 2022, preliminary injunction issued in *Louisiana v. Biden*, No. 21-cv-1074-JDC-KK (W.D. La.). As a result of the Fifth Circuit’s order, the preliminary injunction is no longer in effect, pending resolution of the federal government’s appeal of that injunction or a further court order. Among other things, the preliminary injunction enjoined the defendants in that case from “adopting, employing, treating as binding, or relying upon” the interim estimates of the social cost of greenhouse gases—which were issued by the Interagency Working Group on the Social Cost of Greenhouse Gases on February 26, 2021—to monetize the benefits of reducing greenhouse gas emissions. In the absence of further intervening court orders, DOE will revert to its approach prior to the injunction and present monetized benefits where appropriate and permissible by law.

than three times the value of the energy savings during the first year that the consumer will receive as a result of the standard, as calculated under the applicable test procedure. (42 U.S.C. 6295(o)(2)(B)(iii))

EPCA also contains what is known as an “anti-backsliding” provision, which prevents the Secretary from prescribing any amended standard that either increases the maximum allowable energy use or decreases the minimum required energy efficiency of a covered product. (42 U.S.C. 6295(o)(1)) Also, the Secretary may not prescribe an amended or new 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 in any covered product type (or class) of performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as those generally available in the United States. (42 U.S.C. 6295(o)(4))

Additionally, EPCA specifies requirements when promulgating an energy conservation standard for a covered product that has two or more subcategories. DOE must specify a different standard level for a type or class of product that has the same function or intended use, if DOE determines that 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. (42 U.S.C. 6295(q)(1)) In determining whether a performance-related feature justifies a different standard for a group of products, DOE must consider such factors as the utility to the consumer of the feature and other factors DOE deems

appropriate. *Id.* Any rule prescribing such a standard must include an explanation of the basis on which such higher or lower level was established. (42 U.S.C. 6295(q)(2))

Finally, pursuant to the amendments contained in the Energy Independence and Security Act of 2007 (“EISA 2007”), Pub. L. 110-140, any final rule for new or amended energy conservation standards promulgated after July 1, 2010, is required to address standby mode and off mode energy use. (42 U.S.C. 6295(gg)(3)) Specifically, when DOE adopts a standard for a covered product after that date, it must, if justified by the criteria for adoption of standards under EPCA (42 U.S.C. 6295(o)), incorporate standby mode and off mode energy use into a single standard, or, if that is not feasible, adopt a separate standard for such energy use for that product. (42 U.S.C. 6295(gg)(3)(A)–(B)) DOE’s current test procedures for consumer furnaces address standby mode and off mode energy use.⁵ In this rulemaking, DOE intends to consider such energy use when analyzing any amended energy conservation standards it adopts in the final rule.

Before proposing a standard, DOE typically seeks public input on the analytical framework, models, and tools that DOE intends to use to evaluate standards for the product at issue and the results of preliminary analyses DOE performed for the product.

DOE is examining whether to amend the current standards pursuant to its obligations under EPCA. This notification announces the availability of the preliminary TSD, which details the preliminary analyses and summarizes the preliminary results of

⁵ The DOE test procedures for consumer furnaces appear at title 10 of the Code of Federal Regulations (“CFR”) Part 430, subpart B, appendix N.

DOE's analyses. In addition, DOE is announcing a webinar to solicit feedback from interested parties on its analytical framework, models, and preliminary results.

C. Deviation from Appendix A

In accordance with section 3(a) of 10 CFR part 430, subpart C, appendix A (“appendix A”), DOE notes that it is deviating from the provision in appendix A regarding the pre-NOPR stages for an energy conservation standards rulemaking. Section 6(a)(2) of appendix A specifies that if the Department determines it is appropriate to proceed with a rulemaking, the preliminary stages of a rulemaking to issue or amend an energy conservation standard that DOE will undertake will be a framework document and preliminary analysis, or an advance notice of proposed rulemaking.

As discussed further in section II.B of this document, prior to this notification of the preliminary analysis, DOE published a request for information (“RFI”) in the *Federal Register* in which DOE identified and sought comment on the analyses conducted in support of the most recent energy conservation standards rulemakings for oil, electric, and weatherized gas consumer furnaces. 87 FR 4513 (January 28, 2022; “January 2022 RFI”). In the January 2022 RFI, DOE sought data and information as to whether any new or amended rule would be cost-effective, economically justified, technologically feasible, or would result in a significant savings of energy. *Id.* DOE sought such data and information to assist in its consideration of whether (and if so, how) to amend the standards for oil, electric, and weatherized gas consumer furnaces. *Id.* Further, DOE provided an overview of the analysis it would use to evaluate new or amended energy conservation standards, including references to and requests for comment on the analyses

conducted as part of the most recent energy conservation standards rulemakings. *Id.* As DOE is intending to rely on substantively the same analytical methods as in the most recent rulemaking, publication of a framework document would be largely redundant with the published January 2022 RFI. As such, DOE is not publishing a framework document.

DOE notes that it is also deviating from section 6(d)(2) of appendix A, which specifies that the length of the public comment period for pre-NOPR rulemaking documents will vary depending upon the circumstances of the particular rulemaking, but will not be less than 75 calendar days. For this preliminary analysis, DOE has opted to instead provide a 60-day comment period. As discussed, DOE previously published the January 2022 RFI to determine whether any new or amended standards may be warranted for oil, electric, and weatherized gas consumer furnaces. 87 FR 4513. DOE requested comment in the January 2022 RFI on a variety of issues to aid in the development of its technical and economic analyses and included a 31-day comment period. Additionally, for this preliminary analysis, DOE has relied on many of the same analytical assumptions and approaches as used in the previous rulemaking and the recently published notice of proposed rulemaking for energy conservation standards for non-weatherized gas furnaces and mobile home gas furnaces, which included a separate 60-day comment period⁶. Therefore, for this preliminary analysis, DOE has determined that a 60-day comment period in conjunction with the January 2022 RFI's prior 31-day comment period provides

⁶ DOE recently published a notice of proposed rulemaking and request for comment for non-weatherized gas furnaces and mobile home gas furnaces. 87 FR 40590 (July 7, 2022). See docket number EERE-2014-BT-STD-0031, available at: www.regulations.gov/docket/EERE-2014-BT-STD-0031.

sufficient time for interested parties to review the preliminary analysis and develop comments.

II. Background

A. Current Standards

EPCA established the energy conservation standards that apply to most consumer furnaces currently being manufactured, in terms of minimum annual fuel utilization efficiency (“AFUE”). The original standards established a minimum AFUE of 75 percent for mobile home furnaces. For all other furnaces, the original standards generally established a minimum AFUE of 78 percent. However, Congress recognized the potential need for a separate standard based on the capacity of a furnace and directed DOE to undertake a rulemaking to establish a standard for “small” gas furnaces (*i.e.*, those having an input of less than 45,000 Btu per hour). (42 U.S.C. 6295(f)(1)-(2)) Through a final rule published in the *Federal Register* on November 17, 1989, DOE initially established standards for small furnaces at the same level as furnaces generally (*i.e.*, a minimum AFUE of 78 percent). 54 FR 47916, 47944.

EPCA also required DOE to conduct two rounds of rulemaking to consider amended standards for consumer furnaces. (42 U.S.C. 6295(f)(4)(B)-(C)). In addition, EPCA requires a six-year-lookback review of energy conservation standards for all covered products. (42 U.S.C. 6295(m)(1)) In a final rule published in the *Federal Register* on November 19, 2007 (November 2007 final rule), DOE prescribed amended energy conservation standards for consumer furnaces manufactured on or after November

19, 2015. 72 FR 65136. The November 2007 final rule revised the energy conservation standards to 80-percent AFUE for non-weatherized gas-fired furnaces (“NWGFs”), to 81-percent AFUE for weatherized gas furnaces (“WGFs”), to 80-percent AFUE for mobile home gas-fired furnaces (“MHGFs”), and to 82-percent AFUE for non-weatherized oil-fired furnaces (“NWOFFs”).⁷ 72 FR 65136, 65169. Based on market assessment and the standard levels at issue, the November 2007 final rule established standards without regard to the certified input capacity of a furnace. *Id.* Compliance with the amended standards established in the November 2007 final rule was to be required beginning November 19, 2015. *Id.*

Following DOE’s adoption of the November 2007 final rule, several parties jointly sued DOE in the United States Court of Appeals for the Second Circuit (“Second Circuit”) to invalidate the rule. Petition for Review, *State of New York, et al. v. Department of Energy, et al.*, Nos. 08–0311–ag(L); 08–0312–ag(con) (2d Cir. filed Jan. 17, 2008). The petitioners asserted that the standards for furnaces promulgated in the November 2007 final rule did not reflect the “maximum improvement in energy efficiency” that “is technologically feasible and economically justified” under 42 U.S.C. 6295(o)(2)(A). On April 16, 2009, DOE filed with the Court a motion for voluntary remand that the petitioners did not oppose. The motion did not state that the November 2007 final rule would be vacated, but indicated that DOE would revisit its initial

⁷ Although the November 2007 final rule did not explicitly state the standards for oil-fired furnaces were applicable only to non-weatherized oil-fired furnaces, the NOPR that preceded the final rule made clear that DOE did not perform analysis of and was not proposing standards for weatherized oil-fired furnaces or mobile home oil-fired furnaces. 71 FR 59203, 52914 (October 6, 2006). Thus, the proposed standards that were ultimately adopted in the November 2007 final rule only applied to non-weatherized oil-fired furnaces.

conclusions outlined in the November 2007 final rule in a subsequent rulemaking action. DOE also agreed that the final rule in that subsequent rulemaking action would address both regional standards for furnaces, as well as the effects of alternate standards on natural gas prices. The Second Circuit granted DOE's motion on April 21, 2009. DOE notes that the Second Circuit's order did not vacate the energy conservation standards set forth in the November 2007 final rule, and during the remand, they went into effect as originally scheduled.

On June 27, 2011, DOE published a direct final rule ("DFR") in the *Federal Register* ("June 2011 DFR") amending the energy conservation standards for residential central air conditioners and consumer furnaces. 76 FR 37408. Subsequently, on October 31, 2011, DOE published a notice of effective date and compliance dates in the *Federal Register* ("October 2011 notice") to confirm amended energy conservation standards and compliance dates contained in the June 2011 DFR. 76 FR 67037. The November 2007 final rule and the June 2011 DFR represented the first and the second rounds, respectively, of the two rulemakings required under 42 U.S.C. 6295(f)(4)(B)-(C) to consider amending the energy conservation standards for consumer furnaces.

The June 2011 DFR and October 2011 notice of effective date and compliance dates amended, in relevant part, the energy conservation standards and compliance dates for three product classes of consumer furnaces (*i.e.*, NWGFs, MHGFs, and NWOFs).⁸

⁸ For NWGFs and MHGFs, the standards were amended to a level of 80-percent AFUE nationally with a more-stringent 90-percent AFUE requirement in the Northern Region. For non-weatherized oil-fired furnaces, the standard was amended to 83-percent AFUE nationally. 76 FR 37408, 37410 (June 27, 2011).

The existing standards were left in place for three classes of consumer furnaces (*i.e.*, weatherized oil-fired furnaces, mobile home oil-fired furnaces, and electric furnaces). For one class of consumer furnaces (WGFs), the existing standard was left in place, but the compliance date was amended. Electrical standby mode and off mode energy consumption standards were established for non-weatherized gas and oil-fired furnaces (including mobile home furnaces) and electric furnaces. Compliance with the energy conservation standards promulgated in the June 2011 DFR was to be required on May 1, 2013 for non-weatherized furnaces and on January 1, 2015 for weatherized furnaces. 76 FR 37408, 37547-37548 (June 27, 2011); 76 FR 67037, 67051 (Oct. 31, 2011). The amended energy conservation standards and compliance dates in the June 2011 DFR superseded those standards and compliance dates promulgated by the November 2007 final rule for NWGFs, MHGFs, and NWOFFs. Similarly, the amended compliance date for WGFs in the June 2011 DFR superseded the compliance date in the November 2007 final rule.

After publication of the October 2011 notice, the American Public Gas Association (“APGA”) sued DOE⁹ in the United States Court of Appeals for the District of Columbia Circuit to invalidate that rule as it pertained to NWGFs. *Petition for Review, American Public Gas Association, et al. v. Department of Energy, et al.*, No. 11-1485 (D.C. Cir. filed Dec. 23, 2011). The parties to the litigation engaged in settlement negotiations which ultimately led to filing of an unopposed motion on March 11, 2014, seeking to vacate DOE’s rule in part and to remand to the agency for further rulemaking.

⁹ After APGA filed its petition for review on December 23, 2011, various entities subsequently intervened.

On April 24, 2014, the Court granted the motion and ordered that the standards established for NWGFs and MHGFs be vacated and remanded to DOE for further rulemaking. As a result, the standards established by the June 2011 DFR for NWGFs and MHGFs did not go into effect, and thus, required compliance with the standards established in the November 2007 final rule for these products began on November 19, 2015. As stated previously, the AFUE standards for WOFs, MHOFs, and EFs were unchanged, and as such, the original standards for those product classes remain in effect. Further, the amended standard for NWOFs were not subject to the Court order, and went into effect as specified in the June 2011 DFR. The AFUE standards currently applicable to all residential furnaces,¹⁰ including the five product classes for which DOE is analyzing amended standards in this preliminary analysis, are set forth in DOE’s regulations at 10 CFR 430.32(e)(1)(ii) and (iii). Table II.1 and II.2 present the currently applicable standards for NWOFs, MHOFs, WGFs, WOFs, and EFs, the subject of this preliminary analysis.

Table II.1 Federal Energy Conservation Standards for NWOFs, MHOFs, WGFs, WOFs, and EFs (AFUE)

Product Class	AFUE (percent)
Non-weatherized oil-fired furnaces (not including mobile home furnaces)	83
Mobile Home oil-fired furnaces	75
Weatherized gas furnaces	81
Weatherized oil-fired furnaces	78
Electric furnaces	78

¹⁰ DOE divides consumer furnaces into seven classes for the purpose of setting energy conservation standards: (1) NWGFs, (2) MHGFs, (3) WGFs, (4) NWOFs, (5) MHOFs, (6) WOFs, and (7) electric furnaces. 10 CFR 430.32(e)(1)(ii). As noted previously, DOE has been analyzing amended standards for NWGFs and MHGFs as part of a separate, ongoing rulemaking.

Table II.2 Federal Energy Conservation Standards for NWOFs and EFs (Standby and Off Mode Electrical Power Consumption)

Product Class	Maximum standby mode electrical power consumption $P_{W,SB}$ (watts)	Maximum off mode electrical power consumption, $P_{W,OFF}$ (watts)
Non-weatherized oil-fired furnaces (including mobile home furnaces)	11	11
Electric furnaces	10	10

B. Current Process

On January 28, 2022, DOE published the January 2022 RFI to initiate a review to determine whether any new or amended standards would satisfy the relevant requirements of EPCA for a new or amended energy conservation standard for oil, electric, and weatherized gas consumer furnaces. 87 FR 4513. Specifically, through the published notice and request for information, DOE sought data and information that could enable the agency to determine whether amended energy conservation standards would: (1) result in a significant savings of energy; (2) be technologically feasible; and (3) be economically justified. *Id.* As noted in section III.C of this document, based on its preliminary findings, DOE did not analyze potential AFUE standards for WOFs and EFs, and did not analyze new standby mode or off mode standards for WGFs or WOFs because DOE tentatively determined that there would be no energy savings from doing so.

Comments received to date as part of the current process have helped DOE identify and resolve issues related to the preliminary analyses. Chapter 2 of the preliminary TSD summarizes and addresses the comments received.

III. Summary of the Analyses Performed by DOE

For the products covered in this preliminary analysis, 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 (“LCC”) and payback period (“PBP”); and (5) national impacts. The preliminary TSD that presents the methodology and results of each of these analyses is available at

www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=59.

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 if DOE determines that a NOPR is warranted to propose amended energy conservation standards. 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 LCC and PBP analysis and the 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 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 should one be issued.

A. Market and Technology Assessment

DOE develops information in the market and technology assessment that provides an overall picture of the market for the products concerned, including general

characteristics of the products, the industry structure, manufacturers, market characteristics, and technologies used in the products. This activity includes both quantitative and qualitative assessments, based primarily on publicly available information. The subjects addressed in the market and technology assessment include: (1) a determination of the scope of the rulemaking and product classes, (2) manufacturers and industry structure, (3) existing efficiency programs, (4) shipments information, (5) market and industry trends, and (6) technologies or design options that could improve the energy efficiency of the product.

See chapter 3 of the preliminary TSD for further discussion of the market and technology assessment.

B. Screening Analysis

DOE uses the following five screening criteria to determine which technology options are suitable for further consideration in an energy conservation standards rulemaking:

- 1) *Technological feasibility.* Technologies that are not incorporated in commercial products or in commercially viable, existing prototypes will not be considered further.
- 2) *Practicability to manufacture, install, and service.* If it is determined that mass production of a technology in commercial products and reliable installation and servicing of the technology could not be achieved on the scale necessary

to serve the relevant market at the time of the projected compliance date of the standard, then that technology will not be considered further.

3) *Impacts on product utility.* If a technology is determined to have a significant adverse impact on the utility of the product to subgroups of consumers, or result in the unavailability of any covered product type with performance characteristics (including reliability), features, sizes, capacities, and volumes that are substantially the same as products generally available in the United States at the time, it will not be considered further.

4) *Safety of technologies.* If it is determined that a technology would have significant adverse impacts on health or safety, it will not be considered further.

5) *Unique-pathway proprietary technologies.* If a technology has proprietary protection and represents a unique pathway to achieving a given efficiency level, it will not be considered further, due to the potential for monopolistic concerns.

10 CFR part 430, subpart C, appendix A, sections 6(b)(3) and 7(b).

If DOE determines that a technology, or a combination of technologies, fails to meet one or more of the listed five criteria, it will be excluded from further consideration in the engineering analysis.

See chapter 4 of the preliminary TSD for further discussion of the screening analysis.

C. Engineering Analysis

The purpose of the engineering analysis is to establish the relationship between the efficiency and cost of oil, electric, and weatherized gas consumer furnaces. There are two elements to consider in the engineering analysis; the selection of efficiency levels to analyze (*i.e.*, the “efficiency analysis”) and the determination of product cost at each efficiency level (*i.e.*, the “cost analysis”). In determining the performance of higher-efficiency products, DOE considers technologies and design option combinations not eliminated by the screening analysis. For each product class analyzed, DOE estimates the manufacturer production cost (“MPC”) for the baseline as well as higher efficiency levels.¹¹ The output of the engineering analysis is a set of cost-efficiency “curves” that are used in downstream analyses (*i.e.*, the LCC and PBP analyses and the NIA).

DOE converts the MPC to the manufacturer selling price (“MSP”) by applying a manufacturer markup. The MSP is the price the manufacturer charges its first customer, when selling into the product distribution channels. The manufacturer markup accounts for manufacturer non-production costs and profit. DOE developed the manufacturer markup by examining publicly available financial information for manufacturers of the covered product.

¹¹ DOE did not consider amended AFUE standards for WOFs and EFs as part of this preliminary analysis because DOE tentatively determined that there would be no energy savings from doing so. For WOFs, DOE is not aware of any models on the market, and thus, there would be no potential energy savings from amending the AFUE standard for WOFs. For EFs, the AFUE of models on the market is already nearly 100 percent and DOE is not aware of technologies that would further improve the AFUE. Further, DOE did not consider new standby mode and off mode standards for WGFs or WOFs. For these classes, DOE has previously concluded in the June 2011 DFR that these products are packaged with either an air conditioner or heat pump, and that the standards for these products, specified in terms of power consumption in watts ($P_{W,OFF}$) and Seasonal Energy Efficiency Rating (“SEER”), already account for the standby mode and off mode energy consumption for these classes. 76 FR 37408, 37433.

See chapter 5 of the preliminary TSD for additional detail on the engineering analysis. See chapter 12 of the preliminary TSD for additional detail on the manufacturer markup.

D. Markups Analysis

The markups analysis develops appropriate markups (*e.g.*, retailer markups, distributor markups, contractor markups) in the distribution chain and sales taxes to convert MSP estimates derived in the engineering analysis to consumer prices, which are then used in the LCC and PBP analysis. At each step in the distribution channel, companies mark up the price of the product to cover business costs and profit margin.

DOE developed baseline and incremental markups for each actor in the distribution chain for consumer furnaces. Baseline markups are applied to the price of products with baseline efficiency, while incremental markups are applied to the difference in price between baseline and higher-efficiency models (the incremental cost increase). The incremental markup is typically less than the baseline markup and is designed to maintain similar per-unit operating profit before and after new or amended standards.¹²

¹² Because the projected price of standards-compliant products is typically higher than the price of baseline products, using the same markup for the incremental cost and the baseline cost would result in higher per-unit operating profit. While such an outcome is possible, DOE maintains that in markets that are reasonably competitive it is unlikely that standards would lead to a sustainable increase in profitability in the long run.

Chapter 6 of the preliminary TSD provides details on DOE's development of markups for oil, electric, and weatherized gas consumer furnaces.

E. Energy Use Analysis

The purpose of the energy use analysis is to determine the annual energy consumption of oil, electric, and weatherized gas consumer furnaces at different efficiencies in representative U.S. single-family homes, multi-family residences, and commercial buildings, and to assess the energy savings potential of increased efficiency. The energy use analysis estimates the range of energy use of oil, electric, and weatherized gas consumer furnaces in the field (*i.e.*, as they are actually used by consumers). In addition, the energy use analysis provides the basis for other analyses DOE performed, particularly assessments of the energy savings and the savings in consumer operating costs that could result from adoption of amended or new energy conservation standards.

Chapter 7 of the preliminary TSD addresses the energy use analysis.

F. Life-Cycle Cost and Payback Period Analyses

The effect of new or amended energy conservation standards on individual consumers usually involves a reduction in operating cost and an increase in purchase cost. DOE used the following two metrics to measure consumer impacts:

- The LCC is the total consumer expense of an appliance or product over the life of that product, consisting of total installed cost (manufacturer selling price, distribution chain markups, sales tax, and installation costs) plus operating costs

(expenses for energy use, maintenance, and repair). To compute the operating costs, DOE discounts future operating costs to the time of purchase and sums them over the lifetime of the product.

- The PBP is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost (including installation) of a more-efficient product through lower operating costs. DOE calculates the PBP by dividing the change in purchase cost at higher efficiency levels by the change in annual operating cost for the year that amended or new standards are assumed to take effect.

Chapter 8 of the preliminary TSD addresses the LCC and PBP analyses.

G. 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).¹³ DOE calculates the NES and NPV for the potential standard levels considered based on projections of annual product shipments, along with the annual energy consumption and total installed cost data from the energy use and LCC analyses. For the present analysis, DOE projected the energy savings, operating cost savings, product costs, and NPV of consumer benefits over the lifetime of oil, electric, and weatherized gas consumer furnaces sold from 2030 through 2059.

¹³ The NIA accounts for impacts in the 50 states and U.S. territories.

DOE evaluates the impacts of new or amended standards by comparing a case without such standards (“no-new-standards case”) with standards-case projections. The no-new-standards case characterizes energy use and consumer costs for each product class in the absence of new or amended energy conservation standards. For this projection, DOE considers historical trends in efficiency and various forces that are likely to affect the mix of efficiencies over time. DOE compares the no-new-standards case with projections characterizing the market for each product class if DOE adopted new or amended standards at specific energy efficiency levels for that class. For each efficiency level, DOE considers how a given standard would likely affect the market shares of products with efficiencies greater than the standard.

For the NIA, DOE uses a spreadsheet model to calculate the energy savings and the national consumer costs and savings from each efficiency level. Interested parties can review DOE’s analyses by changing various input quantities within the spreadsheet. The NIA spreadsheet model uses typical values (as opposed to probability distributions) as inputs. 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.

DOE estimates a combined total of 1.15 quads of potential full-fuel-cycle (FFC) energy savings at the max- tech efficiency levels for consumer oil, electric, and weatherized gas furnaces. Combined potential FFC energy savings at Efficiency Level 1 for all product classes considered in this preliminary analysis are estimated to be 0.96 quads. Chapter 10 of the preliminary TSD addresses the NIA.

IV. Public Participation

DOE invites public engagement in this process through participation in the webinar and submission of written comments, data, and information. After the webinar and 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. Following such consideration, the Department will publish either a determination that the energy conservation standards for CRE need not be amended or a NOPR proposing to amend those standards. The NOPR, should one be issued, would include proposed energy conservation standards for the products covered by this rulemaking, and members of the public would be given an opportunity to submit written and oral comments on the proposed standards.

A. Participation in the Webinar

The time and date of the webinar meeting are listed in the **DATES** section at the beginning of this document. Webinar registration information, participant instructions, and information about the capabilities available to webinar participants will be published on DOE's website:

www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid=59.

Participants are responsible for ensuring their systems are compatible with the webinar software.

B. Procedure for Submitting Prepared General Statements for Distribution

Any person who has an interest in the topics addressed in this document, or who is representative of a group or class of persons that has an interest in these issues, may request an opportunity to make an oral presentation at the webinar. Such persons may submit to *ApplianceStandardsQuestions@ee.doe.gov*. Persons who wish to speak should include with their request a computer file in WordPerfect, Microsoft Word, PDF, or text (ASCII) file format that briefly describes the nature of their interest in this rulemaking and the topics they wish to discuss. Such persons should also provide a daytime telephone number where they can be reached.

C. Conduct of the Webinar

DOE will designate a DOE official to preside at the webinar and may also use a professional facilitator to aid discussion. The meeting will not be a judicial or evidentiary-type public hearing, but DOE will conduct it in accordance with section 336 of EPCA (42 U.S.C. 6306). A court reporter will be present to record the proceedings and prepare a transcript. DOE reserves the right to schedule the order of presentations and to establish the procedures governing the conduct of the webinar. There shall not be discussion of proprietary information, costs or prices, market share, or other commercial matters regulated by U.S. anti-trust laws. After the webinar and until the end of the comment period, interested parties may submit further comments on the proceedings and any aspect of the rulemaking.

The webinar will be conducted in an informal, conference style. DOE will a general overview of the topics addressed in this rulemaking, allow time for prepared

general statements by participants, and encourage all interested parties to share their views on issues affecting this rulemaking. Each participant will be allowed to make a general statement (within time limits determined by DOE), before the discussion of specific topics. DOE will allow, as time permits, other participants to comment briefly on any general statements.

At the end of all prepared statements on a topic, DOE will permit participants to clarify their statements briefly and comment on statements made by others. Participants should be prepared to answer questions by DOE and by other participants concerning these issues. DOE representatives may also ask questions of participants concerning other matters relevant to this rulemaking. The official conducting the webinar will accept additional comments or questions from those attending, as time permits. The presiding official will announce any further procedural rules or modification of the above procedures that may be needed for the proper conduct of the webinar.

A transcript of the webinar will be included in the docket, which can be viewed as described in the *Docket* section at the beginning of this document. In addition, any person may buy a copy of the transcript from the transcribing reporter.

D. Submission of Comments

DOE will accept comments, data, and information regarding this notification of availability of preliminary technical support document before or after the webinar, but no later than the date provided in the **DATES** section at the beginning of this document.

Interested parties may submit comments, data, and other information using any of the methods described in the **ADDRESSES** section at the beginning of this document.

Submitting comments via *www.regulations.gov*. The *www.regulations.gov* webpage will require you to provide your name and contact information. Your contact information will be viewable to DOE Building Technologies staff only. Your contact information will not be publicly viewable except for your first and last names, organization name (if any), and submitter representative name (if any). If your comment is not processed properly because of technical difficulties, DOE will use this information to contact you. If DOE cannot read your comment due to technical difficulties and cannot contact you for clarification, DOE may not be able to consider your comment.

However, your contact information will be publicly viewable if you include it in the comment itself or in any documents attached to your comment. Any information that you do not want to be publicly viewable should not be included in your comment, nor in any document attached to your comment. Otherwise, persons viewing comments will see only first and last names, organization names, correspondence containing comments, and any documents submitted with the comments.

Do not submit to *www.regulations.gov* information for which disclosure is restricted by statute, such as trade secrets and commercial or financial information (hereinafter referred to as Confidential Business Information (“CBI”). Comments submitted through *www.regulations.gov* cannot be claimed as CBI. Comments received

through the website will waive any CBI claims for the information submitted. For information on submitting CBI, see the Confidential Business Information section.

DOE processes submissions made through *www.regulations.gov* before posting. Normally, comments will be posted within a few days of being submitted. However, if large volumes of comments are being processed simultaneously, your comment may not be viewable for up to several weeks. Please keep the comment tracking number that *www.regulations.gov* provides after you have successfully uploaded your comment.

Submitting comments via email, hand delivery/courier, or postal mail. Comments and documents submitted via email, hand delivery/courier, or postal mail also will be posted to *www.regulations.gov*. If you do not want your personal contact information to be publicly viewable, do not include it in your comment or any accompanying documents. Instead, provide your contact information in a cover letter. Include your first and last names, email address, telephone number, and optional mailing address. The cover letter will not be publicly viewable as long as it does not include any comments

Include contact information each time you submit comments, data, documents, and other information to DOE. If you submit via postal mail or hand delivery/courier, please provide all items on a CD, if feasible, in which case it is not necessary to submit printed copies. No telefacsimiles (“faxes”) will be accepted.

Comments, data, and other information submitted to DOE electronically should be provided in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII)

file format. Provide documents that are not secured, that are written in English, and that are free of any defects or viruses. Documents should not contain special characters or any form of encryption and, if possible, they should carry the electronic signature of the author.

Campaign form letters. Please submit campaign form letters by the originating organization in batches of between 50 to 500 form letters per PDF or as one form letter with a list of supporters' names compiled into one or more PDFs. This reduces comment processing and posting time.

Confidential Business Information. 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 via email two well-marked copies: one copy of the document marked "confidential" including all the information believed to be confidential, and one copy of the document marked "non-confidential" with the information believed to be confidential deleted. DOE will make its own determination about the confidential status of the information and treat it according to its determination.

It is DOE's policy that all comments may be included in the public docket, without change and as received, including any personal information provided in the comments (except information deemed to be exempt from public disclosure).

V. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this notification of the availability of the preliminary technical support document and request for comment.

Signing Authority

This document of the Department of Energy was signed on November 21, 2022, by Francisco Alejandro Moreno, Acting Assistant Secretary for Energy Efficiency and Renewable Energy, pursuant to delegated authority from the Secretary of Energy. That document with the original signature and date is maintained by DOE. For administrative purposes only, and in compliance with requirements of the Office of the Federal Register, the undersigned DOE Federal Register Liaison Officer has been authorized to sign and submit the document in electronic format for publication, as an official document of the Department of Energy. This administrative process in no way alters the legal effect of this document upon publication in the *Federal Register*.

Signed in Washington, DC, on November 21, 2022.

Digitally signed by FRANCISCO MORENO
Date: 2022.11.21 09:10:38 -05'00'

Francisco Alejandro Moreno
Acting Assistant Secretary for
Energy Efficiency and Renewable Energy
U.S. Department of Energy