[6450-01-P]

DEPARTMENT OF ENERGY

10 CFR Parts 430 and 431

[EERE–2018–BT–STD–0018]

RIN 1904-AE39

Energy Conservation Program for Appliance Standards: Energy Conservation Standards for Residential Furnaces and Commercial Water Heaters

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

ACTION: Notification of final interpretive rule.

SUMMARY: On August 27, 2021, the U.S. Department of Energy (DOE or Department) published in the *Federal Register* for public comment a proposed interpretive rule to reinstate a long-standing interpretation under which, in the context of residential furnaces, commercial water heaters, and similarly-situated products or equipment, the heat exchanger technology (and associated venting) used to supply heated air or hot water is not a performance-related "feature" that provides a distinct consumer utility under the Energy Policy and Conservation Act, as amended (EPCA). The August 27, 2021 proposed interpretive rule set forth the basis and rationale for this final interpretive rule, in which DOE responds to public comments and ultimately reinstates its long-standing interpretation as proposed.

DATES: This final interpretive rule is effective [**INSERT DATE OF PUBLICATION IN THE *FEDERAL REGISTER***].

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

The docket webpage can be found at: *www.regulations.gov/#!docketDetail;D=EERE-2018-BT-STD-0018*. The docket webpage contains instructions on how to access all documents, including public comments, in the docket.

For further information on how to review the docket, contact the Appliance and Equipment Standards Program staff at (202) 586-6636 or by email: *ApplianceStandardsQuestions@ee.doe.gov.*

FOR FURTHER INFORMATION CONTACT: Ms. Julia Hegarty, 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: (240) 597-6737. Email: *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. Email: *Eric.Stas@hq.doe.gov*.

SUPPLEMENTARY INFORMATION:

Table of Contents

I. Introduction and Background

The following sections discuss the statutory authority underlying this final interpretive rule, as well as the relevant background related to determination of what constitutes a "feature" for the purpose of establishing energy conservation standards under EPCA. Additionally, these sections address: DOE's historical interpretation of what constitutes a "feature" for the purpose of establishing energy conservation standards under EPCA; DOE's interpretation in the January 15, 2021 final interpretive rule (86 FR 4776; January 2021 Final Interpretive Rule); the issuance of Executive Order (E.O.) 13990; and the proposed interpretation in the August 27, 2021 notice of proposed interpretive rule (NOPIR) (86 FR 48049; August 2021 NOPIR). The following

discussion provides the background for the final interpretive rule presented in this document addressing whether non-condensing technology (and associated venting) constitutes a performance-related "feature" under EPCA which may not be eliminated by an energy conservation standard.

A. Authority

EPCA,[1] Pub. L. 94-163 (42 U.S.C. 6291 *et seq.*), as amended, authorizes DOE to regulate the energy efficiency of a number of consumer products and certain industrial equipment. When establishing new or amended standards for covered products, DOE is directed to consider any lessening of the utility or the performance of covered products likely to result from the imposition of the standard. (42 U.S.C. 6295(o)(2)(B)(i)(IV)) Moreover, the Secretary of Energy (Secretary) may not prescribe an amended or new standard 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 (collectively referred to hereafter as "features") 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); the "features" provision)

[1] All references to EPCA in this document refer to the statute as amended through the Energy Act of 2020, Pub. L. 116-260 (Dec. 27, 2020).

EPCA provides a companion provision at 42 U.S.C. 6295(q)(1), which requires that a rule prescribing an energy conservation standard for a type of covered products shall specify a level of energy use or efficiency higher or lower than that which applies (or would apply) to any group of covered products that have the same function or intended use, if the Secretary determines that covered 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 that other products within such type (or class) do not have and such feature justifies a higher or lower standard from that which applies (or will apply) to other products within such type (or class).

In making a determination of whether a performance-related feature justifies the establishment of a higher or lower standard, the Secretary must consider such factors as the utility to the consumer of such a feature, and such other factors as the Secretary deems appropriate. (42 U.S.C. 6295(q)(1))

These provisions apply generally to covered commercial and industrial equipment, other than ASHRAE equipment,[2] through the crosswalk provision at 42

[2] "ASHRAE" refers to the American Society of Heating, Refrigerating and Air-Conditioning Engineers. Under EPCA, "ASHRAE equipment" refers to small commercial package air conditioning and heating equipment, large commercial package air conditioning and heating equipment, very large commercial package air conditioning and heating equipment, packaged terminal air conditioners, packaged terminal heat pumps, warm-air furnaces, packaged boilers, storage water heaters, instantaneous water heaters, and unfired hot water storage tanks, which are addressed by ASHRAE in ASHRAE Standard 90.1, *Energy Standard for Buildings Except Low-Rise Residential Buildings.* (*See* 42 U.S.C. 6313(a)(6))

U.S.C. 6316(a). ASHRAE equipment has its own separate statutory scheme under EPCA, with the default situation being that DOE must adopt the level set forth in ASHRAE Standard 90.1 unless the Department has clear and convincing evidence to adopt a more stringent standard (*see* 42 U.S.C. 6313(a)(6)). Under 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa), there is a provision similar to the "features" provision previously discussed that states that the Secretary may not prescribe an amended standard under this subparagraph if the Secretary finds (and publishes the finding) that interested persons have established by a preponderance of the evidence that a standard is likely to result in the unavailability in the United States of any 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 finding of the Secretary. However, it is noted that this provision contains the specific limitation that it applies to an amended standard prescribed *under this subparagraph* (*i.e.*, when DOE is acting under its authority to set a more-stringent standard). There is no companion "features" provision under 42 U.S.C. 6313(a)(6)(A), which is the provision that would apply when DOE is triggered to adopt the levels set by ASHRAE. There is likewise no companion provision to 42 U.S.C. 6295(q)(1) for ASHRAE equipment.

On January 20, 2021, the White House issued E.O. 13990, "Protecting Public Health and the Environment and Restoring Science to Tackle the Climate Crisis." 86 FR 7037 (Jan. 25, 2021). Section 1 of that Order lists several policies related to the protection of public health and the environment, including reducing greenhouse gas emissions and bolstering the Nation's resilience to climate change. *Id.* at 86 FR 7037,

7041. Section 2 of the Order also instructs all agencies to review "existing regulations, orders, guidance documents, policies, and any other similar agency actions (agency actions) promulgated, issued, or adopted between January 20, 2017, and January 20, 2021, that are or may be inconsistent with, or present obstacles to, [these policies]." *Id.* Agencies are then directed, as appropriate and consistent with applicable law, to consider suspending, revising, or rescinding these agency actions and to immediately commence work to confront the climate crisis. *Id.*

As noted in the August 2021 NOPIR, DOE undertook a review of the final interpretation and withdrawal of proposed rulemakings published in the *Federal Register* on January 15, 2021, in response to E.O. 13990. 86 FR 48049, 48051 (August 27, 2021). While E.O. 13990 triggered the Department's re-evaluation, DOE is relying on the analysis and reasoning presented in the August 2021 NOPIR and in this document, based upon EPCA, to withdraw the January 2021 Final Interpretive Rule and to re-instate its historical interpretation of the "features" provision as applied to non-condensing technology, because DOE believes the historical interpretation reflects the better reading of the requirements in EPCA.

B. Historical Interpretation of the "Features" Provision

As discussed previously in this document, when evaluating and establishing energy conservation standards, DOE is required to divide covered products into product classes by the type of energy used, by capacity, or by other performance-related features that DOE determines justify a different standard. In making a determination of whether a

performance-related feature justifies a different standard, the Department must consider factors such as the utility to the consumer of the feature and other factors DOE determines are appropriate. (42 U.S.C. 6295(q)) As the product class provision is complementary to the "features" provision, consideration of what constitutes a feature and what constitutes utility for the purpose of establishing a product class is germane to the application of the "features" provision.

At a basic level, a "feature" is a trait, attribute, or function of a product. The usefulness and benefit provided to a consumer by a feature is the feature's "utility." Given the multitude of covered products and equipment for which DOE is responsible, the Department has found the concept of "feature" to be very case-specific. 86 FR 4776, 4797 (Jan. 15, 2021). No single definition could effectively capture the potential for features across the broad array of consumer products and commercial equipment subject to EPCA's regulatory scheme. *Id.* That is why DOE developed the concept of consumer utility and how the consumer interacts with the product/equipment for when DOE is assessing "features." *Id.*

Historically, DOE has viewed utility as an aspect of the product that is accessible to the layperson and is based on user operation and interaction with the product. This interpretation has been applied in DOE's previous rulemakings by determining utility based on the usefulness or value of the specific feature to the consumer, rather than based on considerations (including design parameters) that do not impact what the consumer perceives as the function of the product, or costs that anyone, including the consumer, manufacturer, installer, or utility companies, may bear. DOE reasoned that this approach

is consistent with EPCA's requirement for a separate and extensive analysis of economic justification for the adoption of any new or amended energy conservation standard (*see* 42 U.S.C. 6295(o)(2)(A)–(B) and (3)). Examples of prior consideration of the "features" provision, utility, and product/equipment classes are provided in the following paragraphs.

In a final rule addressing energy conservation standards for cooking products, DOE did not consider a design option that eliminated oven door windows. 63 FR 48038, 48041 (Sept. 8, 1998). A number of commenters asserted that the oven door window provides consumer utility by alleviating the need for users to open the oven door to check on the contents. *Id.* DOE agreed with commenters that the removal of the oven door window would increase the frequency with which consumers open the oven door. *Id.* DOE also found this increased opening would have the potential to increase energy usage. *Id.* DOE also indicated that it would re-evaluate oven door window designs should a window material with higher thermal insulation properties become a proven technology. *Id.*

In the case of residential clothes washers, DOE has maintained a product class distinction based on axis of loading (*i.e.,* front-loading and top-loading units). Based on comments received during rulemakings, DOE identified axis of loading as a feature that impacts consumer utility (*i.e.*, the longer cycle times of front-loading residential clothes washers versus cycle times for top-loaders are likely to impact consumer utility). 77 FR 32307, 32319 (May 31, 2012). Conversely, DOE eliminated the suds-saving product class because the market had changed, and, at the time of the rulemaking, DOE did not

identify any suds-saving residential clothes washers on the market in the United States. 77 FR 32307, 32317 (May 31, 2012).

In a 2011 rulemaking, DOE created separate product classes for vented and ventless residential clothes dryers based on DOE's recognition of the "unique utility" that ventless clothes dryers offer to consumers. 76 FR 22454, 22485 (April 21, 2011). This utility could be characterized as the ability to have a clothes dryer in a living area where vents are impossible to install (*i.e.,* an apartment in a high-rise building). As explained in the accompanying technical support document (TSD), ventless dryers can be installed in locations where venting dryers would be precluded due to venting restrictions.[3]

In a rulemaking for consumer water heaters, DOE found that water heaters that utilize heat pump technology did not need to be placed in a separate product class from conventional types of hot water heaters that utilize electric resistance technology, even though water heaters utilizing heat pumps require the additional installation of a condensate drain that a hot water heater utilizing electric resistance technology does not require. 75 FR 20112, 20135 (April 16, 2010). Regardless of the installation factors, DOE did not find the mode of heating water to be a performance-related feature or provide a unique utility. *Id.* DOE also noted comments stating that, in the then-current market, water heaters that employed heat pump technology were advertised as replacements for water heaters that employed electric resistance technology. *Id*.

[3] *See* pp. 3–59 of the technical support document, available at *www.regulations.gov/document/EERE-2007-BT-STD-0010-0053*.

However, DOE has cautioned that disparate products may have very different consumer utilities, thereby making direct comparisons difficult and potentially misleading. 76 FR 22454, 22485 (April 21, 2011).

C. January 2021 Final Interpretive Rule

On March 12, 2015, DOE published a notice of proposed rulemaking (NOPR) in the *Federal Register* proposing to amend energy conservation standards for residential non-weatherized gas furnaces and mobile home furnaces, in furtherance of its statutory obligation to determine whether more stringent amended standards would be technologically feasible and economically justified and would save a significant amount of energy. 80 FR 13120 (March 2015 Furnaces NOPR). To provide further consideration of comments suggesting a separate product class for furnaces based on input capacity and in order to mitigate some of the negative impacts of the proposed standards, DOE published a notice of data availability in the *Federal Register* on September 14, 2015. 80 FR 55038. DOE subsequently published a supplemental notice of proposed rulemaking (SNOPR) for this rulemaking in the *Federal Register* on September 23, 2016, in which DOE proposed to establish capacity-based product classes. 81 FR 65720 (September 2016 Furnaces SNOPR). In a separate rulemaking for commercial water heaters, on May 31, 2016, DOE published in the *Federal Register* a proposal to amend the energy conservation standards for commercial water heaters. 81 FR 34440 (May 2016 Commercial Water Heaters NOPR).

In both the residential furnaces rulemaking and the commercial water heaters rulemaking, DOE proposed amended energy conservation standards that would effectively require products/equipment in certain classes to use condensing technology to meet the proposed amended standards, if adopted. *See* 81 FR 65720, 65852 (Sept. 23, 2016); 81 FR 34440, 34503–34504 (May 31, 2016). For the product/equipment classes where such standards were proposed, if finalized, the amended standards would have effectively eliminated all non-condensing products/equipment that are currently on the market in those classes.

In the March 2015 Furnaces NOPR, DOE tentatively concluded that the methods by which a furnace is vented, which are significantly different for condensing and non-condensing furnaces,[4] do not provide any separate performance-related impacts. Therefore, DOE had no statutory basis for defining a separate class based on venting and condensate drainage characteristics because venting methods do not provide unique utility to consumers beyond the basic function of providing heat, which all furnaces perform. 80 FR 13120, 13138 (March 12, 2015). In the September 2016 Furnaces SNOPR, DOE reiterated its tentative conclusion that methods of venting do not provide any performance-related utility separate from the basic function of a furnace. 81 FR 65720, 65753 (Sept. 23, 2016). Similarly, in the May 2016 Commercial Water Heaters NOPR, DOE tentatively concluded that both non-condensing and condensing gas-fired commercial water heating equipment provide the same hot water for use by commercial

[4] Non-condensing furnaces typically use a "category I" vent system, which is designed to operate with a non-positive pressure in the vent system and is not designed to withstand condensate. Condensing furnaces, on the other hand, are typically designed for "category IV" vent systems, which operate with a positive pressure in the vent system and are designed to withstand condensate.

consumers, and, therefore, separate equipment classes could not be justified. 81 FR 34440, 34463 (May 31, 2016).

On October 18, 2018, DOE received a petition for rulemaking submitted by the American Public Gas Association, Spire, Inc., the Natural Gas Supply Association, the American Gas Association, and the National Propane Gas Association, collectively referred to as the "Gas Industry Petitioners," asking DOE to: (1) 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 EPCA, specifically by eliminating from the market units utilizing non-condensing technology; and (2) withdraw the proposed energy conservation standards for residential furnaces and commercial water heaters based upon such findings. DOE published the notice of petition in the *Federal Register* on November 1, 2018 and requested public comment.[5] 83 FR 54883.

Following consideration of the comments on the petition, DOE published a NOPIR on July 11, 2019, presenting DOE's tentative interpretation that, in the context of residential furnaces, commercial water heaters, and similarly-situated products/equipment, use of non-condensing technology (and associated venting) would constitute a performance-related "feature" under EPCA that cannot be eliminated through adoption of an energy conservation standard. 84 FR 33011 (July 2019 Proposed

[5] In response to requests submitted by two stakeholders, DOE extended the initial 90-day comment period for an additional 30 days. 84 FR 449 (Jan. 29, 2019).

Interpretive Rule).[6] DOE also provided that, if such interpretation were to be finalized, it anticipated developing supplemental notices of proposed rulemaking that would implement the new legal interpretation for the subject residential furnaces and commercial water heaters. 84 FR 33011, 33021 (July 11, 2019).

DOE published a supplemental notice of proposed interpretation in the *Federal Register* on September 24, 2020, which proposed alternative approaches to product/equipment class setting in this context. 85 FR 60090. The supplemental proposed interpretive rule was in response to comments expressing concern with the proposed focus on "non-condensing" technology as the performance-related feature. 85 FR 60090, 60094–60095 (Sept. 24, 2020). Alternatively, the supplemental notice of proposed interpretation considered venting compatibility as a possible "feature." 85 FR 60095 (Sept. 24, 2020). DOE requested comment on this alternative approach. *Id.*

On January 15, 2021, DOE published in the *Federal Register* a final interpretive rule determining that, in the context of residential furnaces, commercial water heaters, and similarly-situated products/equipment, use of non-condensing technology (and associated venting) constitutes a performance-related "feature" under EPCA that cannot be eliminated through adoption of an energy conservation standard. 86 FR 4776. Following consideration of comments and data submitted by stakeholders in response to the proposed interpretation and supplemental proposal, DOE found that when used by the

[6] The July 2019 Proposed Interpretive Rule granted the request for an interpretive rule but initially denied the Gas Industry Petitioners' request to withdraw DOE's earlier proposed rules for residential furnaces and commercial water heaters. 84 FR 33011, 33021 (July 11, 2019).

appliances in question, non-condensing technology (and associated venting) constitutes a performance-related feature that provides consumer utility distinct from that provided by such appliances that employ condensing technology. More specifically, in contrast to condensing units, DOE stated that non-condensing units: (1) avoid complex installations in certain locations constrained by space, existing venting, and available drainage; (2) avoid the encroachment on usable space that would occur in certain installations; and (3) do not enhance the level of fuel switching that might accompany standard setting absent a separate product/equipment class for non-condensing appliance. 86 FR 4776, 4816 (Jan. 15, 2021). DOE stated that such interpretation would extend to all relevant/applicable cases involving consumer products, non-ASHRAE commercial equipment, and ASHRAE equipment where DOE adopts a level more stringent than the ASHRAE level. 86 FR 4776, 4816–4817 (Jan. 15, 2021).

In light of this final interpretation, DOE withdrew its March 12, 2015 proposed rule and September 23, 2016 supplemental proposed rule for energy conservation standards for non-weatherized gas furnaces and mobile home gas furnaces, as well as its May 31, 2016 proposed rule for energy conservation standards for commercial water heating equipment. 86 FR 3873 (Jan. 15, 2021). However, DOE has not implemented the January 15, 2021 final interpretation in the context of any individual energy conservation standards rulemakings for affected covered products/equipment.

D. August 2021 Proposed Interpretive Rule

On August 27, 2021, DOE published a proposed interpretative rule in the *Federal Register* (the August 2021 NOPIR), in which DOE re-examined the conclusions reached in the January 2021 Final Interpretive Rule. 86 FR 48049 (August 27, 2021). Based on DOE's reconsideration of the January 2021 Final Interpretative Rule, the Department proposed to revise its interpretation of EPCA's "features" provision in the context of condensing and non-condensing technology used in furnaces, water heating equipment, and similarly-situated appliances. 86 FR 48049, 48053 (August 27, 2021). DOE tentatively concluded that, in the context of residential furnaces, commercial water heaters, and similarly-situated products or equipment, use of non-condensing technology (and associated venting) is not a performance-related "feature" for the purpose of the EPCA prohibitions at 42 U.S.C. 6295(o)(4) and 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa). *Id.* DOE initially found that non-condensing technology (and the associated venting) does not provide unique utility to consumers separate from an appliance's function of providing heated air or water, as applicable. *Id.*

DOE initially found this interpretation to be the best reading of the relevant provisions of EPCA, which is consistent with the intent and purposes of the statute. *Id.* Specifically, the proposed interpretation would align better with EPCA's goals of increasing the energy efficiency of covered products and equipment through the establishment and amendment of energy conservation standards and promoting conservation measures when feasible. (*See id.* (*citing* 42 U.S.C. 6291 *et seq.*, as amended)). Furthermore, DOE initially determined that the proposed interpretation would avoid requiring separate product or equipment classes to preserve less efficient technologies, while maintaining consideration of installation costs as part of the extensive

analysis of economic justification for the adoption of any new or amended energy conservation standard (*see id.* at 86 FR 48049, 48054 (*citing* 42 U.S.C. 6295(o)(2)–(3); 42 U.S.C. 6313(a)(6)(A)–(C); 42 U.S.C. 6316(a)). (The complete discussion of DOE's rationale for the August 2021 NOPIR is set forth at 86 FR 48049, 48053-48057 (August 27, 2021).)

DOE requested comment on the proposed interpretation, which would reinstate DOE's prior reading of EPCA's "features" provision in the context of residential furnaces, commercial water heaters, and similarly-situated products. 86 FR 48049, 48057-48058 (August 27, 2021). The comment period was scheduled to close on September 27, 2021. However, in response to a request from a number of stakeholders,[7] DOE subsequently extended the comment period until October 12, 2021. 86 FR 53014 (Sept. 24, 2021).

DOE received comments in response to the August 2021 NOPIR from the interested parties listed in Table I.1.

[7] *See* comment period extension request submitted by American Gas Association, American Public Gas Association, Spire Inc. and Spire Missouri, Inc., and the National Propane Gas Association, Docket No. EERE-2018-BT-STD-0018-0125.

Table I.1 List of Commenters with Written Submissions on the August 2021 NOPIR

Commenter(s)	Abbreviation in this Document	Commenter Type
A.O. Smith Corporation	A.O. Smith	Manufacturer
Air-Conditioning, Heating & Refrigeration Institute	AHRI	Manufacturer Trade Association
American Gas Association, Natural Gas Supply Association, U.S. Chamber of Commerce	AGA *et al.*	Utility & Business Trade Associations
American Public Gas Association, Spire, Inc., National Propane Gas Association, and Plumbing, Heating-Cooling Contractors – National Association	APGA *et al.*	Utility & Installer Trade Associations
American Gas Association, American Public Gas Association, Spire Inc. and Spire Missouri, Inc., and the National Propane Gas Association	*	Utility Trade Associations
Appliance Standards Awareness Project, American Council for an Energy-Efficiency Economy, Consumer Federation of America, Evergreen Action, Fsi Engineers, Green Energy Consumers Alliance, Midwest Energy Efficiency Alliance, National Consumer Law Center, Rocky Mountain Institute, Southwest Energy Efficiency Project	ASAP *et al.*	Advocacy Groups
Attorneys General of New York, Colorado, Illinois, Maine, Maryland, Michigan, Minnesota, Nevada, New Jersey, New Mexico, Oregon, Vermont, Washington, The Commonwealth of Massachusetts, The District of Columbia, and the City of New York	State Attorneys General	State, Local Governments
Bradford White Corporation	Bradford White	Manufacturer
California Energy Commission	CEC	State
California Investor-Owned Utilities (Pacific Gas and Electric Company, San Diego Gas and Electric, and Southern California Edison)	CA IOUs	Utilities
Crown Boiler Company	Crown Boiler	Manufacturer
Gas End Use Advocacy Group	GEUAG	Advocacy Group
Heating, Air-Conditioning, & Refrigeration Distributors International	HARDI	Trade Association
Institute for Energy Research	IER	Advocacy Group
Institute for Policy Integrity – New York University School of Law	Institute for Policy Integrity	Academic Institution
Natural Resources Defense Council, Sierra Club, Earthjustice	NRDC *et al.*	Advocacy Groups
New Buildings Institute	NBI	Advocacy Group
New Yorker Boiler Company	New Yorker Boiler	Manufacturer
Northwest Energy Efficiency Alliance	NEEA	Advocacy Group
Regal Beloit Americas, Inc.	Regal Beloit	Manufacturer
Steven Kramer	Kramer	Individual
U.S. Boiler Company	U.S. Boiler	Manufacturer

* Commenters submitting a request for an extension of the NOPIR public comment period, as discussed previously.

A parenthetical reference at the end of a comment quotation or paraphrase provides the location of the item in the public record.[8]

II. Final Interpretive Rule and Response to Comments

Based on DOE's reconsideration of the January 2021 Final Interpretative Rule and careful consideration of the comments received in response to the August 2021 NOPIR, the Department is revising its interpretation of EPCA's "features" provision in the context of condensing and non-condensing technology used in furnaces, water heating equipment, and similarly-situated appliances. Consistent with the interpretation presented in the May 2015 Furnaces NOPR, the September 2016 Furnaces SNOPR, and the May 2016 Commercial Water Heaters NOPR, DOE concludes that, in the context of residential furnaces, commercial water heaters, and similarly-situated products or equipment, use of non-condensing technology (and associated venting) is not a performance-related "feature" for the purpose of the EPCA prohibitions at 42 U.S.C. 6295(o)(4) and 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa). DOE finds that non-condensing technology (and the associated venting) does not provide unique utility to consumers separate from an appliance's function of providing heated air or water, as applicable.

Upon further consideration, DOE concludes that utility is determined through the benefits and usefulness the feature provides to the consumer while interacting with the

[8] The parenthetical reference provides a reference for information located in the docket for the development of this final interpretive rule. (Docket No. EERE-2018-BT-STD-0018, which is maintained at *www.regulations.gov*). The references are arranged as follows: (commenter name, comment docket ID number, page of that document).

product, not through design parameters impacting installation complexity, or costs that anyone, including the consumer, manufacturer, installer, or utility companies, may bear. Stated differently, DOE has determined that differences in cost or complexity of installation between different methods of venting (*e.g.*, a condensing furnace versus a non-condensing furnace) do not make any method of venting a performance-related feature under 42 U.S.C. 6295(o)(4), as would justify separating the products/equipment into different product/equipment classes under 42 U.S.C. 6295(q)(1).

This interpretation is consistent with EPCA's requirement for a separate and extensive analysis of economic justification for the adoption of any new or amended energy conservation standard (*see* 42 U.S.C. 6295(o)(2)–(3); 42 U.S.C. 6313(a)(6)(A)–(C); 42 U.S.C. 6316(a)). Therefore, because DOE has come to see that the issues underlying its January 2021 Final Interpretive Rule are more appropriately framed as matters of cost, this interpretation will return those issues for resolution to their proper sphere as part of DOE's economic analysis in individual energy conservation standards rulemakings. DOE finds this interpretation to be the better reading of the relevant provisions of EPCA, which is consistent with the intent and purposes of the statute. In the balance of this section, DOE summarizes the comments received on the August 2021 NOPIR, followed by the agency's responses, which provide further basis for the final interpretation set forth in this document.

In response to the August 2021 NOPIR, DOE received a number of general comments either supporting or opposing DOE's proposed change in interpretation. Along these lines, the State Attorneys General commented in support of DOE's proposed

interpretation of the EPCA's "features" provision, stating they strongly support a robust national appliance and equipment efficiency program. (State Attorneys General, No. 136 at p. 1) ASAP *et al.* stated that DOE's proposed interpretation would help protect consumers and allow the Department to carry out EPCA's goal of increasing the energy efficiency of covered products and equipment through energy conservation standards. (ASAP *et al.*, No. 143 at p. 2) NEEA, NBI, A.O. Smith, CEC, the CA IOUs, and NRDC *et al.* also commented in support of returning to DOE's long-standing interpretation of the "features" provision, under which the technology used to supply heated air or water does not constitute a performance-related "feature." (NEEA, No. 137 at p. 1; NBI, No. 128 at p. 1; A.O. Smith, No. 133 at p. 1; CEC, No. 134 at p. 1; CA IOUs, No. 141 at p. 2; NRDC *et al*., No. 144 at p. 1) Regal Beloit likewise supported DOE revisiting the interpretation of "feature" in the context of residential furnaces and commercial water heaters. (Regal Beloit, No. 131 at p. 1)

In contrast, Crown Boiler, New Yorker Boiler, U.S. Boiler[9], and AGA *et al.* favored maintaining the interpretation adopted in the January 2021 Final Interpretive Rule. (Crown Boiler, No. 127 at p. 1; New Yorker Boiler, No. 130 at p. 1; U.S. Boiler, No. 129 at p. 1; AGA *et al.,* No. 135 at p. 2). AHRI requested DOE not to implement the proposed policy reversal, arguing that the condensing/non-condensing performance feature provides an important utility to consumers. (AHRI, No. 139 at p. 1)

[9] Crown Boiler, New Yorker Boiler, and U.S. Boiler submitted substantively identical comments.

GEUAG objected to the proposed interpretation, asserting that DOE failed to engage in the reasoned decision-making in the August 2021 NOPIR required by administrative law. (GEUAG, No. 132 at p. 4) GEUAG commented that nothing in the technology or operation of these products has changed since DOE published the January 2021 Final Interpretive Rule, nor has anything changed in the extensive analyses, facts, and studies that supported that features determination. (*Id.* at p. 5)

APGA *et al.* asserted that DOE did not provide sufficient time to adequately comment and thoroughly analyze the proposed reversal of the interpretation issued in response to the Gas Industry Petition. (APGA *et al.,* No. 140 at p. 7) IER commented that the DOE failed to provide a reasoned explanation for the change, and instead merely asserted the exact opposite of its prior explanation in the January 2021 Final Interpretive Rule. (IER, No. 138 at p. 2) AHRI expressed concern about the change in course on this ruling within such a short period of time, stating that sudden changes create significant costs and administrative burdens for manufacturers and hinder innovation and progress. (AHRI, No. 139 at p. 4)

In response to these comments and as further explained elsewhere in this document, DOE is issuing this final interpretation following a reexamination of the record developed in the rulemakings for residential furnaces and commercial water heaters, review of the comments received to the August 2021 NOPIR, and further analysis of DOE's authority under EPCA. The issues addressed by this re-evaluation and the information on which this final interpretation is based have been thoroughly aired, not only in this proceeding, but also in a number of prior rulemakings (which themselves had

ample opportunity for public comment), so the record before the agency is substantial. Moreover, as noted previously, DOE provided an extension of the opportunity for public comment on the August 2021 NOPIR at stakeholder request. Consequently, this final interpretive rule is the product of considerable public input.

DOE agrees with the commenters that little has changed in terms of the technology or operation of the products/equipment at issue since promulgation of the January 2021 Final Interpretive Rule and DOE has not acted to implement that interpretation during the intervening period. However, the absence of subsequent developments on the manufacturing and regulatory fronts does not preclude DOE from reexamining the substantial existing record to assess the soundness of its prior "features" determination. Furthermore, because stakeholder positions on the relevant issues have been well documented in the past, when coupled with the lack of any substantial changes during the intervening period, the Department does not agree with those stakeholders who argued that the comment period provided for in the August 2021 NOPIR (45 days in total) was inadequate to analyze DOE's proposal or to prepare written comments. Commenters have also failed to demonstrate any specific harms suffered as a result of reliance on DOE's interpretation between the January 2021 Final Interpretive Rule and the August 2021 NOPIR, and, particularly because that final interpretation was never implemented through amended energy conservation standards, the *status quo* never changed during this period of interpretation review.

As discussed in the following sections, based on this review and the extensive record that exists, DOE finds its historical interpretation (*i.e.*, the interpretation proposed

in the August 2021 NOPIR) to be the better reading of the relevant provisions of EPCA, which also better aligns with EPCA's goals of increasing the energy efficiency of covered products and equipment through the establishment and amendment of energy conservation standards and promoting conservation measures when feasible. (42 U.S.C. 6291 *et seq.*) Furthermore, this interpretation avoids requiring separate product or equipment classes to preserve less efficient technologies, while maintaining consideration of installation costs as part of the extensive analysis of economic justification required by EPCA for the adoption of any new or amended energy conservation standard (*see* 42 U.S.C. 6295(o)(2)–(3); 42 U.S.C. 6313(a)(6)(A)–(C); 42 U.S.C. 6316(a)). The following paragraphs set forth DOE's rationale for its revised interpretation in further detail, as well as the responses to other specific comments received.

A. "Features" Provision and Utility

As described previously in this document, DOE must follow specific statutory criteria for prescribing new or amended energy conservation standards for covered products and covered equipment. In general, a new or amended standard must be designed to achieve the maximum improvement in energy efficiency that the Secretary determines is technologically feasible and economically justified. (42 U.S.C. 6295(o)(2)(A); 42 U.S.C. 6295(o)(3)(B); 42 U.S.C. 6316(a)) In deciding whether a proposed standard is economically justified, DOE must determine whether the benefits of the standard exceed its burdens after receiving comments on the proposed standard and by considering, to the greatest extent practicable, seven factors. One of the seven factors for consideration is the lessening of the utility or the performance of the covered products

likely to result from the standard. (42 U.S.C. 6295(o)(2)(B)(i)(IV); 42 U.S.C. 6313(a)(6)(B)(ii)(IV); 42 U.S.C. 6316(a))

EPCA further directs that the Secretary may not prescribe an amended or new standard 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); 42 U.S.C. 6313(a)(6)(B)(iii)(II); 42 U.S.C. 6316(a)) Also, as discussed, when prescribing an energy conservation standard, DOE must consider whether separate product/equipment classes are justified based on: (1) consumption of a different kind of energy or (2) existence of performance-related features and their associated utility. (42 U.S.C. 6295(q)(1); 42 U.S.C. 6316(a)) The "features" provision, the seven factors for economic justification, and the product class provisions are all required considerations in establishing new and amended energy conservation standards.

As discussed in the August 2021 NOPIR, a "feature" is a trait, attribute, or function of a product. 86 FR 48049, 48053 (August 27, 2021). The usefulness and benefit provided to a consumer by a feature is the feature's "utility," and consumer utility is used to evaluate whether a purported feature justifies a separate product class. *Id.*

DOE has historically viewed utility of a product or equipment as an aspect of the appliance that is accessible to the layperson consumer and is based upon user operation and interaction with that appliance. Borrowing from the examples presented in the previous section of this document, oven door windows and angle of access for clothes washers are illustrative of this principle. Consumers use the oven door window (in conjunction with the oven lamp) to gauge the progress of food undergoing baking, without the need to open the oven door. Needing to open the oven door and losing heat would arguably decrease the energy efficiency of the oven. The oven door window is a feature which consumers generally appreciate and with which they routinely interact when cooking. The window's elimination would result in the loss of a performance-related feature that provides valued utility for consumers. Regarding the angle of access of a clothes washer, consumers currently have two options when purchasing clothes washers: front-loading machines and top-loading machines. Some consumers, such as the elderly, may prefer a top-loading clothes washer, because it is easier to reach the laundry without excessive bending, which is in contrast to the angle of access of a front-loading washer. A broad spectrum of consumers recognizes and appreciates the ability of a top-loading washer to readily accept additional clothing items, even after a wash cycle has begun. Other consumers, such as those with disabilities, may prefer a front-loading machine because that angle of access better suits their access needs. The two angles provide consumer utility in terms of ease of loading or use to different consumer subgroups. As with the oven door window, the angle of access is a feature with which consumers routinely interact while washing clothes. Consequently, consistent with the requirements of EPCA, DOE views angle of access as a performance-related feature for

clothes washers that cannot be eliminated from the market through adoption of an energy conservation standard.

In contrast to the examples discussed in the preceding paragraph, DOE has historically viewed a consumer's interaction with a furnace or water heater to be a simple one, whereby the user interacts only to initiate demand for heated air or water. After the consumer adjusts the thermostat or faucet, the user receives the requested heated air or water. There is no noticeable difference to the consumer in output based upon the type of technology (non-condensing or condensing) or venting used by the appliance, and, therefore, there is no difference in the utility derived from the appliance based on these factors. As noted previously, this approach had been DOE's longstanding interpretation of EPCA's "features" provision in the context of these appliances until the January 2021 Final Interpretive Rule.

On this topic, commenters had divergent viewpoints as to whether non-condensing technology, and associated venting, constitute a performance-related feature under EPCA. One group of commenters clearly favored the approach proposed in the August 2021 NOPIR. For example, NEEA commented in support of DOE's proposed interpretation that the technology used to supply heated air or water does not constitute a performance-related "feature" and that venting type or the use of non-condensing technology does not constitute a performance-related feature as defined in EPCA. (NEEA, No. 137 at p. 1) NEEA asserted that users are typically unaware of their water heater's or furnace's venting category or heating technology, as it does not provide them with any utility. (NEEA, No. 137 at p. 2)

CEC generally supported reinstatement of the prior interpretation of "features," stating that the interpretation from the January 2021 Final Interpretive Rule is unjustified, is not authorized by law, misapplies EPCA, and will preserve inefficient products that offer no unique utility to the consumer. (CEC, No. 134 at p. 1) CEC agreed that the use of non-condensing technology (and associated venting) is not a performance-related feature for the purpose of the EPCA prohibitions because it does not have a direct effect on the utility of providing the consumer with hot air or water. (CEC, No. 134 at p. 3)

NBI commented that non-condensing technologies used in furnaces and water heaters do not represent a performance-related feature that justifies a different energy conservation standard. (NBI, No. 128 at p. 1) NBI further commented that non-condensing technology does not represent a unique utility to consumers that is separate from the appliance's function of providing heated air or water. (*Id.*)

The Institute for Policy Integrity stated that, while there may be some undefined, limited number of cases in which installation of a condensing unit could result in the loss of some usable space, in all other cases, such installation would not result in the loss of usable space. The commenter went on to state that the potential unavailability of a unit using non-condensing technology would not result in any significant loss of utility for many, if not most, consumers. (Institute for Policy Integrity, No. 145 at p. 3)

A.O. Smith stated that the proposed reversal of the January 2021 Final Interpretive Rule would return the Department to the most sensible reading of the statute. (A.O. Smith, No. 133 at p. 2) The State Attorneys General commented that furnaces and

water heaters using non-condensing technologies and associated venting offer no unique utility to consumers beyond the basic function of providing heated air and heated water and that DOE had a strong statutory basis for its historical interpretation of "features." (State Attorneys General, No. 136 at pp. 2, 3)

Another group of commenters supported the January 2021 Final Interpretive Rule as the proper application of EPCA's "features" provision. Among this group, Bradford White asserted that, based on the dictionary definitions of "attribute" and "characteristic," a feature would include an attribute, which could be inferred as a distinguishing trait of a commercial water heater (*i.e.*, different types of venting). (Bradford White, No. 146 at p. 2) Bradford White commented that reliability, which it asserted does not directly relate to the utility that a consumer sees from a product, is considered a characteristic in the context of the "features" provision of EPCA. (*Id.*) The commenter reasoned that, therefore, venting could similarly be treated as a distinguishing feature even if it does not directly relate to the utility (*e.g.*, hot water). (*Id.*) Bradford White disagreed with DOE's statement that energy efficiency differences arise from technologies and design parameters other than size, arguing that condensing technology requires more heat exchange surface area and larger tank size, thereby increasing the size of the overall system and contributing to installation concerns. (*Id.* at p. 3) Bradford White also requested that DOE provide the data it used to re-evaluate the January 2021 Interpretive Final Rule. (*Id.*)

Crown Boiler, New Yorker Boiler, and U.S. Boiler commented that the historical definition of "utility" for furnaces and water heaters, provided by DOE, ignores the

installation considerations that impact the consumer directly. (Crown Boiler, No. 127 at p. 3; New Yorker Boiler, No. 130 at p. 3; U.S. Boiler, No. 129 at p. 3) GEUAG commented that, in considering what constitutes a "feature," DOE must consider that condensing appliances cannot (physically or economically) perform in conjunction with non-condensing venting systems. (GEUAG, No. 132 at p. 11) GEUAG stated that in order to preserve consumer choice over the use of those energy alternatives that best meet the consumer's economic and operational needs, the January 2021 Final Interpretative Rule should be maintained. (*Id.* at pp. 2-3)

AGA *et al.* commented that non-condensing furnaces and water heaters provide unique utility in their ability to commonly vent with other gas appliances, vent into masonry chimneys, operate in unconditioned space without freeze protection, easily install in retrofit applications, and operate without the need to dispose of condensate. (AGA *et al.,* No. 135 at p. 29) AGA *et al.* stated that the facts in the record support a finding that design-specific constraints related to non-condensing technology present important performance-related features, valued by consumers, that justify treating non-condensing appliances as a separate class from condensing appliances. (*Id.* at p. 30) AGA *et al.* objected to the suggestion that features that make the product work in a consumer's existing home or business are not important performance-related features. (*Id.* at p. 27)

Crown Boiler, New Yorker Boiler, and U.S. Boiler stated that a "layperson consumer" may not understand the technical issues associated with a move from Category I ("atmospheric") venting (*i.e.*, the venting commonly used in conjunction with

non-condensing products) to Category IV ("condensing") venting, but consumers will notice the impacts of the associated structural modifications necessary to accommodate the Category IV vent system, the presence of a condensing vent terminal on the side of their house, and the resulting noise and/or an exhaust plume that damages the building exterior, harms plants, or simply obstructs the view. (Crown Boiler No. 127 at p. 3; New Yorker Boiler, No. 130 at p. 3; U.S. Boiler, No. 129 at p. 3)

HARDI commented that it disagrees with DOE's interpretation of consumer utility and determining it only through the lens of whether the feature benefits the consumer. The commenter argued that changes to the living space caused by these retrofits do impact the utility of the new equipment, often in negative ways. (HARDI, No. 142 at pp. 2–3) For example, HARDI commented that replacing venting systems and/or relocating equipment in existing homes could lead to changes in the living space that would be unnecessary if a non-condensing system were installed, and that condensing venting systems may require freeze mitigation equipment (to prevent condensate from freezing) that could be impractical. (*Id.*) HARDI asserted limiting the "utility" definition simply to how a consumer interacts with the equipment in daily life is not a proper measurement of utility, particularly for heating, ventilation, and air conditioning (HVAC) equipment, which HARDI stated is often considered an "invisible good" (*i.e.*, if the product continues to operate as designed, the consumer is unaware of its existence). (*Id.* at p. 3)

HARDI also commented that inclusion of "size" in the "features" provision is not specifically limited to the size of the equipment itself, and that the change in size caused

by the encroachment of a consumer's living space due to new venting or increased equipment closet size would similarly violate EPCA's protections. (*Id.*) Crown Boiler, New Yorker Boiler, and U.S. Boiler asserted that the potential loss of living space to accommodate a new condensing vent system is tantamount to setting a standard that makes an existing appliance size unavailable, even if the size of the appliance itself is unchanged. (Crown Boiler No. 127 at p. 3; New Yorker Boiler, No. 130 at p. 3; U.S. Boiler, No. 129 at p. 3) APGA *et al*. commented that the concept of preserving the availability of a product size is the same as preserving the availability of products that are compatible with the built-in venting systems provided to serve the appliances installed in those spaces in that in both cases, the statute prohibits efficiency standards that leave purchasers without the kinds of products that the infrastructure of their building was designed to accommodate. (APGA *et al.*, No. 140 at pp. 4, 11)

DOE responds to these comments as follows. As discussed in the August 2021 NOPIR and in the following paragraphs, there is a strong statutory basis for returning to DOE's historical interpretation of viewing the utility of a product or equipment as an aspect of the appliance that is accessible to the layperson consumer and is based upon user operation and interaction with that appliance. As stated, EPCA prohibits the Secretary from prescribing an amended or new standard 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 (or certain covered equipment) 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); 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa); 42 U.S.C. 6316(a))

EPCA does not define these listed attributes or the related utility of such "features." Therefore, to understand further those attributes that qualify as "features" and their relevant utility, DOE looks to EPCA as a whole and the purpose of the statute. (*See Robinson v. Shell Oil Co.*, 519 U.S. 337, 341 (1997)) To this end, DOE has once again carefully examined the relevant statutory provisions and would highlight the following.

First, EPCA authorizes DOE to prescribe new or amended energy conservation standards for covered products and covered equipment. (42 U.S.C. 6295(a)(2); 42 U.S.C. 6313) EPCA defines "energy conservation standard," in relevant part, as a performance standard that prescribes the minimum *energy efficiency* or maximum *energy use* of an appliance. (42 U.S.C. 6291(6); 42 U.S.C. 6311(18) (emphasis added)) "Energy efficiency" is the ratio of the useful output of services from a consumer product [or an article of industrial equipment] to the energy use of such a product [or article]. (42 U.S.C. 6291(5); 42 U.S.C. 6311(3)) "Energy use" means, in relevant part, the quantity of energy directly consumed by a consumer product [or article of industrial equipment] at the point of use. (42 U.S.C. 6291(4); 42 U.S.C. 6311(4)) EPCA further provides that DOE may establish more than one energy conservation standard for products that serve more than one major function by setting one energy conservation standard for each major function. (42 U.S.C. 6295(o)(5); 42 U.S.C. 6316(a))

Reading these provisions in the context of EPCA as a whole, the statute requires the Department to establish energy conservation standards that regulate the energy use associated with the useful output or energy consumption at the point of use of an appliance in operation of its major function. Where an appliance possesses more than one major function, Congress authorized and directed DOE to consider regulation of energy efficiency or consumption of an appliance for each major function. Where Congress tasked DOE to address other matters beyond the appliance's major function(s), it expressly directed DOE to set standards that pursue those other objectives, such as when it directed the agency to establish standards for standby mode and off mode operation of covered products (*see* 42 U.S.C. 6295(gg)).

Given EPCA's focus on an appliance's major function(s), it is reasonable to assume that the consumer would be cognizant of such function and recognize such feature as providing additional benefit in the appliance's performance of such major function. It follows that an aspect of the appliance whose elimination would not be noticed by the consumer when interacting with the appliance would not be the type of product characteristic that Congress would expect DOE to preserve at the expense of energy savings. Given that DOE is directed to consider the application of EPCA's "features" provision in appropriate cases when prescribing new or amended energy conservation standards, DOE finds the better reading of the "features" provision (*i.e.*, those features that cannot be eliminated by the establishment of a new or amended energy conservation standard) to be those features that provide a consumer unique utility during the operation of the appliance in performance of its major function(s). Stated another way, the "features" provision and the related utility of such features pertain to those

aspects of the appliance with which the consumer interacts during the operation of the product (*i.e.*, when the product is providing its "useful output") and the utility derived from those features during normal operation.

Using this logic, in the context of residential furnaces, commercial water heaters, and similarly-situated products or equipment, incorporation of non-condensing technology (and associated venting) is not a performance-related "feature" for the purpose of the EPCA prohibitions at 42 U.S.C. 6295(o)(4) and 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa).

As discussed in the subsequent paragraphs, DOE acknowledges that a condensing appliance generally cannot operate as intended by the manufacturer if installed with a non-condensing venting system without modifications. Also, issues of complex and costly installations that require modifications to the existing venting system to be properly installed, as well as potential alternatives, are economic matters appropriately addressed as part of the determination of whether new or amended standards are economically justified, as required by EPCA.

DOE finds that non-condensing technology (and the associated venting) does not provide unique utility to consumers distinct from an appliance's function of providing heated air or water, as applicable. Regardless of changes to the living space that may be required at the time of installation, the consumer utility of a condensing residential furnace or commercial water heater is the same as that of a non-condensing residential furnace or commercial water heater once installed and operating. While interacting with

a residential furnace or commercial water heater during operation of the appliance, a consumer discerns no unique utility resulting from the specific heat exchanger technology (non-condensing or condensing) or the associated venting, as the heated air or water provided by the appliance is indistinguishable to the consumer regardless of those attributes. Because the consumer realizes the same perceived benefit (*i.e.*, heated air or water) regardless of the technology used by the appliance, there is no unique utility to preserve as would justify sacrificing potential additional gains in energy savings through new or amended energy conservation standards in future product-specific rulemakings.

DOE disagrees with Bradford White that the Department's reading, as adopted in this final interpretive rule, is inconsistent with the inclusion of "reliability" in the "features" provision. Whether a consumer can depend on a product to provide its useful output when needed goes directly to an aspect of the appliance that is accessible to the layperson consumer and is based upon user operation and interaction with that appliance. Preserving reliability ensures, for example, that when a consumer calls upon a residential furnace or commercial water heater, the consumer is provided heated air or water, as the case may be. Conversely, there is no noticeable difference to the consumer in access or output based upon the type of technology or venting used by the appliance. In addition, DOE disagrees with Bradford White's assertion that condensing technology requires an increase in the overall size of a water heater, and instead, the agency agrees with the Institute for Policy Integrity that installation of a condensing appliance would not result in a loss of useful space for most consumers. To confirm this understanding, DOE conducted a review of several condensing and non-condensing models having similar characteristics (*i.e.*, input rating and storage volume) from multiple manufacturers and

found that the overall dimensions for condensing models were not significantly larger than for non-condensing models.[10] Further, changes to product dimensions resulting from increasing efficiency is more appropriately considered as part of the energy conservation standards rulemaking process, so that DOE can evaluate the appropriate cost impacts on a case-by-case basis.

APGA *et al.* further commented that establishing energy conservation standards at a condensing level would make all atmospherically-vented furnaces and water heaters no longer commercially viable. (APGA *et al.*, No. 140 at p. 7) GEUAG asserted that the adoption of proposed standards under the interpretation set forth in the August 2021 NOPIR would effectively eliminate the use of non-condensing gas furnaces, which is not permitted under 42 U.S.C. 6295(o)(4). (GEUAG, No. 132 at pp. 3-4)

In response to APGA *et al.* and GEUAG, DOE notes that, in establishing the "features" provision, EPCA anticipates that new or amended energy conservation standards may result in the unavailability of certain inefficient technologies. Preserving inefficient technologies would be inimical to the statute's energy-saving purposes. Accordingly, EPCA's "features" provision is targeted to ensure preservation of only certain performance characteristics (including reliability), features, sizes, capacities, and volumes. 42 U.S.C. 6295(o)(4). However, as discussed in section II.C of this document, an overly broad reading of the "features" provision to include features that do not impact

[10] DOE notes that it surveyed the dimensions of representative commercial water heaters (100 gallon, 200,000 British thermal units (Btu)/hour) and found the height and diameter dimensions comparable. The cubic volume of condensing models ranged from 20 percent less to 2 percent more than the cubic volume of comparable non-condensing models.

the utility of the covered product would preserve inefficient technologies at the expense of EPCA's energy conservation goals and frustrate the purpose of EPCA.

In the August 2021 NOPIR, DOE clarified that the proposed view of the "features" provision in the present case of non-condensing gas-fired residential furnaces and commercial water heaters is distinguishable from certain other products that the Department has regulated in the past (*e.g.*, space-constrained central air conditioners and ventless and compact clothes dryers). 86 FR 48049, 48055 (August 27, 2021).

Certain commenters agreed with the reasoning in DOE's August 2021 NOPIR that DOE's past determinations of the statute's "features" provision were properly applied and that the current case examining condensing vs. non-condensing technology is distinguishable. Along these lines, NEEA commented that the interpretation proposed in the August 2021 NOPIR is consistent with DOE's historical interpretation of a performance-related feature and that the features of water heaters and furnaces accessible to a layperson that affect user operation are the ability of the equipment to provide hot water or heated air on demand when called for by the end user, which does not depend on the technology used to heat the water or how the equipment is vented. (NEEA, No. 137 at p. 2) NEEA distinguished the present issue from DOE's prior interpretation of the "features" provision in the context of ventless clothes dryers, stating that ventless clothes dryers allow for the installation of a clothes dryer for certain consumers that would otherwise not be able to install a clothes dryer, whereas a condensing product can always be installed, despite a small percentage of cases where installation is complicated. (*Id.*) NBI commented that the proposed interpretation follows the precedent set in the

consumer water heater rulemaking in which DOE declined to establish a separate product class for heat pump water heaters, which similarly raised questions of additional cost and complexity due to the need for installation of a condensate drain and vent changes. (NBI, No. 128 at p. 1 (*citing* 75 FR 20112, 20135 (April 16, 2010)))

In contrast, other commenters viewed DOE's proposed approach in the August 2021 NOPIR as conflicting with the Department's past precedent. For example, AHRI and IER cited the rulemaking for ventless clothes dryers as precedent for the proposition that venting provides utility. (AHRI, No. 139 at p. 4; IER, No. 138 at p. 5) IER stated that utility of a residential furnace to the consumer is not merely heated air, but also, based on the DOE's previous ruling on ventless clothes dryers, installation considerations. (IER, No. 138 at p. 5) IER also referenced DOE's prior statement that "compact-size clothes dryers provide utility to consumers by allowing for installation in space-constrained environments." (IER, No. 138 at p. 5 (*citing* 76 FR 22454, 22485 (April 21, 2011))) IER asserted that this statement indicates that the utility to the consumers was not merely heated air to dry clothing, but also installation considerations. (*Id.*) IER also cited the establishment of separate product classes for package terminal air conditioners (PTACs), which address size constraints that allow for replacement units to be installed in existing wall sleeves. (*Id.*)

In their comments, AGA *et al.* drew an analogy between electric clothes dryers and non-condensing gas-fired appliances. Noting that electric clothes dryers have the benefit of fitting into consumers' apartment buildings without the need for remodeling or loss of living space, the commenter argued that such dryers provide an important utility

and, accordingly, constitute a performance-related feature. (AGA *et al.*, No. 135 at pp. 26) Similarly, AGA *et al*. reasoned that natural gas appliances that function with existing chimneys and plumbing designed to accommodate non-condensing appliances likewise serve an important utility and constitute a performance-related feature. (*Id.* at pp. 26-27) AGA *et al.* went on to comment that the constraints that amounted to a performance-related feature for other appliances are too similar to the space and functional constraints of furnaces, water heaters, and boilers for that latter group of appliances not to be accorded similar treatment as performance-related features under the statute. (*Id.* at p. 27) AGA *et al.* further commented that when the Department reevaluated the standards for central air conditioners and heat pumps and packaged terminal air conditioners, the Department recognized separate classes of "space constrained" and "non-standard sized" units that differed from standard air conditioners because of their performance-related feature: their ability to accommodate the space constraints of many homes and apartments. (*Id.* at p. 24) According to the commenter, the Department cannot consider space and functional constraints a "performance-related feature" justifying separate standards for those products, but deny equal treatment to those furnaces, water heaters, and boilers facing similar constraints. (*Id.* at p. 27) AGA *et al.* opined that an appliance provides a consumer limited or no utility if it can only be used after renovating their home or business. (*Id.* at p. 26)

AGA *et al*. and AHRI further submitted that the furnace fans rulemaking is also relevant precedent in support of a requirement for the establishment of separate product classes, given that DOE recognized that condensing and non-condensing furnaces present significant design differences that warrant different product classes for furnace fans in

that proceeding. As the commenters point out, use of condensing versus non-condensing technology was one of the distinguishing factors in the furnace fans product classes adopted by DOE. (AGA *et al*., No. 135 at pp. 25-26; AHRI, No. 139 at pp. 3-4)

In response to these comments, DOE does not find any tension or inconsistency between its prior application of the "features" provision and the interpretation adopted in this document (*i.e.*, the technology used to supply heated air or hot water (and the associated venting) is not a performance-related "feature" that provides a distinct consumer utility). The present case of non-condensing gas-fired residential furnaces and commercial water heaters is distinguishable from certain other products cited by commenters (*i.e*., ventless and compact clothes dryers, space-constrained central air conditioners, and furnace fans) for the reasons that follow.

Regarding ventless clothes dryers, DOE recognizes that there may be some parallels between those appliances and the noncondensing furnaces and water heaters at issue here (particularly regarding problematic installation situations), but the Department would once again clarify that the circumstances surrounding these two sets of appliances are distinguishable. Those different circumstances lead to different results when DOE is interpreting EPCA's "features" provision. Stated simply, DOE found that in the case of ventless clothes dryers, a substantial subset of consumers (*e.g.*, high-rise apartment dwellers) would be deprived of the benefits of a having clothes-drying appliance in their residence entirely unless DOE established a ventless clothes dryers product class. In contrast, DOE has determined that, even in difficult installation situations, consumers would not be deprived of heat or hot water absent product/equipment classes set at a

noncondensing level. Instead, the latter group of consumers facing difficult installation situations have options, including available technological solutions (albeit sometimes costly, if they seek to continue using a gas-fired appliance) or products that they can substitute (*i.e.*, electric appliances), such that they will continue receiving the benefits of heat and hot water. Again, the heat and hot water provided would be indistinguishable to consumers regardless of the technology supplying them. As explained further in the paragraphs that follow, this understanding drives the different regulatory outcomes for residential clothes dryers, as compared to residential furnaces and commercial water heaters.

The clothes dryer situation was explained in detail in a direct final rule (DFR) published in the *Federal Register* on April 21, 2011. 76 FR 22454. In that rulemaking, DOE also referenced and relied on the details presented in the associated TSD accompanying that rulemaking. 76 FR 22454, 22485 (April 21, 2011). In that TSD, DOE explained that ventless clothes dryers can be installed in locations where vented dryers would be precluded due to venting restrictions, and the Department went on to note how a clothes dryer is vented is not simply an issue of initial installation cost or a consumer choosing one product type over another (*i.e.*, if a ventless clothes dryer were not available, no clothes dryer would be available for certain locations).[11] A prime example that DOE considered was high-rise apartment buildings, some of which may be constructed without dedicated or otherwise accessible venting for a clothes dryer.

[11] Technical Support Document: Energy Efficiency Program for Consumer Products and Commercial and Industrial Equipment: Residential Clothes Dryers and Room Air Conditioners, pp. 3-6 (Available at: *www.regulations.gov/document?D=EERE-2007-BT-STD-0010-0053*).

Subsequent installation of additional venting in those situations would be infeasible in those situations, so if a traditional dryer were the only option, such consumers would be deprived of the benefit of having a clothes-drying capability in their homes. Thus, the ventless configuration goes to the heart of the function of the product—it allows the dryer to operate where otherwise a consumer could not have a clothes dryer – so absent the availability of a ventless clothes dryer, some consumers would not be able to have a clothes dryer at all. With that in mind, DOE examined the design and operational parameters of ventless clothes dryer models to understand their energy efficiency potential and cost structure, in order to develop appropriate energy conservation standards pursuant to EPCA that would ensure preservation of the relevant performance-related feature (*i.e.*, ventless operation). In the TSD for the April 2011 DFR, DOE explained how ventless operation inherently limits the energy efficiency of those appliances, so in the end, the agency set separate classes on that basis.[12]

The present case of residential furnaces and commercial water heaters is quite different. Unlike consumers of ventless dryers, consumers facing the prospect of replacing a non-condensing residential furnace or commercial water heater with a condensing furnace or water heater do have options available to either modify existing venting or install a new venting system to accommodate a condensing furnace or water heater, or to install a feasible alternative to have heated air or water provided (*i.e.*, an electric appliance). In all cases, the consumer would not be precluded access to heated

[12] DOE explained that due to the lack of a vent to expel moisture-laden exhaust air to the outdoors, ventless clothes dryers produce a wastewater stream that can be either collected in an integrated storage container or discharged down an available household drain. The Department acknowledged that the process of condensing the moisture out of the recirculated air results in higher energy consumption by a ventless dryer as compared to a conventional (*i.e.,* vented) dryer. 76 FR 22454, 22470 (April 21, 2011).

air or water, a result which is distinctly different from the one at issue in the ventless clothes dryers example. Given the ongoing availability of the consumer benefits of heat and hot water and for the reasons explained elsewhere in this document, DOE finds it reasonable to once again conclude that the technology used to supply heated air or water is not a performance-related feature under EPCA as would justify establishing separate product/equipment classes on that basis. In light of those available options, DOE finds it appropriate to address the matter of difficult furnace and water heater installations in the economic analysis of energy conservation standards rulemakings for those individual appliances.

With regard to compact clothes dryers, the "compact" delineation relates directly to the size and capacity of the product—two attributes explicitly listed in the "features" provision. (*See* 42 U.S.C. 6295(o)(4)) This difference in size and capacity is recognized by the consumer in operation of the product (*i.e.*, by limiting the amount of wet clothes which can be processed per cycle). Moreover, DOE determined that compact-size clothes dryers have inherently different energy consumption than standard-size clothes dryers. 76 FR 22454, 22485 (April 21, 2011).

In establishing a separate product class for space-constrained central air conditioners, DOE recognized the space constraints faced by these products and that the efficiency of such products is limited by physical dimensions that are rigidly constrained by the intended application. 76 FR 37408, 37446 (June 27, 2011). Space-constrained central air conditioners have an indoor or outdoor unit that is limited in size due to the location in which the unit operates. As a result, space-constrained central air conditioners

lack the flexibility of other central air conditioners to increase the physical size of the unit, thereby limiting the ability of space-constrained units to achieve improved efficiency through use of a larger coil. *Id.* In establishing standards for space-constrained central air conditioners, DOE discussed the expense of modifying an exterior opening to accommodate a larger unit, but such discussion did not abrogate DOE's determination that space-constrained central air conditioners provide centralized air conditioning in locations with space constraints that would preclude the use of other types of central air conditioners. *Id*. In contrast, the subject non-condensing residential furnaces and commercial water heaters are not significantly different in overall footprint, size, or heating capacity from their condensing counterparts[13] (although the composition of the venting used may be different), and the energy efficiency differences are a result of the technology used, a design parameter that is dictated by considerations other than size.

With regard to the equipment classes for PTACs, in its prior rulemaking, DOE found that the size of the heat exchanger directly affects the energy efficiency of the equipment. 73 FR 58772, 58782 (October 7, 2008). Like space-constrained central air conditioners, the location of operation of a PTAC directly influences the size of the equipment, which impacts the size of the heat exchanger and has a corresponding direct effect on the energy efficiency of the equipment. *Id.* DOE acknowledged the potentially high costs that would be associated with installing a non-standard sized PTAC in an existing building due to the need to increase the wall opening (*i.e*., the wall sleeve) in which a replacement PTAC is installed. *Id.* As explained in a subsequent rulemaking for

[13] As provided in footnote 10 *supra*., DOE surveyed the dimensions of representative commercial water heaters (100 gallon, 200,000 Btu/hour) and found the height and diameter dimensions comparable.

PTACs, DOE further clarified that it accounts for installation costs in the life-cycle cost (LCC) and payback period (PBP) analyses used to evaluate increased standard levels, which is a separate and distinct consideration from whether separate product classes are justified. 80 FR 43162, 43167 (July 21, 2015). Consideration of installation costs in the LCC and PBP analysis used for evaluating an increased energy conservation standard level is consistent with the application of 42 U.S.C. 6295(o)(4) and 42 U.S.C. 6295(q)(1) in the final interpretation adopted in this document.

The furnace fan product classes also are not an analogous comparison to residential furnaces and commercial water heaters that rely on non-condensing technology. Furnace fans are electrically-powered devices used in consumer products for the purpose of circulating air through ductwork. 10 CFR 430.2. A furnace fan operates to allow the furnace in which it is installed to function. The references to condensing and non-condensing in the furnace fan product classes do not reflect a difference in utility between condensing and non-condensing furnaces, but rather reflect the differences between the operation of a furnace fan installed in a condensing furnace as compared to a furnace fan installed in a non-condensing furnace. In establishing the energy conservation standards for furnace fans, DOE differentiated between furnace fan product classes based on internal structure and application-specific design differences that impact furnace fan energy consumption. 79 FR 38130, 38142 (July 3, 2014). The internal structures encountered differ for a furnace fan installed in a condensing furnace, as compared to a furnace fan installed in a non-condensing furnace. The presence of an evaporator coil or secondary heat exchanger, as in a condensing furnace, significantly impacts the internal structure of an HVAC product, and in turn, the energy performance

of the furnace fan integrated in that HVAC product. *Id.* These differences result in different energy use profiles for furnace fans installed in condensing furnaces, as compared to furnace fans installed in non-condensing furnace, which justifies the separate product classes.

For the reasons presented in the August 2021 NOPIR and the preceding paragraphs, DOE has determined that its historical interpretation -- that utility is properly determined through an assessment of the benefits and usefulness that the feature provides to the consumer while interacting with the product -- is the better reading of EPCA. The differences in cost or complexity of installation between products/equipment with different heat exchanger technology (*i.e.*, non-condensing or condensing) and associated venting do not constitute a performance-related feature under 42 U.S.C. 6295(o)(4), as would justify separating the products/equipment into different product/equipment classes under 42 U.S.C. 6295(q)(1). As discussed in the following section, this approach is consistent with EPCA's requirement for a separate and extensive analysis of economic justification for the adoption of any new or amended energy conservation standard (*see* 42 U.S.C. 6295(o)(2)–(3); 42 U.S.C. 6313(a)(6)(A)–(C); 42 U.S.C. 6316(a)).

B. Cost and Installation Considerations

The Department acknowledges that, in its January 2021 Final Interpretative Rule, it extended its view of consumer utility of residential furnaces and commercial water heaters beyond those appliances' primary function of providing heated air or water, giving considerable weight to installation situations that could require the addition of new

pipes or venting to the usable space of a home or business, major modifications to a utility room, or encroachment upon an existing window or patio. 86 FR 4776, 4786 (Jan. 15, 2021).

However, differences in cost or complexity of installation between different methods of venting (*e.g.*, category IV venting for a condensing furnace versus category I venting for a non-condensing furnace) do not make any method of venting a performance-related feature under 42 U.S.C. 6295(o)(4), as would justify separating the products/equipment into different product/equipment classes under 42 U.S.C. 6295(q)(1). DOE has come to see the issues underlying the January 2021 Final Interpretive Rule more appropriately framed as matters of cost. This view is consistent with EPCA's requirement for a separate and extensive analysis of economic justification for the adoption of any new or amended energy conservation standard (*see* 42 U.S.C. 6295(o)(2)–(3); 42 U.S.C. 6313(a)(6)(A)–(C); 42 U.S.C. 6316(a)). DOE stated in the August 2021 NOPIR that the proposed interpretation would return the issues underlying the January 2021 Final Interpretive Rule to their proper sphere as part of DOE's economic analysis in individual energy conservation standards rulemakings. 86 FR 48049, 48053 (August 27, 2021).

Once again, commenters had mixed views on the change in position outlined in the August 2021 NOPIR, with some in favor and others opposed to DOE's proposed modified approach. Among those in favor, ASAP *et al.* stated that that non-condensing technology (and associated venting) does not provide unique utility to consumers separate from an appliance's function of providing heated air or water and that the cost

impacts are appropriately considered in the context of individual rulemakings, which can consider the specific circumstances of each product. (ASAP *et al.*, No. 143 at p. 2)

The Institute for Policy Integrity commented that in making a "feature" determination, DOE should consider consumer utility as separate from any cost considerations, any technological advances that could resolve the current challenges, and any benefits of fuel switching. (Institute for Policy Integrity, No. 145 at p. 1) CEC commented that the "features" provision makes no mention of cost as a relevant consideration and that such factors are properly considered during the evaluation of a proposed standard level's economic justification. (CEC, No. 134 at p. 3)

NRDC *et al.* commented that, while condensing technologies may require additional installation costs, there are alternatives that can make condensing technologies work within the existing space. NRDC added that it would be more appropriate to incorporate increased installation costs associated with condensing technologies in the life cycle cost and payback period analyses in energy conservation standards rulemakings. (NRDC *et al.*, No. 144 at pp. 1–2)

The State Attorneys General commented that any differences in cost or complexity of installation between different methods of venting for condensing and non-condensing products are more properly considered as part of the DOE's economic analysis in individual energy conservation standards rulemakings. (State Attorneys General, No. 136 at p. 3) These commenters stated that any potential additional costs

associated with condensing products are not an independent basis for establishing separate product classes subject to differing efficiency standards. (*Id.*)

A.O. Smith commented that it is technologically feasible to replace a non-condensing gas-fired water heater with a condensing gas-fired water heater in all circumstances, but that there are certain instances where it is cost prohibitive to do so. To address such circumstances, A.O. Smith recommended that DOE expand the economic analysis for different subgroups with specific installation considerations as part of any future substantive rulemaking on efficiency standards. (A.O. Smith, No. 133 at p. 9) Similarly, ASAP *et al.* recommended that the Department consider impacts on low-income populations, because low-income households are disproportionally renters, and, therefore, are responsible for the higher energy costs of less-efficient technologies, and not the cost of the system itself. (ASAP *et al*., No. 143 at p. 3)

A.O. Smith and the Institute for Policy Integrity commented that the January 2021 reinterpretation of the "features" provision double-counts the economic impact of certain costs as compared to the efficiency gains, in that installation issues would be considered in terms of both utility and the economic analyses. (A.O. Smith, No. 133 at p. 4; Institute for Policy Integrity, No. 145 at pp. 2, 3)

Turning to the commenters opposed to DOE's proposed change in approach, IER disagreed with the DOE's tentative finding that the issues sought to be addressed by the January 2021 Final Interpretative Rule were based on cost. (IER, No. 138 at p. 3) IER urged DOE to explain why the final interpretive rule was "framed as a matter of cost"

when DOE stated in the January 2021 Final Interpretive Rule that the decision was not based on the cost of the feature. (*Id.* at p. 4)

AGA *et al.* stated that economic justification is a separate consideration and that EPCA should be read in a manner that gives meaning to all its provisions. (AGA *et al.,* No. 135 at pp. 18-19) AGA further commented that reading "performance related-features" to include those features that make a product useful for its intended purpose flows from the meaning and context of several provisions of EPCA, including that: (1) energy conservation standards must be technically feasible for their intended application; (2) covered products should be subcategorized into classes to recognize different functions, consumer needs, and fuel types; (3) standards should not render covered products unavailable to American consumers; and (4) the Department should recognize "performance-related features" that make a product useful to consumers. (AGA *et al.*, No. 135 at pp. 17–18) In addition, AGA reasoned that viewing physical, technical, architectural, and code constraints as purely economic considerations fails to give meaning to the entire purpose behind establishing separate classes of consumer products based on their "performance-related features." (AGA *et al.*, No. 135 at p. 18)

AGA *et al*. asserted that the proposed interpretation in the August 2021 NOPIR could render non-condensing natural gas furnaces, commercial water heaters, and boilers unavailable to millions of Americans whose homes and businesses cannot accommodate the alternative, condensing appliances without significant complications and, in many cases, renovation. (AGA *et al.*, No. 135 at p. 2) These commenters stated that when viewed in that light, non-condensing units provide an important performance-related

feature in that they work with the homeowner's or business's existing utility structure venting system. (*Id.* at p. 6) AGA *et al*. argued that an evaluation of the factors for economic justification would show standards based on condensing technology to be economically unjustified in many applications. (*Id.* at p. 17)

Bradford White commented that although energy conservation standards at condensing levels would likely benefit their company, it predicted that eliminating non-condensing technologies from the market would impact both installers and consumers negatively, with there being circumstances where condensing gas-fired water heaters could not be used, either due to installation challenges or increased cost. (Bradford White, No. 146 at p. 1)

Crown Boiler, New Yorker Boiler, and U.S. Boiler asserted that DOE itself acknowledged problems with sole reliance on the economic justification during promulgation of the current rule (*i.e.,* the January 2021 Final Interpretive Rule), including that: subsets of the population (particularly low-income people in urban areas) may be disproportionately impacted by these costs, thereby resulting in consumers keeping unsafe equipment in service, installing the condensing equipment in unsuitable venting systems, or switching to less comfortable, more expensive, less safe forms of heat (*e.g*., resistance electric or kerosene space heaters); and the economic analysis cannot quantify consumer burdens that are associated with building modifications to accommodate venting, such as loss of interior space, loss of decks, aesthetic changes, etc. (Crown Boiler, No. 127 at p. 2; New Yorker Boiler, No. 130 at p. 2; U.S. Boiler, No. 129 at p. 2)

Kramer commented that the "non-condensing" feature of furnaces should be preserved to avoid economic burden for low-income households for which the installation of a condensing furnace is not feasible due to the current location of the installed unit and the costs associated with changing ductwork or upgrading electric services to accommodate a condensing unit. (Kramer, No. 124 at p. 1)

HARDI commented that for existing homes, the need to change the venting system to install a condensing furnace leads to modifications to the living space that are unnecessary if the equipment is replaced with a non-condensing furnace or water heater. The commenter also stated that non-condensing furnaces and water heaters likewise obviate the need for a consumer to install heat-tape and other freeze mitigation equipment used to prevent the freezing of condensate in the vent and without which, there could be resulting damage to the furnace or water heater. Finally, HARDI argued that for consumers with heating equipment that is only in use part-time, the need to constantly heat the venting system would be impractical. (HARDI, No. 142 at p. 2)

DOE acknowledges that the interpretation adopted in this final interpretive rule is a departure from the January 2021 Final Interpretative Rule. The interpretation adopted in this document, which reverts to DOE's historical interpretation, gives meaning to the "features" provision in the context of EPCA's direction to DOE to establish minimum levels of energy efficiency or maximum quantities of energy use for covered products and equipment when performing their intended function. Conversely, the January 2021 Final Interpretive Rule expanded the "features" provision to include consideration beyond the operation of a product or equipment, namely through consideration of other

installation matters best characterized as cost issues. As explained previously in this document and in the paragraphs that follow, DOE has concluded that its historical interpretation is the best reading of the statute, an understanding shared by numerous commenters on the August 2021 NOPIR.

As indicated by several commenters, in certain instances, replacing a non-condensing appliance with a condensing one may involve complications, including the need for installation of new venting and renovation of existing living space. However, these installation complications are separate and apart from any performance-related impacts of the unit once installed. When properly installed, a condensing furnace or water heater would be expected to provide the consumer with heated air or water indistinguishable from that supplied by a non-condensing appliance.

DOE finds strong statutory support for its changed position. EPCA's "features" provision makes no mention of cost as a relevant consideration. (42 U.S.C. 6295(o)(4); 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa)) As AGA *et al.* noted, EPCA directs DOE to separately consider whether energy conservation standards would be economically justified. Therefore, DOE finds that the factors that gave rise to the January 2021 Final Interpretive Rule can be addressed through an evaluation of the factors for economic justification.

EPCA enumerates seven factors for economic justification that DOE must consider when evaluating whether to establish or amend energy conservation standards.[14] (42 U.S.C. 6295(o)(2)–(3); 42 U.S.C. 6313(a)(6)(A)–(C); 42 U.S.C. 6316(a)) Included among those factors is consideration of the savings in operating costs throughout the estimated average life of the covered product [or covered equipment] in the type (or class) 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 imposition of the standard. (42 U.S.C. 6295(o)(2)(b)(i)(II); 42 U.S.C. 6313(a)(6)(B)(ii)(II); 42 U.S.C. 6316(a))

As part of evaluating this factor, DOE conducts a LCC and PBP analysis. The LCC is the total consumer expense of an appliance or product over the life of that product, consisting of total installed cost plus operating costs. The PBP is the estimated amount of time (in years) it takes consumers to recover the increased purchase cost, including installation, of a more-efficient product through lower operating costs.

[14] Specifically, at 42 U.S.C. 6295(o)(2)(B)(i) (and with essentially the same language at 42 U.S.C. 6313(a)(6)(B)(ii)), EPCA provides: In determining whether a standard is economically justified, the Secretary shall, after receiving views and comments furnished with respect to the proposed standard, determine whether the benefits of the standard exceed its burdens by, to the greatest extent practicable, considering— (I) the economic impact of the standard on the manufacturers and on the consumers of the products subject to such standard; (II) the savings in operating costs throughout the estimated average life of the covered product in the type (or class) 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 imposition of the standard; (III) the total projected amount of energy, or as applicable, water, savings likely to result directly from the imposition of the standard; (IV) any lessening of the utility or the performance of the covered products likely to result from the imposition of the standard; (V) the impact of any lessening of competition, as determined in writing by the Attorney General, that is likely to result from the imposition of the standard; (VI) the need for national energy and water conservation; and (VII) other factors the Secretary considers relevant.

In this case, DOE originally considered the additional costs associated with installing condensing residential furnaces and condensing commercial water heaters in the rulemaking proceedings for those appliances whose proposals were withdrawn in conjunction with the January 2021 Final Interpretive Rule. (*See* 81 FR 65720, 65776–65783 (Sept. 23, 2016); 81 FR 34440, 34484–34485 (May 31, 2016)) Additionally, in both the residential furnaces and commercial water heaters rulemaking proceedings, DOE conducted consumer subgroup analyses to understand the disparate impacts of the proposed standards on low-income households by analyzing the LCC impacts and PBP for those particular consumers from alternative standard levels. In these analyses, DOE used different discount rates to reflect various income categories. (*See* 81 FR 65720, 65798–65799 (Sept. 23, 2016); 81 FR 34440, 34494–34495 (May 31, 2016)) DOE has concluded that these analyses are appropriate for analyzing the impacts of potential standards on consumers generally and low-income consumers in particular.

In proposing to return to its historical interpretation, DOE furthermore added that it tentatively concluded that it gave undue weight to the arguments presented by the Gas Industry Petitioners. 86 FR 48049, 48054–48055 (August 27, 2021). After reexamining the record, DOE preliminarily determined that the qualitative arguments made by the Gas Industry Petitioners were not accompanied by sufficient evidence to establish the existence or magnitude of the alleged problem, as would support the significant change from DOE's historical interpretation to the interpretation contained in the January 2021 Final Interpretive Rule. 86 FR 48049, 48055 (August 27, 2021). To the extent that consumers would be faced with difficult installation situations, DOE tentatively concluded that consumers have other options for resolving such situations without the

need for the Department to declare non-condensing technology and associated venting to be a performance-related feature under EPCA. *Id*. In short, consumers facing difficult installation situations can either: (1) utilize a technological solution to resolve their installation problem, or (2) switch to an appliance utilizing alternative technologies. Either approach would allow those consumers with potentially difficult installation situations to choose how best to avoid loss of usable space, extensive building modifications, or extreme installation costs identified in the January 2021 Final Interpretive Rule. *Id.* With regard to specific concerns of "orphaned" water heaters, [15] DOE noted the development of potential technology solutions. *Id.* The Department stands by and reaffirms these conclusions in this Final Interpretive Rule. DOE has also concluded that installation professionals have the expertise to complete any necessary appliance replacements in a safe and effective fashion.

In response to these tentative findings in the August 2021 NOPIR, NEEA cited results from a study conducted by NEEA, Pacific Gas and Electric Company, National Grid, and Northeast Energy Efficiency Partnerships, which found that 5 percent or fewer of condensing gas appliance installations were challenging, and stated that, even in cases that present significant challenges, technical solutions were always possible. (NEEA, No. 137 at p. 2) The commenter referenced technologies available on the market (*i.e.*, DuraVent's FasNSeal 80/90) that it stated allow for the installation of a condensing

[15] The Gas Industry Petitioners raised specific concern with the potential of an orphaned water heater. An "orphaned water heater" refers to the situation in which a non-condensing furnace and non-condensing water heater share a common vent, but, upon replacement of the non-condensing furnace with a condensing furnace, they can no longer share that same venting due to differences in venting requirements.

appliance with existing venting systems and in situations with narrow lot lines, challenging clearances, or where side wall venting is not practical. (*Id.* at p. 3) NEEA suggested that such solutions allow for condensing appliance venting without the need for additional building penetrations or the need to disturb finished internal spaces. (*Id.*) Similarly, the State Attorneys General stated that based on the rulemaking record, a variety of technological fixes are available to accommodate the replacement of non-condensing units and to increase compatibility with other non-condensing appliances. (State Attorneys General, No. 136 at p. 3) ASAP *et al.* stated that non-condensing and condensing furnaces have different venting configurations, but that these different configurations are a matter of cost and not utility, and there are a variety of solutions to challenging venting requirements. (ASAP *et al.*, No. 143 at p. 2) A.O. Smith stated that it is technologically feasible to replace non-condensing equipment in every commercial setting. (A.O. Smith, No. 133 at p. 9)

In contrast, AGA *et al.* asserted that the record for the January 2021 Final Interpretive Rule shows that for millions of applications, appliances with condensing technology would not work (or would present hazardous conditions) if the appliances were installed within existing home and business venting and plumbing systems, absent modification. (AGA *et al.*, No. 135 at p. 28) In support of its assertion, AGA *et al.* pointed to DOE's estimates that upwards of 10 percent of households with gas-fired furnaces would face difficult installation situations if non-condensing furnaces were eliminated, as well as a survey from installation contractors that AGA *et al*. stated showed that atmospheric venting systems often prevent use of condensing furnaces. (*Id.* at pp. 29, 31) AGA *et al.* argued that, although DOE claims the existence of

technological solutions to difficult installation situations, no evidence is cited for that proposition. (*Id.* at p. 31) AGA *et al*. further commented that the National Fuel Gas Code (ANSI Z223.1/NFPA 54) and the International Fuel Gas Code, which are installation codes for gas appliances that are adopted and enforced in the majority of States and jurisdictions within the United States, do not permit venting a condensing type of vented gas appliances (positive venting pressure) with a non-condensing type of vented appliance (negative venting pressure) because of safety concerns. (*Id.* at p. 32) AGA *et al*. stated that, therefore, even if technological issues were overcome, replacement of non-condensing appliances with condensing appliances would still violate the aforementioned installation codes to the extent that the condensing appliance is vented in the same vent line with a negative venting pressure non-condensing appliance. (*Id.*)

AHRI commented that consumers, especially in older homes, will struggle to replace their appliances if condensing-only appliance standards are set in efficiency rulemakings. (AHRI, No. 139 at p. 1) Kramer commented that non-condensing furnaces are sometimes installed in unheated spaces such as an attic or garage, and that such locations cannot accommodate a condensing furnace because the condensation will freeze and cause damage to the heating unit. (Kramer, No. 124 at p.1) Kramer further commented that relocation of such units to the heated part of the home is cost-prohibitive due to reworking of the ductwork and would result in loss of living space inside the home. (*Id.*)

Crown Boiler, New Yorker Boiler, and U.S. Boiler stated that the research conducted by Oak Ridge National Laboratory (ORNL) referenced by DOE in the August 2021 NOPIR demonstrates that condensing furnace standards would result in a significant problem. (Crown Boiler, No. 127 at p. 3; New Yorker Boiler, No. 130 at pp. 3–4; U.S. Boiler, No. 129 at pp. 3–4) These commenters asserted that the "EntrainVent" technology discussed in the ORNL research cited by DOE is problematic because: (1) if the common portion of the vent becomes blocked, the condensing appliance will force flue products backwards down the category I vent and into the living space through the draft diverter and that detecting this spillage will be a significant technical challenge; and (2) this system will only work when the furnace inducer is running, meaning that water heater cannot safely operate when the furnace inducer is off. (Crown Boiler No. 127 at p. 4; New Yorker Boiler, No. 130 at pp. 4–5; and U.S. Boiler, No. 129 at pp. 4–5) Crown Boiler, New Yorker Boiler, and U.S. Boiler further commented that the use of other venting systems described in the ONRL report (*i.e.*, the DuraVent FasNSeal 80/90 and draft inducer paired with a chimney liner) is not practical in situations where there are offsets in the chimney, or where the cross-sectional area of the chimney is too small to provide adequate drafting for the water heater after the new liner(s) are added. (Crown Boiler No. 127 at p. 5; New Yorker Boiler, No. 130 at p. 5; U.S. Boiler, No. 129 at p. 5) These commenters stated that any concentric vent system consisting of a pressurized vent system inside a Category I vent system raises safety concerns because the inner pipe will be difficult or impossible to inspect and a breach in the pipe will lead to flue gas inside the building and that this problem would be particularly acute for a pipe modified with a draft inducer that was not designed to be pressurized. (*Id.*)

Bradford White commented that a non-condensing commercial gas-fired water heater installed in a high-rise building in a large, older city (*e.g.*, New York City, Boston, Chicago) would not be able to be replaced with a condensing equivalent, as it would not be able to vent horizontally due to jurisdictions prohibiting side wall venting in these applications. (Bradford White, No. 146 at p. 3) Bradford White further commented that if the mechanical room is in the basement or ground level floor of a 15-story building (and shorter in some cases), the water heater may not be certified with a long enough vent length to be able to vent vertically through the building's roof, and that if the venting had to run up through current living spaces, there would be impacts to the building space. (*Id.*)

AGA *et al.* and APGA *et al.* stated that, in the current market, the known solutions often require making major reconfigurations to building venting and plumbing systems. (AGA *et al.*, No. 135 at p. 18; APGA *et al.*, No. 140 at p. 9) APGA *et al.* stated that most of the existing buildings in which gas furnaces and water heaters are installed were architecturally designed to accommodate standard atmospherically-vented products and have built-in atmospheric venting systems to serve such products, often with vents sized to serve two or more commonly-vented products. (APGA *et al.*, No. 140 at p. 8) APGA *et al.* commented that there are instances when it is possible to use existing venting when switching from non-condensing to condensing technologies or to scrap the existing venting and run new venting through the same chase, but there are many common scenarios in which this would not be possible (*Id.* at p. 7) APGA *et al.* further commented that if atmospherically-vented products were unavailable, replacement of an existing atmospherically-vented product would require building modifications to

facilitate the installation of condensing products in buildings that were not designed to accommodate them and potentially a relocation of the heating system, which would result in orphaned venting infrastructure. (*Id.* at pp. 7, 8)

Bradford White commented that DOE should not base its analysis on a technology that is not currently commercially available (*i.e.*, venting technologies that could make it easier to switch from noncondensing to condensing appliances). (Bradford White, No. 146 at p. 2)

AHRI stated that there is no justification or evidence provided by DOE for its statements regarding the existence of technological solutions for gas-fired installation issues, orphaned water heaters, or other issues raised by the gas industry petition that would support the Department's proposed policy change. (AHRI, No. 139 at p. 2) The commenter argued that requiring new venting for condensing technologies would be inhibited by safety and building codes, providing, as an example, building types and jurisdictions in which side wall vents necessary for condensing units are prohibited or not feasible. (*Id.*) AHRI claimed that if a consumer cannot install a piece of equipment due to venting constraints, there will be no consumer access to heated air or water. (*Id.*) Furthermore, AHRI stated that upgrading to condensing equipment, upgrading electrical panels for heat pump use, and modifications for the safe use of an orphaned water heater come at a price that disproportionally affects underserved households and small businesses. (*Id.* at p. 4)

As discussed previously, installation costs are addressed in the LCC and PBP analyses, as well as in consumer subgroup-specific analyses. These analyses account for the cost of difficult (*i.e.*, unusually costly) installations, including those subgroups of the population that may be differentially impacted by DOE's consideration of amended energy conservation standards. In the September 2016 Furnace SNOPR, DOE's analysis assumed that when replacing a non-condensing gas furnace with a condensing gas furnace in replacement applications, additional costs could include adding a new polyvinyl chloride (PVC) flue venting, PVC combustion air venting, concealing vent pipes, addressing an orphaned water heater (by updating flue vent connectors, vent resizing, or chimney relining), and condensate removal. Additionally, in the installation costs in new construction installations, DOE's cost estimates for condensing gas furnaces included appropriate flue vents, combustion air venting for direct vent installations, accounting for commonly-vented water heaters, and condensate removal. 81 FR 65720, 65776–65783 (Sept. 23, 2016). In that rulemaking, DOE estimated that a certain percentage of all installation scenarios would incur extra costs to replace a non-condensing furnace with a condensing furnace and ascribed additional installation costs to address a number of installation scenarios, including scenarios in which venting is replaced.[16] Similarly, venting cost estimates for condensing commercial water heaters accounted for the type of installation (new construction or retrofit), draft type (atmospheric venting or power venting), water heater fuel type, building vintage, number of stories, and presence of a chimney. 81 FR 34440, 34484 (May 31, 2016). The materials and diameters of venting analyzed depended on the type of installation. A fixed

[16] See Table 8D.2.19 in Appendix 8D of the TSD for the September 2016 Furnace SNOPR (Available at: *regulations.gov* at Docket No. EERE-2014-BT-STD-0031-0217).

percentage of buildings were estimated to have masonry chimneys that would require relining. *Id.* In applying the interpretation adopted in this document to future energy conservation standards for residential furnaces, commercial water heaters, and similarly-situated products/equipment, DOE expects to employ similar analytical methods.

With respect to concerns raised regarding the safety of the venting technologies evaluated by ORNL, DOE reiterates that the evaluated technologies are discussed in the August 2021 NOPIR only as examples of potential solutions that could emerge to mitigate installation issues related to venting, ones whose development could be hampered by the interpretation provided in the January 2021 Final Interpretive Rule. DOE notes that the EntrainVent evaluated by ORNL was a proof-of-concept designed to demonstrate key functionality, rather than a commercially-available product, and as such, it had not incorporated additional safety-related features (*e.g.*, controls and sensors) that would not impact ordinary operation. DOE did not consider this technology solution in its analysis of furnace standards for the September 2016 Furnaces SNOPR. DOE did analyze the DuraVent product as part of an alternative case.[17]

DOE would point out that the DuraVent FasNSeal 80/90 is a commercially-available product intended for a similar purpose (*i.e.*, to allow condensing products to be concentrically vented with a non-condensing, atmospheric product venting through an existing vent) and which is listed to the applicable Underwriters Laboratories' safety standards, indicating that it can be used safely when installed as intended. DOE also

[17] See Appendix 8L of the TSD for the September 2016 Furnaces SNOPR (Available at: *regulations.gov* at Docket No. EERE-2014-BT-STD-0031-0217).

notes other commenters stated that replacement of non-condensing units with condensing units is possible in all cases, indicating that there are not building code prohibitions on such replacements. (*See* NEEA, No. 137 at p. 2; A.O. Smith, No. 133 at p. 9)

As stated, DOE acknowledges that installation of condensing products/equipment requires modifications to the installed space in some applications and that such modifications may impact the installation cost and/or complexity. As illustrated by the analyses conducted in the prior rulemakings for residential furnaces and commercial water heaters, such costs and complexities can be and have been addressed as part of DOE's evaluation under EPCA's factors for determining whether new or amended standards would be economically justified. To the extent that commenters raised concern regarding the practicability and safety of certain developing technologies that address the orphaned water heater issue, DOE notes that its analysis for the prior residential furnaces rulemaking accounted for the potential of separate venting, limiting consideration of such developing technology to a sensitivity analysis.[18]

Installation costs may influence consumer decisions regarding fuel choice, and, at any time, a segment of consumers may choose replacement products that rely on a different fuel source than that of the unit being replaced. In a limited number of cases, a consumer facing a difficult installation situation may decide it to be impracticable (due to cost or other considerations, including local safety and building codes as suggested by Bradford White and AHRI) to replace a product with another that relies on the same fuel

[18] See Appendix 8D of the TSD for the September 2016 Furnaces SNOPR (Available at: *www.regulations.gov* at Docket No. EERE-2014-BT-STD-0031-0217).

source. In such cases, the consumer may choose to replace the existing appliance with one utilizing a different fuel type as another viable solution. However, the mere potential for fuel switching does not serve as the basis for establishment of a performance-related feature under EPCA.

As discussed in the August 2021 NOPIR, a consumer may replace a gas-fired furnace or water heater with an electric heat pump or water heater, thereby obviating the need for extensive changes to existing venting. 86 FR 48049, 48055–48056 (August 27, 2021). Consumers routinely make such choices, where they deem it appropriate, which reflects economic decision-making. Installation of an electric heat pump or water heater would provide the consumer with heated air or hot water, respectively, without the loss of usable space or aesthetics because it would obviate the need to make significant changes to the residential or commercial space. An electric heat pump or water heater would also be an option to provide the consumer with heated air or hot water, respectively, were a condensing product to present a difficult installation situation. Stated another way, neither the desire to maintain a home's or business's current aesthetics and space configuration, nor the prospect of a difficult installation, would prevent a consumer from having heated air or water because in those instances an electric heat pump or electric water heater could be installed.

Commenters offered a variety of views on the topic of fuel switching. The CA IOUs expressed their belief that fuel switching will occur in the market regardless of whether standards are changed, and that fuel switching should not be a rationale for designating non-condensing technologies as a feature. (CA IOUs, No. 141 at p. 3)

NRDC *et al.* commented that fuel switching from gas to electric is not a rationale that EPCA recognizes as a reason for classifying a technology as a feature and it should not prevent DOE from adopting a condensing standard. NRDC noted that in performing its economic analysis, DOE should account for such impacts, consistent with the Department's practice in prior rulemakings. (NRDC *et al.*, No. 144 at p. 2)

CEC commented that EPCA does not authorize DOE to limit energy conservation standards to allow for the inefficient consumption of energy by certain fuel types; instead, standards must be "designed to achieve the maximum improvement in energy efficiency that the Secretary determines is technologically feasible and economically justified." (CEC, No. 134 at p. 4)

The State Attorneys General stated that nothing in EPCA precludes fuel switching, as long as DOE's standard would not eliminate the appliance of that fuel type entirely, and the commenters suggested that a consumer facing difficult installation could replace a gas-fired appliance with an electric unit to eliminate the need for extensive changes to existing venting. (State Attorneys General, No. 136 at p. 3) The State Attorneys General and ASAP *et al.* stated that fuel switching is a natural part of market operation for the subject appliances. (State Attorneys General, No. 136 at p. 3; ASAP *et al.*, No. 143 at p. 3) The State Attorneys General further stated the mere potential for fuel switching should not serve as the basis for establishment of a performance-related feature under EPCA. (State Attorneys General, No. 136 at p. 4) ASAP *et al.* stated that the costs and benefits of switching to an electric heat pump can and should be evaluated as part of DOE's economic analysis when considering new or amended energy conservation

standards, as the Department has done in prior rulemakings. (ASAP *et al.*, No. 143 at p. 3)

The Institute for Policy Integrity commented that the rulemakings would likely cause a small amount of fuel switching, but that theorizing about the extent of this impact would unnecessarily suggest that there is a "threshold" that violates EPCA. (Institute for Policy Integrity, No. 145 at pp. 1, 7) The commenter argued that "fuel-type" is not explicitly listed among the traits that standards may not make unavailable. (*Id.* at p. 6) In addition, the Institute for Policy Integrity suggested that the subset of consumers who would face aesthetically undesirable installations of condensing units maintain the option of relying on technological solutions or switching to a heating appliance based on a different fuel source to avoid those unwelcome changes, thereby maintaining the aesthetic of their space. (*Id.* at p. 5)

In contrast, APGA *et al.* commented that DOE's "fuel switching" analysis is inconsistent with the statutory direction that any consumer impacts as a result of standards must be economically justified, but, according to these commenters, the analysis framed fuel switching as a means to avoid the changes in building design associated with a condensing standard, and fuel switching is used as a means to justify the costs of switching to a condensing system. (APGA *et al.*, No. 140 at pp. 14–15) These commenters further stated that DOE's analysis underestimates the extent to which the previously proposed standards would lead to fuel switching. (*Id.*)

AGA *et al*., citing 42 U.S.C. 6295(f)(1)(B)(iii), commented that Congress, in directing DOE to finalize standards for certain furnaces built after January 1, 1992, recognized that separate standards would be appropriate based on fuel and performance-related features and that Congress explicitly established separate standards for gas, oil, and electric furnaces (among others). (AGA *et al.*, No. 135 at p. 13) AGA *et al*. further referenced EPCA's direction to issue separate standards for classes of products that "consume a different kind of energy" (*i.e.*, type of fuel) than "other covered products within such type" and to issue separate standards for classes of products that have "a performance-related feature which other products within such type (or class) do not have [.]" (*Id.* at p. 14) AGA *et al*. asserted that these provisions, read together with the "features" provision, make clear that EPCA forecloses a standard that would force consumers to switch fuels or make natural-gas products unavailable to consumers who want to buy them for reasons beyond economics. (*Id.* at p. 22)

AGA *et al.* additionally commented that if the DOE has evidence to support the expectation that the proposal will not lead to significant fuel switching, it should be included in the proposal to allow stakeholders a meaningful opportunity to comment. (*Id.* at p. 32) Crown Boiler, New Yorker Boiler, and U.S. Boiler asserted that DOE has not addressed its prior determination in the January 2021 Final Interpretive Rule that some enhanced level of fuel switching would occur. (Crown Boiler, No. 127 at pp. 3–4; New Yorker Boiler, No. 130 at p. 4; U.S. Boiler, No. 129 at p. 4) Crown Boiler, New Yorker Boiler, and U.S. Boiler suggested that fuel switching will result in a loss of reliability for many consumers since electric products are only as reliable as the electric grid they are

connected to. (Crown Boiler, No. 127 at p. 4; New Yorker Boiler, No. 130 at p. 4; U.S. Boiler, No. 129 at p. 4)

Bradford White stated that DOE appeared to put a fair amount of weight in past trends related to fuel switching continuing to be representative of what will occur in the future, but the commenter disagreed with any such assumption because it argued that significant activity at the State and local levels is driving all parties to shift to primarily electric products. (Bradford White No, 146 at p. 2)

AGA *et al.* commented that some consumers may have no choice other than to switch to an electric appliance if it is untenable or infeasible, regardless of cost, to replace their non-condensing appliances with condensing ones, citing concerns ranging from aesthetics to functionality of living spaces. (AGA *et al.*, No. 135 at p. 21) Bradford White commented that while electric water heaters can be used to provide hot water, there are challenges with using them in place of commercial gas water heaters. According to Bradford White, some of the limitations or problems to overcome include, but are not limited to, slower recovery rates, maximum temperature settings on heat pump water heaters, and panel and outlet upgrades needed to handle the necessary amp draw. (Bradford White, No. 146 at p. 3)

Kramer commented that a fuel change to an electric unit is very frequently not economically feasible for lower income clients due to necessary electrical upgrades. Kramer elaborated that if the home only has 60 or 100 amp service, a breaker panel and

electric meter upgrade is necessary, which costs $2000 to $3000. (Kramer, No. 124 at p. 1)

GEUAG asserted that the proposed interpretive rule constrains fuel choice and is, therefore, incompatible with the law and detrimental to consumers. (GEUAG, No. 132 at p. 3) GEUAG commented that the alternatives of electric resistance and heat pumps typically resort to electric resistance when cold weather conditions exist, negating much of the claimed benefit and putting lives at risk in extreme temperature events, asserting that grid reliability becomes an issue when switching to electric. (*Id.* at pp. 13–14)

Once again, in response to these comments, DOE does not find potential fuel switching to be a basis to support a determination that non-condensing technology and associated venting constitute a performance-related feature. As stated in the August 2021 NOPIR, nothing in EPCA precludes such effects, as long as DOE's standard would not eliminate the appliance of that fuel type entirely. 86 FR 48049, 48056 (August 27, 2021). In this case, interpretation of EPCA's "features" provision that maintains non-condensing and condensing units under a single class of product or equipment would not eliminate residential furnaces or commercial water heaters that rely on natural gas, propane, or other any other fuel type, from the U.S. market. Notably, both non-condensing and condensing units rely on natural gas and propane as the fuel source. The interpretation adopted in this document would continue to preserve consumer choice, which DOE understands to be influenced by a variety of considerations, including market conditions, such as fuel prices. The final interpretive rule adopted in this document allows

consumers to make the choice of when market forces (and installation costs) warrant replacement of a gas-fired appliance with a comparable electric appliance.

It bears noting that while EPCA recognizes that various fuel types exist in the appliance marketplace and provides certain protections, the statute itself does not act, nor does it mandate, that DOE take regulatory action to preclude such marketplace effects, except in limited cases expressly defined. In certain areas, Congress set statutory energy conservation standard levels for products, such as consumer water heaters (*see* 42 U.S.C. 6295(e)(1)) and consumer boilers (*see* 42 U.S.C. 6295(f)(3)), based on fuel type (*e.g.*, gas, oil, electricity). EPCA also recognizes differences in fuel type under 42 U.S.C. 6295(q)(1)(A), which provides for setting separate classes where appliances consume a different kind of energy from that consumed by other covered products within such type (or class).

Where Congress required DOE to consider the potential impacts of fuel switching, it stated so explicitly. Congress directed DOE to prescribe a final rule not later than January 1, 1989, to establish an energy conservation standard for certain furnaces, *i.e.*, furnaces (other than furnaces designed solely for installation in mobile homes) having an input of less than 45,000 Btu per hour and manufactured on or after January 1, 1992, which DOE determined not likely to result in a significant shift from gas heating to electric resistance heating with respect to either residential new construction or furnace replacement. (42 U.S.C. 6295(f)(1)(B)(i) and (iii)) This consideration of fuel switching was specific to smaller-capacity furnaces, rather than being placed in a more general provision of broader applicability. Further, this explicit direction to consider fuel

switching did not preclude *any and all* fuel switching, only significant fuel shifting from gas to electric resistance heating.

Conversely, ECPA's "features" provision at 42 U.S.C. 6295(o)(4) does not include fuel type within its ambit. Thus, Congress structured EPCA to recognize fuel-type distinctions and to create a level playing field, while balancing the need for overall energy savings. For these reasons, DOE finds the positions of GEUAG, AGA *et al*., and other commenters expressing similar views on DOE's statutory obligations regarding fuel switching to be an overly broad reading that the statutory text cannot support.

Regarding the concerns raised by commenters about the safety of fuel switching and grid reliability, DOE notes that modern gas-fired central furnaces also require electricity to operate and would, therefore, be rendered inoperable during a power outage without an appropriately-sized back-up generator. Thus, while grid reliability may be a legitimate societal concern, it is not limited to any one specific fuel type.

In response to concerns about using commercial electric water heaters in place of commercial gas-fired water heaters, DOE has concluded that solutions are available to resolve the potential issues raised by commenters. For example, DOE notes that issues related to the maximum temperature setting on a heat pump water heater could be mitigated by utilizing electric resistance heating as a backup or supplementary source to reach the desired outlet temperature. The concerns raised about the panel and outlet upgrades needed to handle the increased amp draw are appropriately considered as installation costs. Finally, the recovery rate will largely be a function of the rate at which

the water heater provides heat to the water, so sizing an electric water heater with a heating rate comparable to that of the gas-fired water heater it is replacing should not result in any loss of recovery ability.

Regarding the prevalence of fuel switching, DOE has typically found fuel switching to occur in a small number of cases in any given rulemaking, and the Department takes this potential into account as part of the analyses conducted to determine whether amended standards would be economically justified. For example, in the September 2016 Furnaces SNOPR, DOE estimated the percentages of consumers that would switch from a residential non-weatherized gas furnace to either a residential heat pump or electric furnace, and from a commercial gas-fired water heater to a commercial electric water heater (as a result of the existing gas-fired water heater being "orphaned") that would occur under the various potential amended standards scenarios under consideration.[19] Similarly, in the May 2016 Commercial Water Heaters NOPR, DOE considered the potential for fuel switching from gas to electric water heating equipment and tentatively concluded that fuel switching was very unlikely for both storage and instantaneous water heaters. Therefore, DOE did not explicitly include fuel switching in its analyses for that rulemaking. 81 FR 34440, 34494-34495 (May 31, 2016). DOE has determined its analytical methodologies to provide a robust assessment of potential fuel switching, and the Department stands by its results. Although the gas industry

[19] See Appendix 8J of the TSD for the September 2016 Furnace SNOPR (Available at: *www.regulations.gov* at Docket No. EERE-2014-BT-STD-0031-0217).

commenters have faulted these methodologies in the past for a variety of reasons, DOE has disagreed and responded to such challenges in past rulemakings.[20]

Even if the Department had definitive evidence regarding the extent of difficult or impossible installation situations, loss of usable residential or commercial space, or fuel switching effects, DOE nonetheless had a strong statutorily-based rationale for its historical interpretation and the return thereto. As consumer utility turns on the layperson's operation and interaction with the product (*i.e.*, calling for and enjoying the heated air or water which the appliance in question provides) rather than type of combustion or venting, it follows that all furnaces and water heaters provide the same basic utility: heated air or water.

As discussed previously, utility is not determined through analyzing or making comparisons to considerations that impact installation, or costs that anyone, including the consumer, manufacturer, installer, or utility companies, may bear. Utility is determined through the benefits and usefulness the feature provides to the consumer while interacting with the product. This approach is consistent with EPCA's requirement for a separate and extensive analysis of economic justification for the adoption of any new or amended energy conservation standard (*see* 42 U.S.C. 6295(o)(2)–(3); 42 U.S.C. 6313(a)(6)(A)–(C); 42 U.S.C. 6316(a)). Moreover, as discussed in the following section, DOE has concluded that this approach is more consistent with the overall purposes of EPCA.

[20] For example, see the fuel switching analysis in the September 2016 Furnaces SNOPR. 81 FR 65720, 65792-65793 (Sept. 23, 2016).

C. Purposes of EPCA

In the August 2021 NOPIR, DOE tentatively concluded that it gave insufficient weight to other policy arguments in development of the January 2021 Final Interpretive Rule. 86 FR 48049, 48054 (August 27, 2021). In particular, DOE expressed concern that tying the concept of "feature" to a specific technology would effectively lock in the currently existing technology as the ceiling for product efficiency and eliminate DOE's ability to address technological advances that could yield significant consumer benefits in the form of lower energy costs while providing the same functionality/utility for the consumer. *Id.* (*citing* 81 FR 65720, 65752 (Sept. 23, 2016)). Because the statute effectively accords performance-related features a protected status, the Department must take great care when making a features determination.

On this topic, A.O. Smith commented that the January 2021 Final Interpretive Rule imposes an artificial ceiling on energy efficiency that is well below the maximum improvement that the Department would likely determine is technologically feasible if it followed its longstanding interpretation. The commenter also argued that the January 2021 Final Interpretive Rule would lock in an outdated and inefficient technology with no consumer benefit, an outcome contrary to EPCA. (A.O. Smith, No. 133 at p. 7) A.O. Smith added that the preservation of non-condensing water heaters at the current minimum efficiency level would freeze the marketplace, reduce innovation, increase regulatory burden, and limit consumer choice. (*Id.* at p. 8)

NEEA commented that establishing product classes based on non-condensing technology or venting type would limit innovation and increase the cost of efficiency for both consumers and utility programs. (NEEA, No. 137 at p. 3) NEEA further stated that maintaining a single product class for condensing and non-condensing equipment will: (1) continue to encourage the market to develop lower-cost solutions for the small percentage of installations that are challenging; (2) reduce the cost of efficiency for consumers and utility programs, and (3) result in overall cost and energy savings as more condensing equipment is installed. (*Id.*)

CEC commented that finalizing the proposal from the August 2021 NOPIR will ensure that DOE is able to continue to address technological advances that could lower energy costs (something which is especially important to low-income consumers) and maintain product utility. (CEC, No. 134 at p. 2)

The State Attorneys General stated that the January 2021 Final Interpretive Rule unlawfully interpreted EPCA's statutory requirements and improperly constrained DOE's ability to adopt more stringent, updated efficiency standards for residential furnaces, commercial water heaters, and similarly-situated products and equipment. (State Attorneys General, No. 136 at p. 2) The State Attorneys General expressed concern that determining what constitutes a feature based solely on product technology, rather than how the consumer interacts with and benefits from a feature, could undermine the entire Appliance Standards Program, and they agreed that tying the concept of "feature" to a specific technology would effectively lock in the currently existing technology as the ceiling for product efficiency and eliminate DOE's ability to address technological

advances that could yield significant consumer benefits in the form of lower energy costs while providing the same functionality/utility for the consumer. (*Id.* at p. 4)

The CA IOUs and ASAP *et al.* commented that designating a technology as a "feature" would hamper DOE's ability to increase standards in response to efficiency improvements, and that the proposed EPCA interpretation as presented in the August 2021 NOPIR better reflects EPCA's intent to increase standards as a means of "promoting conservation measures when feasible." (CA IOUs, No. 141 at p. 2; ASAP *et al.*, No. 143 at p. 3)

In contrast, Bradford White disagreed with the contention that establishing non-condensing technology as a feature would limit technological innovation in the industry. The commenter pointed to condensing gas water heaters as an example, as that technology was nonetheless developed even though previous technologies were far more efficient than DOE and ENERGY STAR requirements. (Bradford White, No. 146 at p. 2)

AGA *et al.* commented that the proposed interpretation is based on a desired policy outcome that fails to adhere to structure Congress enacted into law, and that the proposal does not present a permissible interpretation of the statute. (AGA *et al.,* No. 135 at p. 23) These commenters asserted that the separation of the condensing and non-condensing product classes would allow DOE to focus on establishing the maximum feasible efficiency levels for each technology. (*Id.* at p. 19) AGA *et al*. also asserted that by separating condensing and non-condensing units, DOE could evaluate the cost of

increased efficiency for condensing units without considering the increased costs required to retrofit millions of structures. (*Id.* at p. 20) AGA *et al.* stated that any effort to promulgate energy conservation standards based on the proposed interpretation would be contrary to EPCA and could not withstand judicial scrutiny. (*Id.*)

AHRI stated that separate product classes for condensing and non-condensing products/equipment would not deter technical development or slow the adoption of condensing technologies, but it would protect consumers who do not have the ability change the technology used in their building. (AHRI, No. 139 at p. 1) In support of its position that a separate product class would not hinder the movement in the market towards condensing products when feasible, AHRI also commented that existing market data demonstrate a trend towards condensing furnaces where venting does not present a technical problem. (*Id.* at p. 3)

GEUAG and APGA *et. al* asserted that utility and performance would be lessened under the interpretation proposed in the August 2021 NOPIR and disproportionately affect low-income consumers, which would be in contradiction with 42 U.S.C. 6295(o)(2)(B)(i). (GEUAG, No. 132 at p. 12; APGA *et. al*, No. 140 at p. 6)

IER stated that there is no explanation provided for the assertion made by DOE that the January 2021 Final Interpretive Rule would impede innovation and the development of more efficient technologies, and IER further stated that the market is moving toward more efficient appliances. (IER, No. 138 at p. 7) In addition, IER argued

that Congress's purposes and goals in enacting EPCA were not that energy efficiency should overtake all competing concerns. (*Id.* at p. 8)

Crown Boiler, New Yorker Boiler, and U.S. Boiler reiterated their prior recommendations that DOE use "compatibility with Category I venting" as the feature that should be protected, stating that this approach would address the concern with potentially locking in a particular technology. (Crown Boiler, No. 127 at pp. 5–6; New Yorker Boiler, No. 130 at p. 6; U.S. Boiler, No. 129 at p. 6) Crown Boiler, New Yorker Boiler, and U.S. Boiler further commented that DOE's reliance on E.O. 13990 to initiate the review of the January 2021 Final Interpretive Rule suggests that DOE's reversal is rooted more in politics than in fault with the current rule. (Crown Boiler, No. 127 at p. 1; New Yorker Boiler, No. 130 at p. 1; U.S. Boiler, No. 129 at p. 1)

Similarly, APGA *et al*. commented that DOE cannot rely solely on the terms of E.O. 13990 as its justification for changing its position, and that DOE must follow the statute and not render "policy choices for purely political reasons nor to rest them primarily upon unexplained policy preferences." (APGA *et al*., No. 140 at p. 5)

Additionally, GEUAG stated that nothing has changed in the applicable legal standards and requirements that govern such determinations and asserted that DOE's decision is a result of changing policy preferences. The commenter stated that DOE cited EO 13990 as part of its rationale to justify its change in position, but argued that such executive actions cannot supersede existing statutes, such as EPCA, that protect consumers from regulatory overreach. (GEUAG, No. 132 at p. 8)

APGA *et al*. and GEUAG asserted that promotion of electrification is not an authorized objective under EPCA, and that the proposed interpretation would expand DOE's authority beyond that authorized by Congress. (APGA *et al*., No. 140 at pp. 2, 5. 6, 7, 11; GEUAG, No. 132 at p. 5) GEUAG asserted that the proposed interpretation in the August 2021 NOPIR would arbitrarily and unnecessarily erode the important role played by natural gas and propane in favor of energy sources that have significant and negative environmental and human rights issues, or require technologies that cannot meet demands currently served by natural gas and propane. GEAUAG also stated that the reliance on such alternative energy sources will put the United States in competition for rare earth minerals against those with policies in conflict with the best interests of Americans. (GEUAG, No. 132 at p. 3) (DOE understands this comment to be referencing the use of rare earth minerals in certain technologies that are commonly associated with electrification, such as batteries.) APGA *et al.* further commented that EPCA's purpose to conserve energy must be considered in terms of the product being regulated (gas products), not savings incurred by switching to a different product class (electric products). (APGA *et al*., No. 140 at p. 11)

As stated previously, DOE initiated a re-review of the January 2020 Final Interpretative Rule in response to E.O 13990. However, the final interpretation, which reinstates DOE's historical interpretation, is based solely on EPCA, review of public comments received, and the analysis presented in this document. Contrary to assertions from certain commenters, it is not based on political considerations or a policy to promote electrification. Instead, as explained in detail previously, it is based on what the Department has concluded to be the better reading of the "features" provision in light of

EPCA's direction for DOE to establish new and amended energy conservation standards for covered products and equipment to achieve the congressional purpose of improving the energy efficiency of major appliances and certain other consumer products. (42 U.S.C. 6201(5)) It is further noted that EPCA directs DOE to regulate enumerated types of covered products and equipment, not specific subcategories of equipment tied to the technologies they utilize. Not surprisingly, different groups of commenters on the August 2021 NOPIR had diametrically opposed viewpoints as to the lawful interpretation of the relevant statutory provisions.

In the 2016 Furnaces SNOPR, DOE expressed concern that separate standards based on preserving a technology used to produce heated air (or the associated type of venting) would not place any restriction on the use of non-condensing appliances and, therefore, would not be a meaningful standard, resulting in little or no change in products offered, their market shares, or energy savings. *See* 81 FR 65720, 65752-65753 (Sept. 23, 2016). DOE remains concerned that determining features solely on product technology, rather than on how the consumer interacts with and benefits from the feature, could undermine the Appliance Standards Program established by EPCA.

As previously discussed and identified by commenters, newer technologies are being developed and introduced into the market that, when mature could address issues of difficult installation (orphaned appliances in particular), thereby allowing consumers to switch from a non-condensing furnace to a condensing furnace while permitting continued use of existing common venting in a greater variety of applications. This venting technology may allow a consumer to obtain the efficiency of a condensing

furnace using the existing venting in a residence by sharing venting space with a water heater. However, DOE also notes that such technology was not incorporated into the analysis conducted for the prior rulemakings and would include such technology in its analysis only after evaluating the technological feasibility of any such technology in future rulemakings.

In response to Crown Boiler, New Yorker Boiler, and U.S. Boiler's suggestions to rely on venting capability as the "feature," DOE previously determined that such an approach would increase the complexity and regulatory burden of its regulatory framework (*e.g.*, the certification of appliances capable of operating with multiple categories of venting) with little benefit. 86 FR 4776, 4972. (Jan. 15, 2021) Additionally, DOE notes that much of the same reasoning for rejecting an interpretation of the "features" provision to cover non-condensing technology would apply. Venting compatibility is not an aspect of the product that is accessible to the layperson and is based on user operation and interaction with the product. The issues sought to be addressed by these commenters' recommendation are issues of cost related to installation and would result in preserving less-efficient technologies.

If DOE is required to maintain separate product classes to preserve less-efficient technologies (*i.e.,* if non-condensing products remain available), the development and advancement of such technologies may be slowed, if not stalled. As efficiencies are increased for non-condensing appliances to near-condensing efficiency levels (*i.e.*, higher efficiencies), small amounts of acidic condensate would form that would require upgrades similar to what is required for condensing systems. Thus, were the product and

equipment classes tied to non-condensing technology, DOE's ability to increase efficiencies would be limited, if not forestalled entirely. Further, if separate product classes are maintained to preserve less-efficient technologies, then future advancements in the energy efficiency of covered products would become largely voluntary, an outcome in conflict with Congress's purposes and goals in enacting EPCA.

Moreover, EPCA provides for consideration of the costs associated with difficult installations and the potential impact on consumers, including sub-groups of consumers, as part of the robust economic factors DOE is statutorily required to consider. As discussed, such installation costs are appropriately considered when comparing the savings in operating costs to any increase in the price of, or in the initial charges for, a covered product or article of covered equipment which are likely to result from the imposition of standards, as directed by EPCA. (42 U.S.C. 6295(o)(2)(B)(i)(II)) It is noted that EPCA requires DOE to consider whether its overall energy conservation standards are economically justified, not to assess economic justification in each individual instance, which is tantamount to what certain commenters would ask the agency to do.

In response to comments about market trends moving towards condensing appliances, DOE takes into consideration such trends as part of the national impact analysis conducted to determine whether amended standards are justified under EPCA's economic factors. As explained in the withdrawn March 2015 Furnaces NOPR and September 2016 Furnaces SNOPR for residential furnaces, a key component of the national impact analysis is the trend in energy efficiency projected for the no-new-

standards case and each of the evaluated standards cases. 81 FR 65720, 65796 (Sept. 23, 2016). In the withdrawn September 2016 Furnaces SNOPR, DOE projected growth in the national market share of condensing products in the base case analysis (*i.e.,* a scenario in which the current standards are not amended). *Id*.[21] The "features" provision directs DOE to consider the availability of products with certain attributes following the establishment of new or amended energy conservation standards. The consideration of market trends is appropriately addressed as part of the economic evaluation to estimate the costs and energy savings at a national level consistent with 42 U.S.C. 6295(o)(2)(B)(i)(II) and 42 U.S.C. 6313(a)(6)(B)(ii)(II), not as part of the "features" consideration.

Moreover, simply relying on the market to realize improvements in energy efficiency and related technological innovations would result in the Appliance Standards Program being largely voluntary, contrary to the purposes and goals of EPCA. The regulatory scheme prescribed by EPCA directs DOE to drive efficiencies beyond what the market provides where energy conservation would result in significant energy savings and are technologically feasible and economically justified. *See generally* 42 U.S.C. 6295(o); 42 U.S.C. 6313(a)(6)(A)-(C); 42 U.S.C. 6316(a).

Based on the foregoing discussion, DOE revises its interpretation of EPCA's "features" provision in the context of condensing and non-condensing technology used in furnaces, water heating equipment, and similarly-situated appliances (where permitted by

[21] *See also* Chapter 10 of the TSD to the September 2016 Furnaces SNOPR (Available at: *www.regulations.gov* at Docket No. EERE-2014-BT-STD-0031-0217).

EPCA) along the lines discussed. Accordingly, DOE concludes that in the context of residential furnaces, commercial water heaters, and similarly-situated products/equipment, use of non-condensing technology (and associated venting) is not a performance-related "feature" for the purpose of the EPCA prohibitions at 42 U.S.C. 6295(o)(4) and 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa).

D. Other Topics

In the August 2021 NOPIR, DOE stated that at the conclusion of this proceeding, the Department plans to again evaluate whether amended energy conservation standards would result in significant savings of energy, be technologically feasible, and be economically justified, consistent with its latest interpretation. 86 FR 48049, 48057 (August 27, 2021).

Regarding the petition-for-rulemaking process, the CA IOUs commented that DOE should produce explicit guidelines on what types and what quantity of evidence is necessary to be considered as a petition to change DOE policies and processes for DOE rulemakings, in order to avoid wasted time and funds. (CA IOUs, No. 141 at p. 2)

A.O. Smith commented that the January 2021 reinterpretation disadvantages U.S.-based manufacturers against low-cost and subsidized products imported from outside the United States. (A.O. Smith, No. 133 at p. 8) A.O. Smith also expressed concern that the January 2021 Final Interpretative Rule, if relied upon to set Federal efficiency standards,

will invite many State petitions for exemption from Federal preemption in order to allow for stricter State regulations, given the low Federal standards that would be adopted. (*Id.*)

GEUAG provided a number of criticisms of the economic analysis performed by DOE as part of past rulemakings to evaluate amended energy conservation standards. (GEUAG, No. 132 at pp. 9, 11) GEUAG also provided a number of comments regarding the economic analyses conducted as part of the withdrawn rulemaking notices, including comments on the assumptions relied on in the Monte Carlo analyses conducted as part of the national impact analysis, which GEUAG asserted inflated the estimated energy savings. (*Id.* at p. 9) Similarly, APGA *et al.* asserted that a condensing standard for gas products is not economically justified and questioned a number of aspects of the economic analyses conducted as part of the prior standards rulemakings. (APGA *et al.*, No. 140 at pp. 12–15)

AGA *et al*. encouraged DOE to adopt minimum efficiency standards and related policies only after consideration of all relevant points of view, including the distributors of natural gas, whose desire for the efficient use of natural gas is matched only by their commitment to ensure minimum standards do not distort consumers choices away from natural gas to potentially more costly fuel sources. (AGA *et al.*, No. 135 at p. 3)

Other commenters urged DOE to finalize the August 2021 NOPIR and proceed with rulemakings to set new energy efficiency standards expeditiously. The CA IOUs commented that DOE should not restart rulemakings for residential furnaces and commercial water heaters from scratch, because the previous analyses are still relevant,

and new standards should be established. (CA IOUs, No. 141 at p. 3) The State Attorneys General and ASAP *et al.* urged DOE to finalize its proposed interpretive rule and proceed expeditiously towards updating efficiency standards for residential furnaces and commercial hot water heaters. (State Attorneys General, No. 136 at p. 4; ASAP *et al.,* No. 143 at p. 3) NEEA recommended that DOE finalize the August 2021 proposed interpretive rule as soon as possible and proceed expeditiously with the rulemakings for non-weatherized gas furnaces and commercial water heating equipment, which have the potential to result in significant energy savings. (NEEA, No. 137 at pp. 3-4) CEC likewise urged DOE to finalize the proposed interpretation as soon as possible and to consider energy savings, economic justification, and emissions reductions with greater weight than the potential for fuel switching in all ongoing and upcoming rulemakings, unless otherwise explicitly directed by Congress. (CEC, No. 134 at pp. 3, 4) ASAP *et al.* commented that setting condensing standards have the potential to save U.S. consumers and businesses more than $100 billion on their energy bills through 2050 while reducing cumulative carbon dioxide emissions by more than 500 million metric tons. (ASAP *et al.*, No 143 at p. 1)

As discussed previously, given the multitude of covered products and equipment for which DOE is responsible, the Department has found the concept of "feature" to be very case-specific. 86 FR 4776, 4797 (Jan. 15, 2021). As such, DOE finds that it would not be practicable, as suggested by the CA IOUs, to develop guidelines as to the type and degree of the information and data necessary to make a determination under the "features" provision.

With regard to rulemakings for residential furnaces and commercial water heaters, as noted, DOE withdrew its March 12, 2015 proposed rule and September 23, 2016 supplemental proposed rule for energy conservation standards for non-weatherized gas furnace and mobile home gas furnaces, as well as its May 31, 2016 proposed rule for energy conservation standards for commercial water heating equipment, for further proceedings consistent with the interpretation contained in the January 2021 Final Interpretive Rule. 86 FR 4776, 4817 (Jan. 15, 2021); *see also* 86 FR 3873 (Jan. 15, 2021).

As explained in this document, after a careful review of the available information and public comments received, DOE is adopting the interpretation as proposed in the August 2021 NOPIR, which reinstates its historical interpretation of the "features" provision. This change in approach should address any competition concerns or preemption waiver issues mentioned by A.O. Smith. With the finalization of this interpretation, DOE plans to once again evaluate whether amended energy conservation standards for the subject covered products/equipment would result in significant savings of energy, be technologically feasible, and be economically justified, consistent with its latest interpretation. As always, DOE welcomes public comments from all interested parties and will take into account the viewpoints expressed in this proceeding. As part of that evaluation, DOE will consider the comments addressing the technical and economic analyses, as well as any associated assumptions.

As explained in the August 2021 NOPR, in any future rulemaking, DOE will make clear that the rulemakings for residential furnaces and commercial water heating

equipment have been subject to multiple rounds of public comment, including public meetings, and extensive records have been developed in the relevant dockets. (*See* Docket Number EERE-2014-BT-STD-0031 and Docket Number EERE-2014-BT-STD-0042, respectively). Consequently, DOE wishes to reassure stakeholders that the information obtained through those earlier rounds of public comment, information exchange, and data gathering have not gone to waste. Instead, DOE anticipates building upon these existing records through further notice and comment rulemaking. Such an approach also reflects DOE's cognizance of the statutory deadlines associated with the energy conservation standards for residential furnaces and commercial water heating equipment. Further, any future rulemakings would evaluate potential energy conservation standards according to the requirements of EPCA and consistent with this document. Comments pertaining to the details of DOE's economic analyses will be addressed, as appropriate, in those individual energy conservation standards rulemakings.

III. Conclusion

In summary, for this final interpretive rule, DOE has concluded that differences in cost or complexity of installation between different methods of venting (*e.g.*, a condensing residential furnace versus a non-condensing residential furnace; a condensing commercial water heater versus a non-condensing commercial water heater) do not make any method of venting a performance-feature under 42 U.S.C. 6295(o)(4) (or 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa); 42 U.S.C. 6316(a) for certain covered equipment). Relatedly, DOE has concluded that the possibility that installing an appliance that employs a particular method of venting (*e.g.*, a non-condensing residential furnace, a non-

condensing commercial water heater) may be less costly or less complex than installing a product that employs a different method of venting (*e.g.*, a condensing furnace; a condensing commercial water heater) does not justify separating the products/equipment into different product/equipment classes under 42 U.S.C. 6295(q)(1) (or as applicable to certain covered equipment under 42 U.S.C. 6316(a)).

Based on the foregoing discussion and careful consideration of available information and comments received, DOE hereby revises its interpretation of EPCA's "features" provision in the context of condensing and non-condensing technology used in furnaces, water heating equipment, and similarly-situated appliances (where permitted by EPCA) along the lines discussed previously elsewhere in this document. DOE concludes that in the context of residential furnaces, commercial water heaters, and similarly-situated products/equipment, use of non-condensing technology (and associated venting) is not a performance-related "feature" for the purpose of the EPCA prohibitions at 42 U.S.C. 6295(o)(4); 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa); 42 U.S.C. 6316(a).

DOE has determined that its interpretation is the better reading of the relevant language of EPCA and DOE's statutory obligation to establish energy conservation standards for covered products and equipment. Additionally, the interpretation allows DOE to consider more-efficient standards for certain products and equipment, consistent with the agency's statutory mandate.

DOE is revising its application of the "features" provisions in 42 U.S.C. 6295(o)(4) and 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa) as an interpretive rule within the

meaning of the Administrative Procedure Act (APA). 5 U.S.C. 551(4), 5 U.S.C. 553(b). DOE published the proposed interpretive rule in the *Federal Register* (86 FR 48049 (August 27, 2021)) to solicit comment and to provide the public with a clear and transparent explanation of DOE's view of a specific legal question, thereby following a process similar to that which resulted in the January 2021 Final Interpretive Rule.

Review Under Executive Order 12866

The Office of Information and Regulatory Affairs (OIRA) in the Office of Management and Budget (OMB) waived review of this interpretive rule under Executive Order 12866, "Regulatory Planning and Review." 58 FR 51735 (Oct. 4, 1993).

IV. Approval of the Office of the Secretary

The Secretary of Energy has approved publication of this notification of final interpretive rule.

Signing Authority

This document of the Department of Energy was signed on December 20, 2021, by Kelly J. Speakes-Backman, Principal Deputy 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 December 20, 2021.

X Kelly Speakes-Backman Digitally signed by Kelly Speakes-Backman Date: 2021.12.20 15:08:22 -05'00'

Kelly J. Speakes-Backman
Principal Deputy Assistant Secretary
Energy Efficiency and Renewable Energy