

ORAL ARGUMENT NOT YET SCHEDULED
Nos. 22-1030; 23-1285; 23-1337

IN THE UNITED STATES COURT OF APPEALS
FOR THE DISTRICT OF COLUMBIA CIRCUIT

AMERICAN GAS ASSOCIATION; AMERICAN PUBLIC GAS ASSOCIATION;
NATIONAL PROPANE GAS ASSOCIATION; THERMO PRODUCTS, LLC;
SPIRE INC., SPIRE ALABAMA INC.; SPIRE MISSOURI INC.
Petitioners,

v.

U.S. DEPARTMENT OF ENERGY; OFFICE OF ENERGY EFFICIENCY
AND RENEWABLE ENERGY, DEPARTMENT OF ENERGY; JENNIFER M.
GRANHOLM, SECRETARY, U.S. DEPARTMENT OF ENERGY,
Respondents.

On Petitions for Review of Final Rules of the
U.S. Department of Energy

JOINT PETITIONERS' PRELIMINARY OPENING BRIEF
(DEFERRED APPENDIX APPEAL)

Dated: April 9, 2024

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Certificate as to Parties, Rulings, and Related Cases

Parties and Amici

Petitioners in these consolidated cases are the American Gas Association (22-1030; 23-1285; 23-1337), American Public Gas Association (22-1030; 23-1285; 23-1337), National Propane Gas Association (23-1285; 23-1337), Thermo Products, LLC (22-1030; 23-1337), Spire Inc. (22-1030), Spire Alabama Inc. (22-1030), and Spire Missouri Inc. (22-1030).

Respondents are the U.S. Department of Energy (22-1030; 23-1285; 23-1337), Office of Energy Efficiency and Renewable Energy, U.S. Department of Energy (23-1285; 23-1337), Jennifer M. Granholm, Secretary, U.S. Department of Energy (22-1030; 23-1285; and 23-1337).

Intervenors supporting respondents are the City of New York (22-1030), Commonwealth of Massachusetts (22-1030), Consumer Federation of America (22-1030), District of Columbia (22-1030), State of Illinois (22-1030), State of Maine (22-1030), State of Maryland (22-1030), State of Minnesota (22-1030), State of Nevada (22-1030), State of New Jersey (22-1030), State of New Mexico (22-1030), State of New York (22-1030), State of Oregon (22-1030),

State of Vermont (22-1030), State of Washington (22-1030), Massachusetts Union of Public Housing Tenants (22-1030; 23-1285; 23-1337), Natural Resources Defense Council (22-1030; 23-1285; 23-1337), and Sierra Club (22-1030; 23-1285; 23-1337).

As of the date of this filing, no *amicus curiae* has appeared in these cases.

Rulings Under Review

Petitioners seek review of three Department of Energy final rules titled: (1) Energy Conservation Program for Appliance Standards: Energy Conservation Standards for Residential Furnaces and Commercial Water Heaters, Notification of Final Interpretive Rule, 86 Fed. Reg. 73,947 (Dec. 29, 2021) (“December 2021 Interpretive Rule”); (2) Energy Conservation Program: Energy Conservation Standards for Commercial Water Heating Equipment, 88 Fed. Reg. 69,686 (Oct. 6, 2023) (“Commercial Water Heater Rule”); and (3) Energy Conservation Program: Energy Conservation Standards for Consumer Furnaces, 88 Fed. Reg. 87,502 (Dec. 18, 2023) (“Consumer Furnace Rule”).

Related Cases

These cases have not previously been before this Court or any other court. In 2021, a group of states challenged the Department's withdrawal of proposed rules that would have eliminated noncondensing consumer furnaces and commercial water heaters from the market. *New York v. DOE*, 21-602 (2d Cir. 2021) (petitioning for review of Energy Conservation Standards for Residential Furnaces and Commercial Water Heaters, 86 Fed. Reg. 4,776 (Jan. 15, 2021) and Energy Conservation Standards for Residential Furnaces and Commercial Water Heaters; Withdrawal, 86 Fed. Reg. 3,873 (Jan. 15, 2021)). That challenge has been held in abeyance since March 24, 2021, *id.* at Doc. 27, and that abeyance was extended pending resolution of the petition here challenging the current, December 2021 Interpretive Rule. *Id.* at Docs. 61, 68, 89. Counsel for Petitioners are not aware of any other related cases.

Disclosure Statement

Pursuant to Federal Rule of Appellate Procedure 26.1 and D.C. Circuit Rule 26.1, Petitioners submit the following corporate disclosure statements:

The **American Gas Association** (“AGA”) certifies that it is a non-profit, tax-exempt trade association headquartered in the District of Columbia. AGA has no parent corporation, and no publicly held company has 10% or greater ownership in AGA. AGA is an advocate for natural gas utility companies and their customers and provides a broad range of programs and services for member natural gas pipelines, marketers, gatherers, international natural gas companies and industry associates, including a natural gas appliances manufacturer.

The **American Public Gas Association** (“APGA”) certifies that it is a non-profit, tax-exempt trade association headquartered in the District of Columbia. APGA has no parent corporation, and no publicly held company has 10% or greater ownership in APGA. APGA is the national, non-profit association of publicly owned natural gas distribution systems, with over 700 members in 38 states. APGA promotes and advances the interests of publicly owned gas systems, including municipal gas distribution systems, public utility districts, county districts, and other public agencies that have natural gas distribution facilities.

The **National Propane Gas Association** (“NPGA”) certifies that it is a non-profit, tax-exempt trade association headquartered in the District of Columbia. NPGA has no parent corporation, and no publicly held company has 10% or greater ownership in NPGA. NPGA represents the U.S. propane industry, and its membership includes small businesses and large corporations engaged in the retail marketing of propane gas and appliances, producers and wholesalers of propane, manufacturers and distributors of propane gas appliances and equipment, fabricators of propane gas cylinders and tanks, and propane transporters. With more than 2,400 member companies in all 50 states and internationally, the association represents every segment of the propane industry.

Thermo Products, LLC (“Thermo”) is a limited liability company organized and existing under the laws of the State of Delaware. Thermo is a wholly owned subsidiary of Burnham Holdings, Inc., which is listed under the symbol “BURCA” on the electronic Pink Sheets and is listed by the OTC Markets Group, Inc. Thermo is a manufacturer of primarily gas and oil furnaces.

Spire Inc. (NYSE MKT: SR) is a publicly traded corporation organized and existing under the laws of the State of Missouri. Spire Inc. has no parent corporation. BlackRock, Inc. owns 10% or more of Spire Inc.'s stock. Spire Inc. is a gas utility company serving 1.7 million customers in Missouri, Alabama, and Mississippi.

Spire Alabama Inc. is a corporation organized and existing under the laws of the State of Alabama. Spire Alabama Inc. is a wholly owned subsidiary of Spire Inc., which is publicly held (NYSE MKT: SR). Spire Alabama, Inc. is a gas utility company, serving customers in Alabama.

Spire Missouri Inc. is a corporation organized and existing under the laws of the State of Missouri. Spire Missouri Inc. is a wholly owned subsidiary of Spire Inc., which is publicly held (NYSE MKT: SR). Spire Missouri, Inc. is a gas utility company, serving customers in Missouri.

/s/ Michael B. Schon

Michael B. Schon

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Glossary

APA	Administrative Procedure Act
AGA	American Gas Association
APGA	American Public Gas Association
ASHRAE	American Society of Heating, Refrigerating and Air Conditioning Engineers
Commercial Water Heater Rule	Energy Conservation Program: Energy Conservation Standards for Commercial Water Heating Equipment, 88 Fed. Reg. 69,686 (Oct. 6, 2023)
Consumer Furnace Rule	Energy Conservation Program: Energy Conservation Standards for Consumer Furnaces, 88 Fed. Reg. 87,502 (Dec. 18, 2023)
December 2021 Interpretive Rule	Energy Conservation Program for Appliance Standards: Energy Conservation Standards for Residential Furnaces and Commercial Water Heaters, Notification of Final Interpretive Rule, 86 Fed. Reg. 73,947 (Dec. 29, 2021)
Department	U.S. Department of Energy
EPCA	Energy Policy and Conservation Act
January 2021 Interpretive Rule	Energy Conservation Standards for Residential Furnaces and Commercial Water Heaters, Notification of Final Interpretive Rule, 86 Fed. Reg. 4,776 (Jan. 15, 2021)

NPGA	National Propane Gas Association
Spire	Spire Inc., Spire Alabama Inc., Spire Missouri Inc.
Thermo	Thermo Products, LLC

Jurisdictional Statement

This Court has jurisdiction under 42 U.S.C. §§ 6306(b) and 6316(a).

The Department issued the December 2021 Interpretive Rule pursuant to 42 U.S.C. §§ 6313 and 6295, and it was published on December 29, 2021. AGA, APGA, Spire, and Thermo petitioned for review on February 25, 2022.

The Department issued the Commercial Water Heater Rule pursuant to 42 U.S.C. § 6313, and it was published on October 6, 2023. AGA, APGA, and NPGA petitioned for review on October 13, 2023.

The Department issued the Consumer Furnace Rule pursuant to 42 U.S.C. § 6295, and it was published on December 18, 2023. AGA, APGA, NPGA, and Thermo petitioned for review on December 18, 2023.

The three challenges were consolidated by this Court's December 21, 2023, order, Document No. 203295, *AGA v. DOE*, No. 22-1030 (D.C. Cir.).

Statement of Issues

1. Did the Department act arbitrarily, capriciously, or contrary to law by imposing amended efficiency standards for commercial water heaters and consumer furnaces that will result in the unavailability of noncondensing gas-fired appliances?

2. Did the Department act arbitrarily, capriciously, or contrary to law by failing to provide sufficient evidence that the new standards are economically justified?

3. Did the Department act arbitrarily, capriciously, or contrary to law by failing to allow stakeholders adequate information and time to comment on critical aspects of the Consumer Furnace Rule?

Statutes and Regulations

Pertinent statutes are contained in an addendum to this brief.

Introduction

In the trio of rules challenged here, the U.S. Department of Energy adopted efficiency standards that will eliminate from the market the consumer furnaces and commercial water heaters used by tens of millions of Americans. *See* December 2021 Interpretive Rule, 86 Fed. Reg. 73,947; Commercial Water Heater Rule, 88 Fed. Reg. 69,686; Consumer Furnace Rule, 88 Fed. Reg. 87,502. Gas-fired furnaces and water heaters have two main technologies. Noncondensing appliances use unpowered (typically vertical) venting to safely remove exhaust gas from a building via natural draft, like through a chimney. Condensing appliances use powered (typically horizontal) venting, requiring extra equipment to suck or blow the exhaust gas out of the building (*i.e.*, powered venting). *See* Consumer Furnace Rule, 88 Fed. Reg. at 87,563 n.111 (describing the differences between venting systems).

Although the market share of condensing appliances is growing, millions of existing buildings still use noncondensing appliances because they were designed with venting to do so. *See* AGA Joint Comments, IR.CI-135 at

2.² Now, the Department has established standards only condensing appliances can meet, and the millions of consumers using noncondensing appliances will have limited options when they must replace them. Those consumers will be forced to remodel their homes or businesses to accommodate a condensing appliance, if that is possible, or abandon gas appliances altogether. Remodels are not only costly and disruptive, but they may require that consumers give up usable space—or even sacrifice windows or balconies—to accommodate the venting necessary for a condensing appliance. For some buildings, condensing appliances are not an option at all.

But the Energy Policy and Conservation Act (“EPCA”) expressly prohibits efficiency standards that will eliminate product classes that consumers rely on for their “performance characteristics.” *See* 42 U.S.C. §§ 6295(o)(4),

² In this brief, “CI” refers to the certified index of record Respondents filed on February 16, 2024, Document No. 2040916. R. 17(b)(1)(B). Documents are identified by the “Document ID” numbers from the certified index. The certified index is broken into three sections: “Rule 1,” “Rule 2,” and “Rule 3.” To specify which section Petitioners are citing, this brief will use “IR,” “CWH,” and “CF” to refer to the December 2021 Interpretive Rule, Commercial Water Heater Rule, and Consumer Furnace Rule, respectively. In the final briefs, CI cites will be replaced with “JA” cites, which refers to the Joint Appendix.

6313(6)(B)(iii)(II)(aa). The plain meaning of “performance characteristics” includes any product attribute that provides utility to consumers who desire to use the product, as the statutory context and the Department’s past rule-making confirm. Because noncondensing appliances are the only type of gas furnace or water heater that will function in millions of buildings with unpowered, vertical venting, they provide consumers with a unique performance characteristic. The Department’s decision to eliminate noncondensing appliances therefore violates the statute. That, alone, is enough to vacate the final rules.

Moreover, the Department must further show that the rules are “economically justified,” and it has not. *See* 42 U.S.C. §§ 6295(o)(2)(A), 6313(a)(6)(A)(ii)(II). The Department estimates the average consumer will save only a handful of dollars each year, meaning it will take consumers years (in some cases almost a decade) to recoup the replacement costs imposed by the final rules. But even those meager savings are inflated by the Department’s arbitrary assumptions. For instance, the Department’s life-cycle-cost model assumes that consumers choose gas appliances at random,

rather than considering economics when making expensive appliance purchases. This Court has already once chastised the Department for promulgating an efficiency standard using this same kind of “random assignment” economic analysis, which the Department failed to justify, *APGA v. DOE*, 22 F.4th 1018, 1027 (D.C. Cir. 2022) (“*APGA I*”), and its use of random assignment again here is now fatal to the final rules.

The Department also justified the standards based on purported savings from consumers switching away from gas to electric appliances due to the standards, paradoxically assuming they act rationally in *that* circumstance. Indeed, *over half* of the Department’s modeled savings for the Consumer Furnace Rule come from consumers switching to electric appliances. The Department’s economic justification for the final rules not only defies logic, it defies the statute itself, which does not allow the Department to use fuel switching to justify an efficiency standard.

These unsupported and unlawful assumptions greatly inflated the consumer savings the Department projected. The Department eliminates a product class relied on by millions of consumers based on this deeply flawed

economic analysis. The final rules should therefore also be vacated because they are not economically justified.

Statement of the Case

I. Statutory Framework

In EPCA, Congress sought to “balance[] energy efficiency with the availability of desirable ‘performance characteristics’” in consumer products. *Louisiana v. DOE*, 90 F.4th 461, 473 (5th Cir. 2024). EPCA authorizes the Department to amend the efficiency standards Congress set for certain appliances to increase energy efficiency without eliminating the product characteristics consumers enjoy. *See* 42 U.S.C. §§ 6295(a), 6295(o)(4).

In section 6295, Congress itself set energy efficiency standards for certain consumer products including furnaces, boilers, and water heaters. Section 6313 sets similar efficiency standards for certain industrial equipment, like commercial water heaters, air conditioning equipment, and heating equipment. Those sections then provide the Department limited authority to amend the standards.

For consumer products, the Department may only establish a “new or amended energy conservation standard” if it establishes with substantial

evidence that the standard would “achieve the maximum improvement in energy efficiency” for the covered product that is “technologically feasible and economically justified.” *Id.* §§ 6295(o)(2)(A), 6306(b)(2). For commercial products, Congress tied the Department’s standard-setting ability to industry standards developed by the American Society of Heating, Refrigerating and Air-Conditioning Engineers (“ASHRAE”), a private professional association that writes efficiency standards and guidelines for the heating, air conditioning, and refrigeration industry. *Id.* § 6313(a)(6)(A)(i); December 2021 Interpretive Rule, 86 Fed. Reg. at 73,948 n.2. For those commercial products, the ASHRAE standards are the default. 42 U.S.C. § 6313(a)(6)(A)(i). The Department may only adopt a more stringent standard if the Department establishes by “clear and convincing evidence” that the revised standard would “result in significant additional conservation of energy and is technologically feasible and economically justified.” *Id.* § 6313(a)(6)(A)(ii)(II). By imposing this heightened evidentiary burden, Congress expressed its strong preference for the Department to maintain parity with the ASHRAE standards. *See APGA I*, 22 F.4th at 1025.

In both sections 6295 and 6313, Congress required any amendments to efficiency standards be “economically justified,” and clarified that “a standard is economically justified” only if “the benefits of the standard exceed the burdens of the proposed standard.” 42 U.S.C. § 6313(a)(6)(B)(ii); *id.* § 6295(o)(2)(B)(i) (materially identical). Congress directed the Department to consider several factors in making that determination, including the “economic impact of the standard” on manufacturers and consumers, the estimated efficiency savings that the standard will produce compared to any increase in price, installation charges or maintenance expenses, the amount of energy savings likely to result from the standard, and any “lessening of the utility or the performance of the covered products.” *Id.* § 6295(o)(2)(b)(i)(I)-(VII); *id.* § 6313(a)(6)(B)(ii) (same).

Both sections 6295 and 6313 also prohibit the Department from establishing “amended standard[s]” if stakeholders have shown “by a preponderance of the evidence that the standard is likely to result in the unavailability in the United States in any product type (or class) of performance characteristics (including reliability, features, sizes, capacities, and volumes)” that is

“generally available in the United States at the time of the finding of the Secretary.” *Id.* § 6313(6)(B)(iii)(II)(aa); *id.* § 6295(o)(4) (materially identical). Congress has therefore prohibited the Department from establishing standards that will wipe out equipment with performance characteristics important to consumers.

Concurrently, section 6295(q) directs the Department to set a separate standard for “any group of covered products which have the same function or intended use, if the Secretary determines that covered products within such group” are distinct in either of two ways. *Id.* § 6295(q)(1). The Department should subdivide if the group of products “consume[s] a different kind of energy” or if the group “ha[s] 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.” *Id.* In the latter situation, when determining whether a “performance-related feature ... justifies the establishment of a higher or lower standard,” Congress instructs the Department to “consider such factors as the utility to the consumer of such a feature, and such other factors as the Secretary deems appropriate.” *Id.* Thus, instead of

eliminating a performance characteristic, the statute directs the Department to create a separate product class and standard if a new standard would otherwise eliminate a performance-related feature.

II. Technical Background

Gas-fired consumer furnaces and commercial water heaters come in both condensing and noncondensing varieties. *See* AGA Joint Comments, IR.CI-135 at 4.

Both condensing and noncondensing appliances require venting to operate safely because combusting natural gas produces exhaust gases that must be vented. *Id.* Noncondensing appliances use unpowered venting systems, which allow the exhaust gases produced in combustion to exit a building, often through a vertical chimney, using the heat and buoyancy of the gases to carry them outside. *Id.*³ These systems have been used for generations and remain the primary exhaust gas venting system in millions of homes, apartments, and buildings. *Id.* Noncondensing furnaces are typically

³ This is also referred to as “atmospheric” venting.

designed to share venting with noncondensing water heaters or other non-condensing appliances. *Id.* at 5-6.

Condensing appliances, on the other hand, are incompatible with un-powered venting systems like chimneys. *Id.* That is because condensing appliances have a secondary heat exchanger that transfers additional heat from the post-combustion gases before they are vented out of the building. This increases the appliance's efficiency, but also changes the volume, temperature, and other characteristics of the exhaust gases, and creates liquid condensate. *Id.* at 4-5.

Because these cooler combustion gases must still be vented to ensure the appliance safely functions, condensing appliances require a different type of venting to discharge the cooler exhaust gases. *Id.* at 5. Condensing appliances generally use a *horizontal* vent and require a fan to generate enough pressure to push or pull the gases outside. *Id.*⁴ Condensing appliances also require plumbing drains to dispose of the liquid condensate

⁴ This is also referred to as “positive pressure” venting.

developed in the operation of the appliance. *Id.* And they cannot be common vented (*i.e.* share vents) with noncondensing appliances. *Id.*

Millions of American homes and businesses were designed to accommodate noncondensing appliances, while others were designed to accommodate condensing appliances. *Id.* Because condensing appliances can achieve higher efficiency levels (and thus save some consumers money on their energy bills), many consumers naturally gravitate to these products in certain situations. They are particularly popular in new construction because buildings can be designed to accommodate a powered venting system. Fuel Switching Study, Attachment 4, CI.CF-11 at 9. But more than half of buildings were built before condensing technology was widely available and thus were designed with utility closets, chimneys, and conduits to support noncondensing technology. AGA Joint Comments, IR.CI-135 at 5 & n.7.

For the millions of existing buildings designed with unpowered venting systems like vertical chimneys, transitioning to horizontal, power vented condensing appliances is tremendously difficult, if not outright impossible. *Id.* at 4, 6. For some building types, like rowhouses, townhomes, and other

multi-family dwellings, it is often impossible to install a powered venting system because of the lack of an appropriate exterior wall available for horizontal venting. *See, e.g.*, WM Techs. Comments, CWH.CI-25 at 5-6 (explaining rowhouses do not have the ability to vent through an exterior wall); *see also* Air Conditioning Contractors of Am. Comments, CF.CI-398 at 3 (same for townhomes and multi-family dwellings). This reality is due to the “physical limitations” of these buildings (*e.g.*, their limited number of exposed exterior walls) and building code restrictions (*e.g.*, prohibiting venting near sidewalks or below the snow level). *See* Air Conditioning Contractors of Am. Comments, CF.CI-398 at 3; AGA Joint Comments, CWH.CI-34 at 5.

Even when buildings *can* be retrofitted for condensing appliances, doing so often requires intrusive and expensive renovations to install horizontal venting. AGA Joint Comments, IR.CI-135 at 6; Consumer Furnace Rule, 88 Fed. Reg. at 87,565 (acknowledging that replacement can lead to “interior wall displacement [and] vent or equipment relocation”). These costly and disruptive renovations often require interior and exterior design changes and can reduce livable or usable interior space. AGA Joint Comments, IR.CI-

135 at 6. For example, because horizontal vents cannot safely be installed near operable windows, installing horizontal venting sometimes requires sacrificing a window or balcony. *See* Commercial Water Heater Rule, 88 Fed. Reg. at 69,744 (noting exhaust vents cannot safely be located near operable windows); January 2021 Interpretive Rule, 86 Fed. Reg. 4,776, 4,798 (Jan. 15, 2021) (noting that to accommodate horizontal venting, buildings often must sacrifice “interior living space, a balcony, or a window”). Similarly, a retailer might be required to give up closet storage space, or even retail shelf space, to fit horizontal venting. *See* January 2021 Interpretive Rule, 86 Fed. Reg. at 4,816.

Certain circumstances make the renovations required to install a condensing appliance even more expensive and disruptive. For example, when multiple noncondensing appliances are “common vented” (*i.e.* using the same venting system), replacing a noncondensing appliance with a condensing appliance means existing unpowered, vertical venting systems will need to be redesigned to account for the lower number of appliances, because common vented appliances combine their hot gases to create the conditions

necessary to vent. *See* AGA Joint Comments, CWH.CI-34 at 7; AGA Joint Comments, IR.CI-135 at 6. Even worse, if a noncondensing appliance fails during winter, renovations needed to replace it with a condensing appliance will often take longer (because of the required structural modifications), so building owners will be forced to endure cold conditions longer, will risk building damage from freezing pipes, and may be forced to relocate to avoid dangerously cold conditions during renovation. Nat. Gas Ass'n of Ga. Comments, CF.CI-380 at 2.

III. History of Challenged Rulemakings

The Department's previous classification of noncondensing appliances. In 2016, the Department proposed energy conservation standards for consumer furnaces and commercial water heaters that would have banned noncondensing appliances from the market. *See* Energy Conservation Standards for Residential Furnaces, 81 Fed. Reg. 65,720 (Sept. 23, 2016); Energy Conservation Standards for Commercial Water Heating Equipment, 81 Fed. Reg. 34,440 (May 31, 2016).

On October 18, 2018, a group of gas industry petitioners, including Petitioners AGA, APGA, and NPGA, asked the Department to withdraw those proposed energy conservation standards. *See* Energy Conservation Standards for Residential Furnaces and Commercial Water Heaters, Notice of Petition for Rulemaking, 83 Fed. Reg. 54,883 (Nov. 1, 2018). The petition further asked the Department to issue an interpretive rule stating that those then-pending proposals would result in the unavailability of “performance characteristics” in violation of the Act. *Id.* The Department issued a final interpretive rule in January of 2021. *See* January 2021 Interpretive Rule, 86 Fed. Reg. 4,776. The January 2021 Interpretive Rule interpreted EPCA to “preclude the adoption of energy conservation standards that would limit the market to [gas-fired] furnaces [and] water heaters ... that use condensing combustion technology, as that would result in the unavailability of a performance related feature within the meaning of 42 U.S.C. § 6295(o)(4) and 42 U.S.C. 6313(a)(6)(B)(iii)(II)(aa).” *Id.* at 4,816.

The Department reached this conclusion for several reasons. First, it has previously “taken space constraints and similar limitations into account

when setting product classes.” *Id.* Second, the Department recognized that eliminating noncondensing appliances undermines consumer utility in many cases because “a condensing appliance may necessitate significant and unwelcome physical modifications to a home or business (*e.g.*, by adding new venting into living/commercial space or decreasing closet or other storage/retail space).” *Id.* Finally, after acknowledging that as a practical matter, many current consumers of noncondensing appliances will be deprived of their preferred fuel options and be forced to switch to electric appliances by the impracticability and hassle that would result if noncondensing appliances were eliminated, the Department sought to continue its longstanding policy to “remain neutral regarding competing energy sources in the marketplace.” *Id.*

The Department withdrew its then-pending standards (which would have eliminated noncondensing appliances). Energy Conservation Standards for Residential Furnaces and Commercial Water Heaters, Withdrawal, 86 Fed. Reg. 3,873 (Jan. 15, 2021). A group of states challenged the January 2021 Interpretive Rule and withdrawal of the then-pending standards, but

that case was held in abeyance pending resolution of the petitions here. *New York v. DOE*, No. 21-602 (2d Cir.).

The Challenged Rulemakings. Less than a year later, in December 2021, the Department published another interpretive rule, which reached the opposite conclusion. *See* 86 Fed. Reg. at 73,950.

In the December 2021 Interpretive Rule, the Department contends 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,” and so does not qualify as a “performance-related ‘feature’” under sections 6295(o)(4) and 6313(a)(6)(B)(iii)(II)(aa). 86 Fed. Reg. at 73,951. The Department now reads the unavailability provision to protect only “the benefits and usefulness the feature provides to the consumer while interacting with the product, not through design parameters impacting installation complexity, or costs that anyone, including the consumer, manufacturer, installer, or utility companies, may bear.” *Id.* Under the Department’s view, noncondensing and condensing appliances do not offer “unique utility” to consumers because they interact with “a furnace or water

heater ... only to initiate demand for heated air or water,” and both types of appliances supply that need. *Id.* at 73,953. According to the Department, the complexities of installation were “more appropriately framed as matters of cost.” *Id.* at 73,951.

Over a year later, the Department finalized new efficiency standards for commercial water heaters and consumer furnaces that cannot be met by noncondensing appliances. *See* Commercial Water Heater Rule, 88 Fed. Reg. 69,686; Consumer Furnace Rule, 88 Fed. Reg. 87,502. The Petitioners, among many other stakeholders, submitted comments pointing out numerous flaws in the proposed standards, specifically in the standards’ elimination of noncondensing appliances and in the Department’s analysis of whether the new standards would be economically justified. Commenters did so despite having been provided limited time and insufficient data to analyze the proposed rules.

In both rulemakings, the Department relied on the December 2021 Interpretive Rule to conclude that it could eliminate noncondensing appliances, despite EPCA’s “unavailability” provisions, on the ground that they

did not provide any distinct “performance characteristics” to consumers that condensing appliances do not also provide. The final rules will therefore eliminate noncondensing consumer furnaces and commercial water heaters from the market. *See* Consumer Furnace Rule, 88 Fed. Reg. at 87,535; Commercial Water Heater Rule, 88 Fed. Reg. at 69,710.

Economic Analysis. After concluding there was no “unavailability” problem with its proposed standards and that the elimination of noncondensing appliances was only an economic issue, the Department found that the proposed standards in each rule were economically justified under sections 6295(o)(2)(A) and 6313(a)(6)(A)(ii)(II).

Among the factors that EPCA requires the Department to evaluate in conducting its economic analysis are “the economic impact of the standard” on manufacturers and consumers and “the savings in operating costs throughout the estimated average life of the product” compared “to any increase of the price” of the product. 42 U.S.C. §§ 6313(a)(6)(B)(ii), 6295(o)(2)(B)(i)(II). To determine whether it would be economically justified to make many Americans purchase new standards-compliant appliances

and eliminate other options, the Department needed to compare “the difference in the life-cycle cost (LCC) of equipment with and without a more stringent standard.” *See APGA I*, 22 F.4th at 1022. The Department’s life-cycle-cost analysis in the final Consumer Furnace and Commercial Water Heater Rules used similar techniques in its analysis in the proposed rules but differed substantially in its bottom-line conclusions.

For the furnace standard, the Department calculated the average life-cycle cost savings of non-weatherized gas furnaces would be \$350 (over 21.5 years), and it would take consumers an average of 7.6 years to break even. *See* Consumer Furnace Rule, 88 Fed. Reg. at 87,503. The Commercial Water Heater Rule estimates average life-cycle-cost savings of between \$120 and \$1,570 (over 25 years) and estimates between 5.8 and 9.4 years to break even. 88 Fed. Reg. at 69,688.

Random Assignment. In determining the cost savings of proposed new standards, the Department must reasonably predict when consumers will purchase higher efficiency condensing furnaces and water heaters *because* of the new standards (rather than *regardless* of new standards). After all,

condensing furnaces and water heaters already enjoy a large and increasing market share. *See* AGA Comments, CF.CI-405 at 61; APGA Comments CF.CI-387 at 7-8.

To isolate the standards' economic impacts, the Department therefore compared a (1) "no-new-standards case," estimating the number of condensing and noncondensing appliances that would be purchased without the standards, with (2) a "standards case," estimating what would happen if everyone was subject to the new standards. *See, e.g.,* Consumer Furnace Rule, 88 Fed. Reg. at 87,550; Commercial Water Heater Rule, 88 Fed. Reg. at 69,735.

In the Consumer Furnace Rule, the Department began its "no-new-standards case" by assigning consumer furnaces of varying efficiency levels in a computer simulation (or model) of energy use across a sample of 10,000 buildings in the U.S. *See* Consumer Furnace Rule, 88 Fed. Reg. at 87,551. To determine which appliance (*e.g.,* condensing, noncondensing, or electric) a building would have in the "no-new-standards" case, the Department started by drawing from shipping data, which reflect the market shares for appliances at each efficiency level. *See id.* at 87,575. Those data show that

consumers are increasingly purchasing condensing furnaces and water heaters. *See* Technical Support Document, CF.CI-4100 at 8I-5 (estimating that the “condensing [non-weatherized furnace] market share” for 2022 was “53 percent nationally”); *id.* at 8I-2 (data showing the market share for condensing furnaces was zero in 1970 and approximately 25% in 2000).

The Department’s 10,000 building sample is weighted by type of construction (new or retrofit), type of building (residential or commercial), and region of the country. Consumer Furnace Rule, 88 Fed. Reg. at 87,574. The Department’s data confirm that the distribution of condensing and noncondensing furnaces differs significantly across type of construction, type of building, and region. For example, new construction builders usually prefer condensing appliances because those appliances have lower upfront installation costs and are higher efficiency. *See* Technical Support Document, CF.CI-4100 at 8D-32 (estimating the average new construction installation cost for a noncondensing furnace at \$2,467 compared to only \$1,796 for condensing furnaces); Consumer Furnace Rule, 88 Fed. Reg. at 87,582 (“Total

installed costs for higher-efficiency products are generally lower in new construction.”).

By contrast, retrofitting an existing building to use powered, horizontal venting when the building was designed with unpowered, vertical venting tends to be much more expensive, and so homeowners in that situation more often choose noncondensing furnaces. AGA Comments, CF.CI-380 at 2-3; APGA Comments, CF.CI-387 at 41-43.

But when assigning appliances to buildings, the Department ignored the real-world data. The Department’s model started off well-enough: it distributed condensing and noncondensing appliances within the 10,000 building sample consistent with their *overall* market share. Consumer Furnace Rule, 88 Fed. Reg. at 87,574; Commercial Water Heater Rule, 88 Fed. Reg. at 69,757. But rather than designing the model to assume builders and building owners are more likely to install condensing appliances whenever cost-effective to do so, as is the case in the real world, the Department *randomly* assigned appliances to all the buildings in the model. *E.g.*, Consumer

Furnace Rule, 88 Fed. Reg. at 87,574; *APGA I*, 22 F.4th at 1027 (describing the same kind of model).

This meant that the Department's model repeatedly and arbitrarily predicted that consumers would disregard their own economic interests and install appliances at a financial loss. For instance, 80% of the time that the Department's Consumer Furnace Rule model randomly assigned a noncondensing furnace to a new home, it would have been cheaper for the builder to install a condensing furnace. Meyer Decl., ¶ 5. Likewise, the model randomly assigned the less economically rational option for replacement furnace installations for existing homes in the base case 60% of the time. *Id.* ¶ 7.

The Department then compared those (randomly determined) buildings' costs and energy use to what those same buildings' costs and energy use would be if the Department eliminated the noncondensing option. When the Department assigned a builder a noncondensing furnace at a financial loss in the no-new-standards case, the Department took credit for the cost and energy savings when the new standards "forced" them to install a condensing appliance. Similarly, if the model irrationally assigned a builder or

homeowner a condensing appliance at a financial loss, even though they would have saved money by installing a noncondensing appliance, the Department assumed its standards would not increase consumer costs when it eliminated noncondensing appliances from the market because those consumers already had been assigned a condensing appliance. Thus, in both of these examples, the Department irrationally inflates projected “savings” from the new standards.

Commenters pointed out that random assignment thus grossly exaggerates the benefits of the rule. Indeed, this Court overturned the Department’s standards for commercial package boilers because of the Department’s “lackadaisical response” to criticisms that “[i]f a purchaser selects the most efficient unit for its building, then the DOE’s model will assign the benefits of that choice to its rule, rather than attributing it, correctly, to the purchaser’s rational decision making.” *APGA I*, 22 F.4th at 1027; *see also* AGA Comments CF.CI-405 at 59-74; APGA Comments, CF.CI-387 at 21-28.

The Department pointedly declined to replace or change the random assignment component of its economic modeling. *E.g.*, Consumer Furnace

Rule, 88 Fed. Reg. at 87,521-22, 87,576-84. Instead, it relied on this technique in concluding that the life-cycle-cost savings of the standards were positive and that the standards were therefore “economically justified.” *Id.* at 87,503; Commercial Water Heater Rule, 88 Fed. Reg. at 69,688.

Fuel Switching. Further, in determining that the standards were economically justified, the Department also evaluated the impact from consumers switching from gas to electric heat to avoid heavy costs from the new standards, counting those switches to *electric* as benefits of the *gas* standards. In fact, over half of the “savings” the Department modeled as economic benefits of the standard were based on consumers no longer being able to use the banned (noncondensing gas) appliances and switching to electric appliances instead. Unlike the random assignment used in the Department’s no-new-standards case, the Department assumed that in response to new standards all consumers would always behave rationally by switching their noncondensing appliance to an electric appliance whenever it was cheaper to do so, rather than incurring the renovation and other costs from switching to a condensing appliance. Consumer Furnace Rule, 88 Fed. Reg. at 87,583.

Summary of Argument

The Department's efficiency standards for consumer furnaces and commercial water heaters violate EPCA.

I.A. EPCA forbids the Department from promulgating any standard that “is likely to result in the unavailability in the United States in any product type (or class) of performance characteristics (including reliability, features, sizes, capacities, and volumes)” already in the market. 42 U.S.C. § 6313(a)(6)(B)(iii)(II)(aa); 6295(o)(4) (materially identical). The text lists characteristics such as “reliability” and “sizes,” as distinct from “capacities” and “volumes,” demonstrating the provision's capaciousness. As that nonexclusive list shows, the unavailability provisions include any product attribute that provides utility to a consumer, including by being able to function within the constraints of a consumer's space. Noncondensing appliances have distinct “performance characteristics” because they offer spatial and design characteristics that allow the product to be installed in existing buildings that currently use the technology without major renovations. Because the Consumer Furnace and Commercial Water Heater Rules will “result in

the unavailability” of these important “performance characteristics,” the new standards must be vacated.

B. The statute’s broader context confirms that interpretation. The statute repeatedly directs the Department to preserve product choice and prioritize utility to consumers, which includes characteristics like being able to install a gas appliance within the existing constraints of a building. For example, section 6295(q)(1)B) directs the Department to preserve product classes that provide a “performance-related feature” which gives utility to consumers. Likewise, section 6295(q)(1)(A) directs the Department to preserve product classes that use different fuels, even if the products otherwise provide the same utility to consumers (like heating a house).

And Congress repeatedly created statutory product classes characterized by installation, size, venting, condensing technology, and other design-related considerations. For instance, the statute places mobile home furnaces in a separate class because of the different physical installation requirements for mobile homes. The statute likewise contains separate categories for through-the-wall air conditioners and central air conditioners, as well as for

separate remote condensing and self-contained condensing refrigerators, each of which are distinguishable from fellow product classes because of where and how they fit in buildings. *See* 42 U.S.C. §§ 6295(d)(4)(A)(ii), 6313(c). Congress has thus repeatedly established separate product classes for products that provide functional utility to consumers because of their installation and space-related characteristics, just like noncondensing appliances.

C. The Department disputes this conclusion by interpreting the statute to protect only product classes that “provide unique utility to consumers” while they interact with the product, “not through design parameters impacting installation complexity, or costs.” December 2021 Interpretive Rule, 86 Fed. Reg. at 73,951. But Congress itself established multiple product classes based on spatial and design parameters. And the Department’s past rulemakings have repeatedly taken “space constraints and similar limitations into account when setting product classes.” January 2021 Interpretive Rule, 86 Fed. Reg. at 4,782.

The Department's contention that the renovations necessary to install a condensing appliance are only "cost issues" that should only be considered "through an evaluation of the factors for economic justification" similarly fails. *E.g.*, December 2021 Interpretive Rule, 86 Fed. Reg. at 73,959-60. That argument ignores the non-financial ways the standards will decrease consumer utility—like preventing them from using their preferred type of energy, or forcing them to sacrifice interior living space, a balcony, or a window to install condensing venting.

That view of the statute would give the Department free rein to eliminate products that provide distinct benefits to consumers. For instance, it has preserved ventless clothes dryers because they provide unique utility to people who live in apartments or condos and do not have access to a dryer vent or have limited space for appliances. Energy Conservation Standards for Residential Clothes Dryers and Room Air Conditioners, 76 Fed. Reg. 22,454, 22,485 (April 21, 2011) ("Dryer Rule"). But making ventless appliances unavailable would be contrary to the statute, even though apartment dwellers and owners could with enough effort remodel their apartments to

accommodate larger appliances or simply move, assuming the Department could justify the standard as cost effective to the average consumer.

Finally, the Department protests that its reading of the unavailability provisions is necessary to avoid preservation of inefficient technology. But that argument ignores that Congress forbade the Department from pursuing increased efficiency gains at the expense of product classes with distinct performance characteristics.

II. The Department has also failed to demonstrate that the new standards are “economically justified.” 42 U.S.C. §§ 6295(o)(2)(A), 6313(a)(6)(A)(ii)(II).

A. The Department’s attempt to do so relied heavily on its assumption that most consumers do not consider the costs of appliances when making individual purchasing decisions. That is as unreasonable as it sounds.

To justify the new standards, the Department used a model that “randomly assigned” appliances to consumers, which means it assumed that consumers have no tendency to prefer more cost-effective appliances or to decline investments that impose net costs, regardless of the economic stakes

involved. For instance, 80% of the time that the model randomly assigned a noncondensing furnace to a new construction building, it would have been cheaper for the builder to install a condensing furnace. The model likewise randomly assigned the more expensive option for replacement furnace installations to existing homes 60% of the time. Those arbitrary assumptions are based on pure speculation, and so the Department has fallen far short of showing that the standards are economically justified.

B. The Department's economic analysis also relies heavily on the certainty that the new standards would make gas-fired appliances so expensive or infeasible that many consumers will abandon them in favor of electric appliances ("fuel switching"). But the statute requires the Department to set separate efficiency standards for products that "consume a different kind of energy." *Id.* § 6295(q)(1)(A). And it further requires the Department to compare the operating cost savings the new standards will produce for "the covered product" with any corresponding increases in the initial price or maintenance expenses for that covered product. *Id.* § 6295(o)(2)(B)(i)(II). In other words, the Department must establish that new efficiency standards

for products using a particular energy type are justified by the operating cost savings *those products* would achieve, not by savings attributable to other types of products (such as products using a different energy source).

Worse yet, while the Department assumes consumers act randomly when selecting which appliance to purchase, its model assumed those same consumers act completely rationally when faced with the economic impacts of the Department's random assignment, and thus fuel-switch when cost-effective to do so. Those inconsistent assumptions are, at a minimum, arbitrary and capricious.

C. When these defects in the Department's life-cycle-cost analysis are addressed, the purported (and already minimal) economic justifications for the Consumer Furnace Rule and Commercial Water Heater Rule disappear. The Department's arbitrary and inconsistent reliance on fuel-switching accounts for over half of the modeled "savings" from the consumer furnace standards. When the Department's unlawful random assignment of existing buildings is also reversed, the Consumer Furnace Rule will *cost* owners of existing buildings in the model \$2,538,205. The economic justifications for

the Commercial Water Heater Rule would doubtless also disappear, but the Department has not provided the underlying data necessary to evaluate by how much. Regardless, because the economic justification for both rules depended on the same irredeemably flawed modeling, they cannot stand.

III. Finally, the Consumer Furnace Rule suffers from severe procedural flaws. EPCA and the APA require the Department to give stakeholders a meaningful opportunity to comment on the most critical parts of its analysis. But the Department released crucial information when most of the comment period had already elapsed. That failure to disclose important information prejudiced stakeholders, including Petitioners, and provides yet another reason why the final rules must be vacated.

Standing

Petitioners have standing to challenge the three rules at issue in these consolidated cases. Petitioner Thermo is a furnace manufacturer that will be directly regulated by the Consumer Furnace Rule. Petitioners AGA, APGA, and NPGA are trade associations that represent members that will be directly harmed by the Commercial Water Heater and Consumer Furnace

Rules. And both of those rules rely on the reasoning advanced in the Interpretive Rule, which all Petitioners except NPGA have challenged. Accordingly, Petitioners have been “adversely affected” by all three rules. 42 U.S.C. § 6306(b)(1).⁵

1. Petitioner Thermo has “self-evident” standing to challenge the Interpretive Rule and Consumer Furnace Rule because it manufactures residential furnaces. *Sierra Club v. EPA*, 292 F.3d 895, 900 (D.C. Cir. 2002).

To establish standing, Thermo must show it has “suffered an injury in fact caused by [the Department] and redressable by the Court.” *Energy Future Coal. v. EPA*, 793 F.3d 141, 144 (D.C. Cir. 2015). Those elements are met when a plaintiff “face[s] a regulatory impediment” to their business “[a]s a direct result” of a regulation. *Id.* When a plaintiff is the “object of the action ... at issue,” there “is ordinarily little question that the action ... has caused him injury.” *Lujan v. Defs. of Wildlife*, 504 U.S. 555, 561-62 (1992).

⁵ “When multiple petitioners seek common relief, [courts] have jurisdiction as long as one of the petitioners has standing.” *Advocs. for Highway & Auto Safety v. Fed. Motor Carrier Safety Admin.*, 41 F.4th 586, 592 (D.C. Cir. 2022). This Court thus need only confirm that one petitioner has standing to challenge each rule.

Just so here. Thermo manufactures and sells residential furnaces, including noncondensing furnaces, which would be banned by the Consumer Furnace Rule. Kuehl Decl., ¶¶ 6-7. That rule will therefore “make[] it harder for [Thermo] to sell” noncondensing gas furnaces. *Energy Future Coal.*, 793 F.3d at 144. Those lost sales constitute an injury in fact that is directly traceable to the Consumer Furnace Rule and that would be redressed by vacating the rule. *Id.*; Kuehl Decl., ¶¶ 7-8. Thermo therefore has standing to challenge the Consumer Furnace and Interpretive Rules.

2. The trade association Petitioners likewise have standing to challenge the Interpretive, Consumer Furnace, and Commercial Water Heater Rules. “[A]n association has standing to bring suit on behalf of its members when: (a) its members would otherwise have standing to sue in their own right; (b) the interests it seeks to protect are germane to the organization’s purpose; and (c) neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit.” *Hunt v. Washington State Apple Advertising Commission*, 432 U.S. 333, 343 (1977). AGA, APGA, and NPGA easily satisfy each factor.

First, Petitioners' members will suffer serious financial harm from the final rules and so would have standing to sue in their own right. Murray Decl., ¶¶ 7-10; Gallard Decl., ¶¶ 7-9; Lani Decl., ¶¶ 8-10; Nussdorf Decl., ¶¶ 6-8. As already explained, when a final rule reduces demand for products sold by a petitioner, the resulting harm creates standing. *Energy Future Coal*, 793 F.3d at 144; *see also Alon Refining Krotz Springs, Inc. v. EPA*, 936 F.3d 628, 664-65 (D.C. Cir. 2019) (holding members of a biomass-based diesel industry trade association had standing to challenge rules that would harm diesel fuel prices). "Economic harm of this sort is a canonical example of injury in fact sufficient to establish standing." *North Carolina Fisheries Ass'n v. Gutierrez*, 518 F. Supp. 2d 62, 82 (D.C. Cir. 2007).

This Court has already held that some of these same trade associations, including APGA, have standing to challenge a similar rule establishing "more stringent energy efficiency standards for commercial packaged boilers." *APGA v. DOE*, 72 F.4th 1324, 1329 (D.C. Cir. 2023) ("*APGA II*"); *id.* at 1336 ("Petitioners have demonstrated standing through declarations

attesting to their expectations of economic losses caused by the Final Rule that may be remedied by vacatur of the rule.”).

For the same reason, the association Petitioners have standing here. The Consumer Furnace and Commercial Water Heater Rules impose efficiency standards for water heaters and furnaces that noncondensing gas-fired appliances cannot achieve. *Infra* Argument I.A. The only gas-fired alternative—condensing water heaters and furnaces—cannot be installed in many older buildings, multifamily structures, or size-constrained buildings without prohibitive expense. These final rules will therefore eliminate many building owners’ ability to replace their gas-fired, unpowered vented water heaters and furnaces with a similar gas-fired product. Like in *APGA II*, the final rules will force consumers to switch from propane and gas-fired water heaters and furnaces to an electric product, thus reducing demand for products sold by the association Petitioners’ members. 72 F.4th at 1336; Murray Decl., ¶¶ 7-10; Gallard Decl., ¶¶ 7-9; Lani Decl., ¶¶ 8-10; Nussdorf Decl., ¶¶ 6-8. That economic harm, which is “apparent from the administrative

record,” easily establishes standing. *Twin Rivers Paper Co. LLC v. SEC*, 934 F.3d 607, 613 (D.C. Cir. 2019) (citation omitted).

The association Petitioners have also identified members that will be directly harmed by the Commercial Water Heater, Consumer Furnace, and Interpretive Rules. Each of the Associations have members who will be harmed by decreased gas and propane sales. Murray Decl., ¶¶ 7-10; Gallard Decl., ¶¶ 7-9; Lani Decl., ¶¶ 8-10. Further, AGA has confirmed it also represents a manufacturer of water heaters that will be harmed. Murray Decl., ¶¶ 9-10. The standing of that member is “self-evident.” *Sierra Club*, 292 F.3d at 900; *see also Advocs. For Highway & Auto Safety*, 41 F.4th at 594 (explaining that “anonymity is no barrier to standing” when the declarations sufficiently identify the member such that additional details would “add[] no essential information” (quotation marks and citation omitted)).

Finally, Spire Inc., Spire Alabama Inc., and Spire Missouri Inc. (collectively “Spire”) are members of AGA and have standing for similar reasons. Jamieson Decl., ¶ 5. Spire Inc. owns and operates natural gas utility companies, including Spire Alabama Inc. and Spire Missouri Inc., that distribute

natural gas to residential, commercial, and institutional customers. *Id.* The final rules impose energy conservation standards for products used by numerous Spire customers which will, by design, reduce consumption of natural gas. *Id.* ¶ 3. The standards will therefore reduce sales and revenue for Spire and impose unjustified costs on its customers. *Id.* ¶ 6. Because the final rules will decrease the use of gas and reduce revenues and sales for members of the association Petitioners, association Petitioners have standing.

Second, association Petitioners are seeking to protect “interests” that “are germane to [their] purpose[s].” *Hunt*, 432 U.S. at 343. The germaneness requirement is “undemanding”: Petitioners need show only “mere pertinence between litigation subject and organizational purpose.” *Humane Soc. of the U.S. v. Hodel*, 840 F.2d 45, 58 (D.C. Cir. 1988).

The challenged rules directly implicate each Petitioner’s associational purposes. AGA, APGA, and NPGA each advocate for sound public policy with respect to the natural gas and propane industries. Indeed, Petitioners frequently engage in rulemaking proceedings and challenge final agency action that would impede consumers’ access to and use of gas-fired appliances.

See, e.g., APGA II, 72 F.4th at 1324; *APGA v. DOE*, No. 11-1485 (D.C. Cir. Apr. 24, 2014) (per curiam) (unreported).

Third, “neither the claim asserted nor the relief requested requires the participation of individual members in the lawsuit.” *Hunt*, 432 U.S. at 343. “Member participation is not required where a ‘suit raises a pure question of law.’” *Ctr. for Sustainable Econ. v. Jewell*, 779 F.3d 588, 597 (D.C. Cir. 2015) (citation omitted). And Petitioners raise only questions of law. They ask this Court to vacate the Department’s final rules as unlawful because the rules exceed the Department’s statutory authority and are arbitrary and capricious.

Standard of Review

When an agency acts “in excess of statutory ... authority,” the action must be set aside. 5 U.S.C. § 706(2)(C). Likewise, this Court “shall ... hold unlawful and set aside agency action, findings, and conclusions found to be ... arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” *Id.* § 706(2)(A). The Department’s action is “arbitrary and capricious if the agency has relied on factors which Congress has not

intended it to consider, entirely failed to consider an important aspect of the problem, [or] offered an explanation for its decision that runs counter to the evidence before the agency.” *Motor Vehicle Mfrs. Ass’n of U.S., Inc. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983).

Argument

I. The Rules Exceed the Department’s Authority Because They Would Make Noncondensing Technology Unavailable to Consumers.

In both the Commercial Water Heater Rule and Consumer Furnace Rule, the Department relied on the Interpretive Rule to propose standards that will result in the unavailability of noncondensing appliances. But EPCA forbids the Department from creating efficiency standards that eliminate product classes with distinct “performance characteristics” from the market. *See* 42 U.S.C. §§ 6295(o)(4), 6313(a)(6)(B)(iii)(II)(aa). The ability of gas appliances to perform using the existing unpowered venting, like chimneys, present in millions of buildings is a performance characteristic that the Department’s standards would eliminate from the market for gas appliances. That is unlawful.

A. Noncondensing technology constitutes a product class with performance characteristics protected from elimination by the statute's unavailability provisions.

When interpreting the unavailability provisions, this Court “begins with the plain language of the statute.” *United States v. Braxtonbrown-Smith*, 278 F.3d 1348, 1352 (D.C. Cir. 2002). The plain language “must be read in ... context and with a view to [its] place in the overall statutory scheme.” *Davis v. Mich. Dep’t of Treasury*, 489 U.S. 803, 809 (1989). “Where the language is clear, that is the end of judicial inquiry in all but the most extraordinary circumstances.” *Braxtonbrown-Smith*, 278 F.3d at 1352 (cleaned up).

Under the terms of the unavailability provisions, the Department is prevented from promulgating a standard that “is likely to result in the unavailability in the United States in 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.” 42 U.S.C. § 6313(a)(6)(B)(iii)(II)(aa); § 6295(o)(4) (materially identical). The plain

meaning of “performance characteristics” spans all product attributes that provide utility to a consumer that desires to use the product.

A “characteristic” is any “distinguishing trait, quality, or property.” *Characteristic*, Merriam-Webster Dictionary, <https://perma.cc/NLT4-CAHE>. Meanwhile, “performance” is “the execution of an action” or “the manner in which a mechanism performs.” *Performance*, Merriam-Webster Dictionary, <https://perma.cc/8PQ3-STYF>. Here, one trait or property of noncondensing appliances is that when they generate heat by combusting gas, they are able to vent through unpowered venting like vertical chimneys. Condensing appliances lack that performance characteristic, which is useful to the many consumers with unpowered venting systems.

That commonsense interpretation is confirmed by the immediate context of the statutory phrase, which includes a non-exhaustive, but capacious, list of other product traits, qualities and properties that are statutorily protected from elimination—“reliability, features, sizes, capacities, and volumes.” 42 U.S.C. §§ 6313(a)(6)(B)(iii)(II)(aa), 6295(o)(4). *See Dubin v. United*

States, 599 U.S. 110, 124 (2023) (“Under the familiar interpretive canon *noscitur a sociis*, ‘a word is known by the company it keeps.’” (citation omitted)).

Take one example: a “feature,” which is a similarly capacious term that covers any “trait, attribute, or function of a product,” as the Department has acknowledged. December 2021 Interpretive Rule, 86 Fed. Reg. at 73,948; *see also Feature*, Merriam-Webster Dictionary, <https://perma.cc/H6QK-AXZ5> (“a prominent part or characteristic”). For instance, features that meet certain “design requirements,” like fitting in a space-constrained mobile home, qualify as performance characteristics. *See Energy Conservation Standards for Residential Furnace Fans*, 78 Fed. Reg. 64,068, 64,077 (Oct. 25, 2013) (“2013 Furnace Fans Rule”) (separating “manufactured home” products because they “meet certain design requirements that allow them to be installed in manufactured homes” like fitting in “a more compact cabinet size” (cleaned up)).

Likewise, the statute lists product “sizes, capacities, and volumes.” 42 U.S.C. §§ 6313(a)(6)(B)(iii)(II)(aa), 6295(o)(4). The inclusion of “size[]” as distinct from “capacit[y]” and “volume[]” means the statute’s unavailability

provisions encompass not only how much a product can handle, but also whether an appliance fits in a consumer's dwelling. The statute thus instructs that space-related attributes are "performance characteristics" intertwined with the end-product of an appliance (producing hot air and water). And the statute's reference to "reliability" necessarily means that "performance characteristics" include not just *how* the appliance performs after installation, but also *whether* it works at all. Bradford White Comments, IR.CI-146 at 1-2 (arguing that if reliability is a performance characteristic, venting technology is too).

This accords with the Department's long-standing interpretation of the statute. For example, front-loading and top-loading washing machines both clean clothes, but they have distinct, protected "performance characteristics" because front-loading washers are "designed to be installed in confined spaces such as small closets and under-counter installations" and, because of those "size and installation limitations," those products "may be less able to incorporate certain efficiency-related technologies." Energy Conservation Standards for Residential Clothes Washers, 84 Fed. Reg. 37,794, 37,797 (Aug.

2, 2019); *see also* Consumer Furnace Rule, 88 Fed. Reg. at 87,566 (retaining separate product class for mobile home gas furnaces, which “are usually installed in tight spaces”). Ventless dryers offer “performance characteristics” because they fit in apartments and condos that cannot accommodate vents. December 2021 Interpretive Rule, 86 Fed. Reg. at 73,949. Thus, “performance characteristics” include design-related features that permit consumers to install appliances in existing spaces that will not accommodate other forms of the covered product.

So too with noncondensing technology. Noncondensing technology provides distinct utility to consumers because it is the only type of gas furnace and water heater that will function in millions of buildings with unpowered venting. That is, one performance characteristic of noncondensing appliances is that they perform in spaces designed with unpowered chimneys, while condensing appliances do not. Indeed, because of these differences, safety and building code experts treat condensing and noncondensing appliances as distinct. *See* AGA Joint Comments, CWH.CI-34 at 6-9.

Just like a larger- or smaller-sized appliance will not fit in certain homes easily, condensing appliances will not fit into some homes designed with vertical venting systems without significant renovations to accommodate horizontal venting. These renovations often have extensive consequences beyond cost—forcing replacement of other common-vented appliances, forcing lengthier repairs during dangerously cold weather, and forever sacrificing usable interior space, including retail space. *See supra* Statement.II.

Noncondensing technology therefore offers a distinct “performance characteristic” for gas appliances. The Act thus prohibits the Department from establishing efficiency standards that will eliminate noncondensing appliances from the market. Because that is precisely what the final rules accomplish, they must be vacated.

B. Statutory context confirms that use of unpowered, vertical venting systems is a “performance characteristic” of noncondensing gas appliances.

This straightforward interpretation of “performance characteristic” is further supported by statutory context. *See Abramski v. United States*, 573 U.S.

169, 179 (2014) (When interpreting a statute the court “must (as usual) interpret the relevant words not in a vacuum, but with reference to the statutory context, structure, history, and purpose.” (cleaned up)). EPCA repeatedly directs the Department to preserve product choice and prioritize utility to consumers, which includes characteristics like being able to install a gas appliance within the existing constraints of a building.

First, section 6295(q)(1) directs the Department to establish different standards to maintain distinct product attributes that are important to consumers. For instance, section 6295(q)(1)(B) instructs the Department to establish different standards when a “performance-related feature” justifies the establishment of a “higher or lower standard.” That provision specifically requires the Department to consider “the utility to the consumer of such a feature” when determining whether a separate product class is warranted. 42 U.S.C. § 6295(q)(1). In other words, if a product offers a feature “which other products within such type (or class) do not have,” and consumers value that feature, the Department should preserve that product class when establishing standards. *Id.* § 6295(q)(1)(B).

Likewise, section 6295(q)(1)(A) directs the Department to establish different standards for products that “consume a different type of energy.” Congress thus sought to preserve consumer choice among similar products using a different energy type. Electric, oil, and gas furnaces may all heat homes, but Congress still wanted consumers to have the freedom to choose the energy type they prefer. And gas appliances often offer advantages that electric appliances cannot duplicate. *See* Bradford White Comments, IR.CI-146 at 3 (explaining that electric water heaters have “slower recovery rates” and “maximum temperature setting[s]” compared to gas water heaters). For example, gas is often cheaper than electricity and oil, making gas appliances often the economic choice. *See* Representative Average Unit Costs of Energy, 87 Fed. Reg. 12,681, 12,682 (Mar. 7, 2022) (average cost of electricity ~3.5 times more than natural gas).

When read in conjunction with the unavailability provisions, section 6295(q) thus plainly reflects Congress’s determination that the Department should avoid eliminating product traits that consumers value. Section 6295(q) also serves as an important corollary to the unavailability provisions.

The Department “may not prescribe an amended or new standard” if it would “result in the unavailability” of a product class with distinct performance characteristics. 42 U.S.C. § 6295(o)(4). Instead, the Department should establish efficiency standards tailored for that class of products. *Id.* § 6295(q)(1)(A). And a key aspect of determining the existence of a “performance-related feature” is “the utility to the consumer of such a feature.” *Id.* § 6295(q)(1). Because noncondensing technology provides obvious utility—functioning in the purchaser’s existing building and vents—the Department should have maintained a separate product class for noncondensing appliances, not set standards that eliminate them.

Second, the efficiency standards Congress initially set for products in the statute further confirm that noncondensing technology provides a protected performance characteristic. Congress has broken down product classes based on installation, size, venting, condensing technology, and other design-related considerations when establishing product classes.

For example, Congress separated mobile home gas-fired furnaces from other furnaces because of the different physical installation requirements for

mobile homes. *Id.* § 6295(f)(1)-(2); *see also* Energy Conservation Standards for Consumer Furnace Fans, 88 Fed. Reg. 69,826, 69,837 (Oct. 6, 2023) (“2023 Furnace Fans Rule”) (noting that “the ability to be installed in mobile home[s] is a performance-related feature under EPCA” justifying a separate product class and acknowledging that “[m]obile home products meet certain design requirements [and] require direct venting”).

Similarly, Congress separated “through-the-wall central air conditioners,” from other air conditioners to preserve performance characteristics. 42 U.S.C. § 6295(d)(4)(A)(ii). They provide utility to consumers because they are “designed to be installed totally or partially within a fixed-size opening in an exterior wall.” *Id.*

Congress’s decision to separate remote condensing and self-contained condensing refrigerators, freezers, and automatic ice makers into separate product classes is likewise telling. *See id.* § 6313(c) (separating remote condensing and self-contained condensing refrigerators and freezers); *id.* § 6313(d)(1) (separating remote condensing and self-contained ice makers). In this context, a “remote condensing” product has a condenser separate

from the unit while a “self-contained” product has a condenser built into the product. These differences affect the size of the units and their ability to function best in certain spaces. *See* Energy Conservation Standards for Commercial Refrigeration Equipment, 78 Fed. Reg. 55,890, 55,905 (Sept. 11, 2013) (identifying “type of condensing unit” as a “[k]ey physical and design characteristic”).

Congress thus repeatedly established separate product classes for products that provide functional utility to consumers because of their installation and space-related characteristics, including those associated with venting and condensing. Noncondensing technology provides a similar “performance characteristic” because it benefits consumers by allowing them to install gas furnaces and water heaters in buildings designed for unpowered venting systems. The Department’s decision to eliminate that option for consumers violates EPCA.

C. The Department’s contrary reading of “performance characteristics” is incorrect.

In the December 2021 Interpretive Rule, the Department contends 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,” and so does not qualify as a “performance-related ‘feature’” under sections 6295(o)(4) and 6313(a)(6)(B)(iii)(II)(aa). 86 Fed. Reg. at 73,951. And the Department further narrowed its reading of the statute by stating “that utility is determined through the benefits and usefulness the feature provides to the consumer while interacting with the product, not through design parameters impacting installation complexity.” *Id.*⁶

That reading—limiting “performance characteristics” solely to features divorced from the appliance’s primary function and that impact only post-installation consumer interactions with a product—cannot be squared with the statute. Nothing about the text of the statute justifies reading such limitations onto the words “performance characteristics.” *Supra* I.A & B.

⁶ The Department repeatedly frames the question as whether noncondensing technology is a “performance-related feature.” *See, e.g.*, Consumer Furnace Rule, 88 Fed. Reg. at 87,589; Commercial Water Heater Rule, 88 Fed. Reg. at 69,710. But the unavailability provisions list product characteristics and other traits beyond just “features” that are protected from elimination. 42 U.S.C. §§ 6295(o)(4), 6313(a)(6)(B)(iii)(II)(aa).

The Department's atextual justifications for its reading wilt under scrutiny. First, it contends that this reading reflects its "long-standing" view of EPCA, Consumer Furnace Rule, 88 Fed. Reg. at 87,511, yet it has repeatedly adopted Petitioners' interpretation of the Act in past rulemakings. Second, the Department contends that the problems its new standards will create for owners of noncondensing appliances are mere "cost issues." But that ignores the significant noneconomic impacts that flow from those retrofits. Third, the Department argues that treating noncondensing technology as a performance characteristic will undermine the statute's goal of improving efficiency. The statute, however, prohibits the Department from pursuing efficiency gains at the cost of product classes with distinct performance characteristics.

1. The Department has repeatedly treated space- and installation-related product attributes as "performance characteristics."

The Department defends its reading of "performance characteristic" on the grounds that it reflects the Department's "long-standing

interpretation” of that term. December 2021 Interpretive Rule, 86 Fed. Reg. at 73,947. But the Department is mistaken.

a. The Department has repeatedly taken “space constraints and similar limitations into account when setting product classes.” January 2021 Interpretive Rule, 86 Fed. Reg. at 4,782. Just last year, the Department recognized that noncondensing gas furnace fans and condensing gas furnace fans provide different performance-related features. *See* 2023 Furnace Fans Rule, 88 Fed. Reg. at 69,836-37 (concluding that “use with condensing technology constitutes a performance-related feature for this product”).

The Department has established separate product classes for noncondensing and condensing gas furnace fans because those products have “internal structure and application-specific design differences that impact furnace fan energy consumption.” Energy Conservation Standards for Residential Furnace Fans, 79 Fed. Reg. 38,130, 38,142 (July 3, 2014) (“2014 Furnace Fans Rule”). The Department has given condensing gas furnace fans a lower efficiency standard because they require more energy to function. *See id.* at 38,131. But the “performance-related feature” that condensing gas furnace

fans provide to justify the lower standard is allowing consumers to use a condensing gas *furnace*.

The Department's decision to establish different standards for condensing and noncondensing gas furnace fans thus necessarily recognizes that the continued existence of separate product classes for condensing and noncondensing furnaces provides important "performance-related features" to consumers. *Id.* at 38,142. The Department's refusal to apply the same reasoning here is arbitrary at best. The preservation of furnace fans that function with a condensing gas furnace is akin to the preservation of gas furnaces that function with unpowered venting, yet the Department arbitrarily chose to implement the former but not the latter. Moreover, the Department's preservation of condensing furnace fans cannot be squared with its assertion that only features separate from an appliance's primary function that a consumer interacts with after installation qualify as performance characteristics. Indeed, consumers are likely unaware of the existence of a separate class of furnace fans for condensing appliances—that is until the Department attempts to deprive consumers of that product.

Similarly, as already mentioned, the Department has recognized that ventless clothes dryers provide “unique utility” to people who live in apartments and condos and do not have access to a dryer vent or have limited space for appliances. Dryer Rule, 76 Fed. Reg. at 22,485; *see* December 2021 Interpretive Rule, 86 Fed. Reg. at 73,949 (conceding that ventless dryers warrant separate standards because they can be used in existing buildings that do not have or cannot easily accommodate vents). Without ventless dryers, consumers wanting a dryer would have to change their homes. Noncondensing appliances provide precisely the same utility to consumers with buildings designed with unpowered, vertical venting systems, because, for example, consumers wanting a gas furnace will have to change their home absent the option to purchase a noncondensing furnace. And with both, consumers may not directly interact with the venting characteristic after installation, but that does not mean it is not a “performance characteristic” providing very real utility to consumers.

Another example: the Department often divides appliances into “weatherized” and “non-weatherized” appliances. *E.g.*, 10 C.F.R. § 430.32(e)

(separating weatherized and non-weatherized furnaces); 10 C.F.R. § 430.32(y) (separating weatherized and non-weatherized furnace fans). This distinction separates products intended to operate outside from those intended to operate inside. *See* 2014 Furnace Fans Rule, 79 Fed. Reg. at 38,142. Even though weatherized and non-weatherized appliances provide the same end product (*i.e.*, heat), the Department preserves different product classes to ensure consumers have the option to purchase an interior or exterior appliance. There is no difference in the way consumers “interact” with weatherized and non-weatherized appliances, just like there is no difference in the way consumers interact with the furnaces and commercial water heaters regulated in the rulemakings challenged here.

And the Department has repeatedly considered whether a product class fits in a space that other product classes cannot. For example, the Department created separate classes for standard size packaged terminal air conditioners and non-standard size packaged terminal air conditioners. *See* Packaged Terminal Air Conditioner and Packaged Terminal Heat Pump Energy Conservation Standards, 73 Fed. Reg. 58,772 (Oct. 7, 2008). These air

conditioners are installed in wall sleeves. The Department was concerned with “unavailability issues” if non-standard sized appliances were eliminated because “absent non-standard equipment, ... customers could be forced to invest in costly building modifications to convert non-standard sleeve openings to standard size dimensions.” *Id.* All of this contradicts the Department’s new interpretation that performance characteristics are *only* those post-installation features that are separate from a product’s primary function and that a consumer directly interacts with.⁷

⁷ See also Central Air Conditioners and Heat Pumps Energy Conservation Standards, 69 Fed. Reg. 50,997, 50,998 (Aug. 17, 2004) (acknowledging that the Department had previously established a separate product class of “space constrained products” for air conditioners because of “concern[s] that air conditioners and heat pumps intended to serve applications with severe space constraints would have difficulty in meeting” newly promulgated standards); Energy Conservation Standards for Water Heaters, 66 Fed. Reg. 4,474, 4,477 (Jan. 17, 2001) (same for tabletop water heaters); 2013 Furnace Fans Rule, 78 Fed. Reg. at 64,077 (separating “manufactured home” products because they “meet certain design requirements that allow them to be installed in manufactured homes” like fitting in “a more compact cabinet size”); Energy Conservation Standards for Residential Clothes Washers, 84 Fed. Reg. at 37,797 (preserving front-loading clothes washers in part because they are “designed to be installed in confined spaces such as small closets and under-counter installations”).

b. Given this history, the Department's newfound view of "performance characteristic" is not entitled to deference. *First*, as noted, the text of the unavailability provisions plainly requires the preservation of noncondensing technology. *See Chevron, U.S.A., Inc. v. Nat. Res. Def. Council, Inc.*, 467 U.S. 837, 843 n.9 (1984) (explaining that courts must "employ[] traditional tools of statutory construction" before resorting to deference); *City of Anaheim v. FERC*, 558 F.3d 521, 522 (D.C. Cir. 2009). Even if there were ambiguity in those provisions, the Department's narrow reading of their broad terms is unreasonable and therefore entitled to no deference, regardless of whether *Chevron* remains binding law. *See Loper Bright Enters. v. Raimondo*, 21-5166 (U.S.) (granting certiorari).

Second, and separately, because the Department's current reading lacks "consistency with earlier ... pronouncements," it is not entitled to deference. *Skidmore v. Swift & Co.*, 323 U.S. 134, 140 (1944). In 2021, the Department adopted two interpretive rules that adopted opposite views of the same statutory language. *Compare* January 2021 Interpretive Rule, 86 Fed. Reg. at 4780-82 (noncondensing technology *is* a feature), *with* December 2021

Interpretive Rule, 86 Fed. Reg. at 73,953 (*not* a feature). Because the Department's December 2021 reading of the statute represents an arbitrary reversal from its prior interpretation (and a long history of rulemakings), this Court should not grant it any deference, but instead reject it.

2. The Department's view that the benefits of noncondensing technology are solely a cost issue, and therefore do not provide a performance characteristic, is wrong.

The Department further defends its new reading of "feature" on the grounds that even though some consumers might face exorbitant renovation costs, those "cost issues" are "separate and apart from any performance-related impacts of the unit once installed," and so those factors should be considered only "through an evaluation of the factors for economic justification." December 2021 Interpretive Rule, 86 Fed. Reg. at 73,959-60. That view not only ignores the utility that noncondensing appliances provide but would allow the Department to sidestep the unavailability provisions.

The Department admits that eliminating noncondensing technology will create "difficult installation situations" for some consumers. *Id.* at 73,960. That is an understatement. As commenters repeatedly explained,

those difficulties do not simply impose a nominal installation cost. Residents of existing buildings would face lengthy renovations, which will disrupt their lives. *See, e.g.*, AGA Joint Comments, CWH.CI-34 at 14; AGA Joint Comments, IR.CI-135 at 2. Plus, to accommodate the horizontal, powered venting often required by condensing appliances, buildings must typically sacrifice usable space, including sometimes “interior living space, a balcony, or a window.” January 2021 Interpretive Rule, 86 Fed. Reg. at 4,798. A business might even be forced to give up closet storage space or retail shelf space to fit horizontal venting. *See id.* at 4,816. The Department’s new standards thus do far more than impose mere installation costs. *Contra* December 2021 Interpretive Rule, 86 Fed. Reg. at 73,959-60.

The Department acknowledges its economic analysis does not consider many of the attendant impacts. For example, the Department admits it “has no mechanism for determining what if any impact there would be on a consumer’s business” to undergo a renovation to accommodate a condensing appliance, and so “continues to assume there is no need to add in costs

for lost business.” Commercial Water Heater Rule, 88 Fed. Reg. at 69,750-51.⁸ Likewise, the Department admits it did not consider “any disruptions” to multi-family buildings like the “displacement of residents, interruption of resident quality of life, and disruption to property operation” that is “associated with installation of [condensing] furnace[s]” because they “are likely to be temporary and of limited duration.” Consumer Furnace Rule, 88 Fed. Reg. at 87,560, 87,565; Manufactured Hous. Inst. Joint Comments, CF.CI-378 at 5.

It is entirely reasonable for some consumers to prefer noncondensing appliances to avoid these non-economic impacts. If noncondensing technology is eliminated from the market, those consumers would be put to a choice. They could undergo a “cost-prohibitive” and lengthy renovation, with all the associated non-economic burdens and inconveniences, and which might require them to suffer the long-term loss of quality of life, such as sacrificing a window or balcony. January 2021 Interpretive Rule at 4,797.

⁸ See also AGA Joint Comments, CWH.CI-34 at 14 (explaining that the Department did not consider “increased downtime and labor costs” that would come during retrofits).

Or they could move to a different building—just another form of altering their current space. These non-pecuniary considerations cannot be meaningfully reduced to dollars and cents. The Department’s myopic focus on the financial costs of replacing noncondensing appliances therefore misses the point.

The Department attempts to dismiss some of these concerns by suggesting that negatively impacted consumers can just switch to electric appliances. *See, e.g.*, December 2021 Interpretive Rule, 86 Fed. Reg. at 73,957, 73,962-63; Commercial Water Heater Rule, 88 Fed. Reg. at 69,710; Consumer Furnace Rule, 88 Fed. Reg. at 87,536. But Congress has not empowered the Department to force such a shift. When establishing the initial furnace efficiency standard, Congress instructed the Department to ensure the standard “is not likely to result in a significant shift from gas heating to electric resistance heating.” 42 U.S.C. § 6295(f)(1)(B)(iii). Likewise, section 6295(q)(1)(A) requires the Department to set different standards for covered products that “consume a different kind of energy from that consumed by other covered products within such type (or class).” In other words,

EPCA was meant to *preserve* fuel choices, not eliminate them. As explained more fully below, the Department cannot, consistent with these provisions, determine that benefits provided by a subclass of gas appliances are not performance characteristics simply because consumers can obtain similar utility by switching to an entirely separate fuel class—electric appliances. *See infra* II.B.

Nor can the Department blind itself to installation issues in its analysis of performance characteristics. Ultimately, if severe consumer impacts can be dismissed as “cost issues,” not “performance-related impacts,” the unavailability provisions can be rendered meaningless. December 2021 Interpretive Rule, 86 Fed. Reg. at 73,959-60.

Congress directed the Department to consider *both* whether “a standard is economically justified” *and* independently whether “the standard is likely to result in the unavailability in the United States” of any product class with distinct performance characteristics. 42 U.S.C. §§ 6313(a)(6)(B)(iii)(II)(aa), 6295(o)(4). But the Department’s cramped reading of “performance characteristics” would allow it to justify a standard that

eliminates products with distinct performance characteristics if it claims the standard is economically justified.

Under the Department's reasoning, it can force some consumers to replicate those performance characteristics at exorbitant costs so long as the average costs to all consumers remains justified. For example, in the Department's standards for ventless clothes dryers, the Department could have simply declined to preserve a ventless product class, reasoning that apartment buildings could undergo renovations to accommodate a vented dryer. The Department's current reading would allow this as long as the average impact on all dryer consumers (including those that already have dryer vents) is net positive. *But see* Dryer Rule, 76 Fed. Reg. at 22,485. But Congress included the unavailability provisions specifically to ensure the Department does *not* eliminate important product classes, even if the Department thinks it would be cost justified in the aggregate.

3. The Department's fear that the statute's plain meaning preserves inefficient technology is misplaced.

Finally, the Department protests that the plain meaning of the unavailability provisions will lead to the "preservation" of inefficient technology.

December 2021 Interpretive Rule, 86 Fed. Reg. at 73,956. But that view ignores that Congress purposefully “balance[d] energy efficiency with the availability of desirable ‘performance characteristics.’” *Louisiana*, 90 F.4th at 473 (quoting 42 U.S.C. § 6295(o)(4)).

The unavailability provisions constrain the Department’s authority to institute new efficiency standards. If a standard would render a given class of performance characteristics unavailable, the Department does not have authority to issue the standard. *See* 42 U.S.C. §§ 6313(a)(6)(B)(iii)(II)(aa), 6295(o)(4). The potential efficiency gains are irrelevant. The statute thus advances dual goals. It promotes energy efficiency, while also protecting American consumers from losing access to products and fuels they want to use. The fact that the statute prohibits the Department from setting efficiency standards that deprive consumers of appliances that function in their space without the inconvenience and cost of renovation is thus a deliberate feature of the statute, not a bug. After all, “no legislation pursues its purposes at all costs.” *Rodriguez v. United States*, 480 U.S. 522, 525-26 (1987) (per curiam).

Moreover, following the statute does not stifle innovation. Nothing prohibits the Department from exploring standards that will increase efficiency of noncondensing appliances, so long as the standards do not render that technology unavailable. Indeed, Congress included section 6295(q)(1)(B)—which authorizes the Department to establish a different efficiency standard for product classes that provide a unique “performance-related feature” to consumers—for precisely this reason. The statute does, however, prohibit the Department from eliminating noncondensing appliances altogether.

* * *

EPCA’s plain text and statutory context establish that noncondensing technology is a distinct performance characteristic that the Department cannot eliminate. Its arguments to the contrary contradict its past rulemakings and EPCA’s manifest purpose of preserving product attributes that give consumers utility. Because the challenged rules violate EPCA’s unavailability provisions, they must be vacated.

II. The Department's Economic Conclusions Are Not Supported by Substantial Evidence, Much Less Clear and Convincing Evidence.

The Consumer Furnace and Commercial Water Heater Rules are also unlawful because the Department failed to establish that they are “economically justified.” *See* 42 U.S.C. §§ 6295(o)(2)(A), 6313(a)(6)(A)(ii)(II). The Department bears the burden of demonstrating the Consumer Furnace Rule’s economic justification with “substantial evidence.” *Id.* § 6306(b)(2). Because the Commercial Water Heater Rule is covered by section 6313(a)(6)(A)(ii)(II), the Department must show it is “economically justified” with “clear and convincing evidence.” It has satisfied neither standard.

Instead, the Department relied on a flawed and unsupported economic analysis featuring the counterfactual assumption that consumers make appliance purchases randomly. It failed to offer a reasoned explanation for that assumption despite extensive comments pointing out its flaws and this Court’s prior remand of another efficiency rule relying on the same kind of unsupported economic analysis. *See APGA I*, 22 F.4th at 1027-28. The Department’s economic analysis further relied on economic benefits arising from consumers switching from gas-fired appliances to electric appliances, which

the statute forbids. Without those flaws in the Consumer Furnace and Commercial Water Heater Rules, the Department cannot meet its statutory burden to show those rules are economically justified.

A. The Department's use of random assignment to economically justify the new standards is arbitrary and capricious.

EPCA requires the Department to economically justify its new standards by comparing the upfront costs and energy savings over the assumed life of appliances that comply with the new standards to the same costs without the new standards. *See* 42 U.S.C. §§ 6295(o)(2)(B)(ii), 6313(a)(6)(B)(ii); *APGA I*, 22 F.4th at 1022. The Department attempted to do so in both the Consumer Furnace and Commercial Water Heater Rules by creating two statistical models: (1) a “no-new-standards case,” estimating the noncondensing and condensing appliances that would be purchased without the standards, and (2) a “standards case,” estimating the number of condensing appliances purchased with the standards, so it could compare the difference in life-cycle-costs for consumers. *See, e.g.*, 88 Fed. Reg. at 87,574; 88 Fed. Reg. at 69,757. The objective of this analysis was to “describe the world as it would be if the agency issued no new standards and then compare[] that world to

a world with new standards.” *APGA I*, 22 F.4th at 1027. The Department “randomly assigned” appliances to consumers, meaning the Department assumed that consumers would not consider the economic costs or benefits when choosing between condensing or noncondensing appliances. That is, the Department assumed that consumers choose products at random, rather than weighing economics. *See supra* Statement.III.

That assumption defies credulity. Despite the long history of this issue in its appliance efficiency rulemakings, the Department offered no new evidence in either of these rulemakings to support its conclusion that random assignment models the real-world more accurately than assuming consumers tend to act in their best interests. *See APGA I*, 22 F.4th at 1027-28. Indeed, real-world data confirm that, for the most part, consumers buy condensing or noncondensing technology based on what is most cost-effective. For example, higher-cost, more-efficient condensing furnaces are popular in the Nation’s colder climates. *Spire Comments*, CF.CI-413 at 4, 23. By arbitrarily assuming rationality is *not* the typical behavior, the Department has greatly

inflated the projected life-cycle-cost benefits of the Consumer Furnace and Commercial Water Heater Rules.

1. Although “estimation techniques” and “statistical analysis” like random assignment may sometimes play a role in supporting an agency determination, these tools must be scrutinized carefully. *See Nat’l Ass’n of Clean Water Agencies v. EPA*, 734 F.3d 1115, 1134-35 (D.C. Cir. 2013). Even a technique that is “lawful in theory,” often cannot “in practice ... support the assumptions underlying its estimations with substantial evidence.” *Id.* at 1131.

Here, the Department’s decision to randomly assign appliances greatly skewed the agency’s assessment of whether the rules were economically justified. “A random assignment methodology misallocates a random fraction of consumers that use economic criteria for their decisions and results in higher LCC savings compared to rational economic decision making criteria.” APGA Comments, CF.CI-387 at 22. That is because the modeling allocates appliances with respect to overall market shares, but otherwise without regard to economic choices facing individual consumers. For example, it gave buildings designed for condensing appliances an equal chance of

being assigned noncondensing appliances, even if no rational consumer would voluntarily choose to install a noncondensing appliance in that building.

Commenters explained to DOE why “[r]andom assignment is not a technically defensible proxy for rational residential decision making processes.” *Id.*; *see also id.* at 24-25; Spire Comments, CF.CI-413 at 22-43. The Department summarily rejected these comments because the final rule provided an updated economic justification. Consumer Furnace Rule, 88 Fed. Reg. at 87,581-82. But the Department’s underlying methodology in its final rules was “largely the same” — as the Department conceded. *See id.* at 87,522. The Department therefore failed to respond to comments challenging “a fundamental premise” of its action. *Bloomberg L.P. v. SEC*, 45 F.4th 462, 476 (D.C. Cir. 2022) (cleaned up).

This failure to grapple with reality skewed the economic analysis. Real-world data show that consumers are increasingly purchasing condensing furnaces and water heaters even without new standards. *See* Technical Support Document, CF.CI-4100 at 8I-5 (estimating “condensing [non-

weatherized furnace] market share” for 2022 was “53 percent nationally”); *id.* at 8I-2 (data showing market share for condensing furnaces was zero in 1970 and approximately 25% in 2000). The Department’s own data likewise confirm that the large majority of new construction contains condensing appliances, while existing buildings retain a larger percentage of noncondensing appliances. *See* AGA Comments, CF.CI-405 at 62-63. This is, in part, because it is less expensive to install condensing appliances than noncondensing appliances when the building’s utility closet and venting systems are designed to accommodate noncondensing technology. *Id.* at 62.

The Department’s life-cycle-cost model for the Consumer Furnace and Commercial Water Heater Rules defied that real-world behavior. The models distributed condensing and noncondensing gas furnaces consistent with the *overall* market share for those appliances. Consumer Furnace Rule, 88 Fed. Reg. at 87,574. But the Department ignored the economic incentives *underlying* the real-world market share of condensing and noncondensing appliances. The models systematically assumed that consumers would defy self-interest. For example, 80% of the time the Consumer Furnace model

assigned new home builders a noncondensing furnace when a condensing furnace would have been cheaper to install. Meyer Decl., ¶ 5. The Department's model then takes credit for the savings from making consumers who were randomly assigned more expensive and less efficient furnaces install condensing furnaces because of the standards. It does so even though those consumers almost certainly would have installed condensing furnaces absent the rule. *See* APGA Comments, CF.CI-387 at 21-24.

In other words, when a “purchaser selects the most efficient unit for its building, then the [Department]’s model will assign the benefits of that choice to its rule, rather than attributing it, correctly, to the purchaser’s rational decision making.” *APGA I*, 22 F.4th at 1027. But the Department made no attempt to establish that it was reasonable to assume that 80% of new home builders will choose to install noncondensing furnaces in situations where that is the less efficient and more expensive option. The Department therefore “inflated the economic value of a more stringent standard by attributing to a new regulation economic benefits that would be realized even without a new regulation.” *Id.*

The Department also downplayed the costs that the new standards will impose on consumers. In many situations, it is far cheaper for a consumer to install a noncondensing unit. *Supra* Statement.II. Because the new standards will require installation of condensing furnaces, the new standards will impose significant costs on those consumers. But the model frequently assigned a *condensing* appliance to a consumer who would, acting rationally, install a noncondensing appliance. Meyer Decl., ¶ 7. By assuming those consumers would make an economically irrational decision even *without* the standards, the Department was able to avoid counting the cost of replacing a noncondensing appliance with a condensing appliance for those consumers.

The Department defends its use of random assignment by asserting that “market failures” in the appliance market mean that consumers sometimes act against their own economic interest. *E.g.*, Consumer Furnace Rule, 88 Fed. Reg. at 87,577. Under the Department’s view, random assignment is appropriate because “[i]t simulates behavior in the furnace market” by

incorporating irrational decision making, rather than “relying only on apparent cost-effectiveness” data. *Id.* at 87,576.

The question is not whether market failures exist to some extent, but whether random assignment reasonably simulates those failures. But the Department makes no attempt in either rule to quantify how often these market failures occur. It simply cites literature noting that these market failures exist, *id.* at 87,576-79, and assumes that because market failures sometimes occur since consumers are not perfectly rational, individual consumers are therefore perfectly *irrational*, meaning they *never* consider economics when making decisions.

Nor does the Department substantiate its assertion that random assignment represents the furnace market “more realistically” than a model that accounts for rational economic decisions. *Id.* at 87,576; Commercial Water Heater Rule, 88 Fed. Reg. at 69,758 (baldly asserting random assignment “best accounts for consumer behavior”). Indeed, none of the articles that the Department cites for the proposition that market failures exist suggests that random assignment validly simulates those failures. Nor would they. A

consumer's likelihood of choosing a condensing furnace is correlated to the relative cost of that product, meaning it is demonstrably nonrandom. AGA Comments, CF.CI-405 at 61-63. The Consumer Furnace Rule thus cites no evidence in support of its fundamental hypothesis: that because some market failures exist, random assignment produces a more accurate picture of the real world.

The Department nonetheless contends that random assignment is a reasonable "methodological simplification that takes into account ... a range of consumer behaviors and market failures." Consumer Furnace Rule, 88 Fed. Reg. at 87,584. But it makes no assessment of actual consumer behavior or the actual prevalence (or lack thereof) of market failures to justify the arbitrary assumptions in the Department's life-cycle-cost analysis. Rather, the Department's modeling produces absurd results that cannot be reconciled with the real world.

This Court has already held that the Department's justifications for random assignment in a similar rulemaking were inadequate. As the Court put it, "assignment of efficiencies to the buildings in the sample was a crucial

part of the analysis supporting the [Department's] conclusion that a more stringent standard was warranted." *APGA I*, 22 F.4th at 1027. But "[i]nstead of producing evidence of some market failure in this specific market, the [Department] essentially said it did the best it could with the data it had." *Id.* That "lackadaisical response" fell far short of justifying the Department's assumption that "a purchaser's decisions will not align with its economic interests." *Id.* The Department again failed to justify its use of random assignment here. It lacks any data on the actual prevalence of these market failures. It has thus failed to show the Consumer Furnace Rule is economically justified with substantial evidence and that the Consumer Water Heater Rule is economically justified by "clear and convincing evidence." *Id.* at 1027-28.

2. The Department's use of random assignment for the Consumer Furnace Rule demonstrates random assignment's absurdities.

First, the Department's model repeatedly assumed that new home builders would choose to install a noncondensing furnace, even when a higher efficiency furnace would be cheaper to install. Meyer Decl., ¶ 5. The Department acknowledges it is usually cheaper for new homes to install

condensing appliances. *See* Technical Support Document, CF.CI-4100 at 8D-32 (estimating the average new construction installation cost for a noncondensing furnace at \$2,467 compared to only \$1,796 for condensing furnaces); Consumer Furnace Rule, 88 Fed. Reg. at 87,582. Yet 80% of the time that the Department's model randomly assigned a noncondensing furnace to a new home, it would have been cheaper to install a different, more efficient furnace. Meyer Decl., ¶ 5; *see also* AGA Comments, CF.CI-405 at 57-58.

The Department's model therefore assumed that new homebuilders routinely act against their own economic interest. But homebuilders, many of whom are large, sophisticated businesses, are profit-driven actors. Carlos Martin & Stephen Whitlow, *The State of the Residential Construction Industry*, at 6, Bipartisan Policy Center (Sept. 2012), <https://perma.cc/XVX9-ALBF>. Any homebuilder that consistently acted against his economic interest would struggle to stay in business. *See also* AGA Comments, CF.CI-405 at 57-58 (providing a graph showing that new home builders are highly sensitive to economics when choosing appliances).

Second, the Department's analysis randomly assigned 60% of the replacement furnace installations for existing homes to the less economically rational option. Meyer Decl., ¶ 7. In other words, the Department assumes that *over half* of consumers choose a less cost-effective appliance when replacing an existing one.

The Department attempts to justify these arbitrary assumptions through a generic appeal to "market failures," despite admitting that it is aware of "no studies ... specific to how consumer furnaces are purchased." Consumer Furnace Rule, 88 Fed. Reg. at 87,580. But it cites nothing in support of its extraordinary assumption that new home builders will almost always install a noncondensing furnace in situations where a condensing furnace would be both cheaper to install and cheaper to operate. Nor does it offer any support for its assertion that over half of consumers opt for the more expensive option when replacing a furnace.

Even more gallingly, the Department justifies its lack of data on the grounds that commenters "have failed to provide any specific external data, information, or studies that could be incorporated into the analysis." *Id.* at

87,580-81. Not so. Commenters explained that the Department's *own* real-world data confirm that consumers usually act rationally. *See* APGA Comments, CF.CI-387 at 6-7, 22-23. The Department's shipping data reveal a strong correlation (higher than 99%) between condensing furnace market share and economic incentives. *See* AGA Comments, CF.CI-405 at 61. Thus, the greater the potential savings from a condensing furnace, the higher the likelihood that a consumer will choose a condensing furnace. *Id.* at 61 & Figure 1. For instance, the real-world market share of condensing furnaces is much higher in cold weather states. *Id.* at 60 (explaining the market share of condensing furnaces in Colorado, Iowa, and New York is 95% even for retrofits). That is because the opportunity for efficiency savings is higher when heat is needed more often. *Id.* That market-share distribution thus reflects rational economic decision making by consumers.

The same general principle holds true when the data for new construction and replacements are analyzed separately. The Department admits new home builders already install condensing furnaces in most new construction. *See* 88 Fed. Reg. at 87,575. That preference for condensing furnaces reflects a

strong correlation between the average life-cycle-cost savings of condensing furnaces and condensing furnace market share. *See* AGA Comments, CF.CI-405 at 64, Figure 3. In short, real-world data confirm that builders overwhelmingly select appliances based on their own economic interests, yet the Department's life-cycle-cost analysis assumed that 80% of the time new home builders act against their own interest. Meyer Decl., ¶ 5. The Department cannot justify that arbitrary, counterfactual assumption.

The Department's assumption that 60% of consumers disregard economics when replacing existing appliances likewise contradicts collected data. If consumers truly flipped a coin when choosing a furnace, shipping data would not reflect any preference for condensing furnaces. But the data show a strong consumer preference for condensing furnaces when the average life-cycle-cost for those furnaces is positive. AGA Comments, CF.CI-405 at 61-63 & Figure 2. Once again, the Department has cited no evidence justifying its assumption that market failures result in consumers choosing the wrong furnace more than half the time. To the contrary, real-world data suggest that consumers react strongly to economic incentives.

3. Similar absurdities doubtless exist in the Department's Commercial Water Heater modeling. But, unlike the Consumer Furnace Rule, the Department's life-cycle-cost spreadsheet for the Commercial Water Heater Rule does not provide the base outputs of its analysis. *See* CWH Life-Cycle Cost Spreadsheet, CWH.CI-40. The Department's use of random assignment means that it necessarily assigned many buildings an unnecessarily expensive commercial water heater. Meyer Decl., ¶ 10. But without those raw data, Petitioners cannot identify the extent of those errors.

The fundamental point, however, is the same. Just like in the Consumer Furnace Rule, the Department has not established that randomly assigning water heaters was reasonable. Indeed, because the Commercial Water Heater Rule was promulgated under § 6313(a)(6)(A)(ii)(II), the Department must demonstrate it is "economically justified" with "clear and convincing evidence." "[T]he requirement of 'clear and convincing evidence' as a prerequisite to informal rulemaking is unusual, perhaps unique" and "creates an unusually strong bias in favor of the status quo." *APGA I*, 22 F.4th at 1025. Suspicion or speculation that a standard may result in the required

“significant additional conservation of energy and is technologically feasible and economically justified,” 42 U.S.C. § 6313(a)(6)(A)(ii)(II), without “actual evidence,” is not enough. *APGA I*, 22 F.4th at 1027, 1029; *Allentown Mack Sales & Serv., Inc. v. NLRB*, 522 U.S. 359, 376 (1998) (“[S]peculative, conjectural, and vague” evidence is insufficient to support standard even lower than “clear and convincing evidence”).

Rather than *demonstrating* random assignment accurately modeled real-world market failure, the Department simply assumed that was the case. *See* Commercial Water Heater Rule, 88 Fed. Reg. at 69,758-61 (supporting its assertion that “economic factors ... most likely would not fully and accurately reflect real-world installations” only with generalized statements about the theoretical existence of market failures). The Department never offered data estimating the frequency of market failures in the water heater market. Nor did the Department establish that its randomly assigned allocation of appliances introduced a similar frequency of market failures.

* * *

If the Department wants to rely on market failures to ignore rational economics, it must *demonstrate* the extent to which market failures “in *this specific market*” disrupt economically rational decision making, not simply “assum[e] a purchaser’s decisions will not align with its economic interests.” *APGA I*, 22 F.4th at 1027 (emphasis added); *Nat. Res. Def. Council, Inc. v. Herrington*, 768 F.2d 1355, 1391 (D.C. Cir. 1985) (explaining that the Department may rely on an algorithm which predicted future market failures only to the extent available evidence does not “show[] the model’s predictions to be unreliable”). Yet in both the Consumer Furnace and Commercial Water Heater Rules, the Department simply assumed that consumers make appliance choices randomly, with no regard to economics. That choice was arbitrary and capricious. And by basing its economic justification analysis on pure speculation, the Department has fallen far short of supporting either the Consumer Furnace Rule or the Commercial Water Heater Rule with substantial evidence, much less clear and convincing evidence.

B. The Department's reliance on fuel switching to economically justify the new standards is unlawful.

The Department based much of its conclusion that the new standards are economically justified on the effect of making those gas appliances and their installation so expensive and inconvenient that consumers switch to electric appliances (“fuel switching”), not on the savings from efficiency improvements to the gas appliances themselves. In fact, over half of the “savings” in the Department’s Consumer Furnace Rule life-cycle-cost analysis come from fuel switching.

This is contrary to EPCA. Congress directed the Department to focus on the efficiency improvements and economic consequences from regulating the appliances subject to the standards, not the performance of non-covered appliances.

1. The Department's reliance on fuel switching violates the statute.

When “determining whether a standard is economically justified,” EPCA requires the Department to consider, among other things, “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.” 42 U.S.C. § 6295(o)(2)(B)(i)(II). Thus, the Department must compare the operating costs for “the covered product” to any corresponding increases in the initial price or maintenance expenses for that product from the new standards. *Id.*; *see also id.* §§ 6295(o)(2)(B)(i); 6295(o)(2)(B)(iii); 6313(a)(6)(B)(ii)(II).

The Department nevertheless claims that it can justify standards for covered gas products on consumers switching to uncovered electric products because section 6295(o)(2)(B)(i)(II) does not “expressly limit consideration of the covered product or covered products likely to result under an amended standard to the covered product type (or class) of [sic] that would be subject to the amended standard.” Energy Conservation Program: Energy Conservation Standards for Consumer Furnaces, 87 Fed. Reg. 40,590, 40,628 (July 7, 2022) (“Proposed Consumer Furnace Rule”). The Department contends that section refers to “‘covered products’ in the plural.” *Id.* This allows it to “consider covered products other than that subject to the standard” in justifying standards. *Id.* That reading cannot be squared with the text of

sections 6295(o)(2) and 6313(a)(6)(B)(ii)(II), their context, or EPCA's broader structure. *See Abramski*, 573 U.S. at 179.

First, Congress directed the Department to maximize the efficiency of covered products when the energy savings from those products would be significant enough to be economically justified, not to make the covered products so expensive that consumers must switch to some other product. 42 U.S.C. §§ 6295(o)(2)(B)(i), 6313(a)(6)(B)(ii)(II). EPCA's list of economic considerations all focus on the direct impacts of the standards on the covered products themselves, the consumers who buy them, and the companies who make them. The Department must consider:

- 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 through 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 ... savings likely to result directly *from the imposition of the standard*;”
- iv. “any lessening of the utility or performance of the covered products likely to result *from the imposition of the standard*;
- v. “the impact of any lessening of competition ... *that is likely to result from imposition of the standard.*”

Id. § 6295(o)(2)(B)(i) (emphases added). All these factors focus on the potential benefits and harms from operating *the covered products* subject to *the standard*, not from switching to other products. It simply makes no sense to read these provisions as authorizing the Department to justify standards for covered products on the performance of non-covered products.

EPCA’s broader structure confirms this. Congress specifically instructed the Department to subdivide products based on energy type. Section 6295(q)(1)(A) requires the Department to set different standards for covered products that “consume a different kind of energy from that consumed by other covered products within such type (or class).” Gas and electric appliances, of course, consume different kinds of energy. Given this explicit

division, the Department cannot justify standards for gas appliance standards on the benefits produced by greater use of electric appliances.

Further, as previously discussed, EPCA forbids the Department from imposing standards that will make certain types of products (like noncondensing gas furnaces) unavailable. *See supra* I.B. Congress thus plainly designed the statute to “encourage energy conservation without unduly altering the economics of fuel choices.” Consumer Furnace Rule, 88 Fed. Reg. at 87,591 (quoting Senator Johnston’s statement in 132 Cong. Rec. 31328 (Oct. 15, 1986)). The Department must therefore establish that new efficiency standards for products using a particular energy type are justified by the operating cost savings *those products* would achieve, not by influencing fuel choice or forcing the conversion to another kind of energy. *See* December 2021 Interpretive Rule, 86 Fed. Reg. at 73,964 (admitting that “[w]here Congress required DOE to consider the potential impacts of fuel switching, it stated so explicitly”).

In short, the Department’s conclusion that the Consumer Furnace and Commercial Water Heater Rules are economically justified because they will

force consumers to switch to electric appliances violates the statute. After removing the so-called “savings” from fuel switching, the life-cycle-cost savings for the Consumer Furnace Rule model would drop by over half—from \$1,922,352 to \$899,306. Meyer Decl., ¶ 9; *see also* AGA Comments, CF.CI-405 at 78 (explaining that “most of the purported cost savings” in the proposed rule came from fuel switching); Spire Comments, CF.CI-413 at 53-54 (pointing out the same problems). The Department’s economic justification analysis thus principally relies on an unlawful analysis, and so the Consumer Furnace and Commercial Water Heater Rules must be vacated.

2. The Department’s fuel-switching analysis is also arbitrary and capricious.

As noted previously, the Department’s economic analysis assumes that consumers act randomly when picking which appliance to buy and randomly assigns appliances, regardless of economics. *Supra* Statement.III. The Department does a complete 180 when it comes to fuel switching. It assumes consumers act completely rationally when confronted with the results of their random assignment, using economic criteria such as initial cost and payback periods to estimate consumers’ fuel switching. Consumer Furnace

Rule, 88 Fed. Reg. at 87,583; 87,587-90; Meyer Decl., ¶ 9 (Department's analysis assumes 9% of consumers would switch to electric appliances under the new standards). That is, whenever the results of random assignment meant it would be more cost effective to switch to electric appliances, the Department concludes the consumer switches. It then credits its new standards with the "cost savings" from the switch. *See Consumer Furnace Rule*, 88 Fed. Reg. 87,583.

The Department cannot have it both ways. *See* APGA Comments, CF.CI-387 at 24. The Department offers no reasonable explanation for why consumers act randomly when selecting a condensing or noncondensing gas appliance, but completely rationally when deciding whether to switch fuels. Consumers cannot act both completely randomly and completely rationally when making nearly identical decisions. *See id.* The Department's assumption they do so is completely arbitrary.

C. The Department's unlawful reliance on random assignment and fuel switching renders its economic justification analysis arbitrary and capricious.

Given these fundamental defects, the Department's economic justification for the Consumer Furnace and Commercial Water Heater Rules collapses. Because the rules cannot be justified, vacatur is necessary.

Even on its own terms, the Department's economic justification analyses suggest only modest cost savings from the rules. The Department estimates that the Consumer Furnace Rule, for instance, will only save the average (non-mobile home) consumer about \$16 a year. 88 Fed. Reg. at 87,503-04. The average mobile home user will save \$29 a year. *Id.* Likewise, the Commercial Water Heater Rule estimates savings of at most \$62 a year (for instantaneous water heaters and hot water supply boilers), down to \$37 a year (for commercial storage water heaters), and even \$5 a year (instantaneous tankless water heaters). 88 Fed. Reg. at 69,688.⁹

⁹ In the Consumer Furnace and Commercial Water Heater Rules, the Department discusses purported climate and health benefits that the final rules would produce. *E.g.*, Commercial Water Heater Rule, 88 Fed. Reg. at 69,691; Consumer Furnace Rule, 88 Fed. Reg. at 87,507. But the Department

Because of these minimal savings, it will take years for consumers to recoup the upfront expenses of installing condensing appliances. Section 6295(o)(2)(B)(iii) creates a “rebuttable presumption” that a new standard is cost-justified if the consumer will break-even within the first three years of installation. But for most of the product classes covered in the new rules, the payback period is double or even triple that. The Department estimates that the average consumer installing a new (non-mobile home) furnace will not break even for seven and a half years. Consumer Furnace Rule, 88 Fed. Reg. at 87,504. The payback period for water heaters is even longer. *See* Commercial Water Heater Rule, 88 Fed. Reg. at 69,688 (estimating 5.8 years for commercial storage water heaters, 7.2 years for residential storage water heaters, and 9.3 years for instantaneous water heaters).

expressly disclaimed reliance on those purported benefits as a basis for justifying the final rules. 88 Fed. Reg. at 69,784 (“The social costs of greenhouse gases ... did not affect the rule ultimately proposed by DOE.”); 88 Fed. Reg. at 87,613 (same). Because “[i]t is well-established that an agency’s action must be upheld, if at all, on the basis articulated by the agency itself,” the Department and its intervenors may not rely on those purported benefits to justify these rules. *Motor Vehicle Mfrs. Ass’n of U.S., Inc.*, 463 U.S. at 50.

The Department projects the new standards will result in total savings of \$1,922,352 for the modeled 10,000 consumers. Meyer Decl., ¶ 6. If the Department had assumed that home builders made economically self-interested decisions when selecting appliances, and did not engage in fuel switching, the modeled savings for the rule would drop by \$233,241. *Id.* ¶ 6. Likewise, if the Department had assumed that consumers made economically rational decisions during retrofits for existing homes, and did not engage in fuel switching, the rule would not save those consumers any money but instead *cost* them \$2,538,205 in the model. *Id.* ¶ 8. Even setting random assignment aside, fuel-switching accounts for over half—\$1,023,046—of the Department’s modeled cost savings. *Id.* ¶ 9. All together, when the Department’s flaws are corrected, the model would show the rule is costing, rather than saving, the modeled 10,000 consumers millions of dollars.

The life-cycle-cost analysis for the Commercial Water Heater Rule is similarly flawed. Once again, the Department’s conclusion that the standards are justified is based on its assumption that businesses act randomly when picking which appliance to install and then completely rationally

when presented with an alternative the Department favors. This arbitrary statistical analysis forms an inextricable part of the Department's economic justification.

In short, the Department's economic justification depended on fundamentally flawed analysis and is therefore unlawful. And because the Department cannot demonstrate that the final rules are economically justified without those considerations, the rules must be vacated.

III. The Consumer Furnace Rule Suffers from Procedural Defects.

Even setting aside its substantive illegality, the Consumer Furnace Rule is procedurally flawed. The Department failed to provide commenters a meaningful opportunity to comment on important aspects of the proposed rule and arbitrarily declined to follow its own Process Rule.

EPCA and the APA require the Department to provide stakeholders a meaningful opportunity to comment on a proposed rule, including the methods and data used to justify an agency's conclusions. *E.g.*, 42 U.S.C. § 6306(a)(1). Agencies must disclose the "most critical factual material" so that interested parties have "an opportunity to present comment and

evidence to support their positions.” *Chamber of Com. of U.S. v. SEC*, 443 F.3d 890, 900 (D.C. Cir. 2006). And agencies must do so “in time to allow for meaningful commentary.” *Connecticut Light & Power Co. v. Nuclear Regul. Comm’n*, 673 F.2d 525, 531 (D.C. Cir. 1982).

Consistent with these principles, the Department has promulgated “procedures, interpretations, and policies that are generally applicable to the development of energy conservation standards and test procedures.” 10 C.F.R. § Pt. 430, Subpt. C, App. A (the “Process Rule”). The Department has, for instance, committed to “[c]onduct thorough analysis of impacts,” and “[u]se transparent and robust analytical methods.” *Id.* § 1(d)-(f). In addition, the Process Rule promises “not less than 75 days for public comment on” a proposed rulemaking. *Id.* § 6(f)(2).

These standards do not create “enforceable” rights, *id.* § 3(c), but the Department has promised that “[i]n those instances where the Department may find it necessary or appropriate to deviate from these procedures, interpretations or policies, DOE will provide interested parties with notice of the deviation and an explanation.” *Id.* § 3(a). After all, “[a] central principle of

administrative law is that, when an agency decides to depart from decades-long past practices and official policies, the agency must at a minimum acknowledge the change and offer a reasoned explanation for it.” *Am. Wild Horse Pres. Campaign v. Perdue*, 873 F.3d 914, 923 (D.C. Cir. 2017).

The Department violated these principles. First, despite the Process Rule’s promise that stakeholders will have at least 75 days to comment on proposed rulemaking, the Department initially only gave stakeholders 60 days to comment on the Consumer Furnace Rule. *See* Proposed Consumer Furnace Rule, 87 Fed. Reg. at 40,590 (requiring comments be submitted “no later than September 6, 2022”). Even worse, when the Department released the proposed Consumer Furnace Rule, the Department’s life-cycle-cost model included table results that were inconsistent with the technical support document and in a format that did not allow stakeholders to analyze or test the Department’s conclusions. AGA Comments, CF.CI-405 at 22.

Stakeholders pointed out that the Department had failed to disclose this “critical factual information” in a way that could be reviewed and commented on in the time given. *Chamber of Com. of U.S.*, 443 F.3d at 900; *see*

Notice of Extension of Comment Period, EERE-2014-BT-STD-0031-0357 (August 30, 2022), <https://perma.cc/7S24-6J6Y>. In response, the Department released an updated life-cycle-cost document and extended the comment period by 30 days, to October 6, 2022. *Id.*

Petitioners therefore had only 37 days to analyze a highly complex and deeply flawed model that goes to the heart of the Department's justification for the Consumer Furnace Rule. The Department's revised life-cycle-cost analysis again failed to identify source data for certain inputs. *See* AGA Comments, CF.CI-405 at 22. And it likewise failed to document that the model's qualitative and quantitative methods were reproducible, explainable, and sound. The truncated comment period was therefore prejudicial.

This failure to disclose key data in time for stakeholders to comprehensively analyze and comment on it cannot be reconciled with either the Process Rule or the broader administrative law principle that agencies must provide critical factual information "in time to allow for meaningful commentary." *Connecticut Light & Power Co.*, 673 F.2d at 531. "The failure to provide an opportunity for comment on the model's methodology therefore

constitutes a violation of the APA's notice-and-comment requirements."

Owner-Operator Indep. Drivers Ass'n, Inc. v. Fed. Motor Carrier Safety Admin.,
494 F.3d 188, 201 (D.C. Cir. 2007).

True, the Department offered brief statements in the proposed rule admitting it was deviating from the Process Rule. The Department explained that it was "seek[ing] to complete its statutory obligations as expeditiously as possible" because "[c]ompletion of this furnaces rulemaking is overdue" and because the Department had agreed in *June 2011* to issue a final rule updating furnace standards. 87 Fed. Reg. at 40,607.

That statement does not cure these procedural defects. To begin with, the Department's rationale for departing from its own Process Rule is deficient. The Department points to a settlement agreement from 2011 as requiring its break-neck comment period. But given its over ten-year delay between that settlement and the promulgation of the proposed Consumer Furnace Rule, the Department cannot credibly claim that a one or two month extension would have meaningfully changed the situation. More

importantly, the Department nowhere addresses its failure to provide an accurate and reviewable life-cycle-cost analysis in time for meaningful comment.

Regardless, these notices at most excuse the Department's failure to comply with its own Process Rule. But the APA imposes binding requirements on the Department. *See supra* 100-02. The Department may not excuse its failure to disclose the "most critical factual material" in time for stakeholders to "present comment" by emphasizing the purported urgency of the rulemaking, especially when the urgency flows from a settlement agreement imposing a deadline the Department has repeatedly ignored. *Chamber of Com. of U.S.*, 443 F.3d at 900. The APA requires more.

Conclusion

This Court should vacate the December 2021 Interpretive Rule, Consumer Furnace Rule, and Commercial Water Heater Rule.

Dated: April 9, 2024

Respectfully submitted,

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Certificate of Compliance

I hereby certify that the foregoing brief complies with the requirements of Federal Rule of Appellate Procedure 32(a)(5) and (a)(6) because it has been prepared in 14-point Palatino Linotype, a proportionally spaced font. I further certify that this brief complies with the type-volume limitation of 18,000 words imposed by this Court's January 29, 2024 order concerning the briefing format in these consolidated cases, Document No. 2025589, *AGA v. DOE*, No. 22-1030 (D.C. Cir.), because, excluding the parts of the brief exempted by Federal Rule of Appellate Procedure 32(f) and D.C. Circuit Rule 32(e)(1), it contains 17,969 words according to the count of Microsoft Word.

/s/ Michael B. Schon

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Certificate of Service

I hereby certify that on April 9, 2024, I electronically filed the foregoing using the Court's CM/ECF system, which will send notification of such filing to the Parties.

/s/ Michael B. Schon

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