ORAL ARGUMENT SCHEDULED FOR JANUARY 20, 2023

No. 22-1107

Consolidated with Nos. 22-1111, 22-1117

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

AMERICAN PUBLIC GAS ASSOCIATION,

Petitioner,

v.

U.S. DEPARTMENT OF ENERGY,

Respondent.

On Petition for Review of a Rule of the
U.S. Department of Energy

PROOF BRIEF OF STATE, MUNICIPAL, AND NON-PROFIT AMICI CURIAE IN SUPPORT OF RESPONDENT

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

A. Parties and Amici

All parties and intervenors appearing in this Court are listed in Petitioners' Opening Brief.

Amici appearing in support of Respondent include: The City of New York, the Commonwealth of Massachusetts, the District of Columbia, the Natural Resources Defense Council, Inc., the Sierra Club, and the States of Illinois, Maine, Maryland, Minnesota, Nevada, New Jersey, New York, and Oregon.

B. Rulings Under Review

Petitioners seek review of the Department of Energy's final rule captioned Energy Conservation Program: Energy Conservation Standards for Commercial Packaged Boilers, 85 Fed. Reg. 1592 (Jan. 10, 2020), as supplemented, 87 Fed. Reg. 23,421 (Apr. 20, 2022).

C. Related Cases

This Court previously heard a challenge by Petitioners (except for Spire Alabama Inc.) to the same final rule at issue in these consolidated cases. *Am. Public Gas Ass'n v. U.S. Dep't of Energy*, 22 F.4th 1018 (D.C. Cir. 2022) (Case Nos. 20-1068, 20-1072, 20-1100). The Court remanded without vacatur in the prior litigation, and Petitioners now challenge the Department's supplemental response.

In addition, the Ninth Circuit previously considered a challenge to the Department's failure to publish the final rule at issue in these consolidated cases. *See NRDC v. Perry*, 940 F.3d 1072 (9th Cir. 2019).

Counsel for Amici are not aware of any other related cases.

REPRESENTATION OF CONSENT AND CORPORATE DISCLOSURE STATEMENTS

Pursuant to D.C. Circuit Rule 29(b), Amici Natural Resources Defense Council, Inc. and Sierra Club represent that Petitioners and Petitioner-Intervenor do not object to the filing of this brief, and Respondent consents. The State of New York previously filed a Notice of Intent to Participate as Amicus Curiae, as authorized by D.C. Circuit Rule 29(b).

Pursuant to Federal Rule of Appellate Procedure 26.1 and D.C. Circuit Rule 26.1, Amici Natural Resources Defense Council, Inc. and Sierra Club state that they are non-profit advocacy organizations dedicated to protecting public health and the environment. They have no parent companies, and no publicly held company has an ownership interest in any of them.

TABLE OF CONTENTS

TABLE OF AUTHORITIES

Cases

Statutes

Regulations

GLOSSARY

Act:	Energy Policy and Conservation Act
Department:	Department of Energy
Industry group:	American Society of Heating, Refrigerating, and Air-Conditioning Engineers
JA:	Joint Appendix
Rule:	Energy Conservation Program: Energy Conservation Standards for Commercial Packaged Boilers, 85 Fed. Reg. 1592 (Jan. 10, 2020)
Supplement:	Energy Conservation Program: Energy Conservation Standards for Commercial Packaged Boilers; Response to United States Court of Appeals for the District of Columbia Circuit Remand in American Public Gas Association v. United States Department of Energy, 87 Fed. Reg. 23,421 (Apr. 20, 2022)

STATUTES AND REGULATIONS

All applicable statutes are contained in an addendum to Petitioners' Brief.

IDENTITY AND INTEREST OF AMICI CURIAE

Amici Natural Resources Defense Council, Inc. and Sierra Club (collectively, "Non-Profit Amici") and the States of New York, Illinois, Maine, Maryland, Minnesota, Nevada, New Jersey, Oregon, the Commonwealth of Massachusetts, the District of Columbia, and the City of New York (collectively, "State and Municipal Amici") have an interest in preserving the substantial public benefits of Respondent Department of Energy's updated energy conservation standards for commercial packaged boilers.[1]

Non-Profit Amici are environmental organizations with a long history of promoting federal energy efficiency standards for appliances and commercial equipment because they are particularly effective tools for reducing energy usage while still providing consumers with reliable and affordable energy services. Non-Profit Amici's members include consumers, business owners, and tenants who use—or whose businesses or landlords use—commercial packaged boilers.

State and Municipal Amici have a compelling interest in improving energy efficiency and preventing the adverse effects of fossil fuel combustion. They rely on federal efficiency standards for consumer and commercial products to complement their energy and climate change policies. Additionally, residents of

[1] No party's counsel authored this brief in whole or in part. No person contributed money that was intended to fund preparing or submitting this brief.

State and Municipal Amici include business owners and landlords who must make purchasing decisions relating to commercial packaged boilers, as well as tenants who are required to pay for heat generated by commercial packaged boilers. Because State and Municipal efforts to adopt more stringent requirements may be preempted by the Energy Policy and Conservation Act, the States have a particularly strong interest in ensuring robust federal efficiency standards.

Because of their interest in the updated standards for commercial packaged boilers, several Amici here brought earlier successful litigation to ensure that the standards were published in the Federal Register so that they would take effect. *See infra* p. 12. When Petitioners challenged the standards in subsequent litigation before this Court, Amici intervened to defend them and helped persuade the Court to remand the standards without vacatur. *See infra* p. 13.

Amici submit this brief pursuant to Federal Rule of Appellate Procedure 29(a) and D.C. Circuit Rule 29(b) to urge the Court, once again, to preserve the benefits of these important and overdue energy conservation standards. Amici offer a unique perspective on the history of the Department's efficiency standards program, the history of this rulemaking, and the environmental and health benefits of the updated standards, which are relevant to this Court's review.

INTRODUCTION AND SUMMARY OF ARGUMENT

The Energy Policy and Conservation Act directs the Department of Energy to periodically review and update its energy conservation standards for commercial and industrial equipment to carry out Congress's goal of steadily increasing the energy efficiency of these products. The Department estimates that, by 2030, cumulative consumer savings from its conservation standards will reach $2 trillion.

This case involves the Department's updated conservation standards for commercial packaged boilers, which are used to heat commercial and multifamily residential buildings. After reviewing its standards—which were last amended over a decade ago—the Department concluded that more stringent standards were technologically feasible, would conserve significant additional energy, and were economically justified. The updated standards are projected to save consumers between $500 million and $2 billion on their utility bills, and to avoid 16 million metric tons of carbon dioxide emissions over the next 30 years. After years of litigation, and because of this Court's prior orders, compliance with the updated (and overdue) standards will finally be required starting on January 10, 2023.

This Court previously remanded the standards to the Department to provide a supplemental response to comments on three issues related to its estimate of consumer savings. *See Am. Pub. Gas Ass'n v. U.S. Dep't of Energy*, 22 F.4th 1018, 1026-31 (D.C. Cir. 2022). The Department published a response that

further explained—and reaffirmed—its modeling and data choices. 87 Fed. Reg. 23,421 (Apr. 20, 2022) (JA__).

Petitioners now renew their challenge to the same three issues, where the Department admittedly lacked "perfect empirical or statistical data." *FCC v. Prometheus Radio Project*, 141 S. Ct. 1150, 1160 (2021). But the lack of such data is "not unusual in day-to-day agency decisionmaking within the Executive Branch," and the Supreme Court and this Court have repeatedly reaffirmed that absent better or more accurate information, an agency can proceed based on the information available to it. *Id.*; *see also Nat'l Ass'n for Surface Finishing v. EPA*, 795 F.3d 1, 12-13 (D.C. Cir. 2015). The Department's supplemental response thoroughly explains that the agency acted reasonably when it relied on its expert understanding of the market for commercial packaged boilers—informed by decades of experience setting energy conservation standards—together with the most comprehensive, reliable data available to it.

To this day, Petitioners have not identified any better data or a practicable alternative model that the Department should have used. Their arguments, if accepted, would allow dissatisfied commenters to obstruct enormously beneficial regulation simply by positing hypothetical better data or a hypothetical superior approach, without even attempting to help the agency develop such information.

Moreover, Petitioners' limited challenge to the Department's consumer savings estimate ignores the majority of the agency's findings in support of the updated standards. Petitioners do not address the Department's determination, based on clear and convincing evidence, that the updated standards are technologically feasible and would conserve significant additional energy—two of the three criteria for imposing more stringent standards. 42 U.S.C. § 6313(a)(6)(A)(ii)(II). They challenge only the Department's determination that the standards are economically justified. Even then, their substantive challenges are limited to the sole issue of how the Department estimated consumer savings, and their core challenge is premised on unsupported assertions about how they think consumers behave. But Petitioners represent the natural gas industry and boiler manufacturers, not consumers. Amici, who do represent consumers, agree with the Department that market failures impede purchasers from buying more efficient boilers that would save money over the long term. And regardless, the Department relied on other statutory factors in addition to consumer savings in concluding that the standards are "economically justified." In particular, the Department cited the projected energy savings, emission reductions, and environmental and public health benefits of the standards—none of which Petitioners acknowledge.

The Court should deny the petitions for review and affirm the Department's updated standards for commercial packaged boilers, preserving their substantial and overdue public benefits.

BACKGROUND

A. Congress requires increasingly stringent efficiency standards

Congress enacted the Energy Policy and Conservation Act in 1975 to "conserve energy supplies through energy conservation programs" and to improve the energy efficiency of major appliances, among other purposes. Pub. L. No. 94-163, § 2(4)-(5), 89 Stat. 871, 874 (1975) (codified at 42 U.S.C. § 6201(4)-(5)). The Act initially sought to accomplish these goals through a voluntary market-based approach, primarily by requiring labels that disclosed covered appliances' efficiency to inform consumers of the economic benefits of energy-efficient appliances. *Id.* §§ 324-26. But Congress soon determined that relying on consumer choice was insufficient to seize cost-effective improvements in efficiency, and amended the Act to require the Department of Energy to prescribe mandatory energy conservation standards for covered appliances. Pub. L. No. 95-619, § 422, 92 Stat. 3206, 3259 (1978); *see Zero Zone, Inc. v. U.S. Dep't of Energy*, 832 F.3d 654, 662 (7th Cir. 2016). After several Amici here sued the Department for failing to set meaningful standards, *NRDC v. Herrington*, 768 F.2d 1355 (D.C. Cir. 1985), Congress directly imposed conservation standards for certain residential products;

required the Department to periodically review and update the standards; and prohibited the weakening of existing standards. Pub. L. No. 100-12, § 5, 101 Stat. 103, 107-17 (1987); *see NRDC v. Abraham*, 355 F.3d 179, 186-88 (2d Cir. 2004). Together, these provisions carry out Congress's "goal of steadily increasing the energy efficiency of covered products." *Abraham*, 355 F.3d at 197.

In 1992, recognizing that another set of consumers were failing to pursue economically beneficial efficiency improvements, Congress expanded the Act's appliance program to include energy conservation standards for certain commercial and industrial equipment. Pub. L. No. 102-486, § 122, 106 Stat. 2776, 2806-17 (1992) (codified as amended at 42 U.S.C. §§ 6311-6317); *see Air Conditioning & Refrigeration Inst. v. Energy Res. Conservation & Dev. Comm'n*, 410 F.3d 492, 500 (9th Cir. 2005). Congress set initial standards for this equipment but mandated that the Department update those standards if the American Society of Heating, Refrigerating, and Air-Conditioning Engineers (the "industry group")—a private professional association—amended its own recommended standards for such equipment. Pub. L. No. 102-486, § 122(d), 106 Stat. at 2812-13 (codified as amended at 42 U.S.C. § 6313(a)(6)(A)-(B)).

Following the 1992 amendments, the Department's updated standards for this equipment must, at minimum, match the industry group's amended standards, but shall be more stringent if the Department determines, by clear and convincing

evidence, that more stringent standards are "technologically feasible," "would result in significant additional conservation of energy," and are "economically justified." 42 U.S.C. § 6313(a)(6)(A)(ii). In determining whether more stringent standards are "economically justified," the Department must decide whether the benefits of the standards exceed the burdens by considering, to the "maximum extent practicable":

- the standards' economic impact on manufacturers and consumers;
- the savings in operating costs throughout the estimated average life of the products compared to any likely increase in the price of, or maintenance expenses of, the products;
- the total likely projected amount of energy savings;
- any likely lessening of the utility or the performance of the products;
- the likely impact of any lessening of competition, as determined in writing by the Attorney General;
- the need for national energy conservation; and
- other factors the Secretary considers relevant.

42 U.S.C. § 6313(a)(6)(B)(ii). The Act does not prescribe the weight the Department must afford any given factor.

In 2007, Congress again amended the Act, this time to "improv[e] [the] schedule for standards updating." Pub. L. No. 110-140, § 305, 121 Stat. 1492, 1553-56 (2007). Congress improved that schedule in at least two ways. First, it gave the Department deadlines to act on any amended standard issued by the industry group: the Department had to either adopt the industry standard within 18

months or prescribe a more stringent standard within 30 months. *Id.* § 305(b) (codified at 42 U.S.C. § 6313(a)(6)(A)(ii), (a)(6)(B)(i)). Second, and as relevant here, Congress imposed an additional obligation on the Department. Similar to when Congress grew "impatient" with the Act's original voluntary market-based approach, *see Abraham*, 355 F.3d at 185, Congress enacted a lookback provision that guarded against the industry group's inaction by requiring the Department to evaluate its existing standards at least every six years to determine whether they should be updated. *See* 42 U.S.C. § 6313(a)(6)(C)(i). If the Department proposes updating a standard pursuant to the lookback provision, it must publish a final rule amending the standard within two years of its proposal. *Id.* § 6313(a)(6)(C)(iii)(I).

The Act's energy conservation program for covered appliances and equipment has been remarkably effective. Between 1989 and 2019, the Department issued more than 50 new and amended standards. *See* 84 Fed. Reg. 36,037, 36,038 (July 26, 2019). The Department estimates that by 2030, cumulative savings from its standards will reach nearly $2 trillion. *See* U.S. Dep't of Energy, Energy Efficiency & Renewable Energy, Buildings, Appliance & Equipment Standards, https://www.energy.gov/eere/buildings/appliance-and-equipment-standards-program (last visited Nov. 18, 2022).

B. The Department promulgates updated commercial packaged boiler standards

Among the equipment covered by the Act's energy conservation program are commercial packaged boilers. 42 U.S.C. § 6311(1)(J). These boilers are powered by oil or natural gas and are generally used to heat commercial and multifamily residential buildings. A typical boiler lasts for decades. *See* 87 Fed. Reg. at 23,423 (JA__) (boiler lifetime). Thus, a less efficient model will consume more energy than necessary—and yield higher energy bills—for many years.

The Department last updated its energy conservation standards for commercial packaged boilers more than a decade ago, in July 2009, when it adopted the industry group's 2007 standards. *See* 74 Fed. Reg. 36,312 (July 22, 2009). The industry group has not amended its standards over the last 15 years.

As a result, the Act required the Department to evaluate its commercial packaged boiler standards and, by July 2015, either determine that they did not need to be amended or propose updated standards. *See* 42 U.S.C. § 6313(a)(6)(C)(i). After initiating rulemaking in 2013, the Department periodically held meetings, solicited public comment, and published preliminary analyses. 81 Fed. Reg. 15,836, 15,844 (Mar. 24, 2016). In March 2016, the Department published a proposed rule in which the agency tentatively concluded

that clear and convincing evidence supported more stringent standards for eight of twelve boiler equipment classes.[2] *Id.* at 15,838.

In December 2016, the Department finalized its update to the energy conservation standards for commercial packaged boilers and publicly posted a signed, final rule on its website. *See* Pre-Publication Final Rule, Energy Conservation Standards for Commercial Packaged Boilers (Dec. 28, 2016), *available at* https://www.energy.gov/sites/prod/files/2016/12/f34/CPB_ECS_Final_Rule.pdf.[3] The Department found that the updated standards will save consumers between $500 million and $2 billion on their energy bills and reduce energy use over the next 30 years by roughly 0.27 quadrillion British thermal units, equivalent to the amount of energy in about 14 million tons of coal.[4] 85 Fed. Reg. 1592, 1595 (Jan. 10, 2020) (JA__). It also estimated that the standards would avoid emissions of 16 million metric tons of carbon dioxide, 139,000 tons of methane,

[2] The Department divides commercial packaged boilers into equipment classes based on their size (small, large, or very large), fuel type (gas or oil), and heating medium (hot water or steam). 81 Fed. Reg. at 15,852.

[3] Because the January 2020 published version of the final rule is "substantively identical" to the one the Department signed in December 2016, 85 Fed. Reg. 1592, 1681 (Jan. 10, 2020) (JA__), this brief hereinafter cites to the published version, for the Court's convenience.

[4] *See* U.S. Energy Information Administration, Units and calculators explained: Energy conversion calculators, https://www.eia.gov/energyexplained/units-and-calculators/energy-conversion-calculators.php (last visited Nov. 18, 2022) (coal conversion calculator).

and 41,000 tons of nitrogen oxides over the same period. *Id.* Based on a robust analysis, the Department concluded that the updated standards represent "a significant improvement in energy efficiency that is technologically feasible and economically justified." *Id.* at 1674 (JA__).

Notwithstanding the demonstrated public benefits of the updated standards, the Department—following a change of administration in January 2017, and without explanation—unlawfully refused to publish the updated standards. Several Amici here successfully sued the Department to enforce its nondiscretionary duty to publish the standards. *See NRDC v. Perry*, 940 F.3d 1072 (9th Cir. 2019). The Department finally published the updated standards in January 2020, three years after they were finalized. 85 Fed. Reg. at 1592 (JA__) (the "Rule"). Because compliance with updated standards is required "3 years after *publication* of the final rule establishing a new standard," 42 U.S.C. § 6313(a)(6)(C)(iv)(I) (emphasis added), the Department's unlawful years-long delay in publishing the Rule pushed out manufacturers' compliance obligations until January 2023, *see* 85 Fed. Reg. at 1593 (JA__). Absent that delay, manufacturers would have begun complying with the standards in early 2020.

C. This Court remands the updated standards for further explanation

After Petitioners challenged the Rule in this Court, Amici intervened to defend it. *Am. Pub. Gas Ass'n v. U.S. Dep't of Energy* (*"APGA v. DOE"*), 22 F.4th 1018, 1024 (D.C. Cir. 2022). In that litigation, the Court determined that the Department did not adequately respond to comments on three issues: the method of assigning boilers to buildings in its economic model, the estimate of fuel prices, and the estimate of burner operating hours. *Id.* at 1027-29. But the Court agreed with Amici that vacatur was not warranted because the "deficiencies of the rule may fairly be characterized as failures to explain, the type of deficiency most readily remedied on remand." *Id.* at 1031. Accordingly, the Court remanded for the Department "to take appropriate remedial action within 90 days." *Id.*

On remand, the Department timely issued a supplemental response to comments that further explained its reasoning on the three issues the Court identified. *See* 87 Fed. Reg. at 23,421 (JA __) (the "Supplement"). Dissatisfied with the Supplement, Petitioners filed an improper post-mandate motion asking the prior panel to vacate the standards. *See* Mot. to Vacate, *APGA v. DOE*, No. 20-1068 (D.C. Cir. Apr. 28, 2022), ECF No. 1944822. The Court denied that motion. Order, *APGA v. DOE*, No. 20-1068 (D.C. Cir. June 1, 2022), ECF No. 1948742. Petitioners then filed these consolidated cases and moved to stay the

standards' compliance date. Joint Mot. for Stay Pending Appeal (July 6, 2022), ECF No. 1953704. The Court denied that motion, too. Order (Aug. 17, 2022), ECF No. 1959647. As a result, compliance with the Rule is required starting on January 10, 2023.

ARGUMENT

I. As the Supplement confirms, the Department reasonably determined that the updated standards are economically justified

A. The Department's assignment method was reasonable and adequately explained

The Department comprehensively supported the premise that market failures exist in the market for commercial packaged boilers and explained why that premise justifies its modeling method. To this day, Petitioners have failed to identify any practicable alternative model or the necessary data to support such an alternative. The Court should defer to the Department's well-considered modeling approach, informed by its decades of experience and expertise.

1. In the Supplement, the Department supported the premise that market failures exist and explained why its modeling method was justified

Petitioners objected to the Department's method of assigning boilers to buildings in its economic modeling, which sought to simulate how purchasers would behave in a world with and without updated efficiency standards. *See APGA*, 22 F.4th at 1027. In the Rule, the Department had identified "several

possible market failures" as a justification for assigning boiler efficiencies randomly, instead of based exclusively on economic criteria. *Id.*; *see also* 85 Fed. Reg. at 1637-38 (JA__-__). On remand, the Department provided a "more complete" explanation: it cited information to support the premise that "market failures affect the market for commercial packaged boilers," and further explained why those market failures "justify" its chosen approach. *APGA*, 22 F.4th at 1027.

The Department described at length how market failures affect commercial and industrial consumers. 87 Fed. Reg. at 23,423-27 (JA__-__). It also identified "several case studies and sources of data specific to the commercial packaged boiler market," *id.* at 23,423 (JA__), which confirmed its conclusion that many consumers' boiler purchasing decisions do not strongly correlate with economic criteria, *see id.* at 23,425-27 (JA__-__); *see also* Resp't Br. 22-25. Amici—who, unlike Petitioners, represent consumers—agree with the Department that there are numerous ways in which market failures impede purchasers from investing in more efficient boilers that would save money over the long term.

For example, in a landlord-tenant scenario—where a building owner pays for the equipment, but tenants pay for energy costs—the owner may choose a cheaper, less efficient boiler instead of a more efficient boiler that would save tenants money over time. *See* 87 Fed. Reg. at 23,423-24 (JA__-__); Suppl. Decl. of

R.J. Mastic ("Mastic Decl.") ¶ 10.[5] The potential for misaligned incentives exists in over a quarter of the commercial buildings in the Department's sample, which are tenant-occupied, *see* 87 Fed. Reg. at 23,423-24 (JA__-__), and in residential buildings. As another example, conflicting goals and incentives also arise within corporations, when one department is responsible for capital expenditures and thus equipment selection, and another department is responsible for paying energy bills. *Id.* As a third example, in emergency situations—like when a boiler fails in the middle of winter—consumers are likely to adopt a familiar "like-for-like" replacement with the same technology, rather than spending time to assess whether a more efficient option would save money long term. *Id.* at 23,426 (JA__); Mastic Decl. ¶ 11. In general, a more efficient boiler costs more upfront than a less efficient boiler, *contra* Pet'rs Br. 29-30, and the high capital cost of a more efficient boiler often impedes purchasers making investments that make long-term economic sense. Mastic Decl. ¶ 12-13.

The Department's explanation of its conclusion that market failures affect the market for commercial boilers was more than adequate, and the Court should defer—as it "routinely and quite correctly" does—to the agency's understanding of

[5] R.J. Mastic is a member of amicus Natural Resources Defense Council, and previously submitted a declaration in support of standing in the prior related litigation. Decl. of R.J. Mastic, *APGA v. DOE*, No. 20-1068 (Apr. 7, 2020), ECF No. 1837171.

the market it regulates. *Pub. Citizen, Inc. v. NHTSA*, 374 F.3d 1251, 1260-61 (D.C. Cir. 2004) (citation omitted); *see also Great Lakes Commc'n Corp. v. FCC*, 3 F.4th 470, 476 (D.C. Cir. 2021) (agency can "reasonably rely on common sense and predictive judgments within its expertise" (citation omitted)); *Herrington*, 768 F.2d at 1424 (agency need not "document copiously every collateral inference it draws from its experience with a regulated industry"). Such deference is especially warranted here, where the Department has decades of experience setting energy conservation standards, and the relevant statutory history reflects Congress's determination that giving consumers access to information that shows the economic value of efficient products would not accomplish its goal of steadily increasing the energy efficiency of covered products.

Insisting that these market failures are irrelevant, Petitioners cite only their own unsupported assertions. *See* Pet'rs Br. 37-38 (citing No. 0076-A1 at 30 (JA__)). But even if Petitioners had shown that economic outcomes motivate all or most consumer choices in this market, it is hardly self-evident that even sophisticated customers with properly aligned incentives will identify the economically optimal commercial boiler for their application. For example, the challenged standards for small gas-fired hot water boilers, the most common class of commercial boiler, increased by just 4 percentage points over the prior levels—going from 80 percent annual fuel utilization efficiency to 84 percent. *See* 85 Fed.

Reg. at 1681-82 (JA__-__); 87 Fed. Reg. at 23,422 (JA__). The Department found the resulting modest annual savings in fuel costs for 84-percent efficient boilers will eventually lead to net savings in a portion of installations. *See* 85 Fed. Reg. at 1655 (JA__) (Table V.4 showing life-cycle cost analysis results for small gas-fired hot water boilers at thermal efficiency level 3); *id.* at 1617 (JA__) (84-percent efficiency corresponds to efficiency level 3). Petitioners' argument against the Department's method of assignment hinges on boiler purchasers recognizing and capturing these long-term benefits, but Petitioners have offered no evidence that purchasers project and scrutinize future costs with the precision needed to do so. *See* 87 Fed. Reg. at 23,423 (JA__) (explaining that "the high costs of gathering and analyzing relevant information" preclude purchasers from fully capturing efficiency benefits); Mastic Decl. ¶ 13 (explaining that purchasers typically do not attempt any long-term financial analysis of their options).

Given the prevalence of market failures and the complexity of purchasing decisions, the Department concluded that randomly assigning boilers—constrained by a probabilistic distribution, which was informed by stakeholder-submitted data—was a "more appropriate representation" of the imperfect market for boilers than relying "only on apparent cost-effectiveness criteria." 87 Fed. Reg. at 23,427 (JA__). In rejecting an approach based on cost-effectiveness—which was the only alternative approach proposed in rulemaking, put forth by Petitioner Air

Conditioning, Heating, and Refrigeration Institute, *see* 85 Fed. Reg. at 1637 (JA__)—the Department recognized that "economic factors may play a role" in purchasing decisions, 87 Fed. Reg. at 23,423 (JA__). But it reiterated that other factors influence decisions too, including market failures and non-economic criteria such as "green behavior," where purchasers prioritize minimizing environmental harm. 85 Fed. Reg. at 1638 (JA__); *see also* 87 Fed. Reg. at 23,423 (JA__).

By assigning boilers randomly, the Department does *not* assume that all purchasers "never consider" the economics of their purchases. *Contra* Pet'rs Br. 8, 14, 16, 25, 38. Rather, this approach reasonably approximates an imperfect market where decisions are influenced by economic criteria, non-economic criteria, and various market failures; "acknowledges the uncertainty inherent in the data"; and "minimizes any bias" rather than assuming market conditions that are unsupported by the evidence. 87 Fed. Reg. at 23,427 (JA__); *see also* Resp't Br. 26-34. The Department's approach is also consistent with those of other prominent energy consumption models, including the Energy Information Administration's Annual Energy Outlook, which assumes market failures in the commercial sector. *See* 87 Fed. Reg. at 23,425 (JA__). The Department acted well within its discretion because it did not "ignore" Petitioners' concerns about rational economic behavior, but "simply interpreted" the role of that behavior in driving purchases

"differently." *Prometheus Radio Project*, 141 S. Ct. at 1159; *see also Rural Cellular Ass'n v. FCC*, 588 F.3d 1095, 1105 (D.C. Cir. 2009) (in "primarily predictive" context, an agency need only "acknowledge factual uncertainties and identify the considerations it found persuasive").

2. Petitioners have not identified any practicable alternative assignment method or data to support such an alternative

Petitioners insist that, even if the Department could have rejected a model that assigned boilers based solely on cost-effectiveness (the alternative they put forth, and the only alternative raised by any party during rulemaking), it needed to model consumers' adherence to classical economic theory in some other way. *See* Pet'rs Br. 35-39. Yet to this day—despite submitting numerous comments, Pet'rs Br. 27, and several briefs on this issue—Petitioners have not identified *any* practicable alternative to random assignment, or suitable data to support such an alternative. They nonetheless argue that the Department had to either develop an alternative, Pet'rs Br. 39, or abandon its rulemaking—a result that would effectively preclude regulation despite the Department's mandate to regularly update and improve its standards.

The Supreme Court and this Court have repeatedly reaffirmed, however, that an agency need not have perfect information before it regulates. Absent "additional data from commenters," an agency can make a "reasonable predictive judgment" based on the information it has. *Prometheus Radio Project*, 141 S. Ct. at 1160; *see*

also Nat'l Ass'n for Surface Finishing, 795 F.3d at 12 (where industry did "not identify any specific, superior" information, court "'defer[s] to an agency's decision to proceed on the basis of imperfect scientific information, rather than to invest the resources to conduct the perfect study'" (citation omitted)); *NRDC v. EPA*, 529 F.3d 1077, 1086 (D.C. Cir. 2008) (similar); *Sierra Club v. EPA*, 167 F.3d 658, 662 (D.C. Cir. 1999) (similar). The Department had good information to support its chosen approach, *see* Resp't Br. at 22-25, and it had "no [] obligation" to develop data to support Petitioners' preferred and hypothetical alternative. *Prometheus Radio Project*, 141 S. Ct. at 1160.

Instead, absent "a model and the necessary supporting data" to analyze the impact of economic and non-economic variables on consumer choice, the Department reasonably relied on random assignment to simulate an imperfect market. 87 Fed. Reg. at 23,427 (JA__). This Court has long recognized an agency's "undoubted power to use predictive models," and it "must defer to the agency's decision" about whether the "cost and complexity" of a more elaborate model is warranted. *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983); *see also AT&T Servs., Inc. v. FCC*, 21 F.4th 841, 849 (D.C. Cir. 2021) (deferring to agency's modeling choice on issue involving technical expertise); *Shafer & Freeman Lakes Env't Conservation Corp. v. FERC*, 992 F.3d 1071, 1093 (D.C. Cir. 2021) (agency reasonably concluded an admittedly

"imperfect method" was the "best option" given "demonstrated flaws in other approaches"). The Court should defer to the Department's reasonable modeling decision here.

B. The Department's use of available data to estimate marginal gas prices and burner operating hours was reasonable and adequately explained

Petitioners also renew their objections to the Department's use of available data to estimate marginal gas prices and burner operating hours, but the Department adequately responded to Petitioners' concerns on remand.

Petitioners argue that the Department's marginal prices did not reflect the lower marginal prices paid by large commercial consumers. Pet'rs Br. 40-41; *APGA*, 22 F.4th at 1028. In the Supplement, the Department explained that operators of commercial packaged boilers are varied, including both "larger load utility customers" and smaller customers like "multi-family residential buildings." 87 Fed. Reg. at 23,428 (JA__). Accordingly, the Department used a comprehensive dataset that reflected the range of rates paid by varied customers, which included (but was not limited to) the lower rates paid by larger customers. *See id.* at 23,429 (JA__). In addition, the Department explained that in a different rulemaking in the residential sector, it found that its estimated marginal price factors were "generally comparable" to those computed using tariff data (i.e., approved utility rates and fees) for a subset of consumers, giving it confidence in its approach. *Id.* at 23,428

(JA__); *see also APGA*, 22 F.4th at 1030 ("[T]here is no bar to relying upon a hypothesis that has been empirically validated."). Petitioners protest that the Department failed to show its marginal prices were consistent with "actual marginal price information" submitted in public comments, Pet'rs Br. 41, but the only such information submitted was a single line graph that purports to show gas prices in Missouri for a single unidentified year, from an undisclosed source, No. 0073-A1 at 19 (JA__).

Petitioners previously argued that the Department overestimated burner operating hours, which were purportedly a critical component of consumer savings because a boiler's operating costs depends on the number of hours it operates. *See* Pet'rs Br. 42-43; *see also APGA*, 22 F.4th at 1029. In the Supplement, however, the Department clarified that burner operating hours are "not a primary input parameter," "but rather a derived quantity," and thus the calculation of operating costs "is not dependent on any assumptions regarding [burner operating hours]." 87 Fed. Reg. at 23,429 (JA__). Petitioners now appear to insist that they were actually challenging the Department's estimate of burner operating hours because it casts doubt on the Department's building heat load estimates, Pet'rs Br. 43-44, but the Department explained why burner operating hours and building heat load are not directly correlated, *see* 87 Fed. Reg. at 23,430 (JA__) (explaining that a different number of burner operating hours will be required to meet the same

building heat load, depending on the number of boilers and overall boiler capacity). In any event, the Department further explained why certain numerical estimates of burner operating hours are not "anomalous," Pet'rs Br. 43, but rather consistent with "reasonable operating conditions," like those of a commercial building with a winter heating season, 87 Fed. Reg. at 23,430 (JA__).

Once again, despite repeated opportunities, Petitioners have failed to identify any better data to estimate either marginal gas prices or burner operating hours. *See* 85 Fed. Reg. at 1637 (JA__) (no comprehensive source of burner operating hours was identified by stakeholders); 87 Fed. Reg. at 23,428-29 (JA__-__) ("no tariffs were submitted" to the Department by large customers who may pay lower energy prices).

But as described *supra*, pp. 20-21, where Petitioners did not "identify any specific, superior" information the Department could have used instead, they may not "simply criticize[] the agency for not obtaining and evaluating more data." *Nat'l Ass'n of Surface Finishing*, 795 F.3d at 12; *see also Prometheus Radio Project*, 141 S. Ct. at 1160 (agencies have "no general obligation" to "conduct or commission their own empirical or statistical studies"); *cf.* 42 U.S.C. § 6313(a)(6)(B)(ii) (instructing the Department to consider certain factors only "to the maximum extent *practicable*" (emphasis added)). Here, absent better information, the Department acted well within its discretion by relying on the most

comprehensive and reliable data available. *See* 87 Fed. Reg. at 23,429 (JA__) (burner operating hours were derived from "the most robust energy consumption data for space heating available"); *id*. at 23,428 (JA__) (marginal gas prices were derived from the "highest quality energy price data available"); *cf. Prometheus Radio Project*, 141 S. Ct. at 1160 (affirming agency's "reasonable predictive judgment" based on a "sparse record"). This Court should affirm that, absent any practicable way to directly measure marginal gas prices or burner operating hours, the Department reasonably used the best data available.[6]

II. The Department reasonably relied on statutory factors in addition to consumer savings to justify the updated standards

Petitioners address only the Department's "economically justified" determination—one of the three criteria for imposing more stringent standards—and their substantive challenges are limited to the sole issue of how the Department estimated consumer savings. *See* Pet'rs Br. 14-15, 24-26; *see also supra* p. 5.[7] Those challenges are meritless. *Supra* pp. 14-25. Moreover, even assuming the

[6] Amici agree that the Department was not required to provide an additional opportunity for comment on the Supplement because the new information was supplementary, and Petitioners have not shown prejudice. *See* Resp't Br. 55-64.

[7] Petitioners have forfeited any challenge to the Department's determination that the other two criteria are satisfied—that is, that the updated standards are technologically feasible and would conserve significant additional energy—by failing to raise those issues in their opening brief. *See City of Waukesha v. EPA*, 320 F.3d 228, 250 n.22 (D.C. Cir. 2003) (per curiam).

Department overestimated consumer savings or that such savings accrue disproportionately to a subset of users, *see* Pet'rs Br. 29, 33, the Act does not set a minimum threshold of consumer savings or mandate that all consumers benefit equally. *See* 42 U.S.C. § 6313(a)(6)(B)(ii) (requiring the Department to consider consumer savings but not mandating any specific distribution of savings).

More importantly, the Department was required to—and did—consider other statutory factors, including "the need for national energy conservation," *id.* § 6313(a)(6)(B)(ii)(VI), in making its "economically justified" determination. *See* 87 Fed. Reg. at 23,427 (JA__). Specifically, the Department found that the standards would conserve roughly 0.27 quadrillion British thermal units of energy, equivalent to the amount of energy in about 14 million tons of coal. *See supra* p. 11. It also found that the standards would avoid 16 million metric tons of carbon dioxide emissions (valued at $100 million to $1.5 billion) and 41,000 tons of nitrogen oxide emissions (valued at $35 to $99 million). 85 Fed. Reg. at 1595-96 & tbl. I.3 (JA__-__). Thus, even *without* considering consumer savings, the value of these environmental benefits far exceed—by an order of magnitude—the industry costs about which Petitioners complain. *See* Pet'rs Br. 57-58; 85 Fed. Reg. at 1595 (JA__) (estimating between $10 and $19 million in lost cash flows and $21 million in conversion costs).

As the Department explained, even assuming its method of assigning boilers "produced some overstatement" of consumer savings, it would still conclude that the standards were economically justified in light of these "numerous [other] factors." 87 Fed. Reg. at 23,427 (JA__). Petitioners simply ignore these other benefits, which the Department explicitly relied on as clear-and-convincing evidence in support of its "economically justified" determination. *See id.* at 23,427-28 (JA__-__); *see also APGA*, 22 F.4th at 1025 (acknowledging that when it is "impracticable" to further assess any given factor regarding economic justification, "but there is clear and convincing evidence based upon the other factors," then the Department "may promulgate a more stringent standard").

Considering its wide discretion to balance the statutory factors, the Department reasonably concluded—based on consumer savings, energy savings, emissions reductions, and other environmental and public health benefits, 87 Fed. Reg. at 23,427 (JA__)—that "the benefits of the [updated] standard[s] exceed the burden," rendering them "economically justified." 42 U.S.C. § 6313(a)(6)(B)(ii).

III. Vacatur is inappropriate and would deprive the public of the updated standards' substantial and overdue benefits

For the reasons explained above and by Respondent, the Court should deny the petitions for review and uphold the Department's updated standards for commercial packaged boilers. If the Court finds any deficiency in the Supplement, however, it should remand without vacatur—as it did in the prior litigation—

because the "seriousness of the . . . deficiencies" continue to weigh against vacatur and the "disruptive consequences" of vacatur would be even more severe now. *APGA*, 22 F.4th at 1030 (quoting *Allied-Signal, Inc. v. Nuclear Regul. Comm'n*, 988 F.2d 146, 150-51 (D.C. Cir. 1993)).

Vacatur would be even more disruptive now than it would have been two years ago. Manufacturers will soon complete any operational changes they undertook to meet the Rule's January 10, 2023, compliance deadline. If the Rule is vacated shortly after taking effect, the regulatory regime will change once again—with a possibility that the regime will change once more, after any remaining procedural defects are cured. Further, a return to the outdated standards would competitively disadvantage manufacturers who have made good-faith investments—and potentially permanent operational changes—to meet the updated standards. Petitioners assure the Court that this is not a case "in which the 'egg has been scrambled,' and it is too late to reverse course." Pet'rs Br. 58 (quoting *Allina Health Servs. v. Sebelius*, 746 F.3d 1102, 1110-11 (D.C. Cir. 2014)). But in support of their standing (and their earlier stay motion), Petitioners submitted declarations from multiple manufacturers who declared that compliance with the updated standards would require "significant investment in *irreversible changes to operations*." Decl. of Michael Doorhy ¶ 9 (Standing-Add-5), ECF No. 1968677; *see also* Decl. of Peter J. Morgan ¶ 7 (Standing-Add-14) (similar). By January 10,

2023—before this case is argued and decided—those "irreversible changes" will have already been made, by those manufacturers and others. Petitioners nowhere reconcile these assertions.

Vacatur is also inappropriate because it "would at least temporarily defeat the enhanced protection of the environmental values covered by" the standards, which are already long overdue. *U.S. Sugar Corp. v. EPA*, 844 F.3d 268, 270 (D.C. Cir. 2016) (per curiam) (alteration and citation omitted). If the Rule is vacated, boilers manufactured in 2023 will only need to meet efficiency standards set by the industry group in 2007—standards which are 15 years old, and which the Department concluded were insufficiently stringent 6 years ago. Manufacturers would continue to produce—and consumers would purchase and install—less efficient boilers that would generate higher utility bills and more emissions for decades. That would deprive the public (including Amici) of the substantial environmental and health benefits of the standards, even though the technologies required to meet them "already exist in the current market" and are readily available. 85 Fed. Reg. at 1674 (JA__); *see also id.* at 1595 (JA__) (projecting cumulative emissions reductions of 16 million metric tons of carbon dioxide, 139,000 tons of methane, and 41,000 tons of nitrogen oxides). Vacatur would, therefore, contravene Congress's goal of "steadily increasing the energy efficiency of covered products." *Abraham*, 355 F.3d at 197.

CONCLUSION

This Court should deny the petitions for review and uphold the Department's updated, and long overdue, energy conservation standards for commercial packaged boilers.

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Respectfully submitted,

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CERTIFICATE OF COMPLIANCE

I hereby certify that the foregoing response complies with the requirements of Federal Rule of Appellate Procedure 32(a)(5) because it has been prepared in 14-point Times New Roman, a proportionally spaced font. I further certify that this response complies with the type-volume limitation of Federal Rule of Appellate Procedure 29(a)(5) because it contains 6,448 words according to the count of Microsoft Word.

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CERTIFICATE OF SERVICE

I hereby certify that I electronically filed the foregoing with the Clerk of the Court for the United States Court of Appeals for the District of Columbia Circuit by using the appellate CM/ECF system on November 21, 2022.

I certify that all participants in the case are registered CM/ECF users and that service will be accomplished by the appellate CM/ECF system.

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