

[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Part 430

[EERE-2019-BT-STD-0002]

RIN 1904-AE31

Energy Conservation Program: Energy Conservation Standards for Direct Heating Equipment

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

ACTION: Notification of proposed determination and request for comment.

SUMMARY: The Energy Policy and Conservation Act, as amended (EPCA), prescribes energy conservation standards for various consumer products, including direct heating equipment (DHE). EPCA also requires the U.S. Department of Energy (DOE) to periodically determine whether more-stringent, amended standards would be technologically feasible and economically justified, and would result in significant energy savings. After carefully considering the available market and technical information for these products, DOE has tentatively concluded in this document that more-stringent standards for DHE would not save a significant amount of energy. Further, depending on the product class, more-stringent standards for DHE would not be technologically feasible or economically justified. As such, DOE has tentatively

determined that amended energy conservation standards are not needed. DOE requests comment on this proposed determination, as well as the associated analyses and results.

DATES: *Meeting:* DOE will hold a webinar on Monday, January 25, 2021, from 12:00 p.m. to 4:00 p.m. See section V, “Public Participation,” for webinar registration information, participant instructions, and information about the capabilities available to webinar participants.

Comments: Written comments and information are requested and will be accepted on or before **[INSERT DATE 75 DAYS AFTER DATE OF PUBLICATION IN THE FEDERAL REGISTER]**.

ADDRESSES: Interested persons are encouraged to submit comments using the Federal eRulemaking Portal at <http://www.regulations.gov>. Follow the instructions for submitting comments. Alternatively, interested persons may submit comments, identified by docket number EERE-2019-BT-STD-0002, by any of the following methods:

1. *Federal eRulemaking Portal:* <http://www.regulations.gov>. Follow the instructions for submitting comments.
2. *E-mail:* DHE2019STD0002@ee.doe.gov. Include the docket number EERE-2019-BT-STD-0002 in the subject line of the message.
3. *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.

4. *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 V (Public Participation) of this document.

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

The docket webpage can be found at <https://www.regulations.gov/document?D=EERE-2019-BT-STD-0002>. The docket webpage contains instructions on how to access all documents, including public

comments, in the docket. See section V, “Public Participation,” for further information on how to submit comments through <http://www.regulations.gov>.

FOR FURTHER INFORMATION CONTACT: Dr. Stephanie Johnson, U.S.

Department of Energy, Office of Energy Efficiency and Renewable Energy, Building Technologies Office, EE-5B, 1000 Independence Avenue, SW., Washington, DC, 20585-0121. Telephone: (202) 287-1943. E-mail: ApplianceStandardsQuestions@ee.doe.gov.

Mr. Eric Stas, U.S. Department of Energy, Office of the General Counsel, GC-33, 1000 Independence Avenue, SW., Washington, DC 20585-0121. Telephone: (202) 586-5827. E-mail: Eric.Stas@hq.doe.gov.

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

SUPPLEMENTARY INFORMATION:

Table of Contents

- I. Synopsis of the Proposed Determination
- II. Authority and Background
 - A. Authority
 - B. Rulemaking History
 - 1. Current Standards
 - 2. April 2010 Final Rule
 - a. Unvented Heaters
 - b. Vented Heaters
 - 3. October 2016 Final Determination
 - a. Unvented Heaters
 - b. Vented Heaters

4. February 2019 Request for Information
 5. Process Rule
 6. Gas Industry Petition for Rulemaking
- III. General Discussion
- A. Product Classes and Scope of Coverage
 1. Scope of Coverage and Definitions
 - a. Unvented Heaters
 - b. Vented Heaters
 2. Product Classes
 - B. Analysis for this Notification of Proposed Determination
 1. Overview of the Analysis
 - a. Technological Feasibility
 - b. Energy Savings
 - c. Cost-Effectiveness
 - d. Further Considerations
 2. Unvented Heaters
 3. Vented Heaters
 - a. Market Assessment
 - b. Technology Options for Efficiency Improvement
 - c. Screening Analysis
 - d. Engineering Analysis
 - e. Energy Use Analysis
 - f. Life-Cycle Cost and Payback Period Analysis
 - g. Shipments
 - h. National Energy Savings
 - i. Manufacturer Impacts
 4. Other Issues
 - a. Fuel Switching and Full-Fuel-Cycle
 - b. Environmental Analysis, Market Failures, and Market-Based Compliance
 - c. Product Labeling
 - d. Standard Level Recommendations
 - C. Proposed Determination
 1. Unvented Heaters
 2. Vented Heaters
 - a. Technological Feasibility
 - b. Cost-Effectiveness
 - c. Significant Energy Savings
 - d. Further Considerations
 - e. Standby Mode and Off Mode
 - f. Summary
- IV. Procedural Issues and Regulatory Review
- A. Review Under Executive Order 12866
 - B. Review Under Executive Orders 13771 and 13777
 - C. Review Under the Regulatory Flexibility Act
 - D. Review Under the Paperwork Reduction Act
 - E. Review Under the National Environmental Policy Act of 1969

- F. Review Under Executive Order 13132
- G. Review Under Executive Order 12988
- H. Review Under the Unfunded Mandates Reform Act of 1995
- I. Review Under the Treasury and General Government Appropriations Act, 1999
- J. Review Under Executive Order 12630
- K. Review Under the Treasury and General Government Appropriations Act, 2001
- L. Review Under Executive Order 13211
- M. Review Under the Information Quality Bulletin for Peer Review
- V. Public Participation
 - A. Participation in the Webinar
 - B. Procedures for Submitting Prepared General Statements for Distribution
 - C. Conduct of the Webinar
 - D. Submission of Comments
- VI. Approval of the Office of the Secretary

I. Synopsis of the Proposed Determination

Title III, Part B¹ of the Energy Policy and Conservation Act, as amended (EPCA or the Act),² established the Energy Conservation Program for Consumer Products Other Than Automobiles. (42 U.S.C. 6291-6309) These products include direct heating equipment, the subject of this notification of proposed determination (NOPD). (42 U.S.C. 6292(a)(9))

DOE is issuing this NOPD pursuant to the statutory requirement in EPCA that not later than three years after issuance of a final determination not to amend standards, 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

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

² All references to EPCA in this document refer to the statute as amended through America's Water Infrastructure Act of 2018, Public Law 115-270 (Oct. 23, 2018).

energy conservation standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m)(3)(B))

“Direct heating equipment” is defined at 10 Code of Federal Regulations (CFR) 430.2 as vented home heating equipment and unvented home heating equipment (*i.e.*, “vented heaters” and “unvented heaters,” respectively). These latter terms are also defined at 10 CFR 430.2. Federal energy conservation standards at 10 CFR 430.32(i) currently exist for vented home heating equipment, but there are currently no standards for unvented home heating equipment.

For this proposed determination, DOE evaluated whether energy conservation standards should be proposed for unvented heaters. In addition, DOE analyzed vented heaters subject to the standards specified in 10 CFR 430.32(i).

For unvented home heating equipment, DOE has previously determined that unvented heaters have minimal potential for energy savings, as they are installed within a conditioned space and all waste heat will be transferred to the conditioned space. 75 FR 20112, 20130 (April 16, 2010). Further, the test procedure only includes test methods for annual energy consumption for primary electric heaters and rated output for all unvented heaters and does not include a test method or metric for energy efficiency. *See* 10 CFR part 430 subpart B appendix G.

For vented home heating equipment, DOE analyzed the current vented heater market and compared it to the market during the previous rulemakings. DOE found the

market has shrunk since these previous rulemakings but that the available technology options and efficiency levels have not changed significantly. In those earlier rulemakings, DOE found that while some efficiency levels were technologically feasible, they were not economically justified. DOE also examined the energy use of the vented heaters considered in the previous rulemakings.

Based on the results of these analyses, as summarized and explained in section III of this document, DOE has tentatively determined that energy conservation standards for unvented heaters are not warranted due to insignificant potential energy savings. Similarly, DOE has tentatively determined that amended energy conservation standards for vented heaters are not warranted due to insignificant energy savings, and furthermore, depending on the product class, more-stringent standards for vented heaters would not be technologically feasible or economically justified. Consequently, DOE proposes to take no further action vis-à-vis the energy conservation standards for DHE at this time.

II. Authority and Background

The following section briefly discusses the statutory authority underlying this proposed determination, as well as some of the historical background relevant to the establishment of energy conservation standards for unvented home heating equipment and vented home heating equipment.

A. Authority

EPCA, Public Law 94-163 (42 U.S.C. 6291-6317, as codified), among other things, authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. Title III, Part B of EPCA established the Energy Conservation Program for Consumer Products Other Than Automobiles, which sets forth a variety of provisions designed to improve energy efficiency. The National Appliance Energy Conservation Act of 1987 (NAECA), Public Law 100-12, amended EPCA to include DHE in the list of covered products and prescribed the initial energy conservation standards for DHE. (42 U.S.C. 6292(a)(9); 42 U.S.C. 6295(e)(3)) NAECA amendments to EPCA also directed DOE to conduct two cycles of rulemakings to determine whether to amend these standards. (42 U.S.C. 6295(e)(4))

Under EPCA, DOE's energy conservation program for covered products consists essentially of four parts: (1) testing, (2) labeling, (3) Federal energy conservation standards, and (4) certification and enforcement procedures. Relevant provisions of the Act specifically include definitions (42 U.S.C. 6291), test procedures (42 U.S.C. 6293), labeling provisions (42 U.S.C. 6294), energy conservation standards (42 U.S.C. 6295), and the authority to require information and reports from manufacturers (42 U.S.C. 6296).

Subject to certain criteria and conditions, DOE is required to develop test procedures to measure the energy efficiency, energy use, or estimated annual operating cost of each covered product. (42 U.S.C. 6295(o)(3)(A) and 42 U.S.C. 6295(r))

Manufacturers of covered products must use the prescribed DOE test procedure as the basis for certifying to DOE that their products comply with the applicable energy conservation standards adopted under EPCA and when making representations to the public regarding the energy use or efficiency of those products. (42 U.S.C. 6293(c) and 42 U.S.C. 6295(s)) Similarly, DOE must use these test procedures to determine whether the products comply with standards adopted pursuant to EPCA. (42 U.S.C. 6295(s)) The currently applicable DOE test procedures for unvented home heating equipment and vented home heating equipment, subsets of DHE, appear at 10 CFR part 430, subpart B, appendix G (Appendix G) and appendix O (Appendix O), respectively.

Federal energy efficiency requirements for covered products established under EPCA generally supersede State laws and regulations concerning energy conservation testing, labeling, and standards. (42 U.S.C. 6297(a)-(c)) DOE may, however, grant waivers of Federal preemption in limited instances for particular State laws or regulations, in accordance with the procedures set forth under 42 U.S.C. 6297(d).

As noted previously, NAECA amended EPCA to include the initial energy conservation standards for DHE – limited to gas DHE only – which were based on annual fuel utilization efficiency (AFUE). NAECA established separate standards for “wall fan type,” “wall gravity type,” “floor,” and “room” DHE, further divided by input capacity.³ (42 U.S.C. 6295(e)(3)) The statutory energy conservation standards for gas DHE were

³ DOE defines “direct heating equipment” as vented home heating equipment and unvented home heating equipment. 10 CFR 430.2. For the purpose of the energy conservation standards, DOE further delineates vented home heating equipment as “gas wall fan type,” “gas wall gravity type,” “gas floor,” and “gas room,” and then further divides product classes by input capacity. 10 CFR 430.32(i).

incorporated into the CFR in a final rule published on February 7, 1989 (February 1989 final rule) and applied to all gas vented home heating equipment manufactured beginning January 1, 1990. 54 FR 6062, 6077. The initial statutory energy conservation standards published in the February 1989 final rule are presented in Table II.1 of this document.

Table II.1 Minimum Federal Energy Conservation Standards for Gas Direct Heating Equipment Established by NAECA

DHE Type	Heat Circulation Type	Input Rate, Btu/h	AFUE, percent
Wall	Fan Type	≤42,000	73
		>42,000	74
	Gravity Type	≤10,000	59
		>10,000 and ≤12,000	60
		>12,000 and ≤15,000	61
		>15,000 and ≤19,000	62
		>19,000 and ≤27,000	63
		>27,000 and ≤46,000	64
		>46,000	65
Floor	All	≤37,000	56
		>37,000	57
Room	All	≤18,000	57
		>18,000 and ≤20,000	58
		>20,000 and ≤27,000	63
		>27,000 and ≤46,000	64
		>46,000	65

Pursuant to the amendments to EPCA contained in the Energy Independence and Security Act of 2007 (EISA 2007), Public Law 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)) In this analysis, DOE considers such energy use in its determination of whether energy conservation standards need to be adopted or amended.

EPCA also requires under 42 U.S.C. 6295(m), that DOE must periodically review its already established energy conservation standards for a covered product no later than six years from the issuance of a final rule establishing or amending a standard for a covered product. This six-year-lookback provision requires that DOE publish either a determination that standards do not need to be amended or a NOPR, including new proposed standards (proceeding to a final rule, as appropriate). (42 U.S.C. 6295(m)(1)) EPCA further provides that, not later than three years after the issuance of a final determination not to amend standards, DOE must publish either a notification 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 the determination is based publicly available and provide an opportunity for written comment. (42 U.S.C. 6295(m)(2))

A determination that amended standards are not needed must be based on consideration of whether amended standards will result in significant conservation of energy, are technologically feasible, and are cost-effective. (42 U.S.C. 6295(m)(1)(A))

and 42 U.S.C. 6295(n)(2)) Additionally, any new or amended energy conservation standard prescribed by the Secretary for any type (or class) of covered product shall be designed to achieve the maximum improvement in energy efficiency which the Secretary determines is technologically feasible and economically justified. (42 U.S.C.

6295(o)(2)(A)) Among the factors DOE considers in evaluating whether a proposed standard level is economically justified includes whether the proposed standard at that level is cost-effective, as defined under 42 U.S.C. 6295(o)(2)(B)(i)(II). Under 42 U.S.C. 6295(o)(2)(B)(i)(II), an evaluation of cost-effectiveness requires DOE to consider 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 standard. (42 U.S.C. 6295(n)(2) and 42 U.S.C. 6295(o)(2)(B)(i)(II))

A NOPR including new proposed standards, must be based on the criteria established under 42 U.S.C. 6295(o). (42 U.S.C. 6295(m)(1)(B)) The criteria in 42 U.S.C. 6295(o) require that standards be designed to achieve the maximum improvement in energy efficiency, which the Secretary determines is technologically feasible and economically justified, and they must result in significant conservation of energy. (42 U.S.C. 6295(o)(2)(A) and 42 U.S.C. 6295(o)(3)(B)) In deciding whether a proposed standard is economically justified, DOE must determine, after receiving public comment, whether the benefits of the standard exceed its burdens. (42 U.S.C. 6295(o)(2)(B)(i)) DOE must make this determination after receiving comments on the proposed standard,

and by considering, to the greatest extent practicable, the following seven statutory 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 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 covered 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 is publishing this NOPD in satisfaction of the three-year review requirement in EPCA.

B. Rulemaking History

As noted, DOE codified the statutory standards for gas DHE into the CFR in the February 1989 final rule. 54 FR 6062 (Feb. 7, 1989). Pursuant to the requirements in EPCA (42 U.S.C. 6295(e)(4)), DOE conducted two cycles of rulemaking for DHE to determine whether to amend these standards. DOE published a final rule concluding the first round of rulemaking on April 16, 2010 (75 FR 20112 (April 2010 final rule)), and the Department published a final rule concluding the second round on October 17, 2016 (81 FR 71325 (October 2016 final determination)).

1. Current Standards

In the April 2010 final rule, DOE prescribed the current energy conservation standards for gas vented home heating equipment manufactured on and after April 16, 2013. 75 FR 20112, 20234-20235 (April 16, 2010). These standards consolidated the input rate ranges of all gas wall gravity type vented heaters at or below 27,000 Btu/h, consolidated the input rate ranges of all gas room vented heaters at or below 20,000 Btu/h, and are set forth in DOE's regulations at 10 CFR 430.32(i)(2) and repeated in Table II.2 of this document. There are currently no standards for unvented home heating equipment.

Table II.2 Federal Energy Conservation Standards for Gas Vented Home Heating Equipment

DHE Type	Heat Circulation Type	Input Rate, Btu/h	AFUE, percent
Wall	Fan Type	≤42,000	75
		>42,000	76
	Gravity Type	≤27,000	65
		>27,000 and ≤46,000	66
		>46,000	67
Floor	All	≤37,000	57
		>37,000	58
Room	All	≤20,000	61
		>20,000 and ≤27,000	66
		>27,000 and ≤46,000	67
		>46,000	68

2. April 2010 Final Rule

a. Unvented Heaters

DOE did not adopt standards for unvented heaters in the April 2010 final rule, having determined that a standard would produce little energy savings (largely due to the fact that any heat losses are dissipated directly into the conditioned space) and because of limitations in the applicable DOE test procedure. 75 FR 20112, 20130 (April 16, 2010). The unvented heaters test procedure, Appendix G, includes neither a method for measuring energy efficiency nor a descriptor for representing the efficiency of unvented heaters. Instead, Appendix G provides a method to measure and calculate the rated output for all unvented heaters and annual energy consumption of primary electric unvented heaters.

b. Vented Heaters

DOE established the current energy conservation standards for vented heaters in the April 2010 final rule, but the agency determined that standards more stringent than those adopted would not be economically justified. 75 FR 20112, 20217-20219 (April 16, 2010). At the next highest level of stringency, trial standard level (TSL) 3, DOE projected the fraction of consumers experiencing an increased life-cycle cost would be 19 percent for gas wall fan type vented heaters, 33 percent for gas wall gravity type vented heaters, 25 percent for gas floor vented heaters, and 20 percent for gas room vented heaters. *Id.* at 75 FR 20218. DOE also projected a decrease in the industry net present value (INPV) of 42.4 percent, with total conversion costs (costs for redesigning and retooling product lines not already meeting the amended standards) of roughly half of the industry value. *Id.* DOE also found that the industry had consolidated significantly over the prior decade due to a steady decline in shipments; the three competitors that account for nearly 100 percent of the market had survived up to that point by consolidating a variety of legacy brands and products and providing them in replacement situations; and thus, each of the three competitors, two of which are small business manufacturers, would face the prospect of significantly upgrading several low-volume product lines. *Id.* DOE found that for the most part, manufacturers did not have significant volume over which to spread the capital conversion costs required by TSL 3 and all higher TSLs, meaning that margins will likely be pressured unless consumers accept large increases in product price. *Id.* DOE projected even more harmful impacts for small business (*e.g.*, the typical small business manufacturer in the industry would require investment equal to 426 percent of its annual earnings before interest and taxes). *Id.* Concern with the

potential impacts on competition and small business were also raised by the U.S. Department of Justice, Antitrust Division based on its review of the evaluated TSLs. *Id.* at 75 FR 20235-20236.

In the April 2010 final rule, DOE concluded that at the next higher level of stringency over that which was adopted, the benefits of energy savings, emission reductions, and consumer net present value (NPV) benefits would be outweighed by the economic burden on some consumers, the large capital conversion costs that could result in a large reduction in INPV for the manufacturers of vented heaters, and the potential for small business manufacturers of vented heaters to reduce their product offerings or to be forced to exit the market completely, thereby reducing competition in the vented heater market. *Id.* at 75 FR 20218-20219.

Compliance with the adopted standards (*i.e.*, those currently at 10 CFR 430.32(i)(2)) was required for all vented home heating equipment manufactured beginning April 16, 2013.

3. October 2016 Final Determination

a. Unvented Heaters

In the October 2016 final determination, DOE concluded that energy conservation standards for unvented heaters would result in negligible energy savings. 81 FR 71325, 71327 (Oct. 17, 2016). DOE also explained that the test procedure for unvented heaters in Appendix G, includes a calculation of annual energy consumption based on a single

assignment of active mode hours for unvented heaters that are used as the primary heating source for the home. *Id.* at 81 FR 71328. For unvented heaters that are not used as the primary heating source for the home, there are no provisions for calculating either the energy efficiency or annual energy consumption. *Id.* DOE further explained that pursuant to 42 U.S.C. 6295(o)(3), DOE is prohibited from prescribing a new or amended standard for a covered consumer product if a test procedure has not been prescribed for that consumer product, and as such, DOE could not consider standards for these products at that time. *Id.*

b. Vented Heaters

In the October 2016 final determination, DOE found that few changes to the industry and product offerings had occurred since the April 2010 final rule, and, therefore, the conclusions presented in that final rule were still valid. 81 FR 71325, 71327-71328 (Oct. 17, 2016). For the October 2016 final determination, DOE reviewed the vented heater market, including product literature and product listings in the DOE Compliance Certification Management System (CCMS) database and the Air-Conditioning, Heating, and Refrigeration Institute (AHRI) product directory.⁴ *Id.* at 81 FR 71327. DOE found that the number of models offered in each of the vented heater product classes had decreased overall since the April 2010 final rule, and the agency

⁴ The AHRI directory for DHE can be found at: <https://www.ahridirectory.org/NewSearch?programId=23&searchTypeId=3> (Last accessed for the October 2016 final determination on July 16, 2015). The DOE CCMS database can be found at: https://www.regulations.doe.gov/certification-data/CCMS-4-Direct_Heating_Equipment.html#q=Product_Group_s%3A%22Direct%20Heating%20Equipment%22 (Last accessed for the October 2016 final determination on July 16, 2015).

concluded that this finding supported the notion that the vented heater market was shrinking and that product lines were mainly maintained as replacements for existing vented heater units, and that new product lines generally were not being developed. *Id.*

For the October 2016 final determination DOE also examined available technologies used to improve the efficiency of vented heaters. DOE analyzed products on the market at the time through product teardowns and engaged in manufacturer interviews to obtain further information in support of its analysis. 81 FR 71325, 71327 (Oct. 17, 2016). Most of the technology options on the market and evaluated for the October 2016 final determination (*i.e.*, improved heat exchanger, induced draft, electronic ignition, and a two-speed blower for gas wall fan type vented heaters) were those considered as part of the vented heater rulemaking analysis for the April 2010 final rule. *Id.* DOE determined that the technology options available for vented heaters were likely to have limited potential for achieving energy savings.⁵ *Id.* Furthermore, DOE concluded that the costs of technology options would likely be similar or higher than in the previous rulemaking analysis due to reduced shipments and, therefore, reduced purchasing power of vented heater manufacturers. *Id.* DOE also evaluated condensing technology for gas wall fan type vented heaters, which had become available after the April 2010 final rule, and, therefore, was not evaluated as part of that rulemaking. *Id.* DOE concluded that this technology option would not be economically justified when

⁵ DOE noted that for gas room vented heaters with input capacity up to 20,000 Btu/h, the maximum AFUE available on the market increased from 59 percent in 2009 (only one unit at this input capacity was available on the market at that time) to 71 percent in 2015. DOE found that this was due to heat exchanger improvements only because these units do not use electricity. Due to the small input capacity, DOE found that this increase in AFUE (based on heat exchanger improvements relative to input capacity) was not representative of or feasible for the other gas room vented heater product classes.

analyzed for the Nation as a whole due to the significant increase in initial product cost for products using this technology and the potential for severe manufacturer impacts due to the necessary capital conversion costs if an energy conservation standard were adopted at this level. *Id.* at 81 FR 71327-71328.

DOE acknowledged that the vented heater industry had seen further consolidation since the April 2010 final rule, with the total number of manufacturers declining from six to four. *Id.* at 81 FR 71328. Furthermore, according to manufacturers,⁶ shipments further decreased since the April 2010 final rule, and, therefore, it would be more difficult for manufacturers to recover capital expenditures resulting from increased standards. *Id.* DOE acknowledged that vented heater units continue to be produced primarily as replacements and that the market is small, and expected that shipments would continue to decrease and amended standards would likely accelerate the trend of declining shipments. *Id.* Moreover, DOE anticipated that small business impacts resulting from amended standards could be significant, as two of the four remaining manufacturers subject to vented heater standards were small businesses. *Id.*

DOE concluded in the October 2016 final determination that due to the lack of advancement in the vented heater industry since the April 2010 final rule in terms of product offerings, available technology options and associated costs, and declining shipment volumes, amending the vented heater energy conservation standards would

⁶ Information obtained during confidential manufacturer interviews.

impose a substantial burden on manufacturers of vented heaters, particularly to small manufacturers. 81 FR 71325, 71328 (Oct. 17, 2016). DOE noted that it had rejected higher TSLs for vented heaters in the April 2010 final rule due to significant impacts on industry profitability, risks of accelerated industry consolidation, and the likelihood that small manufacturers would experience disproportionate impacts that could lead them to discontinue product lines or exit the market altogether, and the Department stated that the market and the manufacturers' circumstances at the time were similar to when DOE evaluated amended energy conservation standards for vented heaters for the April 2010 final rule. *Id.* at 81 FR 71328-71329. Accordingly, DOE concluded that amended energy conservation standards for vented heaters were not economically justified at any level above the current standard levels because benefits of more-stringent standards would not outweigh the burdens, and the Department determined not to amend the vented heater energy conservation standards. *Id.* at 81 FR 71329.

In the October 2016 final determination, DOE also considered whether to establish energy conservation standards for standby mode and off mode electrical energy use, noting that fossil fuel energy use in standby mode and off mode is already included in the AFUE metric and that electric standby mode and off mode energy use is small in comparison to fossil fuel energy use. *Id.* Because the standards for vented heaters were not amended, DOE concluded it was not required under EPCA to adopt amended standards that include standby mode and off mode energy use, and due to the relatively small potential for energy savings, DOE declined to do so. *Id.*

4. February 2019 Request for Information

On February 26, 2019, DOE published a request for information (RFI) (February 2019 RFI) to solicit information from the public to help DOE determine whether amended standards for DHE would result in significant energy savings and whether such standards would be technologically feasible and economically justified. 84 FR 6095.

5. Process Rule

On February 14, 2020, DOE published in the *Federal Register* a final rule which updated the procedures, interpretations, and policies that DOE will follow in the consideration and promulgation of new or revised appliance energy conservation standards and test procedures under EPCA. 85 FR 8626; *see also* 10 CFR part 430, subpart C, appendix A (*i.e.*, “Process Rule”). The Process Rule requires DOE to conduct an early assessment, which includes publishing a notice in the *Federal Register* announcing that DOE is considering a rulemaking proceeding and soliciting the submission of related comments, including data and information on whether DOE should proceed with the rulemaking, including whether any new or amended rule would be cost-effective, economically justified, technologically feasible, or would result in a significant savings of energy. Section 6(a)(1) of the Process Rule. Based on the responses received to the early assessment and DOE’s own analysis, DOE will then determine whether to proceed with a rulemaking for a new or amended energy conservation standard or an amended test procedure. *Id.* If DOE determines that a new or amended standard would not satisfy all of the applicable statutory criteria, DOE would engage in a notice and

comment rulemaking to issue a determination that a new or amended standard is not warranted. *Id.* If DOE receives sufficient information suggesting it could justify a new or amended standard or the information received is inconclusive with regard to the statutory criteria, DOE would undertake the preliminary stages of a rulemaking to issue or amend an energy conservation standard. Section 6(a)(2) of the Process Rule. In those instances where the early assessment either suggested that a new or amended energy conservation standard might be justified or in which the information was inconclusive on this, DOE will examine the potential costs and benefits and energy savings potential of a new or amended energy conservation standard. Section 6(a)(3) of the Process Rule.

DOE will first look to the projected energy savings that are likely to result in “significant energy savings,” as required under 42 U.S.C. 6295(o)(3)(B) to ensure that DOE avoids setting a standard that “will not result in significant conservation of energy.”⁷ Section 6(b)(1) of the Process Rule. To determine whether energy savings could be significant, the projected energy savings from a potential maximum technologically feasible (max-tech) standard will be evaluated against a threshold of 0.3 quadrillion Btus (quads) of site energy saved over a 30-year period. Section 6(b)(2) of the Process Rule. If the projected max-tech energy savings do not meet or exceed this threshold, those max-tech savings would then be compared to the total energy usage of

⁷ EPCA defines “energy efficiency” as the ratio of the useful output of services from an article of industrial equipment to the energy use of such article, measured according to the Federal test procedures. (42 U.S.C. 6311(3)) EPCA defines “energy use” as the quantity of energy directly consumed by an article of industrial equipment at the point of use, as measured by the Federal test procedures. (42 U.S.C. 6311(4)) Given this context, DOE relies on site energy as the appropriate metric for evaluating the significance of energy savings.

the covered product to calculate a potential percentage reduction in energy usage. Section 6(b)(3) of the Process Rule. If this comparison does not yield a reduction in site energy use of at least 10 percent over a 30-year period, the analysis will end, and DOE will propose to determine that no significant energy savings would likely result from setting new or amended standards. Section 6(b)(4) of the Process Rule. If either one of the thresholds is reached, DOE will conduct analyses to ascertain whether a standard can be prescribed that produces the maximum improvement in energy efficiency that is both technologically feasible and economically justified and still constitutes significant energy savings at the level determined to be economically justified. Section 6(b)(5) of the Process Rule.

Because this rulemaking was already in progress at the time the revised Process Rule was published, DOE will apply those provisions moving forward (*i.e.*, rather than reinitiating the entire rulemaking process).

6. Gas Industry Petition for Rulemaking

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)) Related to the establishment of product classes, EPCA provides that the Secretary may not prescribe an amended or new standard for covered products if the Secretary finds (and publishes such finding) that 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 at the time of the Secretary's finding. (42 U.S.C. 6295(o)(4))

On November 1, 2018, DOE published in the *Federal Register* a notice of petition for rulemaking and request for comment regarding a petition for rulemaking submitted by Spire, Inc., the National Gas Supply Association, the National Propane Gas Association, the American Public Gas Association, and the American Gas Association (Gas Industry Petition). 83 FR 54883. The petition requested that DOE issue an interpretive rule stating that DOE's proposed energy conservation standards for residential furnaces and commercial water heaters would result in the unavailability of "performance characteristics" within the meaning of the EPCA (*i.e.*, by setting standards which can only be met by condensing combustion technology products/equipment and thereby precluding the distribution in commerce of non-condensing combustion technology

products/equipment) and withdraw the proposed energy conservation standards for residential furnaces and commercial water heaters based upon such findings. 83 FR 54883, 54885 (Nov. 1, 2018).

On July 11, 2019, following consideration of the Gas Industry Petition, public comments, and other information received on the petition, DOE published in the *Federal Register* a notice granting in part and denying in part of the petition for rulemaking, a notice of proposed interpretative rule (NOPIR), and request for comment. 84 FR 33011 (July 2019 NOPIR). The July 2019 NOPIR granted the request for an interpretive rule, but denied the petition to withdraw the proposed rules for residential furnaces and commercial water heaters. *Id.* at 84 FR 33021. Specifically, the July 2019 NOPIR proposed to revise DOE's interpretation of EPCA's "features" provision in the context of condensing and non-condensing technology used in residential furnaces, commercial water heating equipment, and similarly situated appliances (where permitted by EPCA). *Id.* at 84 FR 33020. DOE stated that as compared to products that rely on non-condensing technology, products that use condensing technology may result in more complicated/costly installations, require physical changes to a home that impact aesthetics (*e.g.*, by adding new venting into the living space or decreasing closet or other storage space), and may result in some enhanced level of fuel switching. *Id.* DOE also acknowledged that although energy efficiency improvements may pay for themselves over time, there is a significant increase in first-cost associated with residential furnaces and commercial water heaters using condensing technology, and for consumers with

difficult installation situations (*e.g.*, inner-city row houses) there would be the added cost of potentially extensive venting modifications. *Id.*

DOE proposed in the July 2019 NOPIR to interpret the statute to provide that adoption of energy conservation standards that would limit the market to natural gas and/or propane furnaces, water heaters, or similarly situated products/equipment (where permitted by EPCA) that use condensing combustion technology would result in the unavailability of a performance-related feature within the meaning of 42 U.S.C. 6295(o)(4) and 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa) and 42 U.S.C. 6316(a). 84 FR 33011, 33021 (July 11, 2019).

In the July 2019 NOPIR, DOE initially assumed that if it were to adopt an interpretation consistent with the Gas Industry Petition, it would suffice to set product/equipment classes largely based upon the key distinction of whether an appliance utilizes condensing or non-condensing combustion technology. However, a number of commenters on the proposed interpretive rule suggested that such an approach may not adequately resolve the issue at hand, as presented in the petition. Instead, these commenters suggested that the agency should focus on preservation of Category I venting, or alternatively maintaining compatibility with all types of existing venting (*i.e.*, Categories I, II, III, and IV). In light of these comments, DOE decided to issue a supplemental notice of proposed interpretive rule (where these comments are presented in further detail), which was published in the *Federal Register* on September 24, 2020 (the September 2020 SNOPIR). 85 FR 60090. In that document, DOE tentatively determined

to consider a more involved class structure which turns on the maintenance of compatibility with existing venting categories, and the Department stated that it seeks further information on the potential feasibility, burdens, and other implications of implementing such a venting-compatibility approach. The comment period on the September 2020 SNOPIR was originally scheduled to end on October 26, 2020.

However, on September 25, 2020, and October 6, 2020, DOE received requests from A.O. Smith and Lennox, respectively, seeking an extension of the comment period on the September 2020 SNOPIR. On September 29, 2020, DOE received a request from the submitters of the Gas Industry Petition seeking prompt action on their petition. Balancing these competing requests, DOE published in the *Federal Register* on October 22, 2020 a notice extending the public comment period for submitting comments and data on the SNOPIR to November 9, 2020. 85 FR 67312. DOE will analyze the information received in comments on the September 2020 SNOPIR, and it will consider both potential venting-compatibility approaches, as well as its original proposed approach.

DOE plans to consider the comments received on the July 2019 NOPIR and the September 2020 SNOPIR, after which the Department will determine whether and how to proceed with the interpretive rule in response to the Gas Industry Petition. As necessary, DOE would then consider any required changes to its energy conservation standards for DHE, including product class designations.

III. General Discussion

DOE developed this proposed determination after a review of the DHE market, including product literature and product listings in the DOE CCMS database and the AHRI product directory. DOE also considered written comments, data, and information from interested parties that represent a variety of interests. In response to the February 2019 RFI, DOE received eight substantive comments from interested parties, which are listed in Table III.1.⁸ This notice addresses issues raised by these commenters.

⁸ DOE also received a comment that was not responsive to the RFI.

Table III.1 Interested Parties Providing Written Response to the February 2019 RFI

Name(s)	Commenter Type*	Acronym
Air-conditioning, Heating, and Refrigeration Institute	TA	AHRI
Appliance Standards Awareness Project, American Council for an Energy-Efficient Economy, and Natural Resources Defense Council	EA	Joint Advocates
Association of Home Appliance Manufacturers	TA	AHAM
Institute for Policy Integrity at New York University School of Law	P	PI NYU
National Grid USA Service Company	U	National Grid
National Propane Gas Association	U	NPGA
Northwest Energy Efficiency Alliance	EA	NEEA
Pacific Gas and Electric, Southern California Edison, San Diego Gas and Electric (<i>i.e.</i> , California Investor Owned Utilities)	U	CA IOUs

* EA: Efficiency/Environmental Advocate; P: Policy Advocacy Group, TA: Trade Association; U: Utility or Utility Trade Association.

A parenthetical reference at the end of a comment quotation or paraphrase provides the location of the item in the public docket.⁹

A. Product Classes and Scope of Coverage

When evaluating and establishing new or amended energy conservation standards, DOE divides covered products into product classes by the type of energy used or by capacity or other performance-related features that justify differing standards. (42 U.S.C.

⁹ The parenthetical reference provides a reference for information located in the docket of DOE's rulemaking to consider amended energy conservation standards for direct heating equipment. (Docket No. EERE-2019-BT-STD-0002, which is maintained at <https://www.regulations.gov/docket?D=EERE-2019-BT-STD-0002>). The references are arranged as follows: (commenter name, comment docket ID number, page of that document).

6295(q)) In making a determination whether a performance-related feature justifies a different standard, DOE must consider such factors as the utility of the feature to the consumer and other factors DOE determines are appropriate. *Id.* The scope of coverage is discussed in further detail in section III.A.1 of this document. The product classes for this proposed determination are discussed in further detail in section III.A.2 of this document.

1. Scope of Coverage and Definitions

This NOPD covers those products that meet the definitions of “direct heating equipment,” which is defined as vented home heating equipment and unvented home heating equipment. 10 CFR 430.2. “Home heating equipment, not including furnaces” likewise means vented home heating equipment and unvented home heating equipment. *Id.* The existing energy conservation standards at 10 CFR 430.32(i)(2) apply only to product classes of vented home heating equipment. There are no existing energy conservation standards for unvented home heating equipment.

a. Unvented Heaters

Unvented heaters are those products that meet the definitions for “unvented home heating equipment,” as codified at 10 CFR 430.2. Under that provision, “Unvented home heating equipment” means a class of home heating equipment, not including furnaces, used for the purpose of furnishing heat to a space proximate to such heater directly from the heater and without duct connections and includes electric heaters and unvented gas

and oil heaters. DOE further defines the various sub-types of unvented heaters at 10 CFR 430.2 as follows:

- (1) “Baseboard electric heater” means an electric heater which is intended to be recessed in or surface mounted on walls at floor level, which is characterized by long, low physical dimensions, and which transfers heat by natural convection and/or radiation.
- (2) “Ceiling electric heater” means an electric heater which is intended to be recessed in, surface mounted on, or hung from a ceiling, and which transfers heat by radiation and/or convection (either natural or forced).
- (3) “Electric heater” means an electric appliance in which heat is generated from electrical energy and dissipated by convection and radiation and includes baseboard electric heaters, ceiling electric heaters, floor electric heaters, portable electric heaters, and wall electric heaters.
- (4) “Floor electric heater” means an electric heater which is intended to be recessed in a floor, and which transfers by radiation and/or convection (either natural or forced).
- (5) “Portable electric heater” means an electric heater which is intended to stand unsupported, and can be moved from place to place within a structure. It is

connected to electric supply by means of a cord and plug, and transfers heat by radiation and/or convection (either natural or forced).

- (6) “Primary heater” means a heating device that is the principal source of heat for a structure and includes baseboard electric heaters, ceiling electric heaters, and wall electric heaters.
- (7) “Supplementary heater” means a heating device that provides heat to a space in addition to that which is supplied by a primary heater. Supplementary heaters include portable electric heaters.
- (8) “Unvented gas heater” means an unvented, self-contained, free-standing, non-recessed gas-burning appliance which furnishes warm air by gravity or fan circulation.
- (9) “Unvented oil heater” means an unvented, self-contained, free-standing, non-recessed oil-burning appliance which furnishes warm air by gravity or fan circulation.
- (10) “Wall electric heater” means an electric heater (excluding baseboard electric heaters) which is intended to be recessed in or surface mounted on walls, which transfers heat by radiation and/or convection (either natural or forced) and which includes forced convectors, natural convectors, radiant heaters, high wall or valance heaters.

DOE received no recommended changes to the unvented heater definitions in response to its request in the February 2019 RFI.

b. Vented Heaters

Vented heaters are those products that meet the definitions for “vented home heating equipment,” as codified at 10 CFR 430.2. Under that provision, “vented home heating equipment” or “vented heater” means a class of home heating equipment, not including furnaces, designed to furnish warmed air to the living space of a residence, directly from the device, without duct connections (except that boots not to exceed 10 inches beyond the casing may be permitted) and includes: vented wall furnace, vented floor furnace, and vented room heater. DOE further defines the various sub-types of vented heaters at 10 CFR 430.2 as follows:

- (1) “Vented floor furnace” means a self-contained vented heater suspended from the floor of the space being heated, taking air for combustion from outside this space. The vented floor furnace supplies heated air circulated by gravity or by a fan directly into the space to be heated through openings in the casing.
- (2) “Vented room heater” means a self-contained, free standing, non-recessed, vented heater for furnishing warmed air to the space in which it is installed. The vented room heater supplies heated air circulated by gravity or by a fan directly into the space to be heated through openings in the casing.

(3) “Vented wall furnace” means a self-contained vented heater complete with grilles or the equivalent, designed for incorporation in, or permanent attachment to, a wall of a residence and furnishing heated air circulated by gravity or by a fan directly into the space to be heated through openings in the casing.

AHRI recommended against revisions or additions to the vented heater definitions, stating that the definitions are appropriate as written and capture the entirety of the market. (AHRI, No. 6 at p. 2) No other comments were received regarding the definitions relevant to vented heaters.

2. Product Classes

In general, when evaluating and establishing energy conservation standards, DOE divides the covered product into classes by the type of energy used, the capacity, or other performance-related feature that justifies a different standard. (42 U.S.C. 6295(q)) In making a determination whether capacity or another performance-related feature justifies a different standard, DOE must consider such factors as the utility of the feature to the consumer and other factors DOE deems appropriate. *Id.*

For vented heaters, the current energy conservation standards specified in 10 CFR 430.32(i)(2) are based on 11 product classes divided by equipment type (*i.e.*, gas wall, gas floor, or gas room), heat circulation type (*i.e.*, fan type or gravity type), and input capacity. Table III.2 lists the current product classes for vented heaters.

Table III.2 Current Vented Heater Product Classes

DHE Type	Heat Circulation Type	Input Rate, Btu/h
Gas Wall	Fan Type	≤42,000
		>42,000
	Gravity Type	≤27,000
		>27,000 and ≤46,000
		>46,000
	Gas Floor	All
>37,000		
Gas Room	All	≤20,000
		>20,000 and ≤27,000
		>27,000 and ≤46,000
		>46,000

In the February 2019 RFI, DOE requested feedback on whether changes to the current vented heater product classes should be made. AHRI stated that changes to the existing product classes and adding new product classes are not necessary. (AHRI, No. 6 at p. 2) No other comments were received on the DHE product classes.

B. Analysis for this Notification of Proposed Determination

1. Overview of the Analysis

As stated previously, in determining that amended standards are not needed, DOE must consider whether amended standards would result in significant conservation of energy, are technologically feasible, and are cost-effective as described in 42 U.S.C. 6295(o)(2)(B)(i)(II). (42 U.S.C. 6295(m)(1)(A) and 42 U.S.C. 6295(n)(2)). An evaluation of cost-effectiveness under 42 U.S.C. 6295(o)(2)(B)(i)(II) requires that DOE consider 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 standard. (42 U.S.C. 6295(n)(2) and 42 U.S.C. 6295(o)(2)(B)(i)(II)) Before potential energy savings and cost-effectiveness of amended standards can be estimated, available and working prototype technologies with the potential to improve energy efficiency must first be evaluated. Accordingly, DOE generally starts with this technology evaluation.

a. Technological Feasibility

In evaluating potential amendments to energy conservation standards, DOE first conducts a market and technology assessment to survey the products currently available on the market and identify technology options (including prototype technologies) that could improve the efficiency of the products or equipment that are the subject of the rulemaking. DOE then conducts a screening analysis for the technologies identified, and, as a first step, determines which of those means for improving efficiency are technologically feasible. DOE considers technologies incorporated in commercially-available products or in working prototypes to be technologically feasible. 10 CFR part 430, subpart C, appendix A, section 6(c)(3)(i).

After DOE has determined that particular technology options are technologically feasible, it further evaluates each technology option in light of the following additional screening criteria: (1) practicability to manufacture, install, and service; (2) adverse impacts on product utility or availability; (3) adverse impacts on health or safety, and (4) whether a proprietary technology represents a unique pathway to achieving a certain

efficiency level. 10 CFR part 430, subpart C, appendix A, section 6(c)(3)(ii)-(v) The technology options identified for this NOPD are essentially those technologies identified and considered for the October 2016 final determination. *See* sections III.B.3.b and III.B.3.c of this document for additional discussion.

When DOE proposes to adopt an amended standard for a type or class of covered product, as part of its analysis, it must determine the maximum improvement in energy efficiency or maximum reduction in energy use that is technologically feasible for such a product. (42 U.S.C. 6295(p)(1)) Accordingly, DOE determined the max-tech improvements in energy efficiency for vented heaters, using the design parameters for the most efficient products available on the market or in working prototypes. *See* section III.B.3.d of this document for further discussion.

b. Energy Savings

In determining whether amended standards are needed, DOE must consider whether potential standards would result in significant conservation of energy. (42 U.S.C. 6295(m)(1)(A) and 42 U.S.C. 6295(n)(2)) Congress did not define the statutory term “significant conservation of energy.” DOE recently defined a significant energy savings threshold in the Process Rule. 85 FR 8626, 8705 (Feb. 14, 2020). Specifically, DOE prescribed a two-step approach that considers both a quad threshold value (*i.e.*, for site energy savings calculated over a 30-year period) and a percentage threshold value (*i.e.*, for percentage reduction in energy usage) to ascertain whether a potential standard satisfies the requirement of 42 U.S.C. 6295(o)(3)(B) that DOE may not set a standard that

“will not result in significant conservation of energy.” *Id.*; *see also* section 6(b) of the Process Rule. As discussed, if neither threshold is met, the analysis will end, and DOE will propose to determine that no significant energy savings would likely result from setting new or amended standards. Section 6(b)(4) of the Process Rule.

DOE considered the energy use analysis conducted for the April 2010 final rule, the qualitative evaluation of the potential savings in the October 2016 final determination, and input from stakeholders and other sources to evaluate the current potential for significant energy conservation from amended DHE standards.

c. Cost-Effectiveness

Under EPCA’s six-year-lookback review provision for existing energy conservation standards at 42 U.S.C. 6295(m)(1), cost-effectiveness of potential amended standards is a relevant consideration both where DOE proposes to adopt such standards, as well as where it does not. In making a determination of whether existing energy conservation standards do not need to be amended, EPCA requires DOE to consider the cost-effectiveness of amended standards in the context of the savings in operating costs throughout the estimated average life of the covered product compared to any increase in the price of, or in the initial charges for, or maintenance expenses of, the covered product that are likely to result from a standard. (42 U.S.C. 6295(m)(1)(A)(referencing 42 U.S.C. 6295(n)(2))) Additionally, any new or amended energy conservation standard prescribed by the Secretary for any type (or class) of covered product shall be designed to achieve the maximum improvement in energy efficiency which the Secretary determines is

technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) Cost-effectiveness is one of the factors that DOE must ultimately consider under 42 U.S.C. 6295(o)(2)(B) to support a finding of economic justification, if it is determined that amended standards are appropriate under the applicable statutory criteria. (42 U.S.C. 6295(o)(2)(B)(i)(II))

In determining cost effectiveness of potential amended standards for DHE, DOE considered the life-cycle cost (LCC) and payback period (PBP) analyses that estimate the costs and benefits to users from standards. The LCC is the sum of the initial price of equipment (including its installation) and the operating expense (including energy, maintenance, and repair expenditures) discounted over the lifetime of the equipment. The LCC analysis requires a variety of inputs, such as equipment prices, equipment energy consumption, energy prices, maintenance and repair costs, equipment lifetime, and discount rates appropriate for consumers. To account for uncertainty and variability in specific inputs (*e.g.*, equipment lifetime and discount rate), DOE uses a distribution of values, with probabilities attached to each value.

The PBP is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost (including installation) of more-efficient equipment through lower operating costs. DOE calculates the PBP by dividing the change in total installation cost due to a more-stringent standard by the change in annual operating cost for the year that standards are assumed to take effect.

To further inform DOE's consideration of the cost-effectiveness of potential amended standards, DOE may also consider the NPV of total costs and benefits estimated as part of the national impact analysis (NIA). The inputs for determining the NPV of the total costs and benefits experienced by consumers are: (1) total annual installed cost, (2) total annual operating costs (energy costs and repair and maintenance costs), and (3) a discount factor to calculate the present value of costs and savings.

For the determination proposed in this document, DOE considered the LCC and PBP analyses from the April 2010 final rule, as well as the evaluation in the October 2016 final determination, and information gathered on the current market and technologies.

d. Further Considerations

As stated previously, pursuant to EPCA, if DOE does not issue a notification of determination that energy conservation standards for DHE do not need to be amended, DOE must issue a NOPR that includes new proposed standards. (42 U.S.C. 6295(m)(1)(B)) The new proposed standards in any such NOPR must be based on the criteria established under 42 U.S.C. 6295(o). (42 U.S.C. 6295(m)(1)(B)) The criteria in 42 U.S.C. 6295(o) require that standards be designed to achieve the maximum improvement in energy efficiency, which the Secretary determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A)) In deciding whether a proposed standard is economically justified, DOE must determine whether the benefits of the standard exceed its burdens. (42 U.S.C. 6295(o)(2)(B)(i)) DOE must make this

determination after receiving comments on the proposed standard, and by considering, to the greatest extent practicable, the following seven statutory 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 for, or maintenance expenses of 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 covered 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))

As discussed in the October 2016 final determination, DOE found that amended standards for vented heaters would not be economically justified under the considerations of the seven factors prescribed in EPCA. 81 FR 71325, 71328-71329 (Oct. 17, 2016). For the determination proposed in this document, DOE has considered the previous evaluation of amended standards in the October 2016 final determination.

2. Unvented Heaters

In the February 2019 RFI, DOE specifically sought comment on the definitions for unvented heaters, and generally sought comment on a number of issues related to DHE (which includes both vented and unvented home heaters). 84 FR 6095, 6098 (Feb. 26, 2019).

CA IOUs suggested that electric infrared heating technology be added to the technology options list. (CA IOUs, No. 9 at p. 1) DOE notes that this particular technology option is relevant to unvented heaters (as electric infrared heaters are not vented). However, for unvented heaters, including electric unvented heaters, any heat losses are lost to the living space in which the unit is installed. As a result, these heaters are nearly 100-percent efficient during the heating season, in that all energy consumed is converted to heat that ends up within the living space as useful heat, and as a result, there is negligible opportunity for energy savings. Therefore, DOE has tentatively determined not to analyze unvented electric heaters further. However, DOE seeks additional input on

the operation of electric infrared heaters as compared to other types of electric unvented heaters, and on the comparative levels of energy consumption.

Regarding unvented gas heaters and unvented oil heaters, the Joint Advocates commented in response to the RFI that DOE should consider a standard for unvented heaters that addresses off mode energy consumption. The commenters argued that models with standing pilot lights can waste a significant amount of energy in off mode during the non-heating season. (Joint Advocates, No. 7 at p. 2)

The unvented heater test procedure, Appendix G, has provisions to calculate the rated output in Btu/h for gas and oil models. Under Appendix G, measurement of the pilot light input rate is not required for unvented heaters where the pilot light is designed to be turned off by the user when the heater is not in use and that include an instruction to turn off the unit is provided on the heater near the gas control valve (*e.g.*, by label) by the manufacturer. For unvented heaters with a pilot light that is not designed to be turned off when not in use, or that does not include an instruction to do so, the pilot light input rate is required to be measured, but is not used in the calculation of rated output. DOE reviewed the product literature for unvented gas and oil heaters on the market and found that most models that include a standing pilot light instruct the user on how to turn the pilot light off, and, therefore, would not be required to measure the pilot light consumption under the existing test procedure. As a result, most models are not required to measure the pilot light input rate. DOE will further consider whether to propose amended test procedures for unvented home heating equipment in the ongoing evaluation

of the test procedure, including whether to address the measurement of the energy consumption and energy efficiency associated with standing pilot lights.¹⁰

3. Vented Heaters

In the February 2019 RFI, DOE sought comment on a number of issues related to vented heaters, which are discussed in the subsections within this section. 84 FR 6095, 6098-6106 (Feb, 26, 2019).

a. Market Assessment

Models on the Market

DOE has conducted a review of the vented heater market, including product literature and product listings in the CCMS database and AHRI product directory. DOE has tentatively concluded that the number of models offered in each of the vented heater product classes has continued to decrease overall since the October 2016 final determination, as shown in Table III.3 of this document. The model counts presented in Table III.3 of this document are counts of individual model numbers, as opposed to basic model numbers. A basic model can have multiple individual model numbers certified under it. The model counts from previous rulemakings were individual model numbers, so for consistency of comparison, the model counts for 2019 that are presented in Table III.3 of this document are also in terms of individual model number. DOE acknowledges

¹⁰ DOE published an RFI regarding test procedures for DHE. 84 FR 6088 (Feb. 26, 2019). The docket for the test procedure RFI is available at: <https://www.regulations.gov/docket?D=EERE-2019-BT-TP-0003>.

that, although changes in model counts and shipments sometimes correlate, changes to available model counts do not necessarily indicate a change in the number of units sold. For example, a model could be taken off of the market, but more units of another model could be sold, thereby resulting in roughly the same amount of sales as before the first model was taken off the market. Shipments of vented heaters are discussed in section III.B.3.g of this document.

Table III.3 Vented Heater Individual Model Counts by Product Class for Current and Previous Rulemakings

Product Class	Model Count by Product Class		
	2019 *	October 2016 Final Determination **	April 2010 Final Rule ***
Gas Wall Fan Type	50	64	82
Gas Wall Gravity Type	50	56	52
Gas Floor	10	15	15
Gas Room	19	28	29

*CCMS database (last accessed on July 1, 2019), with further information taken from the AHRI Directory (last accessed on July 1, 2019). Models designated as “Production Stopped” within the AHRI Directory are not included in the model count.

**CCMS database (last accessed on July 16, 2015), with further information taken from the AHRI Directory (last accessed on July 16, 2015). Models designated as “Discontinued” within the AHRI Directory are not included in the model count.

***Gas Appliance Manufacturers Association (GAMA) Directory for Direct Heating Equipment¹¹ (downloaded March 2, 2009). Models designated as “Discontinued” within the GAMA Directory are not included in the model count.

In response to the February 2019 RFI, AHRI confirmed that there are fewer models in the AHRI Directory now than there were at the time of the October 2016 final determination. (AHRI, No. 6 at p. 4) In response to the February 2019 RFI, AHAM and

¹¹ AHRI is the trade association that represents manufacturers of heating products. It was formed on January 1, 2008, by the merger of GAMA, which formerly represented these manufacturers, and the Air-Conditioning and Refrigeration Institute. As stated previously, AHRI maintains a Consumers’ Directory of Certified Product Performance for direct heating equipment, which can be found on AHRI’s website at: <https://www.ahridirectory.org/Search/SearchHome?ReturnUrl=%2f>.

AHRI commented generally that the market characteristics have not changed significantly since the analysis was done for the October 2016 final determination. (AHAM, No. 5 at p. 2; AHRI, No. 6 at p.1)

The CA IOUs stated that they reviewed available models from major distributors and catalogs, and they identified the models available in each product class through an online market survey. CA IOUs provided the number of models they identified along with information on the AFUE values available. (CA IOUs, No. 8 at pp. 2-3) The number of models in the gas wall fan type and gravity type vented heater product classes identified by the CA IOUs were different than those identified by DOE from its review of the CCMS database and the AHRI Directory. For the gas wall fan type vented heater product class, CA IOUs stated they identified 64 products, whereas DOE identified 48 models in the CCMS database and 50 models in the AHRI Directory. For the gas wall gravity type vented heater product class, CA IOUs stated they identified 43 products, whereas DOE identified 50 models in the CCMS database and 48 models in the AHRI Directory. For the gas floor vented heater product class, CA IOUs identified 10 products which matched the number of models in the CCMS database and the AHRI Directory. For the gas room vented heater product class, CA IOUs did not provide a number for the identified models but did state that there were a large number available on the market. (CA IOUs, No. 8 at p. 2) DOE identified 19 gas room vented heaters in both the CCMS database and AHRI Directory.

The discrepancies between the gas wall fan type and gas wall gravity type vented heater model counts identified by CA IOUs and the model counts identified by DOE from the CCMS database and AHRI Directory may have arisen from CA IOUs' review of the market through online sources and catalog review where the product class may not have been immediately apparent. The AHRI Directory provides information on the DHE and heat circulation types which are used to identify each model's product class (information which is not publicly available in the CCMS database). The information in the AHRI Directory is provided directly by AHRI-member manufacturers, and as such, products are classified directly by manufacturers. Similarly, the DOE CCMS database relies on manufacturer submissions. Manufacturers of covered products are required to submit to DOE a certification report certifying that each basic model meets the applicable energy conservation standard(s) before distributing in commerce any basic model. The certification report includes general information such as the manufacturer and model number, and product specific information, which for DHE includes the AFUE rating. Because manufacturers are legally required to submit model information to DOE, the CCMS database should be the most comprehensive listing of models available. Further, both the CCMS and AHRI database may be more accurate than a review of manufacturers' literature, due to manufacturers' familiarity with their products' classifications. The total model count for gas wall fan type and gas wall gravity type vented heaters provided by the CA IOUs is 107, and the total model count for the same models when examining both the CCMS database and AHRI Directory is 100.

Likewise, the AFUE ranges identified by the CA IOUs also do not match the ranges DOE identified based on the CCMS database and AHRI Directory. For gas wall fan type vented heaters with input rates below 42,000 Btu/h, CA IOUs stated that the AFUE range was between 75 and 83 percent, while DOE identified models with AFUE values between 75 and 90 percent. (CA IOUs, No. 8 at pp. 2-3) This suggests that the two condensing models on the market were not a part of CA IOUs' analysis. For gas wall fan type vented heaters with input rates above 42,000 Btu/h, CA IOUs stated that the AFUE range was between 74 and 76 percent and that all the products they reviewed had AFUE values below the minimum energy conservation standard of 76 percent. (CA IOUs, No. 8 at pp. 2-3) DOE found that the models identified by the CA IOUs as gas wall fan type vented heaters with AFUE below 76 percent were gas wall gravity type vented heaters and listed in the CCMS database with AFUE values which meet the minimum energy conservation standards for the gas wall gravity type classes. For gas wall gravity type vented heaters with input rates less than or equal to 27,000 Btu/h, greater than 27,000 Btu/h and less than or equal to 46,000 Btu/h, and greater than 46,000 Btu/h, the AFUE ranges identified by CA IOUs were 65 to 76 percent, 65 to 76 percent, and 69 to 71 percent, respectively. (CA IOUs, No. 8 at pp. 2-3) DOE identified the AFUE ranges for the given input capacities as 65 to 72 percent, 66 to 70 percent, and 67 to 70 percent, respectively. The minimum energy conservation standard for the three gas wall gravity type vented heater input rate ranges, from lowest to highest input rate, are 65, 66, and 67 percent, respectively. For gas wall gravity type vented heaters with input rates greater than 27,000 Btu/h and less than or equal to 46,000 Btu/h, the minimum

AFUE in the CA IOUs identified range (65 percent) is less than the minimum energy conservation standard (66 percent), suggesting that at least one model was misidentified.

For gas wall gravity type vented heaters with input rates greater than 46,000 Btu/h, the minimum AFUE identified by CA IOUs (69 percent) is above the minimum energy conservation standard (67 percent), suggesting that not all models in this input rate range were identified. For gas floor vented heaters, CA IOUs identified an AFUE range between 57 and 70 percent across all input rate ranges. (CA IOUs, No. 8 at pp. 2-3) However, all gas floor vented heaters identified by DOE have AFUE values at the minimum energy conservation standard. The minimum energy conservation standards for gas floor vented heaters with input rates less than or equal to 37,000 Btu/h and greater than 37,000 Btu/h are 57 and 58 percent, respectively. The CA IOUs provided links to their 10 identified gas floor vented heaters, and the model numbers matched those identified by DOE which have AFUE values at the minimum energy conservation standard. (CA IOUs, No. 8 at pp. 2-3) Further, none of the sources CA IOUs provided included any efficiency or AFUE information. Due to various discrepancies DOE has identified in the model count and AFUE ranges provided by CA IOUs, DOE has tentatively decided to continue to use the models and AFUE values found within the CCMS database and AHRI Directory.

Manufacturers

The number of manufacturers producing vented heaters increased in the CCMS database from four to five since the October 2016 final determination. This new

manufacturer mainly produces hearth products (which are not subject to this proposed determination) but has added two gas wall gravity type vented heaters with input rate and AFUE values that are comparable to the input rate and AFUE values of other models available on the market, and that are similar in design. AHRI stated that there are six AHRI member manufacturers in the DHE industry. (AHRI, No. 6 at p. 5) Upon review two of the six manufacturers identified by AHRI were not identified by DOE as manufacturers of vented heaters. Rather, DOE found that the two additional AHRI manufacturers produce hearth products, which as noted previously are not a subject of this rulemaking. The new manufacturer identified by DOE is not an AHRI member manufacturer and, consequently, was not identified by AHRI.

b. Technology Options for Efficiency Improvement

In the February 2019 RFI, DOE listed the technology options considered in the previous rulemakings to increase AFUE and requested comment on these options and any other technology options that would be relevant to vented heaters. 84 FR 6095, 6099 (Feb. 26, 2019). Specifically, DOE identified the technologies in the following Table III.4 for improving the efficiency of vented heaters.

Table III.4 Technology Options for Vented Heaters

Technology Options
Increased heat exchanger surface area
Multiple flues
Multiple turns in flue
Direct vent (concentric)
Increased heat transfer coefficient
Electronic ignition
Thermal vent damper

Electrical vent damper
Power burner
Induced draft
Two-stage and modulating operation
Improved fan or blower motor efficiency
Increased insulation
Condensing
Condensing Pulse Combustion
Air circulation fan
Sealed combustion

AHAM commented that technologies available for improving efficiency have not advanced significantly since the October 2016 final determination. (AHAM, No. 5 at p. 2) AHRI further stated that the use of the technologies that DOE identified are generally not economically justifiable, that consumers will purchase other types of heating appliances (*e.g.*, not DHE) before purchasing vented heaters with those technologies, and that other technology options should not be considered in the analysis. In addition, AHRI stated that the inclusion of electronic ignition can minimize the utility of vented heaters. (AHRI, No. 6 at p. 3)

During DOE’s examination of the current vented heater market, DOE found that the available range of input rates and AFUE values of products available on the market have stayed largely the same since the October 2016 final determination. Differences in the available input rate and AFUE were mostly due to models being taken off the market as opposed to new models being added. This indicates that the technology options currently available are similar to those examined in both the April 2010 final rule and October 2016 final determination. DOE did not identify any additional technologies, and there were not any comments suggesting additional technology options for vented heaters

that were not previously considered. Therefore, DOE used the technology options in Table III.4 of this document for its review of potential amended vented heater energy conservation standard levels in this document.

c. Screening Analysis

In the February 2019 RFI, DOE identified and explained why four of the technologies on its initial list had been previously screened out: (1) increased heat transfer coefficient (practicability to manufacture, install, and service); (2) power burner (practicability to manufacture, install, and service); (3) condensing pulse combustion (technological feasibility); and (4) improved fan or blower motor efficiency (practicability to manufacture, install, and service). 84 FR 6095, 6099-6100 (Feb. 26, 2019). DOE also noted that it only considers potential efficiency levels achieved through the use of proprietary designs in the engineering analysis if they are not part of a unique pathway to achieve the efficiency level (*i.e.*, if there are other non-proprietary technologies capable of achieving the same efficiency level). 84 FR 6095, 6099 (Feb. 26, 2019). DOE sought comment on how these criteria would apply to technology options for vented heaters and whether the previously screened out technology options should continue to be screened out. 84 FR 6095, 6100 (Feb. 26, 2019).

AHRI stated that the screening criteria are appropriate and will result in most, if not all, of the technology options being eliminated from further consideration. AHRI stated elsewhere that the technology options presented are generally not economically justifiable and that AHRI members have indicated that customers will often purchase

other heating appliances before purchasing DHE with the listed technology options. AHRI further stated that incorporation of the technologies identified in the February 2019 RFI would require significant investment on the part of manufacturers in the industry. (AHRI, No. 6 at p. 3-4) DOE notes that the five criteria for removing a technology option during the screening analysis are technological feasibility, practicability to manufacture, service or install, adverse impacts on consumer utility, adverse impacts on product safety, and unique-pathway proprietary technologies. The economic justification of a technology option is not considered in the screening analysis.

In evaluating potential technology options for this notice, DOE maintained the list from the February 2019 RFI, as discussed in section III.B.3.b of this document. In addition, DOE did not find that any of the technology options should be screened out from consideration as options for improving the AFUE of vented heaters other than the four previously screened-out.

d. Engineering Analysis

For the April 2010 final rule, DOE determined technology options by efficiency level for each of the vented heater product classes. These technology options are found in section 5.7 of the April 2010 final rule technical support document (TSD)¹² and are reproduced in Table III.5 of this document. The representative input rate ranges from the April 2010 final rule are >42,000 Btu/h for gas wall fan type vented heaters, >27,000

¹² Available at: <https://www.regulations.gov/document?D=EERE-2006-STD-0129-0149>.

Btu/h and $\leq 46,000$ Btu/h for gas wall gravity type vented heaters, $> 37,000$ Btu/h for gas floor vented heaters, and $> 27,000$ Btu/h and $\leq 46,000$ Btu/h for gas room vented heaters.

75 FR 20112, 20114 (April 16, 2010).

Table III.5 April 2010 Final Rule Technology Options by Efficiency Level for the Representative Input Rate Ranges of the Vented Heater Product Classes

DHE Type	Heat Circulation Type	Efficiency Level (AFUE)	Technology
Gas Wall	Fan Type	74*	Standing Pilot
		75*	Intermittent Ignition and Two-Speed Blower
		76**	Intermittent Ignition and Improved Heat Exchanger
		77	Intermittent Ignition, Two-Speed Blower, and Improved Heat Exchanger
		80	Induced Draft and Electronic Ignition
	Gravity Type	64*	Standing Pilot
		66**	Standing Pilot and Improved Heat Exchanger
		68*	Standing Pilot and Improved Heat Exchanger
		69*	Standing Pilot and Improved Heat Exchanger
		70	Electronic Ignition
Gas Floor	All	57*	Standing Pilot
		58**	Standing Pilot and Improved Heat Exchanger
Gas Room	All	64*	Standing Pilot
		65*	Standing Pilot and Improved Heat Exchanger
		66*	Standing Pilot and Improved Heat Exchanger
		67**	Standing Pilot and Improved Heat Exchanger
		68	Standing Pilot and Improved Heat Exchanger
		83*†	Electronic Ignition and Multiple Heat Exchanger Design

*No longer available on the market.

**Efficiency level adopted in as the Federal standard the April 2010 final rule at the representative input rate.

† This was a theoretical model and was not on the market at the time of the April 2010 final rule analysis.

DOE reviewed the technology options available in the current vented heater market for the representative input rate ranges from the April 2010 final rule. The

available efficiency levels and associated technologies are shown in Table III.6 of this document.

Table III.6 Current Technology Options by Efficiency Level of the Representative Input Rate Ranges of the Vented Heater Product Classes from the April 2010 Final Rule

DHE Type	Heat Circulation Type	Efficiency Level (AFUE)	Technology
Gas Wall	Fan Type	76	Intermittent Ignition and Improved Heat Exchanger
		77	Intermittent Ignition, Two-Speed Blower, and Improved Heat Exchanger
		80	Induced Draft and Electronic Ignition
		90*	Electronic Ignition and Condensing
	Gravity Type	66	Standing Pilot and Improved Heat Exchanger
		68	Standing Pilot and Improved Heat Exchanger
		69	Standing Pilot and Improved Heat Exchanger
		70	Electronic Ignition
Gas Floor	All	58	Standing Pilot and Improved Heat Exchanger
Gas Room	All	67	Standing Pilot and Improved Heat Exchanger
		68	Standing Pilot and Improved Heat Exchanger
		83**	Electronic Ignition and Multiple Heat Exchanger Design

* Condensing gas wall fan type vented heaters exist in an input rate range that was not the representative input rate range in the April 2010 final rule. Thus, the max-tech level presented is theoretical for the representative input range, but exists in models on the market in other input ranges

** This is a theoretical efficiency level based on the analysis for the April 2010 final rule, and is not available in any model currently on the market.

The maximum available efficiency level is the highest efficiency model currently available on the market for that class. The max-tech efficiency level represents the theoretical maximum possible efficiency if all available design options are incorporated in a model. In some cases, models at the max-tech efficiency level are not commercially available because, although the level is technically achievable, manufacturers have

determined that it is not economically feasible (either for the manufacturer to produce or for consumers to purchase). However, DOE seeks to determine the max-tech level for purposes of its analyses. The current maximum available efficiencies for the 11 existing product classes are included in Table III.7, along with the maximum available efficiencies from the April 2010 final rule and those evaluated for the October 2016 final determination.

Table III.7 Maximum Available Efficiency Levels for the Vented Heater Product Classes – Current and Previous Rulemakings

Product Class	Input Rate, kBtu/h	2019	October 2016 Final Determination	April 2010 Final Rule
Gas Wall Fan Type	≤42	90	92	83
	>42	80	80	80
Gas Wall Gravity Type	≤27	72	80	80
	>27 and ≤46	70	69	69
	>46	70	70	69
Gas Floor	≤37	57	57	57
	>37	58	58	58
Gas Room	≤20	71	71	59
	>20 and ≤27	66	66	63
	>27 and ≤46	68	68	81
	>46	70	70	70

In the April 2010 final rule, DOE determined max-tech efficiency levels using the technology options available at that time. For gas wall fan type vented heaters with an input rate over 42,000 Btu/h, DOE identified a max-tech efficiency level design with induced draft combustion and electronic ignition, resulting in an AFUE of 80 percent. For gas wall gravity type vented heaters with an input rate over 27,000 Btu/h and up to

46,000 Btu/h, DOE identified 70 percent AFUE as a theoretical max-tech level, which was achievable with an improved heat exchanger design and electronic ignition. For gas floor vented heaters with an input rate over 37,000 Btu/h, DOE identified the max-tech efficiency level as 58 percent AFUE, which DOE stated could be reached using a standing pilot light and an improved heat exchanger design. For gas room vented heaters with an input rate over 27,000 Btu/h and up to 46,000 Btu/h, DOE identified a theoretical max-tech efficiency level of 83 percent AFUE, which manufacturers could achieve using an electronic ignition and a multiple heat exchanger design. 75 FR 20112, 20145–20146 (April 16, 2010).

In the October 2016 final determination, DOE noted that condensing gas wall fan type vented heater models with input rates at or below 42,000 Btu/h had become available, and DOE considered this the max-tech level for all gas wall fan type vented heaters. Based on information obtained during manufacturer interviews and a manufacturer production cost developed through a teardown analysis performed for the proposed determination, DOE determined that condensing technology was not economically justified for gas wall fan type vented heaters at that time. 81 FR 21276, 21280 (April 11, 2016); 81 FR 71325, 71328-71329 (Oct. 17, 2016).

Since the October 2016 final determination, the highest efficiency condensing gas wall fan type vented heater, with an input rate at or below 42,000 Btu/h, available on the market has been rerated (*e.g.*, the same model number has been rated with at least two different AFUE values between the October 2016 final determination and this NOPD)

from an AFUE of 92 percent to an AFUE of 90 percent, which is the only condensing AFUE level on the market. The maximum available AFUE for gas wall gravity type vented heaters, with an input rate over 27,000 Btu/h and up to 46,000 Btu/h, increased to 70 percent, which is the max-tech level analyzed in the April 2010 final rule. In total, the maximum available AFUE decreased for two input rate ranges and increased for one input rate range. All other input rate ranges have the same maximum available AFUE as in the October 2016 final determination.

In response to the February 2019 RFI, AHRI stated that condensing, multi-stage vented heaters equipped with combustion and circulating fans should be considered the max-tech technology option. (AHRI, No. 6 at p. 4) The commenter added that condensing vented heaters continue to be significantly more expensive to produce than non-condensing models and are by and large not economically justified. AHRI also stated that only one manufacturer produces condensing vented heaters and that there are only two models listed in the AHRI Directory. *Id.* Lastly, AHRI generally recommended against the use of the maximum available efficiency levels as possible energy conservation standards. *Id.*

Joint Advocates estimated that condensing gas wall fan type vented heaters would reduce energy use by about 17 to 18 percent over models at the baseline. (Joint Advocates, No. 7 at p. 2) CA IOUs stated that higher condensing efficiencies could be achieved through the use of microprocessor controls, a two-stage heat exchanger, and multi-speed blowers for venting and air circulation. According to the CA IOUs, there are

two manufacturers of condensing vented heaters, so those commenters recommended that DOE consider the condensing technology option. CA IOUs asserted that as this option gains popularity with manufacturers, there is the likelihood of increased market share leading to larger production volumes and a decrease in consumer costs due to economies of scale and increased competition. (CA IOUs, No. 8 at p. 4)

As noted, AHRI stated that there is one manufacturer of condensing gas wall fan type vented heaters, whereas the CA IOUs stated that there are two manufacturers and supplied manufacturer literature from the two manufacturers. (AHRI, No. 6 at p. 4; CA IOUs, No. 8 at p. 4) To assess this discrepancy, DOE reviewed the supplied literature and found that the literature was last updated in 2017 and could not find the models on the manufacturer's website. Consequently, DOE has tentatively determined that there is only one manufacturer of condensing gas wall fan type vented heaters on the market at the time of this NOPD.

Consistent with comments and the evaluation in the October 2016 final determination, DOE considers condensing technology to be the "max-tech" levels for gas wall fan type vented heaters.

As explained in section II.B.6 of this document, DOE published the July 2019 NOPIR in the *Federal Register* which proposed to interpret EPCA to provide that adoption of energy conservation standards that would limit the market to natural gas and/or propane furnaces, water heaters, or similarly-situated products/equipment (where

permitted by EPCA) that use condensing combustion technology would result in the unavailability of a performance-related feature within the meaning of 42 U.S.C. 6295(o)(4) and 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa) and 42 U.S.C. 6316(a). 84 FR 33011, 33021 (July 19, 2019). In light of the July 2019 NOPIR, DOE further investigated the venting options associated with condensing and non-condensing DHE. Categories of venting appliances are defined in the 2018 National Fire Protection Association (NFPA) 54/American National Standards Institute (ANSI) Z223.1 National Fuel Gas Code, titled “NFPA 54 National Fuel Gas Code” (NFPA 54-2018). Currently, the only models on the market using condensing technology are gas wall fan type vented heaters. Through an examination of these products’ installation literature, condensing gas wall fan type vented heaters are installed using Category IV¹³ venting. Non-condensing gas wall fan type vented heaters are typically installed using either Category I¹⁴ or Category III¹⁵ venting. Therefore, products using condensing technology require a different venting system (*i.e.*, Category IV venting) than non-condensing DHE (which typically use either Category I or Category III venting). As a result, DHE are similarly situated relative to residential furnaces and commercial water heaters, in that replacing an existing non-condensing vented heater with a vented heater that uses condensing technology may require

¹³ NFPA 54-2018 defines a “Category IV Vented Appliance” as an appliance that operates with a positive vent static pressure and with a vent gas temperature that can cause excessive condensate production in the vent.

¹⁴ NFPA 54-2018 defines a “Category I Vented Appliance” as an appliance that operates with a non-positive vent static pressure and with a vent gas temperature that avoids excessive condensate production in the vent.

¹⁵ NFPA 54-2018 defines a “Category III Vented Appliance” as an appliance that operates with a positive vent static pressure and with a vent gas temperature that avoids excessive condensate production in the vent.

significant changes to the existing vent system. As such, DOE's proposed interpretation in the July 2019 NOPIR, if finalized, would apply to DHE.

Under the proposed interpretation in the July 2019 NOPIR, DOE would consider whether non-condensing combustion technology justified a separate product class under 42 U.S.C 6296(q). If DOE determined that such technology did justify a separate product class for DHE, DOE would consider establishing separate standards for a condensing DHE product class and a non-condensing DHE product class (or through classes that maintain venting compatibility, as DOE determines appropriate). As a result, although DOE considers condensing technology to represent the max-tech design for gas wall fan type vented heaters, if a separate product class were to be established for condensing gas wall fan type vented heaters, there would be no additional energy savings associated with the max-tech level, as discussed in sections III.B.3.e and III.B.3.h of this document.

National Grid stated that it found a gas floor vented heater with a rated AFUE of 70 percent and suggested that the minimum AFUE for gas floor vented heaters should be increased. (National Grid, No. 9 at p. 1) However, all of the gas floor vented heater models that DOE found in the CCMS database and AHRI Directory have rated AFUE values at the baseline (*i.e.*, 57 percent for models at or below 37,000 Btu/h and 58 percent for models above 37,000 Btu/h). DOE was unable to find the model identified by National Grid in its product research, and the Department seeks additional information regarding the highest available efficiency and maximum possible efficiency for gas floor vented heaters. Thus, for the purposes of this analysis, DOE tentatively considers the

maximum available AFUE values found in Table III.7 of this document to be the max-tech efficiency levels.

The Joint Advocates and the CA IOUs encouraged DOE to perform an engineering analysis on all 11 product classes of vented heaters. (Joint Advocates, No. 7 at p. 2; CA IOUs, No. 9 at p. 2) The Joint Advocates also stated that there is significant market availability of gas wall vented heaters, both fan type and gravity type, which exceed the current energy conservation standard levels. (Joint Advocates, No. 7 at p. 1) DOE agrees that there are models on the market which exceed the current energy conservation standards, but as discussed in this section, the technology options have not changed significantly since the April 2010 final rule and October 2016 final determination. Because the technology options have not changed significantly, the energy use of all vented heaters remains approximately the same (see section III.B.3.e of this document). As discussed in section III.B.3.e of this document, DOE has tentatively determined that at max-tech the potential energy savings resulting from amended standards, set at levels based on the technology options analyzed during the April 2010 final rule and October 2016 final determination, would not result in significant energy savings. Furthermore, as discussed in section III.C.2 of this document, DOE has tentatively determined that the potential benefits from amended standards would be outweighed by burdens on manufacturers, in particular, small business manufacturers, as vented heater shipments have previously declined, and there is no evidence that

shipments have increased since the October 2016 final determination. As such, a full engineering analysis of all 11 product classes of vented heaters is not necessary.

Manufacturer Production Costs

After establishing the efficiency levels in the April 2010 final rule, DOE estimated the manufacturer production cost (MPC) of attaining each efficiency level based on the technology options identified for that level. The MPC takes into account the costs for material, labor, depreciation, and overhead. These values were developed based on product teardowns that generated bills of materials for all components and manufacturing processes required to manufacture vented heaters at a given efficiency level for each product class. DOE uses these bills of material, along with information on material and component prices, costs for labor, depreciation, and overhead to derive the MPC. In development of the April 2010 final rule, manufacturer interviews were conducted to verify the accuracy of the inputs to DOE's analysis of MPCs (*e.g.*, material prices, labor rates) and the resulting MPCs. 75 FR 20112, 20147-20148 (April 16, 2010).

DOE reviewed its April 2010 final rule engineering analysis to determine whether the results are still valid in the context of the current market. As the technology options have not changed significantly since the April 2010 final rule and the market conditions for manufacturers remains substantially the same as the previous rulemaking (*i.e.*, production volumes remain similar or slightly lower than previously projected, while material prices and labor rates are also similar), DOE has tentatively determined that the engineering analysis performed during the April 2010 final rule is still valid. DOE also

reviewed retail prices for models currently available on the market and found that the current retail prices are comparable to those published in chapter 8, section 8.2.3.5 of the April 2010 final rule TSD, when adjusted for inflation. Because DOE has not found distribution channels or mark-ups to have changed since April 2010, the similarity of the predicted retail prices in the April 2010 final rule analysis to those of current products indicates that the manufacturer production costs are also likely to be unchanged from the April 2010 final rule analysis.

e. Energy Use Analysis

Table III.8 presents the average energy consumption, from section 7.3.6 of the April 2010 final rule TSD, for each vented heater product class and efficiency level. DOE has tentatively concluded that the current average energy consumption for these vented heaters is comparable to the estimates developed for the April 2010 final rule and relied on in the October 2016 final determination, as the technology options at each efficiency level have not changed substantially.

Table III.8 Average Energy Consumption for the Vented Heater Product Classes from April 2010 Final Rule

DHE Type	Heat Circulation Type	Efficiency Level (AFUE)	Average Energy Consumption	
			Gas (MMBtu/yr)	Electricity (kWh/yr)
Gas Wall	Fan Type	74*	29.9	38.6
		75*	28.2	45.7
		76**	27.8	45.2
		77	27.4	44.7
		80	26.3	66.2
	Gravity Type	64*	29.9	0.0
		66**	29.0	0.0

		68*	28.2	0.0
		69*	27.8	0.0
		70	26.5	17.7
Gas Floor	All	57*	30.8	0.0
		58**	30.3	0.0
Gas Room	All	64*	27.5	0.0
		65*	27.1	0.0
		66*	26.7	0.0
		67**	26.3	0.0
		68	26.0	0.0
		83*†	20.2	81.1

*No longer available on the market.

**Efficiency level adopted in as the Federal standard the April 2010 final rule at the representative input rate.

† This was a theoretical model and was not on the market at the time of the April 2010 final rule analysis.

As discussed in section III.B.3.d of this document, in the event that amended energy conservation standards are economically justified for gas wall fan type vented heaters at a level which would require condensing technology, then at that time, separate product classes would likely have to be considered to effectively separate non-condensing and condensing technologies in order to preserve non-condensing products, consistent with the proposals in the July 2019 NOPIR and September 2020 SNOPIR. Also as stated in section III.B.3.d of this document, there is only one available condensing AFUE level on the market, which is identified as the max-tech level. As such, the baseline AFUE for a potential condensing product class would be set at the only available AFUE level, and there would be no potential for energy savings in a condensing gas wall fan type vented heater product class, so, therefore, DOE has not presented energy use values for condensing gas wall fan type vented heaters.

f. Life-Cycle Cost and Payback Period Analysis

LCC is the total consumer expense over the life of an appliance, including the total installed cost and operating costs (including energy expenditures, maintenance, and repair). DOE discounts future operating costs to the time of purchase, and sums them over the lifetime of the product.

The total installed cost is determined by combining the installation cost with the equipment price. The equipment price is determined using the MPC and applying a manufacturer mark-up, a wholesaler mark-up, a mechanical contractor mark-up, and sales tax.¹⁶ As presented in section III.B.3.d of this document, DOE has tentatively determined that the MPC has not changed significantly since the April 2010 final rule. DOE has also tentatively concluded that the average mark-ups, sales taxes, and installation costs are comparable to the estimates developed for the April 2010 final rule. Therefore, the total installed costs are estimated to have remained approximately the same, as compared to the April 2010 final rule, for products that are still on the market, as the technology options have not changed. DOE additionally estimates that the total installed cost for the 90- percent AFUE gas wall fan type vented heater would be considerably higher compared to lower efficiency gas wall fan type vented heaters, since there are considerable development and production costs (as discussed in section III.B.3.d of this document), as well as additional installation costs.

¹⁶ For new construction, builder mark-up is also included. For the April 2010 final rule, the new construction market shares are 10 percent for vented gas wall fan, vented gas wall gravity, and vented gas room heaters, and 0 percent for vented gas floor furnace heaters.

The annual operating cost is determined by the energy consumption of vented heaters, the energy prices of the fuel used, and any repair and maintenance costs that would be required. DOE has tentatively determined that the energy consumption (as discussed in section III.B.3.e of this document) and repair and maintenance costs associated with each efficiency level have not changed significantly from that in the April 2010 final rule for the vented heaters that are still on the market, as the technology options have not changed. DOE additionally estimates that the average energy consumption for the 90-percent AFUE gas wall fan type vented heater would be proportionally lower compared to the 80-percent AFUE gas wall fan type vented heaters, and repair and maintenance costs would be higher than for the 80-percent AFUE gas wall fan type vented heaters. To assess the impact of energy prices, DOE compared the April 2010 final rule's average energy prices for 2013 (*i.e.*, the starting year in the analysis) to a likely starting year if DOE performed a revised analysis in a new rulemaking. The April 2010 final rule used Energy Information Administration's (EIA) *Annual Energy Outlook (AEO) 2010* energy price trends.¹⁷ To assess the impact of updated energy price estimates, DOE used EIA's *AEO 2020* energy price trends to estimate the energy prices in 2027,¹⁸ the expected compliance year for the updated analysis.¹⁹ DOE has found that

¹⁷ U.S. Department of Energy-Energy Information Administration, *Annual Energy Outlook 2010 with Projections to 2035 (Early Release)* (Available at: <https://www.eia.gov/outlooks/aeo/>) (Last accessed August 13, 2020).

¹⁸ For purposes of the updated analysis, DOE estimated 2027 as the first year of compliance by assuming that the publication of a potential final rule would occur by 2022 and any amended standards would apply to DHEs manufactured 5 years after this date. (42 U.S.C. 6295(m)(4)(A)(ii))

¹⁹ U.S. Department of Energy-Energy Information Administration, *Annual Energy Outlook 2020 with Projections to 2050* (Available at: <https://www.eia.gov/outlooks/aeo/>) (Last accessed August 13, 2020).

both natural gas and propane prices are significantly lower in 2027 (\$10.99/MMBtu in 2019\$ and \$28.20/MMBtu in 2019\$, respectively) compared to the 2013 natural gas and propane prices used in the April 2010 final rule (\$13.31/MMBtu in 2019\$ and \$32.71/MMBtu in 2019\$, respectively).²⁰ Additionally, the 30-year trends are comparable in the two *AEO* editions. Due to comparable energy use and lower energy prices, DOE has tentatively determined that the annual operating cost of vented heaters has either decreased or not changed significantly from that estimated in the April 2010 final rule.

As vented heaters have not significantly changed since the April 2010 final rule, DOE has tentatively determined that the product lifetime has remained largely the same. DOE has also tentatively determined that residential discount rates have not changed significantly from those in the April 2010 final rule.

Because the total installed costs are estimated not to have changed significantly, and operating costs are estimated to be comparable, DOE has tentatively determined that the LCC savings for each efficiency level of vented heaters are similar to the estimates in the April 2010 final rule. Further, DOE has tentatively determined that the relative comparisons between each efficiency level for each product class remain unchanged and

²⁰ For the April 2010 final rule, the fraction of propane installations is 12 percent for vented gas wall fan and vented gas wall gravity, 9 percent for vented gas floor furnace heaters, and 38 percent for vented gas room heaters.

that the conclusions from the April 2010 final rule and October 2016 final determination are still applicable.

The PBP is the amount of time it takes the consumer, in a typical case, to recover the estimated higher purchase expense of more energy-efficient products through lower operating costs. Numerically, the PBP is the ratio of the increase in purchase expense (*i.e.*, due to a more energy-efficient design) to the decrease in annual operating expenditures. This type of calculation is known as a “simple” payback period, because it does not take into account changes in operating expense over time or the time value of money (*i.e.*, the calculation is done at an effective discount rate of zero percent). Payback periods are expressed in years. Payback periods greater than the life of the product indicate that the increased total installed cost is not recovered by the reduced operating expenses.

As previously stated, DOE has estimated that the total installed costs have not changed significantly, and operating costs are comparable to the April 2010 final rule results. Therefore, DOE has tentatively determined that the “simple” payback period for each efficiency level of vented heaters is similar to the “simple” payback period results from the April 2010 final rule. Further, DOE has tentatively determined that the relative comparisons between each efficiency level for each product class remain unchanged and that the conclusions from the April 2010 final rule and October 2016 final determination are still applicable.

g. Shipments

In the February 2019 RFI, DOE stated that from the April 2010 final rule, the Department has vented heater historical shipment data from AHRI for gas wall vented heaters from 1990 to 1998 and from 2000 to 2006, for gas floor vented heaters from 1990 to 2007, and for gas room vented heaters from 1990 to 2005. DOE also has limited disaggregated shipments for fan type and gravity type gas wall vented heaters and by input capacity. DOE requested comment on the annual sales data (*i.e.*, number of shipments) for each vented heater product class from 2008–2018. 84 FR 6095, 6104-6105 (Feb. 26, 2019).

AHRI stated that it was conducting a special data collection to gather shipment data for each vented heater product class from 2016-2018, and that these data will be provided to DOE at a later date. AHRI also stated that shipment data from 2008-2015 was provided in response to the NOPD for direct heating equipment published in 2016. (AHRI, No. 6 at p. 4)

In 2016, AHRI presented data showing the percentage change in total shipments for the years 2010-2015 compared with the total shipments over the period 2001-2006, estimating that gas wall vented heater shipments were 21 percent less, that direct vent gas wall vented heater (a form of gas wall vented heater) shipments were 31 percent less, and that gas room vented heater shipments were 44 percent less.²¹ AHRI did not have an

²¹ AHRI Comment to the NOPD for Direct Heating Equipment published in 2016 (June 10, 2016) (Comment No. 7) (Available at: <https://www.regulations.gov/document?D=EERE-2016-BT-STD-0007-0007>) (Last accessed Aug. 13, 2020).

active statistics program for gas floor vented heaters and was attempting to collect annual shipments information for recent years through a special data collection.

At this time, AHRI has not submitted data for the 2016-2018 time period. However, DOE will consider any additional data submissions from AHRI (or other interested parties) when making the final determination with respect to whether amended standards for DHE are justified.

h. National Energy Savings

As explained in sections III.B.3.d through III.B.3.g of this document, the technology options, energy use, and shipments for DHE have not changed significantly since the April 2010 final rule and October 2016 final determination. Accordingly, the national energy savings are expected to be largely the same as the national energy savings projected in the April 2010 final rule. In the April 2010 final rule, DOE estimated that the max-tech TSL (TSL 6) would result in an additional 0.13 quads of site energy savings over 30 years, as compared to the adopted TSL (*i.e.*, the current standard levels).²² The

²² DOE used the April 2010 final rule National Impact Analysis (NIA) spreadsheet for DHE to calculate the site energy savings difference between the max-tech level (TSL 6) and current standard level (then TSL 2). The site energy savings are available in the "National Impacts Summary" worksheet for each product class. The site energy savings calculation was adjusted to take into account the site energy savings over 30 years of product shipments (2013-2042) and to include the full lifetime of products shipped over the 30 year period (2013-2042). The published version of the DHE NIA spreadsheet only accounted for site energy savings from 2013-2042. The resulting 30-year site energy savings per product class are: 0.02 quads for gas wall fan type vented heaters, 0.07 quads for gas wall gravity type vented heaters, 0.00 quads for gas floor vented heaters, and 0.04 quads for gas room vented heaters. The DHE NIA spreadsheet (published

site energy savings from the max-tech TSL represent approximately a six-percent reduction compared to the total 30-year site energy consumption, as compared to the current standard levels.²³

The April 2010 final rule did not contemplate or include a TSL with specific provisions for a condensing gas wall fan type vented heater. As discussed in section III.B.3.b of this document, pursuant to DOE's tentative interpretation from the July 2019 NOPIR, amending energy conservation standards to a level which would require condensing technology would result in the unavailability of a performance-related feature within the meaning of 42 U.S.C. 6295(o)(4). 84 FR 33011, 33021 (July 11, 2019). As such, when evaluating energy savings from potential energy conservation standards, separate non-condensing and condensing product classes are investigated as a possible outcome of the Gas Industry Petition. DOE identified one manufacturer of condensing gas fan type vented heaters which produces two models at 90-percent AFUE. Because there was only one efficiency level available on the market and analyzed at the

March 23, 2010) (Available at: <https://www.regulations.gov/document?D=EERE-2006-STD-0129-0148>) (Last accessed Aug. 13, 2020).

²³ DOE used the April 2010 final rule NIA spreadsheet for DHE to calculate the total 30-year site energy consumption at the current standard levels (then TSL 2). The "Base Case Consumption" worksheet is used to calculate the total site energy consumption at the current standard levels for each product class. This worksheet includes the total "source energy (Quads)" per product class. DOE converted the total source energy to site energy by removing the site-to-source factors (which come from the "EnergyPrices SitetoSource" worksheet) from the calculation. The site energy consumption calculation was then expanded to take into account the site energy consumption over 30 years of product shipments (2013-2042) and include the full lifetime of products shipped over the 30 year period (2013-2042), to match the site energy savings calculation. Finally, the totals per product class were adjusted to take into account the energy savings for the current standard (then TSL 2). The resulting 30-year site energy consumption totals per product class are: 0.55 quads for gas wall fan type vented heaters, 1.30 quads for gas wall gravity type vented heaters, 0.02 quads for gas floor vented heaters, and 0.24 quads for gas room vented heaters. The 0.13 quads of 30-year site energy savings from the max-tech TSL are then divided by the resulting total value of 2.11 quads for the 30-year site energy consumption at the current standard levels, which results in the 6-percent value.

condensing level, there would be no potential additional energy savings from setting a condensing level for the divided gas wall fan type vented heater product class.

i. Manufacturer Impacts

December 2009 NOPR

As stated in section II.B.3.b of this document, in the NOPR that preceded the April 2010 final rule, DOE proposed to amend standards for vented heaters to TSL 3. 74 FR 65852, 65973 (Dec. 11, 2009). In response to that proposal, DOE received several comments expressing concerns that:

- Shipments of vented heaters were low, and, therefore, potential energy savings were low;
- Low shipments would make it difficult for manufacturers to recoup the costs to comply with amended standards;
- Product offerings may be limited as a response to amended standards;
- Manufacturers may exit the industry as a result of amended standards;
- Employment may be negatively impacted due to reduced product lines and insufficient return on investment.

75 FR 20112, 20218 (April 16, 2010).

April 2010 Final Rule

In the April 2010 final rule, DOE additionally found that the industry had gone through considerable consolidation due to decreased shipments, that product lines were primarily maintained to provide replacement products, and that some small business manufacturers could be disproportionately affected by a more-stringent standard. 75 FR 20112, 20199, and 20218 (April 16, 2010). As mentioned in section III.B.3.g of this document, the April 2010 final rule presented a trend of declining annual shipments throughout the 30-year analysis period. As discussed in section II.B.2.b of this document, DOE ultimately adopted standards at TSL 2 for vented heaters, which was one TSL below the proposed level. In rejecting proposed TSL 3, DOE concluded that the benefits of higher potential standard levels would be outweighed by the economic burden on some consumers, the large capital conversion costs that could result in a large reduction in INPV for the manufacturers of vented heaters, and the potential for small business manufacturers of vented heaters to reduce their product offerings or to be forced to exit the market completely, thereby reducing competition in the vented heater market. 75 FR 20112, 20218-20219 (April 16, 2010).

October 2016 Final Determination

In the April 2016 proposed determination that preceded the October 2016 final determination, DOE tentatively determined that the conclusions presented in the April

2010 final rule were still valid. 81 FR 21276, 21281 (April 11, 2016). Further, DOE has found that the number of models offered in each of the vented heater product classes decreased in the time between the April 2010 final rule and the October 2016 final determination, which indicated that the vented heater market was shrinking and product lines were mainly maintained as replacements for current vented heater products. 81 FR 71325, 71327 (Oct. 17, 2016).

In the October 2016 final determination DOE noted that the number of manufacturers declined from six to four, indicating consolidation in the vented heater industry. 81 FR 71325, 71328 (Oct. 17, 2016).

Current Analysis of Manufacturer Impacts

In DOE's most recent review of the market, a total of five manufacturers were identified within the vented heater industry, four of which are domestic small businesses. In the February 2019 RFI, DOE requested comment on annual sales data for each vented heater product class from 2008-2018. 84 FR 6095, 6105 (Feb. 26, 2019). DOE did not receive any comment or information regarding the number and classification of manufacturers presented in the February 2019 RFI and, therefore, considers its previous analysis of industry shipments to still be valid. DOE also did not receive any comments or data suggesting that DOE's analysis of the DHE market in the April 2016 NOPD was inaccurate. Because the market conditions are substantially the same as when DOE considered manufacturer impacts for the April 2010 final rule and October 2016 final

determination, DOE tentatively concludes that manufacturers would likely face similar impacts under more-stringent standards as those previously discussed.

4. Other Issues

a. Fuel Switching and Full-Fuel-Cycle

NPGA urged DOE to analyze the potential of fuel switching and correlated effects on energy efficiency. (NPGA, No. 3 at p. 1) The commenter requested that DOE utilize a full-fuel-cycle (FFC) analysis when calculating energy consumption across all product classes and energy types, instead of utilizing a site energy analysis to determine whether to amend the energy standards for DHE. *Id.* NPGA further stated that unless DOE assesses the potential of fuel-switching, it would be prejudicing some energy sources. *Id.*

Because consumers are sensitive to the cost of heating equipment, a standard level that significantly increases purchase price may induce some consumers to switch to a different heating product than they would have otherwise installed (*i.e.*, in the case where no new standards are established). In the April 2010 final rule, DOE was unable to find any data it could use to estimate the extent of fuel and product switching in its analysis. 75 FR 20112, 20165 (April 16, 2010). As stated, the April 2010 final rule analysis is part of DOE's consideration for the determination proposed in this document. DOE uses FFC measures of energy use and greenhouse gas and other emissions in the national impact analyses and emissions analyses included in future energy conservation standards rulemakings. *See* 77 FR 49701 (August 17, 2012). As previously explained in the

context of rulemakings for other products, it would not be appropriate to incorporate FCC in an energy efficiency metric for energy conservation standards. *See* 81 FR 2628, 2639 (Jan. 15, 2016). First, EPCA provides that “energy conservation standards” must prescribe a “minimum level of energy efficiency” or a “maximum quantity of energy use”; the statute subsequently provides that “energy use” is the quantity of energy directly consumed by a consumer product *at the point of use*, and it defines “energy efficiency” as the ratio of useful heat output of services from a consumer product to the energy use of such product. (42 U.S.C. 6291(4)-(6)) Moreover, the mathematical adjustment to the site-based energy descriptor to calculate an FFC value relies on information that is updated annually. If DOE were to include such an adjustment to the energy conservation standard, DOE would be required to update standards (or applicable test procedure) annually.

b. Environmental Analysis, Market Failures, and Market-Based Compliance

PI NYU recommended that DOE consider the environmental costs when analyzing the national impact and selecting the maximum economically justified efficiency level. PI NYU further stated that the benefits from greenhouse gas emissions reductions should be considered and that global, as opposed to domestic-only, estimates of the social cost of greenhouse gas reduction should be used in the national impact analysis. (PI NYU, No. 4 at p. 2)

In response, DOE notes that its rulemaking analyses include consideration of environmental impacts resulting from potential amended standards. In the April 2010

final rule, DOE performed an environmental assessment and considered the benefits resulting from reduced emissions. 75 FR 20112, 20176-20180 (April 16, 2010). Since that time, new legal authority has impacted DOE's approach to environmental analysis in regulatory rulemaking. Specifically, section 5(c) of Executive Order (E.O.) 13783, "Promoting Energy Independence and Economic Growth," 82 FR 16093 (March 31, 2017), directs agencies to maintain consistency with the guidance contained in the Office of Management and Budget's Circular A-4 (Sept. 17, 2003) when monetizing the value of greenhouse gas emissions resulting from regulations, including with respect to consideration of domestic versus international impacts and appropriate discount rates. Section E.1 of OMB Circular A-4 provides that "analysis should focus on benefits and costs that accrue to citizens and residents of the United States," and it further provides that "[w]here you choose to evaluate a regulation that is likely to have effects beyond the borders of the United States, these effects should be reported separately." Accordingly, DOE has structured its environmental assessment and regulatory analyses so as to conform to these legal requirements.

The Joint Advocates stated that DHE are largely used in older homes, many of which may be occupied by renters. The commenters stated that the landlord purchases the heating equipment, while the tenant typically pays the heating bill; therefore, there is no financial incentive for the person buying the DHE in these situations to purchase efficient units. (Joint Advocates, No. 7 at p. 2) DOE tentatively agrees with the Joint Advocates that when a landlord purchases heating equipment and the tenant pays the

heating bill, there is no financial incentive for the landlord to purchase a more-efficient product.

PI NYU resubmitted comments originally submitted in response to an energy conservation program design RFI published in the *Federal Register* on November 28, 2017. 82 FR 56181. These comments discussed the addition of market-based compliance flexibilities such as credit trading, feebates, or intra-firm averaging to the Appliance Standards Program.

In the present document in which DOE is determining whether standards for DHE need to be amended, EPCA requires DOE to consider the technological feasibility of amended standards, whether such standards would result in a significant conservation of energy, and whether such standards would be cost-effective. (42 U.S.C. 6295(m)(1)(A); 42 U.S.C. 6295(n)(2)) As such, the standards evaluated for the purpose of this proposed determination are the current energy conservation standards and standards at more-stringent levels, not potential market-based compliance strategies.

c. Product Labeling

National Grid stated that many gas floor vented heaters were listed online without their associated AFUE value and recommended that AFUE should be indicated on all product specifications so that consumers can see the efficiency of the product compared to the range of products on the market. (National Grid, No. 9 at p. 1) DOE notes that all covered DHE must be certified to DOE under 10 CFR 429.22, and the associated AFUE

ratings are included in the CCMS database.²⁴ Representations of AFUE are not required in product literature, but representations of efficiency other than the AFUE metric established by DOE are not allowed. (See 42 U.S.C. 6293(c)(1))

d. Standard Level Recommendations

In response to the February 2019 RFI, DOE received several comments opining on the appropriate course of action for DHE energy conservation standard levels. AHAM argued that the burdens outweigh the benefits of increasing energy conservation standards, while AHRI stated that the conclusion that amended standards for DHE are not economically justified remains true today. (AHAM, No. 5 at p. 2; AHRI, No. 6 at p.1)

NEEA stated it supports increasing energy conservation standards when there are technology options available, arguing that vented heaters are typically inefficient when compared to other heating options (*i.e.*, non-DHE heating products). (NEEA, No. 10 at p. 1) NEEA encouraged DOE to increase energy conservation standards for gas wall vented heaters, and that organization specifically suggested a level of 80-percent AFUE for gas wall fan type vented heaters due to the high number of models available. (NEEA, No. 10 at p. 1) PI NYU stated that DOE should continue to select the maximum energy

²⁴ CCMS is available at: <https://www.regulations.doe.gov/ccms/>.

conservation standard level that is technologically feasible and cost-benefit justified. (PI NYU, No. 4 at p. 16)

C. Proposed Determination

After carefully considering the comments on the February 2019 RFI and the available data and information, DOE has tentatively determined that energy conservation standards for DHE do not need to be amended, for the reasons explained in the paragraphs immediately following. DOE will consider all comments received on this proposed determination prior to issuing the next document in this rulemaking proceeding.

1. Unvented Heaters

As discussed in sections II.B.2 and III.B.1 of this document, the efficiency inherent with unvented electric heaters provides negligible opportunity for energy savings, because any heat loss of the product is transferred to the conditioned space and not wasted. DOE examined the market for unvented gas heaters and unvented oil heaters and found that most models on the market have instructions to turn the pilot light off and, thus, would not be required to measure the standing pilot light input rate. For these reasons, consistent with previous rulemakings in which it has addressed unvented heaters, DOE has tentatively determined that standards for unvented heaters are not needed.

2. Vented Heaters

For vented heaters, DOE analyzed each product class – gas wall fan type, gas wall gravity type, gas floor, and gas room – separately in the market and technology assessment (sections III.B.3.a and III.B.3.b of this document), the screening analysis (section III.B.3.c of this document), the engineering analysis (section III.B.3.d of this document), the LCC and PBP analysis (section III.B.3.f of this document), and the shipments analysis (section III.B.3.g of this document), and the Department evaluated all vented heaters together in the energy use analysis (section III.B.3.e of this document), the national energy savings analysis (section III.B.3.h of this document), and the manufacturer impact analysis (section III.B.3.i of this document) when making a determination of whether amended standards are justified under EPCA.

a. Technological Feasibility

EPCA mandates that DOE consider whether amended energy conservation standards for vented heaters would be technologically feasible. (42 U.S.C. 6295(m)(1)(A) and 42 U.S.C. 6295(n)(2)(B)) For gas floor vented heaters, as discussed in section III.B.3.d of this document, the maximum available efficiency level on the market is at the baseline efficiency level (*i.e.*, the current standard). Since there are no models available on the market above baseline and DOE is unaware of any prototype designs that have demonstrated higher efficiencies for gas floor vented heaters, DOE tentatively concludes that more-stringent standards for gas floor vented heaters are not technologically feasible.

DOE has tentatively determined that there are technology options that would improve the efficiency of gas wall fan type vented heaters, gas wall gravity type vented heaters, and gas room vented heaters. These technology options are being used in commercially available gas wall fan type vented heaters, gas wall gravity type vented heaters, and gas room vented heaters and, therefore, are technologically feasible. (See section III.B.3.b of this document for further information.) Hence, DOE has tentatively determined that amended energy conservation standards for gas wall fan type vented heaters, gas wall gravity type vented heaters, and gas room vented heaters are technologically feasible.

b. Cost-Effectiveness

As the next step in the agency's analysis, EPCA requires DOE to then consider whether amended energy conservation standards for gas wall fan type vented heaters, gas wall gravity type vented heaters, and gas room vented heaters would be cost-effective through an evaluation of the savings in operating costs throughout the estimated average life of the covered product compared to any increase in the price of, or in the initial charges for, or maintenance expenses of the covered products which are likely to result from the amended standard. (42 U.S.C. 6295(m)(1)(A), 42 U.S.C. 6295(n)(2)(C), and 42 U.S.C. 6295(o)(2)(B)(i)(II)) As discussed in sections II.B.2.b and III.B.3.f of this document, DOE determined that the LCC and PBP analyses of TSL 3, the TSL immediately above the level adopted as a Federal standard (and which was proposed in the October 2009 NOPR and rejected in the April 2010 final rule), as evaluated in the April 2010 final rule, suggested that initial costs outweighed the consumer benefits. *See*

also 81 FR 71325, 71327 (Oct. 17, 2016). DOE has tentatively determined that the LCC and PBP analyses conducted for the April 2010 final rule remain generally applicable.

c. Significant Energy Savings

EPCA also mandates that DOE consider whether amended energy conservation standards for gas wall fan type vented heaters, gas wall gravity type vented heaters, and gas room vented heaters would result in result in significant conservation of energy. (42 U.S.C. 6295(m)(1)(A) and 42 U.S.C. 6295(n)(2)(A)) As explained in section II.B.5 of this document, DOE uses a two-step approach that considers both a quad threshold value (0.3 quads of site energy over a 30-year period) and a percentage threshold value (10 percent reduction in energy usage over a 30-year period) to ascertain whether a potential standard satisfies 42 U.S.C. 6295(o)(3)(B), which requires DOE to avoid setting a standard that “will not result in significant conservation of energy.” As discussed in section III.B.3.e of this document, the technology options for vented heaters have not changed significantly since the April 2010 final rule and October 2016 final determination analyses were conducted. Therefore, DOE based its energy savings analysis on the estimates developed during the April 2010 final rule and October 2016 final determination. Based on its analysis, DOE estimated that for gas wall fan type vented heaters, gas wall gravity type vented heaters, and gas room vented heaters, potential site energy savings from more-stringent standards at the max-tech level would be 0.13 quads, which is less than quad threshold value of 0.3 quads. As the quad threshold value was not met at max-tech, DOE next considered the percentage threshold. DOE again referred to the analysis conducted for the April 2010 final rule and estimated

that the reduction in site energy use under an energy conservation standard at the max-tech level would be six percent, which is less than the percentage threshold of 10 percent. As both the quad and percentage thresholds are not met, DOE has tentatively determined that amended standards would not result in significant conservation of energy. This tentative conclusion, if confirmed after review of public comments, would be sufficient on its own under EPCA to support a determination that the energy conservation standards for DHE do not need to be amended.

d. Further Considerations

As previously discussed, DOE is required to publish either a notification of a determination that standards for vented heaters do not need to be amended, or a NOPR including new proposed standards. (42 U.S.C. 6295(m)(1) and 42 U.S.C. 6295(m)(3)(B)) If DOE publishes a NOPR including new proposed standards, the proposed standards must be designed to achieve the maximum improvement in energy efficiency, which DOE determines is technologically feasible and economically justified. (42 U.S.C. 6295(m)(1)(B); 42 U.S.C. 6295(o)(2)(A)). In determining whether new proposed standards would be economically justified, DOE must determine whether the benefits of the standards exceed their burdens by, to the greatest extent practicable, considering, the seven statutory criteria previously discussed. (42 U.S.C. 6295(o)(2)(B)(i))

For gas wall fan type vented heaters, gas wall gravity type vented heaters, and gas room vented heaters, DOE considered the findings of the April 2010 final rule and the October 2016 final determination, in addition to comments received in response to the

February 2019 RFI. As discussed in section III.B.3.g of this document, the number of vented heater shipments were projected to decline in the April 2010 final rule, and comments received during the rulemaking that resulted in the October 2016 final determination indicated that shipments have indeed continued to decline since the previous analysis was conducted. Further, DOE stated in the April 2016 NOPD which preceded the October 2016 final determination that shipments were in fact lower than projected in the April 2010 final rule, indicating that the decline has been faster than expected. 81 FR 21276, 21281 (April 11, 2016). This supports the notion that the vented heater market is continuing to shrink, that product lines are mainly maintained as replacements for existing vented heaters units, and that new product lines generally are not being developed. In addition, the one new manufacturer of vented heaters that has entered the market since the October 2016 final determination only produces two models, neither of which have AFUE values outside of the range offered by other manufacturers, or any other characteristics that make them unique from other products already on the market. As discussed in sections III.B.3.a and III.B.3.d of this document, DOE found that the available AFUE values have largely stayed the same or decreased, with more-efficient products being taken off the market or rerated to lower AFUE values.

As discussed in section III.B.3.f of this document, an examination of how the inputs to the LCC and PBP analysis have changed since the April 2010 final rule indicates that the LCC and PBP results from the April 2010 final rule would be comparable today. As discussed in section III.B.3.i of this document, DOE did not

receive any comments or data in response to the February 2019 RFI that suggested a change in the historical trends within this industry.

In the April 2010 final rule, DOE rejected higher standards, finding that capital conversion costs would lead to a large reduction in INPV and that small businesses would be disproportionately impacted, which would outweigh any benefits from higher standard levels. 75 FR 20112, 20217-20218 (April 16, 2010). Upon reviewing the current market for vented heaters, DOE has tentatively determined that its prior determination regarding the impact on INPV remains valid (*i.e.*, standard levels above the current Federal energy conservation standard would require manufacturers to make significant capital investments of the magnitude initially projected in the April 2010 final rule). As shipments for vented heaters have continued to decrease, manufacturers would be required to make investments to update model lines and manufacturing facilities with fewer shipments over which to spread the cost. This would lead to even more difficulty in recovering their investment than was projected in the April 2010 final rule.

In addition, DOE has initially determined that its conclusions regarding small business impacts from the April 2010 final rule and the October 2016 final determination are still valid concerns (*i.e.*, small businesses would be likely to reduce product offerings or leave the vented heater market entirely if the standard were to be set above the level adopted in that rulemaking). Four of the five identified manufacturers of gas wall fan type vented heaters, gas wall gravity type vented heaters, and gas room vented heaters are small businesses.

e. Standby Mode and Off Mode

DOE also considered whether to establish energy conservation standards for standby mode and off mode electrical energy use. Fossil fuel energy use in standby mode and off mode is already included in the AFUE metric, so, therefore, separate standards for standby mode and off mode fossil fuel energy consumption are not needed. Given that the technologies in vented heaters are largely unchanged from those in the April 2010 final rule and October 2016 final determination, electric standby mode and off mode energy use is still very small in comparison to fossil fuel energy, and, thus, presents a relatively small potential for energy savings. DOE has tentatively determined that any energy savings from establishing energy conservation standards for standby mode and off mode electrical energy use, even when considered with active mode, would not increase the energy savings to a level above the quad or percentage threshold values established in the Process Rule and described in section II.B.5 of this document.

f. Summary

For gas floor vented heaters, DOE tentatively concludes that more-stringent standards for gas floor vented heaters are not technologically feasible. As such, DOE also tentatively concludes that there is no conservation of energy possible from including gas floor vented heaters. Therefore, DOE has tentatively determined that amended standards for gas floor vented heaters are not needed.

For gas wall fan type vented heaters, gas wall gravity type vented heaters, and gas room vented heaters DOE has tentatively determined that amended standards would not result in significant conservation of energy. Further, the potential benefits from amended standards would be outweighed by burdens on manufacturers. As such, DOE has tentatively determined that new proposed standards would not be economically justified. Therefore, DOE has tentatively determined that amended standards for gas wall fan type vented heaters, gas wall gravity type heaters, and gas room vented heaters are not needed.

IV. Procedural Issues and Regulatory Review

A. Review Under Executive Order 12866

The Office of Management and Budget (OMB) has determined that this proposed determination does not constitute a “significant regulatory action” under section 3(f) of E.O. 12866, “Regulatory Planning and Review,” 58 FR 51735 (Oct. 4, 1993). Accordingly, this action was not subject to review under the Executive Order by the Office of Information and Regulatory Affairs (OIRA) at OMB.

B. Review Under Executive Orders 13771 and 13777

On January 30, 2017, the President issued E.O. 13771, “Reducing Regulation and Controlling Regulatory Costs.” 82 FR 9339 (Feb. 3, 2017). E.O. 13771 stated the policy of the Executive Branch is to be prudent and financially responsible in the expenditure of funds, from both public and private sources. E.O. 13771 stated it is essential to manage the costs associated with the governmental imposition of private expenditures required to

comply with Federal regulations. This notification of proposed determination is expected to be an E.O. 13771 “Other Action.”

Additionally, on February 24, 2017, the President issued E.O. 13777, “Enforcing the Regulatory Reform Agenda.” 82 FR 12285 (March 1, 2017). E.O. 13777 required the head of each agency to designate an agency official as its Regulatory Reform Officer (RRO). Each RRO oversees the implementation of regulatory reform initiatives and policies to ensure that agencies effectively carry out regulatory reforms, consistent with applicable law. Further, E.O. 13777 requires the establishment of a regulatory task force at each agency. The regulatory task force is required to make recommendations to the agency head regarding the repeal, replacement, or modification of existing regulations, consistent with applicable law. At a minimum, each regulatory reform task force must attempt to identify regulations that:

- (1) Eliminate jobs, or inhibit job creation;
- (2) Are outdated, unnecessary, or ineffective;
- (3) Impose costs that exceed benefits;
- (4) Create a serious inconsistency or otherwise interfere with regulatory reform initiatives and policies;
- (5) Are inconsistent with the requirements of Information Quality Act, or the guidance issued pursuant to that Act, in particular those regulations that rely in whole or in part on data, information, or methods that are not publicly available or that are insufficiently transparent to meet the standard for reproducibility; or

- (6) Derive from or implement Executive Orders or other Presidential directives that have been subsequently rescinded or substantially modified.

DOE initially concludes that this proposed determination is consistent with the directives set forth in these Executive Orders. As discussed in this document, DOE has initially determined that amended energy conservation standards for DHE products are not needed. Therefore, if finalized as proposed, this determination is expected to be an E.O. 13771 “Other Action.”

C. Review Under the Regulatory Flexibility Act

The Regulatory Flexibility Act (5 U.S.C. 601 *et seq.*) requires preparation of an initial regulatory flexibility analysis (IRFA) for any rule that by law must be proposed for public comment, unless the agency certifies that the rule, if promulgated, will not have a significant economic impact on a substantial number of small entities. As required by E.O. 13272, “Proper Consideration of Small Entities in Agency Rulemaking,” 67 FR 53461 (August 16, 2002), DOE published procedures and policies on February 19, 2003, to ensure that the potential impacts of its rules on small entities are properly considered during the DOE rulemaking process. 68 FR 7990. DOE has made its procedures and policies available on the Office of the General Counsel’s website (<http://energy.gov/gc/office-general-counsel>).

DOE reviewed this proposed determination under the provisions of the Regulatory Flexibility Act and the policies and procedures published on February 19,

2003. Because DOE is proposing not to amend standards for DHE, if adopted, the determination would not amend any energy conservation standards. On the basis of the foregoing, DOE certifies that the proposed determination, if adopted, would not have a “significant economic impact on a substantial number of small entities.” Accordingly, DOE has not prepared an IRFA for this proposed determination. DOE will transmit this certification and supporting statement of factual basis to the Chief Counsel for Advocacy of the Small Business Administration for review under 5 U.S.C. 605(b).

D. Review Under the Paperwork Reduction Act

This proposed determination, which proposes to determine that amended energy conservation standards for DHE would be unneeded as they would either be technologically infeasible (unvented heaters and gas floor vented heaters), or would not result in significant conservation of energy (gas wall fan type vented heaters, gas wall gravity type vented heaters, and gas room vented heaters), would impose no new informational or recordkeeping requirements. Accordingly, OMB clearance is not required under the Paperwork Reduction Act. (44 U.S.C. 3501 *et seq.*)

E. Review Under the National Environmental Policy Act of 1969

DOE is analyzing this proposed action in accordance with the National Environmental Policy Act of 1969 (NEPA) and DOE’s NEPA implementing regulations (10 CFR part 1021). DOE’s regulations include a categorical exclusion for actions which are interpretations or rulings with respect to existing regulations. 10 CFR part 1021,

subpart D, Appendix A4. DOE anticipates that this action qualifies for categorical exclusion A4 because it is an interpretation or ruling in regards to an existing regulation and otherwise meets the requirements for application of a categorical exclusion. *See* 10 CFR 1021.410. DOE will complete its NEPA review before issuing the final action.

F. Review Under Executive Order 13132

E.O. 13132, “Federalism,” 64 FR 43255 (August 10, 1999), imposes certain requirements on Federal agencies formulating and implementing policies or regulations that preempt State law or that have Federalism implications. The Executive Order requires agencies to examine the constitutional and statutory authority supporting any action that would limit the policymaking discretion of the States and to carefully assess the necessity for such actions. The Executive Order also requires agencies to have an accountable process to ensure meaningful and timely input by State and local officials in the development of regulatory policies that have Federalism implications. On March 14, 2000, DOE published a statement of policy describing the intergovernmental consultation process it will follow in the development of such regulations. 65 FR 13735. DOE has examined this proposed determination and has tentatively determined that it would 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. EPCA governs and prescribes Federal preemption of State regulations as to energy conservation for the products that are the subject of this proposed determination. States can petition DOE for exemption from such preemption to the extent, and based on criteria, set forth in EPCA. (42 U.S.C. 6297) As this proposed

determination would not amend the standards for DHE, there is no impact on the policymaking discretion of the States. Therefore, no action is required by E.O. 13132.

G. Review Under Executive Order 12988

Regarding the review of existing regulations and the promulgation of new regulations, section 3(a) of E.O. 12988, “Civil Justice Reform,” imposes on Federal agencies the general duty to adhere to the following requirements: (1) eliminate drafting errors and ambiguity; (2) write regulations to minimize litigation; (3) provide a clear legal standard for affected conduct rather than a general standard, and (4) promote simplification and burden reduction. 61 FR 4729 (Feb. 7, 1996). Regarding the review required by section 3(a), section 3(b) of E.O. 12988 specifically requires that Executive agencies make every reasonable effort to ensure that the regulation: (1) clearly specifies the preemptive effect, if any; (2) clearly specifies any effect on existing Federal law or regulation; (3) provides a clear legal standard for affected conduct while promoting simplification and burden reduction; (4) specifies the retroactive effect, if any; (5) adequately defines key terms, and (6) addresses other important issues affecting clarity and general draftsmanship under any guidelines issued by the Attorney General. Section 3(c) of E.O. 12988 requires Executive agencies to review regulations in light of applicable standards in section 3(a) and section 3(b) to determine whether they are met or it is unreasonable to meet one or more of them. DOE has completed the required review and determined that, to the extent permitted by law, this proposed determination meets the relevant standards of E.O. 12988.

H. Review Under the Unfunded Mandates Reform Act of 1995

Title II of the Unfunded Mandates Reform Act of 1995 (UMRA) requires each Federal agency to assess the effects of Federal regulatory actions on State, local, and Tribal governments and the private sector. Public Law 104-4, sec. 201 (codified at 2 U.S.C. 1531). For a proposed regulatory action likely to result in a rule that may cause the expenditure by State, local, and Tribal governments, in the aggregate, or by the private sector of \$100 million or more in any one year (adjusted annually for inflation), section 202 of UMRA requires a Federal agency to publish a written statement that estimates the resulting costs, benefits, and other effects on the national economy. (2 U.S.C. 1532(a), (b)) The UMRA also requires a Federal agency to develop an effective process to permit timely input by elected officers of State, local, and Tribal governments on a proposed “significant intergovernmental mandate,” and requires an agency plan for giving notice and opportunity for timely input to potentially affected small governments before establishing any requirements that might significantly or uniquely affect them. On March 18, 1997, DOE published a statement of policy on its process for intergovernmental consultation under UMRA. 62 FR 12820. DOE’s policy statement is also available at:

http://energy.gov/sites/prod/files/gcprod/documents/umra_97.pdf.

DOE examined this proposed determination according to UMRA and its statement of policy and determined that the proposed determination does not contain a Federal intergovernmental mandate, nor is it expected to require expenditures of \$100

million or more in any one year. As a result, the analytical requirements of UMRA do not apply.

I. Review Under the Treasury and General Government Appropriations Act, 1999

Section 654 of the Treasury and General Government Appropriations Act, 1999 (Public Law 105-277) requires Federal agencies to issue a Family Policymaking Assessment for any rule that may affect family well-being. This proposed determination would not have any impact on the autonomy or integrity of the family as an institution. Accordingly, DOE has concluded that it is not necessary to prepare a Family Policymaking Assessment.

J. Review Under Executive Order 12630

Pursuant to E.O. 12630, “Governmental Actions and Interference with Constitutionally Protected Property Rights,” 53 FR 8859 (March 18, 1988), DOE has determined that this proposed determination would not result in any takings that might require compensation under the Fifth Amendment to the U.S. Constitution.

K. Review Under the Treasury and General Government Appropriations Act, 2001

Section 515 of the Treasury and General Government Appropriations Act, 2001 (44 U.S.C. 3516 note) provides for Federal agencies to review most disseminations of information to the public under information quality guidelines established by each agency pursuant to general guidelines issued by OMB. OMB’s guidelines were published at

67 FR 8452 (Feb. 22, 2002), and DOE's guidelines were published at 67 FR 62446 (Oct. 7, 2002). DOE has reviewed this NOPD under the OMB and DOE guidelines and has concluded that it is consistent with applicable policies in those guidelines.

L. Review Under Executive Order 13211

E.O. 13211, "Actions Concerning Regulations That Significantly Affect Energy Supply, Distribution, or Use," 66 FR 28355 (May 22, 2001), requires Federal agencies to prepare and submit to OIRA at OMB, a Statement of Energy Effects for any proposed significant energy action. A "significant energy action" is defined as any action by an agency that promulgates or is expected to lead to promulgation of a final rule, and that: (1) is a significant regulatory action under E.O. 12866, or any successor Executive Order; and (2) is likely to have a significant adverse effect on the supply, distribution, or use of energy, or (3) is designated by the Administrator of OIRA as a significant energy action. For any proposed significant energy action, the agency must give a detailed statement of any adverse effects on energy supply, distribution, or use should the proposal be implemented, and of reasonable alternatives to the action and their expected benefits on energy supply, distribution, and use.

This proposed determination, which does not propose to amend the energy conservation standards for DHE, is not a significant regulatory action under E.O. 12866. Moreover, it would not have a significant adverse effect on the supply, distribution, or use of energy, nor has it been designated as a significant energy action by the

Administrator at OIRA. Therefore, it is not a significant energy action, and accordingly, DOE has not prepared a Statement of Energy Effects.

M. Review Under the Information Quality Bulletin for Peer Review

On December 16, 2004, OMB, in consultation with the Office of Science and Technology Policy (OSTP), issued its Final Information Quality Bulletin for Peer Review (the Bulletin). 70 FR 2664 (Jan. 14, 2005). The Bulletin establishes that certain scientific information shall be peer reviewed by qualified specialists before it is disseminated by the Federal Government, including influential scientific information related to agency regulatory actions. The purpose of the bulletin is to enhance the quality and credibility of the Government's scientific information. Under the Bulletin, the energy conservation standards rulemaking analyses are "influential scientific information," which the Bulletin defines as "scientific information the agency reasonably can determine will have, or does have, a clear and substantial impact on important public policies or private sector decisions." *Id.* at 70 FR 2667.

In response to OMB's Bulletin, DOE conducted formal peer reviews of the energy conservation standards development process and the analyses that are typically used and has prepared a Peer Review report pertaining to the energy conservation standards rulemaking analyses.²⁵ Generation of this report involved a rigorous, formal, and documented evaluation using objective criteria and qualified and independent

²⁵ "Energy Conservation Standards Rulemaking Peer Review Report" (2007) (Available at: <http://energy.gov/eere/buildings/downloads/energy-conservation-standards-rulemaking-peer-review-report-0>).

reviewers to make a judgment as to the technical/scientific/business merit, the actual or anticipated results, and the productivity and management effectiveness of programs and/or projects. DOE has determined that the peer-reviewed analytical process continues to reflect current practice, and the Department followed that process for considering amended energy conservation standards in the case of the present action.

V. Public Participation

A. Participation in the Webinar

The time and date of the webinar are listed in the **DATES** section at the beginning of this document. If you plan to attend, please notify Appliance and Equipment Standards Program staff at *ApplianceStandardsQuestions@ee.doe.gov*.

Please note that foreign nationals participating in the webinar (or public meeting, if one is held) are subject to advance security screening procedures which require advance notice prior to attendance. If a foreign national wishes to participate, please inform DOE as soon as possible by contacting Ms. Regina Washington at (202) 586-1214 or by email: *Regina.Washington@ee.doe.gov* so that the necessary procedures can be completed.

Webinar registration information, participant instructions, and information about the capabilities available to webinar participants will be published on DOE's website: https://www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid

=57&action=viewlive. Participants are responsible for ensuring their systems are compatible with the webinar software.

B. Procedures for Submitting Prepared General Statements for Distribution

Any person who has plans to present a prepared general statement may request that copies of his or her statement be made available at the webinar. Such persons may submit requests, along with an advance electronic copy of their statement in PDF (preferred), Microsoft Word or Excel, WordPerfect, or text (ASCII) file format, to the appropriate address shown in the **ADDRESSES** section of this document. The request and advance copy of statements must be received at least one week before the webinar and may be emailed, hand-delivered, or sent by postal mail. DOE prefers to receive requests and advance copies via email. Please include a telephone number to enable DOE staff to make a follow-up contact, if needed.

C. Conduct of the Webinar

A DOE official will preside at the webinar and may also use a professional facilitator to aid discussion. The webinar 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. A transcript of the webinar will be included on DOE's website:

https://www1.eere.energy.gov/buildings/appliance_standards/standards.aspx?productid

=57&action=viewlive. In addition, any person may buy a copy of each transcript from

the transcribing reporter. Public comment and statements will be allowed prior to the close of the webinar.

D. Submission of Comments

DOE will accept comments, data, and information regarding this proposed determination no later than the date provided in the **DATES** section at the beginning of this proposed determination. 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 <http://www.regulations.gov>. The <http://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 <http://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 <http://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 <http://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 <http://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 <http://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. With this instruction followed, 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, postal mail, or hand delivery/courier 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. Submit these documents via email or on a CD, if feasible. 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).

VI. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this notification of proposed determination.

List of Subjects in 10 CFR part 430

Administrative practice and procedure, Confidential business information, Energy conservation, Household appliances, Imports, Intergovernmental relations, Reporting and recordkeeping requirements, and Small businesses.

Signing Authority

This document of the Department of Energy was signed on November 24, 2020, by Daniel R Simmons, 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 24, 2020



Daniel R Simmons
Assistant Secretary
Energy Efficiency and Renewable Energy