Attachment B

Request for
Interpretation
(June 6, 2017)

June 6, 2017

BEFORE THE
OFFICE OF ENERGY EFFICIENCY AND RENEWABLE ENERGY
UNITED STATES DEPARTMENT OF ENERGY
WASHINGTON, D.C.

Request for Interpretation

Energy Conservation Program:
Energy Conservation Standards for Commercial Packaged Boilers
Docket Number EERE-2013-BT-STD-0030, RIN No. 1904-AD01

Energy Conservation Program:
Energy Conservation Standards for Commercial Water Heaters
Docket Number EERE–2014-BT–STD–0042; RIN No. 1904-AD34

Energy Conservation Program:
Energy Conservation Standards for Residential Furnaces
Docket Number EERE-2014-BT-STD-0031; RIN No. 1904-AD20

The undersigned organizations hereby request a legal interpretation from the Department of Energy ("DOE") confirming that the Energy Policy and Conservation Act of 1975, as amended ("EPCA"), does not authorize the adoption of efficiency standards that would limit the market for fuel gas vented appliances or equipment to condensing products (*i.e.*, products that use condensing combustion technology), which effectively cannot use atmospheric venting systems that are beyond the jurisdiction of EPCA.

Specifically, we request a legal interpretation clarifying that *the ability of a product to operate with conventional atmospheric venting systems – and the ability of a product to operate without generating liquid condensate requiring disposal – are important performance-related features for EPCA purposes*. Condensing products lack these features: other gas vented products commonly provide them. Efficiency standards requiring the use of condensing combustion technology would therefore have the effect of eliminating important performance-related features that are currently available to consumers: a result EPCA was specifically designed to preclude.[1] Clarification is necessary because – although the interpretation requested herein is consistent with EPCA's provisions and DOE's own previous regulatory determinations – DOE has suggested a contrary interpretation in the following pending rulemaking proceedings:

1. Energy Conservation Program: Energy Conservation Standards for Commercial Packaged Boilers, Docket Number EERE-2013-BT-STD-0030.

2. Energy Conservation Program: Energy Conservation Standards for Commercial Water Heaters, Docket Number EERE–2014-BT–STD–0042.

3. Energy Conservation Program: Energy Conservation Standards for Residential Furnaces, Docket Number EERE-2014-BT-STD-0031.

DOE well understands that it may not promulgate efficiency standards that would result in the unavailability in the United States of any covered product type (or class) of performance characteristics (including reliability, features, sizes, capacities, and volumes) that are substantially the same as those currently in the market.[2] Yet, in the non-weatherized residential furnace and manufactured home furnace rulemaking, DOE has proposed to do just that by imposing minimum efficiency standards that can only be safely achieved through the use of condensing technology.[3] DOE recognizes that such standards would result in the unavailability of vented gas products capable of operating with conventional atmospheric venting systems and without the need for liquid condensate disposal; it has simply failed to acknowledge that these important product features *are performance-related features* for EPCA purposes.

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[1] 42 U.S.C. §§ 6295(o)(4), 6295(q)(1), and 6313(a)(6)(B)(iii)(II).

[2] 42 U.S.C. §§ 6295(o)(4) and 6313(a)(6)(B)(iii)(II).

[3] *See generally* White Paper Developed by the American Gas Association and American Public Gas Association, "In the Upcoming Rulemaking on Amendments to the Minimum Efficiency Standards for Non-Weatherized Residential Gas Furnaces, DOE Should Employ Separate Product Classes for Condensing and Noncondensing Furnaces" (Oct. 22, 2014)(detailing the unique performance-related characteristics and consumer utility of non-condensing furnaces)(attached hereto as Attachment No. 1).

The Issue of Statutory Interpretation

Many conventional natural gas products are designed for atmospheric venting, typically through vent systems that carry exhaust gases via buoyancy vertically through the roof of the buildings in which they are installed. The vast majority of existing buildings in which gas products are installed were built with atmospheric venting systems designed to accommodate such products.

Gas products that use condensing combustion technology can achieve higher measured efficiencies than conventional gas products, but they do so by imposing the need for liquid condensate disposal and making the products incompatible with atmospheric venting systems provided by the overwhelming majority of existing homes and other buildings in which gas products are installed. In brief, condensing technology provides increased thermal efficiency by extracting additional heat from combustion gases before they are vented. This, in turn, produces liquid condensate and cooler exhaust gases that lack sufficient buoyancy to exit a building via an atmospheric venting system. Condensing products therefore require plumbing for condensate disposal and "power" (*i.e.*, positive pressure) venting, typically through horizontal venting penetrating an exterior building wall. Power-vented products cannot share common vent systems with atmospherically-vented products under the prevailing national model codes[4] because positive pressure in such a vent system would force combustion products into occupied spaces within the building through draft hoods and other atmospheric vent system structures designed to facilitate buoyancy-driven transport of combustion products. For these and related safety reasons, the safety manufacturing design standards and installation codes specifically separate the categories of non-condensing and condensing vented fuel gas appliances and equipment based on venting characteristics; they provide that power-vented products cannot be connected to atmospheric venting systems or share common venting systems with atmospherically vented gas products. In addition, condensing products require plumbing for condensate disposal that other vented gas products generally do not. These performance-related features of condensing technology significantly constrain the utility of condensing products; in fact, there are cases in which they effectively eliminate condensing products as a practical option. Products that do not require plumbing for condensate disposal and are compatible with atmospheric venting systems therefore offer performance-related features with utility that condensing products lack.

Products that offer different performance-related features are often capable of achieving different measured efficiencies. Where this is the case, there is a potential that an efficiency standard could be set that would be achievable for products with some features but not achievable for products with other features, in which case the standard would have the effect of banning the latter products and the features they provide. Congress anticipated such situations, and it accordingly made it clear that DOE is authorized to regulate product efficiency but *not to restrict the range of features that covered products can provide.* EPCA expressly prohibits the adoption of an energy conservation standard if it has been shown that the standard would have the effect of eliminating a currently-available product feature from the market. 42 U.S.C. § 6295(o)(4) and 42 U.S.C. § 6313(a)(6)(B)(iii)(II). If DOE determines that a more stringent standard would be

[4] "National Fuel Gas Code, 2015 Edition," ANSI Z223.1/NFPA 54/, American Gas Association/National Fire Protection Association, 2015, and "International Fuel Gas Code," International Code Council/American Gas Association, 2015.

appropriate for products with specific product features, it can impose such standards *for such products*; but, it may do so only by creating separate product classes for products with different performance-related features and specifying different (and achievable) standards for each. 42 U.S.C. § 6295(q)(1). What DOE cannot do is impose a single standard that would achieve higher efficiency by eliminating the availability of useful product features. Unfortunately, that is exactly what DOE's proposed standards for residential furnaces, for example, would accomplish.[5]

There is no material dispute as to the facts: DOE has acknowledged that efficiency standards that can only be achieved through use of condensing technology would effectively eliminate gas products that do not require a plumbing connection and are compatible with atmospheric venting systems.[6] DOE has simply suggested that the constraints imposed by condensing technology do not involve any loss of useful product features. This suggestion is inconsistent both with EPCA's provisions and DOE's own previous determinations.

In addressing the need for separate product classes under 42 U.S.C. § 6295(q)(1), DOE has repeatedly recognized that features that significantly affect the conditions under which products can be used are *performance-related features* for EPCA purposes. For example, DOE's decision to maintain separate product classes for "space-constrained" heat pumps and air conditioners and other central heat pump and air conditioning products necessarily reflects the legal conclusion that product features that address significant installation constraints are *performance-related features* providing utility that other products lack.[7] Similarly, DOE has recognized different product classes for electric residential clothes dryers to address differences in product features that address installation space constraints and differences in available electrical power supply.[8] Moreover, such "performance-related" features are also recognized in the provisions of EPCA itself: for example, EPCA provides separate standards for residential direct heating equipment on the basis of variations in the manner in which such products are designed to be installed.[9]

The ability of a product to function without a plumbing connection is a feature that is no less important than features that affect where products will fit, what type of wiring they require, or whether they are designed to be free-standing as opposed to being installed in a wall or a floor. The ability of a product to function with atmospheric venting is an even more important feature because it enables products to be used as replacements for atmospheric-vented products without the need for building alterations or the risk of adverse impacts on other atmospheric-vented gas products tied to a common venting system. For example – as DOE is aware – standards that

[5] 81 Fed. Reg. 65720 at 65752-53 (Sept. 23, 2016). The same basic issue is presented in the pending standards development proceedings for commercial water heaters and commercial packaged boilers.
[6] 81 Fed. Reg. at 65752-53.
[7] Direct Final Rule, Energy Conservation Program: Energy Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps, 76 Fed. Reg. 37407, 37446 (June 27, 2011) ("Because physical size constraints for through-the-wall products continue to exist, DOE determined that continuation of the space-constrained product class is warranted."). *See also* APGA Residential Furnace Comments at 6-11 (filed Nov. 22, 2016)("DOE fails to address the line of contrary precedent that APGA brought to its attention.").
[8] 10 C.F.R. § 430.32(h)(3).
[9] *See* 42 U.S.C. § 6295(e)(3). *See also* Final Rule, Energy Conservation Program: Energy Conservation Standards for Ceiling Fans, 82 Fed. Reg. 6826, 6833 (Jan 19, 2017)(adopting 7 product classes: highly-decorative, belt-driven, very small-diameter, hugger, standard, high-speed small-diameter and large-diameter fans).

would effectively eliminate atmospherically-vented furnaces would often create venting problems for commonly-vented *water heaters*, often with the result that a furnace replacement would require that a perfectly good water heater be replaced as well.[10] This combination of features can make gas products a viable option in situations in which condensing products – due to physical or legal constraints – could not be installed at all. Moreover, there are cases in which the continued availability of atmospherically vented products is absolutely critical, such as multistory housing in which vented gas products are common vented into a central venting system that serves multiple floors where residential units are under different ownership. In such cases, the inability of a consumer to replace an atmospherically-vented product with another atmospherically-vented product would not merely present problems for consumers involved; it could adversely affect the venting of common-vented products owned by other parties in the same building.

It is absurd to suggest that features that may be necessary to make the use of a product practical (or even possible) are not "performance-related features" for EPCA purposes. DOE's proposed interpretation to the contrary – as stated in the context of the residential furnace rulemaking – amounts to the suggestion that the features lacking in condensing products are irrelevant because "the consumer utility of a furnace is that it provides heat to a dwelling," and products with such features do not "provide unique utility to consumers beyond the basic function of providing heat, which all furnaces perform." 81 Fed. Reg. at 65752-53. The first error in this conclusion is that it is wrong on the facts: atmospheric-vented gas furnaces *do* provide unique utility, because they can provide heat to dwellings in cases in which condensing furnaces cannot (because they could not reasonably be installed). The second obvious problem is that – if the only "performance-related feature" of a product were its basic function – products performing the same basic function could never have different performance-related features, and the statutory provisions designed to prevent the adoption of standards eliminating available product features could never apply. All furnaces provide heat, all dishwashers clean dishes, all clothes dryers dry clothes, and so on. Statutory provisions should not be interpreted in ways that would render them meaningless,[11] and – more to the point – DOE cannot reasonably "interpret" express statutory constraints on its authority into oblivion.[12] Suggestions to the contrary in the pending rulemaking proceedings are nothing more than transparent attempts to justify exactly the kind of outcome Congress intended to preclude: the adoption of standards that would achieve higher efficiency by eliminating product features that are important to many purchasers.

DOE has attempted to justify its proposed interpretation by asserting that "tying the concept of 'feature' to a specific technology" locks in existing technology so that technological advances cannot be recognized in efficiency standards. This argument is flawed because minimum efficiency standards, providing baseline efficiencies for covered products, do not preclude installation of widely-available condensing combustion alternatives where they are economically justified. Furthermore, we are not suggesting that particular technologies should be arbitrarily

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[10] Spire Residential Furnace SNOPR Comments (filed Jan. 6, 2017). (https://www.regulations.gov/contentStreamer?documentId=EERE-2014-BT-STD-0031-0309&attachmentNumber=1&contentType=pdf) (Open the PDF document and use the search function for the word "stranded").

[11] *NRDC v. EPA*, 489 F.3d 1364, 1373 (D.C. Cir. 2007).

[12] *Hearth, Patio & Barbecue Assn. v. DOE*, 706 F.3d 499, 506 (D.C. Cir. 2013).

preserved, but that DOE may not impose standards that effectively eliminate available product features that provide unique utility to consumers. As technology advances, it may become possible for gas products to achieve higher efficiencies without sacrificing their compatibility with atmospheric venting systems and their ability to function without plumbing connections. Until then, DOE can impose higher efficiency standards as appropriate, but only by creating separate standards for separate product classes as necessary to preserve the availability of those product features.

Relief Requested

Minimum efficiency requirements that can only be safely achieved through the use of condensing technology would eliminate vented gas products with important features – including compatibility with the atmospheric venting systems present in the vast majority of existing buildings in which such products are installed – that are often necessary to make the use of gas products a practical option. DOE is not authorized to adopt standards that would limit the range of available product features in this way. Unfortunately, DOE has failed to heed this limitation on its authority in the course of its pending rulemaking proceedings.

We respectfully request that DOE re-examine its position and provide the requested interpretation that confirms that *the ability of a product to operate with conventional atmospheric venting systems – and the ability of a product to operate without generating liquid condensate requiring disposal – are important performance-related features for EPCA purposes*. The effect of this interpretation would be to confirm that DOE cannot lawfully impose minimum efficiency standards that can only be achieved through the use of condensing technology unless it (1) determines that such standards are justified for power-vented products requiring condensate disposal; and (2) specifies separate product classes, as it has done for many other products, so that it can impose such technically feasible and economically justified minimum efficiency standards on the different product classes while preserving the availability of products that do not require condensate disposal and are compatible with atmospheric venting systems.

Respectfully submitted,

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White Paper Developed by the American Gas Association and American Public Gas Association

In the Upcoming Rulemaking on Amendments to the Minimum Efficiency Standards for Non-Weatherized Residential Gas Furnaces, DOE Should Employ Separate Product Classes for Condensing and Noncondensing Furnaces

October 22, 2014

The Department of Energy should, in pursuing the rulemaking on amended residential furnace standards required by the court's order in American Public Gas Association v. DOE (D.C. Circuit Case No. 11-1485), establish separate product classes for condensing and non-condensing non-weatherized residential gas furnaces.

This paper describes the relevant legal authority that governs DOE's decision on this product class issue, the technical characteristics of condensing and non-condensing furnaces indicating that separate product classes are appropriate, and the applicable DOE precedents that should guide DOE in its consideration of separate product classes in this case.

I. Legal Basis for Rulemaking

Under the April 24, 2014 order of the United States Court of Appeals for the District of Columbia Circuit approving a settlement among the parties including DOE, the previously promulgated amendments to the "energy conservation standards for non-weatherized gas furnaces, including but not limited to the Department of Energy's determination that such furnaces constitute a single class of products for purposes of 42 U.S.C. 6295(q)(1)(B)," were vacated and remanded to DOE for notice and comment rulemaking. Thus, DOE agreed, and the court ordered, that DOE reconsider the question of whether condensing and noncondensing non-weatherized gas furnaces should be treated as separate product classes in future rulemaking covering these products.

In setting standards, EPCA requires DOE to structure product classes to ensure the continued availability of a product's unique performance characteristics in light of the utility those characteristics provide to consumers. Specifically, DOE may not prescribe a standard if 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 already available.[1] Moreover, EPCA's "special rule for certain types or classes of products" requires the Secretary to establish separate standards for any group of covered products if the products "have a capacity or other performance-related feature which other products within such type (or class) do not have and such feature justifies a higher or lower standard from that which applies (or will apply) to other products within such type (or class)."[2] In determining "whether a performance-related feature

[1] 42 U.S.C. § 6295(o)(4).
[2] 42 U.S.C. § 6295(q)(1)(B).

justifies the establishment of a higher or lower standard, the Secretary shall consider such factors as the utility to the consumer of such a feature . . . ."[3]

In light of the unique performance-related characteristics and utility that non-condensing non-weatherized residential gas furnaces provide to consumers, these provisions of EPCA require DOE to establish separate product classes for condensing and non-condensing non-weatherized residential gas furnaces.

II. The Unique Performance-Related Characteristics and Consumer Utility of Non-Condensing Furnaces

Condensing and non-condensing non-weatherized gas furnaces are significantly different in terms of the venting mechanisms they use, how they produce and dispose of condensate and the building environments in which they can be installed.[4] These differences create important differences in consumer utility, and must be appropriately considered in DOE's standards development process.

A. Distinct Venting Characteristics

Non-condensing (also known as Category I) and condensing (also known as Category IV) gas furnaces use separate and technically distinct types of venting systems. Non-condensing furnaces employ net negative vent pressures and require masonry chimneys or metal vents that are installed vertically. Condensing furnaces employ positive net pressures, and use plastic, pressurized, gas-tight venting that is typically installed horizontally. Condensing furnaces require blowers to exhaust combustion products, while non-condensing furnaces rely on an induced draft. Condensing furnaces require condensate drains to operate properly; non-condensing furnaces do not.

Neither type of furnace can be installed with venting designed for the other type of furnace, according to design certification standards for safety covering gas furnaces, gas installation codes, and safe installation practices. For example, installation of a Category IV condensing gas furnace that is certified for positive vent static pressure and vent temperatures

[3] 42 U.S.C. § 6295(q)(1).

[4] The distinguishing technical characteristics of a *condensing gas furnace* include: (1) exhaust gas temperatures generally ranging from 120 to 130°F; (2) the use of a fan for venting, because the exhaust gas is not hot enough to travel up a vertical chimney without propulsion; (3) PVC vent piping because PVC resists corrosion from moisture in the acidic exhaust gas, unlike metal piping, and exhaust gas temperatures remain well below the melting point of PVC pipe; and (4) a dedicated condensate drain for moisture produced during gas combustion. The distinguishing technical characteristics of a *non-condensing gas furnace* include: (1) exhaust gas temperatures of 275°F or above; (2) atmospheric venting – i.e., venting without propulsion via fan – because the temperature of the exhaust gas causes the gas to rise and exit a vertical chimney; (3) no condensate drain, because the moisture produced during gas combustion remains in a gaseous state (above 212°F, the boiling point of water) and vents with the exhaust gas through the chimney. *See generally* "Fundamentals of Venting and Ventilation," American Standard Inc., Pub. No. 34-4010-02 (1993), *available at* http://hvac.amickracing.com/Venting/Fundamentals%20of%20Venting%2034-4010-02.pdf.

that produce condensate from combustion cannot be vented into an "atmospheric" or buoyancy-driven venting system designed for a non-condensing appliance under the National Fuel Gas Code.[5] Doing so would also violate the furnace manufacturer's installation instructions and terms of sale, and applicable building codes. Such installations would pose a threat to the safety of building occupants by increasing the risks of venting system failures due to corrosion and of carbon monoxide poisoning due to incomplete venting of combustion products.

Non-condensing furnaces can also be vented through common vents with atmospherically vented gas water heaters, unlike condensing furnaces which require dedicated venting. Common venting non-condensing gas furnaces and atmospherically vented water heaters together is standard practice and requires proper sizing of the venting system to serve both appliances. In the case of a furnace replacement, a change from a non-condensing to a condensing furnace will require a new venting system for the furnace and may require significant modifications to the venting system of the existing water heater to maintain safe and proper venting of its flue gasses. The venting system requirements underpinning such modifications are well established in national installation codes, and if a consumer neglects to implement the needed venting system changes for cost or other reasons, he or she may be creating a safety hazard.

As discussed in section III.A below, DOE has previously made product class distinctions based on type of venting.

B. Building Constraints on Installation

Because a venting system is part of a building's infrastructure, it represents an installation constraint associated with the building environment for furnaces that need to be replaced in existing structures. Replacing a non-condensing furnace with a condensing furnace will require a new venting system. In many installation situations, switching to a condensing furnace may require abandonment of the existing venting system, structural changes to accommodate a new venting system path, and relocation of the furnace to meet the code and installation requirements of the new condensing furnace system. Because of these installation hurdles, replacing a non-condensing furnace with another non-condensing furnace has significant utility to consumers who, in replacing a furnace, do not anticipate needing to significantly alter their home venting system to maintain their safety.

In some cases, such as in certain multi-family dwellings, these installation hurdles may be significant enough to preclude installation of a condensing furnace. For consumers in such a situation, a non-condensing furnace may be the only feasible furnace alternative that relies upon natural gas. For these consumers, failure to create a separate product class for non-condensing non-weatherized gas furnaces would compel fuel-switching.[6]

[5] National Fuel Gas Code, ANSI Z223.1/NFPA 54.

[6] The record in the vacated Direct Final Rule proceeding contained voluminous record evidence on the extent of the fuel switching that would occur due to the up-front costs associated with replacing a non-condensing furnace

In many other circumstances, the building-related hurdles to installing a condensing furnace could be overcome as a technical matter but only with very significant installation costs. In these situations, building constraints make use of a condensing furnace an economically impractical option.

As discussed in section III.B below, DOE has previously made product class distinctions for products designed to meet building-related constraints.

C. Distinct Product Utility and Performance-Related Characteristics for Condensing and Non-Condensing Furnaces Require Separate Product Classes

Given that non-condensing furnaces provide unique utility and performance-related characteristics in terms of venting, condensate management and installation, DOE should establish separate product classes for condensing and non-condensing furnaces in its rulemaking action pursuant to the court's order. Failure to create a regulatory framework that permits the continued availability of non-condensing furnaces to consumers in building circumstances that require the particular utility of these furnaces would contravene the purposes of EPCA.

III. Relevant Precedents for Separate Product Classes

A large body of DOE precedent demonstrates that DOE has frequently considered venting characteristics and installation characteristics related to the building environment as bases for establishing separate product classes under EPCA. Establishment of separate product classes for condensing and non-condensing furnaces would be consistent with all of these precedents.

A. Precedents for Using Venting Characteristics as a Basis for Product Class Distinctions

DOE has previously created distinct product classes based on relevant venting characteristics, as is urged here.[7]

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with a condensing furnace. *Energy Conservation Program: Energy Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps,* Direct Final Rule, 76 FR 37524 (June 27, 2011)(rule vacated in relevant part). This fuel switching scenario was confirmed by a recent nationwide survey conducted by GTI (available at http://www.apga.org/i4a/pages/index.cfm?pageid=3881)

[7] In 2011, DOE declined to establish separate non-condensing and condensing classes for non-weatherized gas furnaces on this basis because the "utility derived by consumers from furnaces is in the form of the space heating function that the furnace performs," and because the two types of gas furnaces provide "virtually the same utility with respect to that primary function." *Energy Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps*, *Notice of Effective Date and Compliance Dates for Direct Final Rule*, 76 FR 67037, 67041 (Oct 31, 2011) (rule vacated in relevant part). That rationale does not square with the precedents listed here, all of which involve product class distinctions based on venting as a non-primary function

1. Residential Electric Clothes Dryers. DOE's standards for electric clothes dryers manufactured on or after January 1, 2015 distinguish between vented and ventless dryers, and include four vented dryer product classes and two ventless dryer product classes.[8] For example, DOE has created product classes for "Vented Electric, Compact (240V) (less than 4.4 ft3 capacity)" and "Ventless Electric, Compact (240V) (less than 4.4 ft3 capacity)"; the only difference between these two product classes is whether the product is vented or ventless. In finalizing these product classes, DOE expressly based its decision to create a product class designation on the utility that the relevant venting mechanism provides to consumers:

   > DOE considered four product classes for vented clothes dryers and two product classes for ventless clothes dryers, ventless electric compact (240 V) and combination washer/dryers, recognizing the **unique utility that ventless clothes dryers offer to consumers.**[9]

   DOE further explained that the new ventless designation "reflects the actual consumer utility (that is, no external vent required)."[10]

2. Residential Furnace Fans. DOE recently established the following product classes for furnace fans: (i) Non-weatherized, Non-condensing Gas Furnace Fan (NWG-NC); (ii) Non-weatherized, Condensing Gas Furnace Fan (NWG-C); (iii) Mobile Home Non-weatherized, Non-condensing Gas Furnace Fan (MH-NWG-NC); and (iv) Mobile Home Non-weatherized, Condensing Gas Furnace Fan (MH-NWG-C).[11] Thus, DOE created separate non-condensing and condensing classes – precisely the same product class distinction sought here – for non-weatherized gas furnace fans and mobile home non-weatherized gas furnace fans. In so doing, DOE distinguished between non-condensing and condensing furnaces as an appropriate basis for creating separate product classes under EPCA.

3. Commercial Packaged Boilers. DOE's standards for steam commercial packaged boilers include product subcategories for "Gas-fired—all, except natural draft" and "Gas-fired—natural draft."[12] This differentiation based on venting system is directly analogous to the "condensing" and "non-condensing" approach to categorizing furnaces – natural draft venting corresponds with venting of non-condensing furnaces, and positive vent pressure venting corresponds with condensing furnaces. For steam commercial packaged boilers, this distinction was based on the product classes defined in ASHRAE Standard 90.1-2007. [13]

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[8] 10 C.F.R. § 430.32(h).
[9] *Energy Conservation Program: Energy Conservation Standards for Residential Clothes Dryers and Room Air Conditioners*, *Direct Final Rule*, 76 FR 22453, 22485 (April 21, 2011) (emphasis added).
[10] *Id.* at n.28.
[11] 10 C.F.R. § 430.32(y).
[12] 10 C.F.R. § 431.87(b).
[13] *Energy Conservation Program for Certain Industrial Equipment: Energy Conservation Standards and Test Procedures for Commercial Heating, Air-Conditioning, and Water-Heating Equipment*, *Final Rule*, 74 FR 36312, 36320 (July 22, 2009).

B. Precedents Using Installation Constraints and Costs as a Basis for Product Class Distinctions

DOE has previously created product classes expressly based on relevant installation characteristics that permit continued installation of a covered product in an existing building condition without undue burden.[14]

1. Packaged Terminal Air Conditioners (PTAC) and Heat Pumps (PTHP). In addition to its "standard-size" class for PTACs and PTHPs, DOE has adopted a "non-standard size" class for PTACs and PTHPs, reasoning that wall sleeve size (the housing into which the product is fitted in the wall) is a performance-related feature.[15] DOE created the non-standard product class because in facilities using non-standard size equipment, "altering the existing wall sleeve opening to accommodate the more efficient, standard size equipment could include extensive structural changes to the building, which could be very costly . . . DOE was concerned that, absent non-standard equipment, commercial customers could be forced to invest in costly building modifications to convert non-standard sleeve openings to standard size dimensions."[16]

2. Central Air Conditioners and Heat Pumps. DOE adopted a space-constrained product class for air conditioners and a space-constrained product class for heat pumps.[17] Originally established in 2004, DOE continued the space-constrained product class in 2011 - in the same rulemaking in which it declined to establish a non-condensing, non-weatherized gas furnace product class - pointing out that DOE believes that "a larger through-the-wall unit would trigger a considerable increase in the installation cost to accommodate the larger unit."[18]

3. Residential Water Heaters. DOE adopted a product class for tabletop water heater in 2001 due to "strict size limitations" for the products.[19]

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[14] In 2011, DOE declined to establish separate non-condensing and condensing classes for non-weatherized gas furnaces on the ground that avoiding the installation obstacles associated with switching from non-condensing to condensing furnaces was an "economic impact" rather than a "special utility" to consumers. 76 FR at 67042 (rule vacated in relevant part). That rationale is not consistent with the precedents listed here, all of which involve product classes developed to ensure that the installation of new covered products in certain building conditions is not foreclosed. This inconsistency is highlighted by the fact that all of the constraints that form the basis for these product class distinctions listed here can be overcome with changes to a building condition, but only at unreasonable cost.

[15] *Energy Conservation Program for Commercial and Industrial Equipment: Packaged Terminal Air Conditioner and Packaged Terminal Heat Pump Energy Conservation Standards*, *Final Rule*, 73 FR 58772, 58782 (Oct. 7, 2008).

[16] *Id.*

[17] 10 C.F.R. § 430.32(c).

[18] *Energy Conservation Program: Energy Conservation Standards for Residential Furnaces and Residential Central Air Conditioners and Heat Pumps*, *Direct Final Rule*, 76 FR 37407, 37446 (June 27, 2011)(rule vacated in relevant part).

[19] *Energy Conservation Program for Consumer Products: Energy Conservation Standards for Water Heaters*, *Final Rule*, 66 FR 4474, 4478 (Jan. 17, 2001).

4. Compact Products. DOE has created compact product classes for a large number of appliances, including refrigerators/refrigerator-freezers/freezers, dishwashers, clothes washers, and clothes dryers.[20] DOE has adopted such product classes because of the unique utility that compact appliances provide consumers by permitting installation of appliances in existing space-constrained environments.[21]

[20] *See* 10 C.F.R. 430.32(a), (f), (g), and (h).

[21] *See*, *e.g.*, *Energy Conservation Program: Energy Conservation Standards for Residential Clothes Dryers and Room Air Conditioners*, *Direct Final Rule*, 76 FR 22453, 22485 (April 21, 2011) ("DOE also notes that compact-size clothes dryers provide utility to consumers by allowing for installation in space-constrained environments."); *Energy Conservation Program: Energy Conservation Standards for Residential Dishwashers*, *Direct Final Rule*, 77 FR 31917, 31926 (May 30, 2012) ("compact dishwashers provide unique utility").