NOT YET SCHEDULED FOR ORAL ARGUMENT

No. 20-1068 (consolidated with Nos. 20-1072 and 20-1100)

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

AMERICAN PUBLIC GAS ASSOCIATION,

Petitioner,

v.

UNITED STATES DEPARTMENT OF ENERGY,

Respondent.

On Petitions for Review of an Order of the
United States Department of Energy

FINAL JOINT OPENING BRIEF OF AMERICAN PUBLIC GAS ASSOCIATION, AIR-CONDITIONING, HEATING, AND REFRIGERATION INSTITUTE, SPIRE INC., AND SPIRE MISSOURI INC.

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CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Parties and Amici.

Petitioners in these consolidated cases are the American Public Gas Association (20-1068), the Air-Conditioning, Heating, and Refrigeration Institute (20-1072), and Spire Inc. and Spire Missouri Inc. (20-1100). Respondent in each case is the United States Department of Energy. The American Gas Association has intervened in support of Petitioners. The City of New York, Commonwealth of Massachusetts, Consumer Federation of America, District of Columbia, Massachusetts Union of Public Housing Tenants, Natural Resources Defense Council, Sierra Club, and States of California, Illinois, Maine, Maryland, Minnesota, Nevada, New Jersey, New York, Oregon, and Vermont have intervened in support of Respondent.

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

Ruling 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).

Related Cases.

These cases have not previously been before this Court or any other court. Counsel for Petitioners are not aware of any other related cases.

CORPORATE DISCLOSURE STATEMENTS

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

The Air-Conditioning, Heating & Refrigeration Institute ("Institute") is a trade association representing manufacturers of equipment for water heating, and for heating, ventilation, air conditioning, and refrigeration. The Institute's 315 member companies manufacture quality, efficient, and innovative residential and commercial equipment and components, and together account for more than 90% of the residential and commercial heating, ventilation, air conditioning, and refrigeration equipment manufactured and sold in North America. The Institute's member companies that manufacture commercial boilers account for at least 75% of all commercial gas and oil boilers with input ratings of 5 million Btu/h or less that are sold and installed in the United States. Because the Institute is a non-profit, membership organization, it has no parent companies, and no publicly-held company has a 10% or greater ownership in the Institute.

The American Public Gas Association ("Association") is a non-profit, non-stock corporation organized and existing under the laws of the District of Columbia, and has its principal place of business at 201 Massachusetts Avenue, NE, Suite C-4, Washington, D.C. 20002. The Association is the national, non-profit association of publicly-owned natural gas distribution systems, with over

700 members in 36 states. The American Public Gas Association 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 American Public Gas Association is a trade association within the meaning of Local Rule 26.1(b) and thus is exempt from the requirement to list the names of its members that have issued shares or debt securities to the public.

Spire Inc. (NYSE MKT: SR) is a publicly-traded corporation organized and existing under the laws of the State of Missouri and has its principal place of business at 700 Market Street, St. Louis, Missouri, 63101. Spire Inc. has no parent corporation. BlackRock, Inc. owns 10% or more of Spire Inc.'s stock.

Spire Missouri Inc. is a corporation organized and existing under the laws of the State of Missouri and has its principal place of business at 700 Market Street, St. Louis, Missouri, 63101. Spire Missouri Inc. is a wholly-owned subsidiary of Spire Inc., which is publicly held (NYSE MKT: SR).

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GLOSSARY

Act	Energy Policy and Conservation Act
Institute	Air-Conditioning, Heating & Refrigeration Institute
American Society of Engineers or Society	American Society of Heating, Refrigeration and Air-Conditioning Engineers
APA	Administrative Procedure Act
Association	American Public Gas Association
DOE or Department	Department of Energy
Final Rule	Energy Conservation Program: Energy Conservation Standards for Commercial Packaged Boilers, 85 Fed. Reg. 1592 (Jan. 10, 2020)
Petitioners	Institute, American Public Gas Association, and Spire
Process Rule	Energy Conservation Program for Appliance Standards: Procedures for Use in New or Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment, 85 Fed. Reg. 8626 (Feb. 14, 2020)
Proposal	Energy Conservation Program: Energy Conservation Standards for Commercial Packaged Boilers, 81 Fed. Reg. 15835 (Mar. 24, 2016)
Spire	Spire Inc. and Spire Missouri Inc.
Standards-compliant	A "standards-compliant" product is a product that is sufficiently efficient to satisfy a standard (or standard under consideration).

INTRODUCTION

In the Final Rule under review, the Department of Energy ("DOE" or "Department") adopted stringent energy-efficiency standards for certain commercial packaged boilers pursuant to the Energy Policy and Conservation Act, 42 U.S.C. § 6291 *et seq*. (the "Act"). The Act grants the Department authority to establish such efficiency standards for industrial equipment, including the commercial packaged boilers at issue—but only when certain criteria are met by clear and convincing evidence.

Congress purposefully constrained DOE's authority in such rulemakings because it recognized that the American Society of Heating, Refrigerating and Air-Conditioning Engineers ("American Society of Engineers" or "Society"), a standards-setting body, issues and continually updates the benchmark minimum energy-performance standard that is the basis for most state and local building codes. Accordingly, the Act generally requires DOE to maintain consistency between its national standards and the American Society of Engineers standard. The statute authorizes DOE to depart from the Society's standard *only* where DOE determines, "supported by clear and convincing evidence, that adoption of a . . . more stringent [standard] . . . would result in significant additional conservation of energy and is technologically feasible and economically justified." 42 U.S.C. § 6313(a)(6)(A)(ii)(II).

DOE has always applied the clear-and-convincing-evidence standard to American Society of Engineers rulemakings—both when reviewing a new Society standard and when, as it did here, "conduct[ing] an evaluation" of standards "[e]very 6 years" as the Act requires, *id.* § 6313(a)(6)(C)(i). Yet DOE reversed course in the Final Rule, claiming for the first time that the Act's clear-and-convincing-evidence requirement did *not* apply in the context of a 6-year review like this one. In so doing, DOE not only misread the statute, it departed from longstanding DOE precedent without notice—let alone reasoned explanation. Indeed, the Department itself has since abandoned the Final Rule's interpretation as inconsistent with the plain text of the statute.

Petitioners agree with DOE's longstanding (and current) reading of the statute. Because the Final Rule's erroneous (and now discarded) statutory interpretation is foreclosed by the Act and otherwise unreasonable, it cannot withstand review.

DOE tersely asserted, in the alternative, that the heightened efficiency standards were supported by clear and convincing evidence—the standard it had just claimed did not apply. But this naked assertion was both unreasonable and the epitome of arbitrary and capricious decision-making. Moreover, the record did not satisfy the clear-and-convincing-evidence requirement. Rather than obey Congress's command in the Act to resolve substantial doubts *against* the need for

standards more stringent than the Society standard, DOE unlawfully resolved those doubts in favor of the need for more-stringent standards.

Finally, there is an independently sufficient reason to vacate the Final Rule: DOE's determination that its more-stringent standards were economically justified was unsupported by substantial evidence, let alone clear and convincing evidence, and was arbitrary and capricious. The fundamental premise of DOE's determination was that purchasers of commercial packaged boilers would realize a net economic benefit from investing in boilers complying with DOE's new standard. But commenters explained that such boilers were already readily available and that there was no basis to conclude that purchasers were declining to make economically beneficial investments in such products on their own. DOE's failure to address the absence of substantial evidence on this point was arbitrary and capricious in several respects.

JURISDICTIONAL STATEMENT

This Court has jurisdiction pursuant to 42 U.S.C. §§ 6306(b) and 6316 over these petitions for review. DOE issued the Final Rule (Energy Conservation Program: Energy Conservation Standards for Commercial Packaged Boilers, 85 Fed. Reg. 1592 (Jan. 10, 2020) ("*Final Rule*")) pursuant to its authority under 42 U.S.C. § 6313, and the Final Rule was published in the Federal Register on January 10, 2020. The American Public Gas Association petitioned for review on

March 9, 2020, and the Institute and Spire filed separate petitions for review on March 10, 2020. The Institute and Spire's petitions were subsequently transferred to this Court and consolidated with the Association's challenge.

STATEMENT OF ISSUES

1. Whether the Final Rule is unlawful because DOE concluded unreasonably and contrary to law that the Energy Policy and Conservation Act's clear-and-convincing-evidence standard, *see* 42 U.S.C. § 6313(a)(6)(A)(ii)(II), did not apply to the adoption of the rule.

2. Whether the Final Rule is unlawful or arbitrary and capricious because DOE failed to provide notice or reasoned explanation for its departure from longstanding precedent holding that clear and convincing evidence was required.

3. Whether DOE's alternative conclusion that it met the clear-and-convincing-evidence standard was arbitrary and capricious because DOE failed to evaluate the evidence in the record against that standard.

4. Whether the Final Rule is unlawful because DOE's determination that the standards were economically justified was unsupported by substantial evidence, let alone clear and convincing evidence, or was arbitrary and capricious.

STATUTES AND REGULATIONS

Pertinent statutes are contained in an addendum to this brief.

STATEMENT OF THE CASE

Background. The Final Rule imposes new energy conservation standards for commercial packaged boilers under the Energy Policy and Conservation Act, as amended ("the Act"), 42 U.S.C. § 6291 *et seq*. Commercial packaged boilers provide space heating or service water heating in commercial and institutional buildings. They are sold as a package of equipment ready for installation (as an alternative to boilers that are individually "field constructed" on site) and represent substantial investments for the commercial and institutional entities that purchase them. The commercial packaged boilers for which the Final Rule imposed new standards include natural-gas and oil-fired equipment with estimated average installed costs ranging from $22,734 to over $175,000.[1]

Congress originally limited DOE's authority to establish energy-efficiency standards to non-automotive consumer products. But in the Energy Policy Act of 1992, Pub. L. No. 102-486, 106 Stat. 2776 (1992), Congress amended the Act to authorize DOE, subject to precise requirements, to establish standards for certain industrial equipment, including commercial packaged boilers. DOE's authority to establish those industrial standards—unlike its authority over consumer products—

[1] No. 0083-A1 at 8-37–8-43, tbls. 8.4.1, 8.4.3, 8.4.5, 8.4.7. 8.4.9, 8.4.11, 8.4.13 and 8.4.15 (JA457-68). Record materials in the joint appendix are cited by their document number in the certified index to the record, followed by their page numbers in the joint appendix (JA___).

is expressly linked to "Standard 90.1" published by the American Society of Heating, Refrigerating and Air-Conditioning Engineers, a standards-setting body. Standard 90.1 is an internationally-recognized benchmark for minimum energy-performance standards that provides the basis for the majority of state and local building codes for newly constructed commercial buildings in the United States. Numerous editions of the standard have been issued over time (including new editions published in 2016 and 2019), and the standard has been subject to "continuous maintenance"—a process for continuous updates under which anyone can propose changes at any time—since 1999.[2]

The Statutory Text. When the American Society of Engineers adopts a new efficiency standard for commercial packaged boilers, Section 6313 of the Act (in subparagraph (A)) directs DOE to "establish an amended uniform national standard for the product" at the Society level. 42 U.S.C. § 6313(a)(6)(A)(ii)(I). That directive to adopt the Society's amended standard, however, "shall not apply if [DOE] determines" by "clear and convincing evidence" that a more-stringent standard "would result in significant additional conservation of energy and is technologically feasible and economically justified." *Id.* § 6313(a)(6)(A)(ii)(II). Subparagraph (B)(i) authorizes DOE to adopt a more-stringent standard, *but only if*

[2] Information about the standard is available at: https://www.ashrae.org/technical-resources/bookstore/standard-90-1.

DOE makes the determination "described in subparagraph (A)(ii)(II)"—*i.e.*, one supported by clear and convincing evidence. *Id.* § 6313(a)(6)(B)(i). And subparagraph (B)(ii), among other things, sets out a list of seven factors DOE must use to determine whether the standard is economically justified "for the purposes of subparagraph (A)(ii)(II)." *Id.* § 6313(a)(6)(B)(ii). Subparagraphs (A) and (B) thus direct DOE to follow one of two paths—adopt the American Society of Engineers' new standard, or adopt a more-stringent standard—depending on whether DOE "makes a determination in subparagraph (A)(ii)(II)" based on clear and convincing evidence.

The Act also requires DOE to evaluate its current standards every 6 years. *See* 42 U.S.C. § 6313(a)(6)(C) (the "6-year lookback" provision). Just as when the Society amends its standards, the statute provides two paths: DOE shall either (1) publish a notice "that [the] standards . . . do not need to be amended, based on the criteria established under subparagraph (A)," or (2) publish a notice of proposed rulemaking "including new proposed standards based on the criteria and procedures established under subparagraph (B)." *Id.* § 6313(a)(6)(C).

Notice of Proposed Rulemaking. In March 2016, DOE issued the notice of proposed rulemaking that led to the Final Rule. Energy Conservation Program: Energy Conservation Standards for Commercial Packaged Boilers, 81 Fed. Reg. 15835 (Mar. 24, 2016) ("*Proposal*") (JA136-222).

The Proposal explained that, to satisfy its "statutory obligations" under the 6-year lookback provision, "DOE must determine that there is clear and convincing evidence supporting the adoption of more stringent energy conservation standards than the [Society] level." *Id.* at 15837-38 (JA138-39). DOE tentatively concluded that there was "clear and convincing evidence to support more stringent standards" for eight of the twelve proposed commercial packaged boiler equipment classes (*i.e.*, all commercial packaged boilers with fuel input rate ≤10,000 kBtu/h). *Id*. at 15838 (JA139). Specifically, the Proposal tentatively concluded that "that there is clear and convincing evidence that the proposed amended standards . . . would result in significant additional conservation of energy and would be technologically feasible and economically justified, as mandated by 42 U.S.C. 6313(a)(6)." *Id*. at 15843 (JA144); *see also id.* at 15841 (JA142) (stating tentative conclusions were "[b]ased on clear and convincing evidence"). The Proposal provided no indication that DOE was reconsidering whether that "clear and convincing" evidentiary standard applied to this rulemaking.

DOE's proposed determination that the standards were economically justified was based in critical part on the claim that the standards would provide economic benefits for consumers, as indicated by the results of life-cycle cost analyses comparing the incremental additional cost of products with the minimum

efficiency each standard would require with the utility-bill savings the increased efficiency of those products would provide over the anticipated life of the products. *Id*. at 15848, 15869 (JA149, JA170). To perform this analysis, DOE compares the full life-cycle cost (*i.e.*, initial cost plus lifetime operating cost) of products efficient enough to satisfy the standard ("standards-compliant" products) with the life-cycle cost of the less-efficient products purchasers would select in the absence of the standard to determine whether and to what extent the standard would result in life-cycle cost savings. *Id*. Recognizing that the economic outcome of individual investments in standards-compliant products depends on a number of variables, DOE used a spreadsheet model, combined with a Monte Carlo simulation, to account for "variability among the input variables" and evaluate economic impacts on individual consumers. *Id*. at 15869 (JA170). The analysis uses 10,000 individual "trial cases" to represent the range and distribution of the individual economic outcomes for investments in standards-compliant products and determine an average life-cycle cost outcome for each standard. *See id.* at 15839 tbl. 1.2, 15889-94 (JA140, JA190-95).

Rulemaking Record. In the course of the rulemaking, Petitioners commented that the proposed amended standards were not supported by clear and convincing evidence. *See*, *e.g.*, No. 0076-A1 at 6-7 (JA305-06); No. 0073-A1 at 3 (JA272). In contrast to consumer products, as the Institute explained, this

heightened evidentiary burden for commercial packaged boilers was "designed and intended by Congress to reflect the [American Society of Engineers] process that was already in place for certain types of commercial equipment." No. 0076-A1 at 6 (JA305). Because the industry and DOE had already gone through the Society's standard-setting process, the Institute explained, DOE bore the burden of proving that clear and convincing evidence supported heightened standards and could not shift that burden to industry. *Id.* at 7 (JA306). Commenters further objected that DOE had issued the Proposal on the basis of unsubstantiated and incorrect assumptions, *id.* at 1, 6-7 (JA300, JA305-06), and that it would be unlawful for DOE to adopt final standards without making the critical information and analysis on which it relied available for review and potential refutation during the notice-and-comment process, No. 0073-A1 at 9-10 (JA278-79).

Commenters directly challenged the premise that the standards could provide economic benefits for consumers, arguing that standards-compliant products were already on the market and there was no basis to conclude that purchasers are failing to make economically beneficial investments in such products on their own. *See* No. 0073-A1 at 15-17 (JA284-86); No. 0076-A1 at 30, 35 (JA329, JA334); No. 0072-A1 at 2 (JA266). Commenters also argued that the results of DOE's life-cycle cost analyses were completely invalid because they were based upon inadequate evidence and arbitrary assumptions, including the

assumption that purchasers of commercial packaged boilers pay no attention to the costs and benefits of potential efficiency investments. *See*, *e.g.*, No. 0076-A1 at 26 (JA325).

The Final Rule. The Department posted the Final Rule online for error-correction purposes in December 2016. Following the Ninth Circuit's decision in *Natural Resources Defense Council, Inc. v. Perry*, 940 F.3d 1072 (9th Cir. 2019), DOE published the Final Rule in the Federal Register on January 10, 2020.

The Final Rule adopted more-stringent standards (compared to existing American Society of Engineers standards) for eight of the twelve classes of commercial packaged boilers based on DOE's determination that "the amended standards represent significant additional energy conservation and are technologically feasible and economically justified." *Final Rule* at 1598 (JA582).

In determining that the standards were economically justified, DOE claimed authority to adopt these more-stringent standards even without clear and convincing evidence. *Id*. at 1607-08 & n.21 (JA591-92). Reversing its long-held view to the contrary, DOE stated that the "clear and convincing" standard did not apply because these standards were being adopted pursuant to the 6-year lookback provision. *Id.* It has since disavowed that interpretation in a published rule, stating that "the plain language of the statute does not support such a reading." Energy Conservation Program for Appliance Standards: Procedures for Use in New or

Revised Energy Conservation Standards and Test Procedures for Consumer Products and Commercial/Industrial Equipment, 85 Fed. Reg. 8626, 8643 (Feb. 14, 2020) ("*Process Rule*").

In the alternative, DOE concluded without any additional factual analysis that, if the clear-and-convincing-evidence standard was required, that standard was met here because DOE had "strong conviction [in its findings], well placed given the record as a whole." *Final Rule* at 1608 (JA592). The Final Rule did not point to evidence that purchasers of commercial packaged boilers are failing to make economically beneficial investments in standards-compliant products on their own; nor did it modify the assumption in its life-cycle cost analysis that purchasers of commercial packaged boilers pay no attention to the costs and benefits of potential efficiency investments.

Petitioners subsequently filed the challenges now before the Court.

SUMMARY OF ARGUMENT

I. DOE unlawfully concluded that the clear-and-convincing-evidence standard did not apply to the Final Rule. The Act expressly requires DOE to adopt the American Society of Engineers' energy-efficiency standards unless DOE determines "by clear and convincing evidence" that a more-stringent standard "would result in significant additional conservation of energy and is technologically feasible and economically justified." 42 U.S.C.

§ 6313(a)(6)(A)(ii)(II). That requirement applies both when the Society amends its own standards, *see id.* § 6313(a)(6)(A)(ii), and when, as happened here, DOE "conduct[s] an evaluation" "[e]very 6 years" of any unchanged Society standards, *id.* § 6313(a)(6)(C)(i). DOE had always interpreted the statute to require clear and convincing evidence for all standards more stringent than the American Society of Engineers requires. But it reversed course in the Final Rule and concluded that the clear-and-convincing-evidence requirement does not apply in 6-year lookback proceedings. *See Final Rule* at 1607 (JA591).

DOE has since disavowed the interpretation in the Final Rule, explaining that "the plain language of the statute does not support such a reading." *Process Rule*, 85 Fed. Reg. at 8643. Indeed, the statute's text, structure, purpose, and history confirm that the clear-and-convincing-evidence standard unambiguously applied to this rulemaking. DOE's interpretation that it did not is foreclosed by the statute and, in all events, unreasonable. Because the statute clearly "circumscribe[s] DOE's authority," DOE "cannot now escape these limits." *Hearth, Patio & Barbecue Ass'n v. DOE*, 706 F.3d 499, 507 (D.C. Cir. 2013).

Beyond its misreading of the statute, DOE did not provide notice in the Proposal that it was reconsidering its long-held statutory interpretation, and it did not acknowledge, let alone explain, its departure from well-established precedent. That is also unlawful. *Physicians for Soc. Responsibility v. Wheeler*, 956 F.3d 634,

644 (D.C. Cir. 2020); *Envtl. Integrity Project v. EPA*, 425 F.3d 992, 998 (D.C. Cir. 2005).

II. DOE tersely claimed, in the alternative, that the Final Rule satisfied the clear-and-convincing-evidence standard, which it had just argued did not apply. But the record did not contain clear and convincing evidence to support the Final Rule, and DOE's assertion otherwise was unreasonable. Commenters, including Petitioners, raised several instances in which the record lacked evidence of economic justification. As DOE has acknowledged in other proceedings, where such factual gaps exist, the Act requires DOE to resolve substantial doubts against the need for standards more stringent than the Society's. *See Final Rule* at 1599 (JA583) (citing Energy Conservation Program, 81 Fed. Reg. 15836, 15851-53 (2016) (declining to amend the standards for the largest class of Boilers because there was not sufficient data to justify new standards)). Rather than obey Congress's command, DOE filled critical data gaps despite the lack of clear and convincing evidence, based on unsupported assumptions or undisclosed information. That was unreasonable, arbitrary and capricious, and contrary to the Act.

III. The Final Rule should also be set aside because DOE's determination that the standards were economically justified was unsupported by substantial

evidence, let alone clear and convincing evidence, and was arbitrary and capricious.

DOE's determination that the standards were economically justified was based in critical part on the claim that the standards would provide economic benefits for consumers. Because the effect of the standards will be to require purchasers to make investments in standards-compliant boilers that they are currently declining, the standards can only provide economic benefits for consumers if those declined investments—at least on average—are economically beneficial. As commenters pointed out, there was no evidence that this is true.

Standards-compliant boilers were already readily available, and DOE's own analysis showed that investments in such products are economically beneficial in some cases but would impose net costs in others. Commenters argued that, in view of the nature of the products and purchasers involved, there is "no evidence—let alone clear and convincing evidence—that purchasers of commercial packaged boilers do not already make purchasing decisions that are in their own economic interest," No. 0073-A1 at 15 (JA284), and that there was therefore no basis to believe that standards forcing purchasers to make efficiency investments they would otherwise decline would provide net economic benefits for consumers.

DOE pointed to no evidence to the contrary; it simply assumed the existence of the problem—a failure of purchasers to make economically beneficial efficiency

investments on their own—that its standards were supposed to address. This, by itself, is sufficient reason to vacate the Final Rule, because a regulation that is "perfectly reasonable and appropriate in the face of a given problem may be highly capricious if that problem does not exist." *Home Box Office, Inc., v. FCC*, 567 F.2d 9, 36 (D.C. Cir. 1977) (quoting *City of Chicago v. FPC*, 458 F.2d 731, 742 (D.C. Cir. 1971)).

DOE's life-cycle cost analyses provided no evidence that the standards will provide net economic benefits for consumers. Rather than demonstrating that purchasers of commercial packaged boilers do not make economically beneficial investments in more efficient products on their own, it simply assumed that this was the case. Specifically, DOE's analysis assumed what no evidence even remotely suggests: that purchasers of commercial packaged boilers never consider the economics of their investments and thus exhibit no tendency to make economically beneficial efficiency investments on their own. Commenters explained that this assumption is factually incorrect and "makes no sense whatsoever in the case of commercial packaged boilers." No. 0076-A1 at 30 (JA329). DOE did not claim that its assumption was valid and made no attempt to defend it on the merits. *Final Rule* at 1626 (JA610). The results of DOE's life-cycle cost analysis—the sole basis for DOE's determination that the standards would provide economic benefits for consumers—was thus the product of a

baseless assumption that purchasers of commercial packaged boilers have a remarkable tendency to leave economic benefits "on the table" to be harvested as regulatory benefits. This, by itself, is sufficient basis to vacate the Final Rule, because "[a]n agency action is arbitrary and capricious if it rests upon a factual premise that is unsupported by substantial evidence." *Genuine Parts Co. v. EPA*, 890 F.3d 304, 312 (D.C. Cir. 2018) (quoting *Ctr. for Auto Safety v. Fed. Highway Admin.*, 956 F.2d 309, 314 (D.C. Cir. 1992)).

In short, DOE's economic justification for the standards amounts to an assertion that "benefits exist primarily because [DOE] says they do," and that "unsupported assertion does not amount to substantial evidence." *Algonquin Gas Transmission Co. v. FERC*, 948 F.2d 1305, 1313 (D.C. Cir. 1991).

The Final Rule should be vacated for the independently-sufficient reason that—faced with comment challenging the fundamental premise of its economic justification—DOE acted arbitrarily by failing to "engage the arguments raised before it," *Del. Dep't of Natural Res. & Envtl. Control v. EPA*, 785 F.3d 1, 11, 13-14 (D.C. Cir. 2015) (citation omitted), and thus effectively ignoring adverse comment on issues central to its determination of regulatory outcomes. *Carlson v. Postal Regulatory Comm'n*, 938 F.3d 337, 344-45, 348-49 (D.C. Cir. 2019).

STANDING

The Institute is a trade association representing manufacturers of equipment for water heating, and for heating, ventilation, air conditioning, and refrigeration, including commercial boilers like those affected by the Final Rule. The Institute has standing on behalf of its members because "(1) at least one of its members would have standing to sue in its own right, (2) the interests the association seeks to protect are germane to its purpose, and (3) neither the claim asserted nor the relief requested requires that an individual member of the association participate in the lawsuit." *Sierra Club v. EPA*, 292 F.3d 895, 898 (D.C. Cir. 2002) (citation omitted).

The Final Rule "adopt[s] amended energy conservation standards for commercial packaged boilers," *Final Rule* at 1594 (JA578), which apply directly to the Institute's members that manufacture commercial packaged boilers. As described in the attached declaration and affidavits from the Institute and its members, the Final Rule inflicts a distinct injury on its members that can be redressed by its success in this case. Declaration of Caroline Davidson-Hood ¶ 8 ("Institute Declaration") (Standing-Add-02); Affidavit of Michael Doorhy ¶¶ 6-8 ("Doorhy Affidavit") (Standing-Add-05-06); Affidavit of R. Bruce Carnevale ¶¶ 6-7 ("Carnevale Affidavit") (Standing-Add-08-09). In addition, the interests the Institute seeks to protect here are germane to its purpose, which includes advocacy

on behalf of its members in government proceedings, and the participation of individual Institute members is not necessary for the claim asserted or relief requested (*i.e.*, vacatur of the Final Rule). Institute Declaration ¶ 9 (Standing-Add-03); *see also*, *e.g.*, *Am. Trucking Ass'ns v. Fed. Motor Carrier Safety Admin.*, 724 F.3d 243, 247 (D.C. Cir. 2013) (an organization "has an obvious interest in challenging" a rule that "directly—and negatively—impacts" its members).

The Institute's interests also fall "arguably within the zone of interests to be protected or regulated" by the Act. *Twin Rivers Paper Co. LLC v. SEC*, 934 F.3d 607, 616 (D.C. Cir. 2019) (internal quotation marks omitted) (citation omitted). The Act broadly authorizes "[a]ny person who will be adversely affected by a rule" prescribed under the statute to file a petition for review. 42 U.S.C. § 6306(b)(1). The Institute and its members are adversely affected as described above and in the attached declarations. And as an organization made up of directly regulated parties, the Institute has "the incentive to guard against any administrative attempt to impose a greater burden than that contemplated by Congress." *Hazardous Waste Treatment Council v. Thomas*, 885 F.2d 918, 922 (D.C. Cir. 1989).

The American Public Gas Association is also a trade association and has standing under *Sierra Club* for similar reasons. Declaration of John P. Gregg ¶¶ 8-12 (Standing-Add-11-13). While the direct compliance obligations imposed by efficiency standards fall on manufacturers, the purpose of such standards is to

reduce the use of the product sold by the natural gas utilities that are members of the Association. Many Association members serve customers who use commercial packaged boilers, as shown in the attached representative declarations. Declaration of Chris Strippelhoff ¶ 7 ("Strippelhoff Declaration") (Standing-Add-15); Declaration of John Olshefski ¶ 6 ("Olshefski Declaration") (Standing-Add-18). The Final Rule will both require new, standards-compliant commercial packaged boilers to consume less natural gas *and* make natural gas-fueled boilers more expensive, inducing customers to switch to non-natural-gas alternatives. Strippelhoff Declaration ¶¶ 8-9 (Standing-Add-15-16); Olshefski Declaration ¶ 7 (Standing-Add-18). Both of these effects will directly cause decreased use of natural gas and reduced revenues and sales for Association members. *Id.* Because the Final Rule impedes the use of the product sold by Association members, they are "object[s] of the action (or foregone action) at issue," leaving "little question that they have standing" to challenge the rule. *See Energy Future Coalition v. EPA*, 793 F.3d 141, 144 (D.C. Cir. 2015) (internal quotation marks omitted) (citations omitted).

The interests that the Association seeks to protect are germane to its purpose. The Association advocates for the safe and widespread use of natural gas and sound public policy for the natural gas industry, consistent with applicable laws. In doing so, the Association represents its members as well as the consumers

served by its members. Neither the claim asserted nor the relief requested requires that an individual member of the association participate in the lawsuit. The Association participated in the administrative proceeding under review and, as a representative of the nation's publicly-owned natural gas distribution systems, it is well suited to petition the Court on behalf of its members. Like the Institute, the Association's interests as a trade organization representing its members fall "arguably within the zone of interests to be protected or regulated" by the statute. *Twin Rivers*, 934 F.3d at 616.

Spire Inc. and Spire Missouri Inc. (collectively "Spire") have standing for essentially the same reasons the American Public Gas Association's members do: Spire Inc. owns and operates natural gas utility companies that distribute natural gas to residential, commercial, and institutional customers, and Spire Missouri Inc. is the largest natural gas utility serving residential, commercial, and institutional customers in Missouri. The Final Rule imposes energy conservation standards for products used by numerous Spire customers. *See* Declaration of Adam Woodard ¶ 6 ("Woodard Declaration") (Standing-Add-21); Declaration of Mark Krebs ¶ 6 ("Krebs Declaration") (Standing-Add-23). The very purpose of those standards is to reduce the consumption of natural gas, s*ee* 42 U.S.C. §§ 6312(a), 6313(a)(6)(B)(ii)-(iii), and DOE justified the standards on the grounds that they would achieve that objective. *See Final Rule* at 1666-67 (JA650-51).

Spire supports cost-effective energy efficiency improvements. However, the standards at issue are not economically justified and will therefore impose unjustified losses of sales and revenue on Spire and unjustified costs on its customers. Woodard Declaration ¶ 6 (Standing-Add-21); Krebs Declaration ¶ 7 (Standing-Add-23). The injury to Spire is concrete, directly caused by the standards, and redressable by the Court. And Spire is arguably within the zone of interests under the Act's broad authorization for the same reasons as the Institute and the Association. *See* 42 U.S.C. § 6306(b)(1).

STANDARD OF REVIEW

Under the Administrative Procedure Act ("APA"), the Court must set aside agency action that is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 5 U.S.C. § 706(2)(A). Under the *Chevron* framework, the Court "always first examine[s] the statute *de novo*, employing traditional tools of statutory construction"; "if the intent of Congress is clear, the [Court] must give effect to that unambiguously expressed intent." *Hearth, Patio & Barbecue Ass'n*, 706 F.3d at 503 (internal quotation marks omitted). If there is ambiguity "such as to make it appear that Congress either explicitly or implicitly delegated authority to cure that ambiguity" to a federal agency, the Court defers to the agency's reasonable interpretation. *Id.* at 504 (internal quotation marks omitted).

Under the APA's arbitrary-and-capricious standard, the Court must determine whether the agency considered the relevant issues, examined the relevant evidence, and provided a cogent explanation of the basis for its decisions. *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983). An agency acts arbitrarily if it fails to "engage the arguments raised" and provide a cogent response to serious objections raised by interested parties. *Del. Dep't of Natural Res.*, 785 F.3d at 11, 15-16.

ARGUMENT

I. DOE Misinterpreted the Statute and Failed to Provide Notice or Reasoned Explanation for Its Flawed Interpretation.

A. DOE wrongly concluded that the clear-and-convincing-evidence standard did not apply to the Final Rule.

The Energy Policy and Conservation Act authorizes DOE to adopt energy-efficiency standards more stringent than the American Society of Engineers' standards for commercial packaged boilers if—and only if—the agency determines "by clear and convincing evidence" that the heightened standard "would result in significant additional conservation of energy and is technologically feasible and economically justified." 42 U.S.C. § 6313(a)(6)(A)(ii)(II). DOE claimed otherwise in the Final Rule, asserting that clear and convincing evidence is required only to amend new Society standards, but not when DOE evaluates those

same standards every 6 years. That flawed interpretation is unambiguously foreclosed by the statute and cannot withstand review.

DOE's interpretation fails at *Chevron*'s first step. DOE itself has since explained: "the plain language of the statute does not support such a reading." *Process Rule*, 85 Fed. Reg. at 8643.

Petitioners agree with DOE's current view. The "text, structure, purpose, and history" here all make clear that Congress has spoken to the issue and foreclosed the Final Rule interpretation. *See Hearth, Patio & Barbecue Ass'n*, 706 F.3d at 503 (internal quotation marks omitted). The Supreme Court recently reiterated that "only when th[e] legal toolkit is empty and the interpretive question still has no single right answer can a judge conclude" that deference is appropriate. *Kisor v. Wilkie*, 139 S. Ct. 2400, 2415 (2019) (internal quotation marks omitted).[3]

Here, all of the tools confirm that the clear-and-convincing-evidence requirement applies to 6-year lookback rulemakings like this one.

1. Text and Structure. The Court's analysis "begin[s] as always with the relevant statutory text." *Hearth, Patio & Barbecue Ass'n*, 706 F.3d at 503. And

[3] *See also*, *e.g.*, *Larson v. Saul*, 967 F.3d 914, 922 (9th Cir. 2020) (citing *Kisor* in statutory-interpretation case and noting that "[o]nly if genuine ambiguity remains after we have exhausted all possible interpretive tools at our disposal do we proceed to the agency's interpretation"); *Consol Penn. Coal Co. v. Fed. Mine Safety & Health Review Comm'n*, 941 F.3d 95, 104 (3d Cir. 2019) (citing *Kisor* similarly in the context of both statutory and regulatory interpretation).

even if Section 6313 may "sometimes make the eyes glaze over," *Kisor*, 139 S. Ct. at 2415, the "plain language of the statute" shows that the clear-and-convincing-evidence standard applies in 6-year lookback rulemakings. *Process Rule*, 85 Fed. Reg. at 8643.

To start, the operation of Section 6313(a)(6)(A)(ii) with Section 6313(a)(6)(B) when the American Society of Engineers amends an energy standard is clear. In that case, DOE has two options. *First*, and as the default, "if [the Society] amends Standard 90.1, DOE must adopt amended standards at the new [Society] efficiency level," pursuant to section 6313(a)(6)(A)(i). *See Final Rule* at 1598 (JA582). *Second*, DOE may adopt a more-stringent standard—but only if "DOE determines, supported by clear and convincing evidence, that adoption of a more stringent level would produce additional conservation of energy and would be technologically feasible and economically justified," pursuant to section 6313(a)(6)(A)(ii) and the incorporated factors set out in section 6313(a)(6)(B). *See id*.

The same framework applies to DOE's periodic review of unchanged Society standards pursuant to 42 U.S.C. § 6313(a)(6)(C). Every six years, DOE "shall conduct an evaluation of each class of covered equipment and shall publish" *either* "(I) a notice of the determination of the Secretary that the [existing] standards for the product do not need to be amended, based on the criteria under

subparagraph (A) [§ 6313(a)(6)(A)]" *or* "(II) a notice of proposed rulemaking including new proposed standards based on the criteria and procedures established under subparagraph (B) [§ 6313(a)(6)(B)]." 42 U.S.C. §§ 6313(a)(6)(C)(i)(I)-(II).

Like DOE's review of a new American Society of Engineers standard, Subsections 6313(a)(6)(C)(i)(I) and (II) establish the same two options. *First*, as with a new Society standard, the default outcome of a 6-year lookback review is for DOE to affirm the existing standard. *Second,* as with a new Society standard, in a 6-year lookback review DOE can adopt more-stringent standards only by considering the "criteria and procedures established under" Section 6313(a)(6)(B), which are expressly for the purpose of "determining whether a standard is economically justified for the purposes of subparagraph (A)(ii)(II)," *id.* § 6313(a)(6)(B)(ii)—*i.e.*, whether there is "clear and convincing evidence" to support it.

Again, DOE itself now agrees with this reading. As DOE recently put it: "[I]n determining whether it is appropriate to set a more-stringent standard, 42 U.S.C. 6313(a)(6)(B) clearly references 42 U.S.C. 6313(a)(6)(A)(ii)(II), which contained the 'clear and convincing evidence' requirement. In other words, 42 U.S.C. 6313(a)(6)(C) references 42 U.S.C. 6313(a)(6)(B), which references 42 U.S.C. 6313(a)(6)(A)." *Process Rule*, 85 Fed. Reg. at 8643.

In the Final Rule, however, DOE asserted—for the first (and apparently last) time in a DOE proceeding—that, unlike when Society first amends a standard, the clear-and-convincing-evidence standard does not apply in a 6-year lookback proceeding. *Final Rule* at 1607 (JA591). DOE claimed that Section 6313(a)(6)(C) "requires DOE to issue new standards based on 'the criteria and procedures established under subparagraph (B),'" which "does not mention clear and convincing evidence." *Id.* (quoting 42 U.S.C. § 6313(a)(6)(C)(i)(II)).

But as DOE itself has since recognized, that Final Rule interpretation is "difficult to square with the statute on more than one level." *Process Rule*, 85 Fed. Reg. at 8643. Subparagraph (B) twice "clearly references" the provision requiring clear and convincing evidence. *Id.*

First, subparagraph (B) specifies that the "determination described in subparagraph (A)(ii)(II)" must be made to "issue [a] rule establishing the amended standard." 42 U.S.C. § 6313(a)(6)(B)(i). Ignored by DOE in the Final Rule, this reference makes clear that the economic-justification factors listed in Section 6313(a)(6)(B) are intertwined with the "determination" whether clear and convincing evidence justifies a rule more stringent than a Society standard.

Second, subparagraph (B) confirms that the factors listed are specifically for "determining whether a standard is economically justified *for the purposes of subparagraph (A)(ii)(II)*." *Id.* § 6313(a)(6)(B)(ii) (emphasis added). The Final

Rule, in a footnote, recognizes this reference but argues that it does not "incorporate[] subparagraph (A) by reference." *Final Rule* at 1607 n.21 (JA591-92). Instead, according to the Final Rule, "subparagraph (B) says the criteria and procedures it establishes are to be used *in* subparagraph (A)(ii)(II)," but there can also be "different type[s] of decision[s] to which subparagraph (B) also applies." *Id.* This conception of subparagraph (B) as a set of off-the-shelf "criteria and procedures" to be used in various situations, however, is unsupported by the text of the statute. The considerations listed in subparagraph (B), on their own, do not "establish[]" the "criteria and procedures" for adopting "new proposed standards." 42 U.S.C. § 6313(a)(6)(C)(i)(II). In fact, subparagraph (B) does not itself require that a more-stringent standard be economically justified—it provides the factors for making that determination, which is *contained in subparagraph (A)*.

DOE also claimed that the Final Rule's interpretation "gives significance" to the differences in how subparagraphs (C)(i)(I) and (C)(i)(II) refer to the provisions that precede them. *Final Rule* at 1607 n.21 (JA591-92). Subparagraph (C)(i)(I) authorizes DOE to issue a "notice . . . that the standards for the product do not need to be amended, based on the *criteria established under subparagraph (A)*," 42 U.S.C. § 6313(a)(6)(C)(i)(I) (emphasis added), while subparagraph (C)(i)(II) authorizes DOE to propose new standards "based on the *criteria and procedures established under subparagraph (B)*," *id.* § 6313(a)(6)(C)(i)(II) (emphasis added).

"[W]ere they the same criteria," the argument goes, "there would have been no need to use different cross-references." *Final Rule* at 1607 n.21 (JA591-92).

But there are many flaws in this argument. *First*, there is a far superior explanation for Congress's choice of language. As discussed above, subparagraph (a)(6)(A)(i)(ii) directs DOE to adopt an American Society of Engineers standard, so it makes sense that Congress referred to subparagraph (A) when authorizing DOE, in the context of a 6-year lookback, to publish a notice that the existing standards "do not need to be amended." 42 U.S.C. § 6313(a)(6)(C)(i)(I). But subparagraph (A) does *not* authorize DOE to adopt a more-stringent standard than what the American Society of Engineers issues. *That authorization is in subparagraph (B)*, and is conditioned on DOE's making the "determination described in subparagraph (A)(ii)(II)," including economic justification based on clear and convincing evidence. *Id.* § 6313(a)(6)(B)(i). It thus makes sense that in authorizing DOE to adopt a more-stringent standard in the 6-year lookback context, Congress referred to *subparagraph (B)*, which contains the parallel authorization and expressly references the determination by clear and convincing evidence in subparagraph (A)(ii)(II) (thus obviating the need to refer to that provision specifically). *See id.* § 6313(a)(6)(C)(i)(II).[4] Indeed, "mak[ing] a

[4] Referring to subparagraph (A)(ii)(II) *instead of subparagraph (B)* in subparagraph (C)(i)(II) would not have worked, either.

determination described in subparagraph (A)(ii)(II)" and "issu[ing] the rule establishing the amended standard" (*id.* § 6313(a)(6)(B)(i)) make perfect sense as the "criteria and procedures established under subparagraph (B)" (*id.* § 6313(a)(6)(C)(i)(II)), which explains the differences in terminology in subparagraphs (C)(i)(I) and (C)(i)(II).

Second, DOE's interpretation in the Final Rule proves too much. Subparagraph (B) does not contain any references to DOE's requirements for amending a Society standard other than economic justification—*i.e.*, that the more stringent standard must result in significant conservation of energy and be technologically feasible. Those requirements of "additional conservation of energy" and "technological[] feasib[ility]" are in subparagraph (A)(ii)(II). *See id.* § 6313(a)(6)(A)(ii)(II). If the Final Rule's interpretation were correct, and the "criteria and procedures established under subparagraph (B)" were separate from anything in subparagraph (A), there would be no reason to discuss the conservation-of-energy or technological-feasibility requirements in a 6-year lookback rulemaking under subparagraph (C)(i)(II). Yet the Final Rule itself

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Subparagraph (A)(ii)(II) does not contain criteria and procedures for DOE's adopting a more-stringent standard—it establishes an *exception* from the default direction to adopt the Society's standard if DOE makes the specified determinations. In addition, referring only to subparagraph (A)(ii)(II) would have risked suggesting that the guardrails in subparagraph (B) did not apply in a 6-year lookback.

repeatedly discusses those criteria and cites subparagraph (A)(ii)(II) alongside subparagraph (C)(i) as the source of all three requirements.[5]

DOE cannot explain why these other requirements from subparagraph (A)(ii)(II) apply in this 6-year lookback proceeding when subparagraph (C)(i)(II) mentions only the "criteria and procedures established under subparagraph (B)." 42 U.S.C. § 6313(a)(6)(C)(i)(II). The answer, however, is clear: In referring to the "criteria and procedures established under subparagraph (B)," subparagraph (C)(i)(II) *includes* the parts of subparagraph (B) that expressly reference the "determination described in subparagraph (A)(ii)(II)," *id.* § 6313(a)(6)(B)(i), and the "purposes of subparagraph (A)(ii)(II)," *id.* § 6313(a)(6)(B)(ii).

In other words, the *very same* statutory sentence includes both the clear-and-convincing-evidence requirement and the substantive requirements that amended standards must conserve energy, be technologically feasible, and be economically justified. DOE's argument amounts to the claim that the part of the sentence

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[5] *See Final Rule* at 1606 (JA590) (DOE must "ensure that the standards save a significant additional amount of energy and are technologically feasible and economically justified, as required by [the Act]. (42 U.S.C. 6313(a)(6)(A)(ii)(II) and (C)(i))"); *see also id.* at 1604 (JA588) (discussing all three criteria); *id.* at 1607 (JA591) ("an amended [commercial packaged boiler] standard must be designed to achieve significant additional energy conservation and be technologically feasible and economically justified. (42 U.S.C. 6313(a)(6)(A)(ii)(II) and (C)(i))").

imposing substantive requirements applies to this rulemaking, but the part of the sentence requiring clear and convincing evidence does not. That is nonsensical no matter how DOE attempts to parse the cross-references.

Third, as DOE has itself recognized, the interpretation in the Final Rule would produce an "anomalous result." *Process Rule*, 85 Fed. Reg. at 8643. Under that interpretation, "DOE would issue a notice of determination that a product does *not* need to be amended when there is *no* clear and convincing evidence to support a more stringent standard (applying the criteria of subparagraph (A)), but *would* be able to issue a proposed rule for those same more-stringent standards" without demonstrating that there *is* clear and convincing evidence." *Id.* (emphasis added). Put differently, where there is less than clear and convincing evidence in a 6-year lookback proceeding, DOE would seemingly be required (or at the very least authorized) to both issue a notice that the standards do not need to be amended *and* nonetheless propose new standards. That outcome is absurd, and it is a product only of the Final Rule's strained interpretation of the text.

In sum, Congress "employed specific statutory mechanisms to circumscribe DOE's authority" by requiring clear and convincing evidence before DOE can impose a standard more stringent than the American Society of Engineers', and "DOE cannot now escape these limits" through the now-abandoned interpretation of Section 6313. *Hearth, Patio & Barbecue Ass'n*, 706 F.3d at 507.

2. Purpose. The Final Rule's view of how to interpret Section 6313 also undermines the purpose of the statute's carefully-balanced scheme for regulating Society equipment. Again, it is undisputed that when the American Society of Engineers amends a standard, Sections 6313(a)(6)(A) and (B) require DOE to adopt that standard unless it determines by clear and convincing evidence that a more-stringent standard is, among other things, economically justified. *See*, *e.g.*, *Final Rule* at 1598 (JA582). As DOE has since recognized, the Act's "statutory structure demonstrates a *strong Congressional preference* for adoption of [Society] levels, except in extraordinary cases where a high evidentiary hurdle has been surmounted. In this way, Congress sought to ensure that more-stringent standards have objectively recognized benefits that unquestionably justify their costs." *Process Rule*, 85 Fed. Reg. at 8637 (emphasis added). American Society of Engineers standards are the benchmark for many states and localities, and Congress sought to minimize conflicts between DOE standards and those local preferences. *See id.* at 8643 (recognizing the "congressional intent that DOE should defer to [the Society] in most cases," including 6-year lookbacks, "when setting uniform national standards for covered equipment within that organization's purview").

The Final Rule suggests that interpreting Section 6313(a)(6)(C) not to require clear and convincing evidence in 6-year lookback proceedings "encourages

[the Society] to keep its standards up to date." According to DOE, if the Society "has recently amended its standards (and triggered DOE to follow), DOE will not need to engage in its independent standards revision," while the Society's not amending its standards allows DOE to "adopt more stringent standards" in the 6-year lookback context "without being tied to the [Society] standards" or "the 'clear and convincing' threshold." *Final Rule* at 1607 n.21 (JA591-92). Yet the Rule cites nothing to support that naked speculation, and the Society needs no such "encouragement." The Society standard is already subject to a "continuous maintenance" process in which DOE has participated and anyone can propose changes at any time. Nor did DOE explain why Congress would have "encouraged" the Society in such an opaque and convoluted way that DOE only recently discovered (and then abandoned) it. To the contrary, the statutory history further undercuts DOE's bizarre theory.

3. History. The history of Section 6313 confirms subparagraph (C) was meant simply to distinguish between the somewhat ministerial task of publishing a notice that DOE had determined the existing standards did not need amendment, and the alternative path of using the rulemaking process to propose a new, more-stringent standard supported by clear and convincing evidence. It was *not* intended to carve out 6-year lookback proceedings from the application of the clear-and-convincing-evidence requirement.

Section 6313(a)(6)(C) was first codified in 2007. Subparagraph (C)(i)(II), then as now, called for DOE to "publish . . . a notice of proposed rulemaking including new proposed standards *based on the criteria and procedures established under subparagraph (B)*." 42 U.S.C. § 6313(a)(6) (C)(i)(II) (as effective Dec. 20, 2007 to Dec. 18, 2010) (emphasis added); *see* Energy Independence and Security Act of 2007, Pub. L. No. 110-140, 121 Stat. 1492, 1554-56, sec. 305(b), § 6313 (2007). Subparagraph (B), in turn, read *in its entirety* as follows: "If the Secretary makes a determination described in clause (ii)(II) [*i.e.*, § 6313(a)(6)(A)(ii)(II)] for a product described in clause (i) [*i.e.*, § 6313(a)(6)(A)(i)], not later than 30 months after the date of publication of the amendment to the [American Society of Engineers]/IES Standard 90.1 for the product, the Secretary shall issue the rule establishing the amended standard." 42 U.S.C. § (a)(6)(B) (as effective Dec. 20, 2007 to Dec. 18, 2010). At that point, the factors regarding how to make the economic-justification determination described in subparagraph (A)(ii)(II) that the Final Rule argues are the "criteria and procedures" referenced in subparagraph (C)(i)(II) *did not exist*. *See Final Rule* at 1607 & n.21 (JA591-92).

The statute has been amended since then to, *inter alia*, clarify the references to "clause (ii)(II)" and "clause (i)" consistent with the bracketed language above and to add text that now appears in subparagraph (B). *See*, *e.g.*, American Energy

Manufacturing Technical Corrections Act, Pub. L. No. 112-210, 126 Stat. 1514, 1518-19, 1522-23, secs. 5(b), 10(a)(3), § 6313 (2012). But the interpretation of Section 6313 articulated in the Final Rule would have made zero sense in the version of the statute as amended in 2007, and none of the additions and technical corrections since then were intended to make a substantive change to the import of the relationship between the provisions. *See*, *e.g.*, 158 Cong. Rec. H6599-04 (daily ed. Dec. 4, 2012) (Statement of Rep. Whitfield describing relevant parts of the 2012 legislation as making "additional routine technical corrections to the 2007 energy bill"). The material parts of each of the subparagraphs present in 2007 are still present now, demonstrating that DOE's interpretation in the Final Rule is as ahistorical as it is atextual.

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The text, purpose, and history of Section 6313 all confirm that the clear-and-convincing-evidence requirement applies both when the American Society of Engineers amends a standard and when DOE conducts a 6-year lookback. Because these considerations all demonstrate clear congressional intent on the issue, the Rule's contrary interpretation fails at *Chevron*'s first step.

To the extent the Court believes that there is any residual ambiguity, these considerations demonstrate that the interpretation in the Final Rule—since abandoned by DOE—is unreasonable and not entitled to deference under

Chevron's second step. *See*, *e.g.*, *Goldstein v. SEC*, 451 F.3d 873, 878, 881 (D.C. Cir. 2006) ("If Congress employs a term susceptible of several meanings, as many terms are, it scarcely follows that Congress has authorized an agency to choose *any* one of those meanings," and "even if [a statute] does not foreclose the [agency's] interpretation," it must reject an "interpretation [that] falls outside the bounds of reasonableness"); *Northpoint Tech., Ltd. v. FCC*, 412 F.3d 145, 156 (D.C. Cir. 2005) ("[W]hile the Commission's construction of [the statute] may not be prohibited by the statutory text (and may even represent a wise policy choice), it is an unreasonable construction on this record").

B. DOE failed to provide reasoned explanation or notice before departing from its prior interpretation and precedent.

DOE departed from years of precedent and adopted its flawed reading in the Final Rule without acknowledging, let alone providing a reasoned explanation for, its changed interpretation. This is an independent ground for reversal. "Reasoned decision-making requires that when departing from precedents or practices, an agency must offer a reason to distinguish them or explain its apparent rejection of their approach." *Physicians for Soc. Responsibility*, 956 F.3d at 644 (internal quotation marks omitted). DOE's failure to do so here was arbitrary and capricious.

Since subparagraph (C) was added in 2007, DOE has consistently interpreted the statute to require clear and convincing evidence in 6-year lookback

proceedings.[6] Indeed, in this very proceeding, DOE repeatedly stated in the Proposal that the statute required it to "determine that there is clear and convincing evidence supporting the adoption of more stringent energy conservation standards

[6] *See*, *e.g.*, Energy Conservation Program, 78 Fed. Reg. 7296, 7297 (2013) (in "reviewing the standards that are already in place" in a 6-year lookback proceeding, DOE can only "adopt levels more stringent than the [Society] levels if there is clear and convincing evidence in support of doing so"); Energy Conservation Program, 78 Fed. Reg. 25627, 25630-31 (2013) ("The new statutory 6-year look-back review" requires "clear and convincing evidence . . . to support adoption of a more-stringent standard"); Energy Conservation Program, 80 Fed. Reg. 1172, 1174-75 (2015) (declining to adopt "more-stringent efficiency levels for small three-phase split-system air-cooled air conditioners less than 65,000 Btu/h" because "there is not clear and convincing evidence" supporting adoption, in a 6-year lookback where the Society "did not amend standard levels for the split-system models within that equipment class"); Energy Conservation Program, 80 Fed. Reg. 42614, 42616 (2015) (declining to adopt "more-stringent efficiency levels for small three-phase split-system air-cooled air conditioners less than 65,000 Btu/h" because "there is not clear and convincing evidence" supporting adoption, in a 6-year lookback where the Society "did not amend standard levels for the split-system models within that equipment class"); Energy Conservation Program, 80 Fed. Reg. 43162, 43163 (2015) ("Under the six-year look back requirement, DOE must also demonstrate clear and convincing evidence supporting adoption of a national standard at a more-stringent efficiency level"); Energy Conservation Program, 84 Fed. Reg. 32328, 32330 (2019) ("In proposing new standards under the 6-year review, DOE must undertake the same considerations" as when the Society amends a standard, including the requirement of "clear and convincing evidence"); Energy Conservation Program, 84 Fed. Reg. 36480, 36481 (2019) (determinations in 6-year lookback "must be supported by clear and convincing evidence," citing 42 U.S.C. §§ 6313(a)(6)(A) and (C)(i)).

than the [Society] level." *Proposal* at 15837 (JA138).[7] The Final Rule is the exception in this otherwise-unbroken line.

Yet, remarkably, the Final Rule acknowledged neither DOE's position in the Proposal nor this mountain of DOE precedent. DOE's "wholesale failure" to acknowledge that it had "previously reached exactly the opposite conclusion," "let alone to explain its reversal of course" was arbitrary and capricious. *Physicians for Soc. Responsibility*, 956 F.3d at 646-47; *see also*, *e.g.*, *Grace v. Barr*, 965 F.3d 883, 900-03 (D.C. Cir. 2020) (holding agency decision was arbitrary and capricious on this ground).

Nor did DOE provide the requisite notice before reversing its position on whether the clear-and-convincing-evidence standard applied. This, too, is a separate ground on which to vacate the Final Rule: "If the APA's notice requirements mean anything, they require that a reasonable commenter must be able to trust an agency's representations about *which particular* aspects of its proposal are open for consideration." *Envtl. Integrity Project*, 425 F.3d at 998

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[7] *See also id.* at 15841 (JA142) (describing tentative conclusions "[b]ased on clear and convincing evidence"); *id.* (Section 6313 requires "clear and convincing evidence"); *id.* at 15843 (JA144) (similar); *id.* at 15847 (JA148) (similar); *id.* at 15852 (JA153) (describing proposal to maintain existing standards for certain boilers "because there is not sufficient data to provide clear and convincing evidence"); *id.* at 15883 (JA184) (explaining that the statute requires "clear and convincing evidence," citing 42 U.S.C. §§ 6313(a)(6)(A)(ii)(II) and (C)(i)).

(vacating a rule because an agency's proposed interpretation did not provide notice or opportunity to comment on its decision "to repudiate its proposed interpretation and adopt its inverse"). DOE's Proposal unequivocally stated that the statute required clear and convincing evidence for this rulemaking and requested no comment on that previously non-controversial view. Because DOE's defective Proposal deprived parties of the opportunity to comment on this unprecedented statutory interpretation, the Final Rule cannot withstand review.

II. DOE's Alternative Conclusion that the Final Rule Met the Clear-and-Convincing-Evidence Standard Was Unreasonable and Contrary to Law.

After articulating why the clear-and-convincing-evidence standard did not apply, DOE tersely asserted in the alternative—without any additional factual analysis—that its findings in the Final Rule nonetheless met that standard. *See Final Rule* at 1607-08 (JA591-92). This determination was unreasonable and contrary to law because the Final Rule was not, in fact, based on clear and convincing evidence.

An agency cannot meet a heightened evidentiary standard by reciting that standard and claiming it has been met, when the record evidence and rulemaking analysis fall far short. The Act requires DOE to actually apply the heightened standard to the evidence and determine whether the evidence is clear and convincing. *See*, *e.g.*, *Natural Res. Def. Council, Inc. v. Pritzker*, 828 F.3d 1125,

1135 (9th Cir. 2016) ("[m]erely reciting the statutory language is not enough to satisfy the statute's explicit requirement," and "an agency acts contrary to the law when it gives mere lip service or verbal commendation of a standard but then fails to abide the standard in its reasoning and decision").

Absent clear and convincing evidence to support more-stringent standards, the Act requires DOE to rely on the American Society of Engineers standard and refrain from establishing a higher standard, as DOE has acknowledged in other proceedings. *See Final Rule* at 1599 (JA583) (citing 81 Fed. Reg. 15836, 15851-53 (2016)). The clear-and-convincing-evidence standard is a familiar evidentiary standard imposing a requirement for objectively sufficient evidence. Here, DOE interpreted the standard to require only that DOE "be strongly convinced that its forecasts are highly likely to be reasonable forecasts given current conditions and information" and that it is "highly likely to have reached appropriate findings." *Final Rule* at 1608 (JA592). And DOE simply asserted that it had "that strong conviction . . . given the record as a whole." *Id.* But that naked assertion is dispelled by the evidence and reasoning in the Final Rule.

In fact, the record evidence was as insufficient as DOE's conclusory assertion was unreasonable. To see that, the Court need only examine the Department's response to comments demonstrating specific factual shortcomings

in the way DOE attempted to calculate economic impacts: DOE unreasonably resolved those factual gaps with arbitrary and unsupported assumptions.

First, DOE lacked critical information required for it to determine the baseline energy efficiency distribution for products being sold in the absence of any new standard. To determine the frequency with which standards-compliant products are being sold and the efficiency of the other products that would be sold in the absence of new standards, DOE needed "shipment" information (*i.e.*, data on product sales). When it lacked such data, DOE "used publicly available modeling listing and efficiency information" instead, based on the assumption that "the distribution of model listings provides a reasonable proxy for shipments." *Id.* at 1635 (JA619). DOE suggested that there was some logic behind this assumption, *id.*, but elsewhere acknowledged that comments from product manufacturers—who ought to know—unanimously indicated that the distribution of efficiencies in model listings is *not representative of the distribution of efficiencies in product sales*. *Id.* at 1639 (JA623).

DOE also represented that it had performed "an analysis" that "showed only a minimal difference" between revised efficiency distributions DOE had prepared after the issuance of the Proposal and limited shipment data the Institute had been able to provide in response to the Proposal. *Id.* at 1635 (JA619). But that analysis is not documented in the record, so it remains unclear exactly what numbers DOE

compared or what difference it considered to be "minimal." *Id.* In any event, DOE admitted that it "did not have data on shipments by efficiency to inform its analysis" for six of the eight equipment classes it analyzed and had thus relied on product listing information as a surrogate for shipment data despite consistent comment that the former is not representative of the latter. *Id.* at 1636 (JA620).

Second, there was substantial comment indicating that DOE's life-cycle cost analysis significantly overstated burner operating hours (a measure of how much a product is used, which is a critical determinant of efficiency savings). No. 0076-A1 at 37-40 (JA336-39). Again, DOE lacked the data it needed (burner-operating-hours data) and used other information to plug that data gap. The Institute's consultant could not determine exactly how DOE had attempted to do that, but explained both that the results of the exercise were objectively hard to believe and that extreme outliers constituting the least credible part of DOE's burner-operating-hours distribution significantly distorted the life-cycle cost results. *Id*. In response, DOE noted that it "has not identified a source of comprehensive burner operating hour (BOH) data for commercial boilers" and generally suggested that it had done the best it could under the circumstances. *Final Rule* at 1637 (JA621).

Third, there was also comment indicating that "DOE's estimates of benefits from gas appliance efficiency standards are significantly overstated as the result of

significant errors in its assumptions with respect to utility marginal pricing and pricing forecasts." No. 0073-A1 at 17-19 (JA286-88). Again, the problem was that DOE lacked the data it needed: in this case, information on marginal gas prices needed to determine the utility-bill savings efficiency improvements would provide. Again, DOE used other data: data on *average gas prices*, which are substantially higher than the *marginal* prices need for its analysis. *Id.*; *see* No. 0061-A1 at 171-73 (JA240-42). DOE responded to these concerns by noting that it was using "the best aggregate sources for energy prices currently available to DOE" and suggesting that its analysis "incorporates many adjustment factors to the average price data . . . to ensure that the energy prices are properly accounted for in the economic analysis." *Final Rule* at 1632 (JA616). Again, it is not clear exactly what all the adjustments were, what the basis for them was, or whether they produced credible results. All the record discloses is that DOE took data it had, somehow tried to convert it into the data it needed, and suggested that the gas price inputs used in its analysis—which were neither disclosed nor meaningfully described—were good enough.

The pattern is clear: DOE's approach to these critical factual issues was to treat the best information available as necessarily sufficient, fill in critical data gaps based on arbitrary assumptions or undisclosed information and analysis, and represent that it was confident in the result. The claim that such factual

determinations were supported by clear and convincing evidence cannot be reconciled with the ordinary meaning of that term. *See*, *e.g.*, *Colorado v. New Mexico*, 467 U.S. 310, 316 (1984) (the clear-and-convincing-evidence standard is satisfied "only if the material it offered instantly tilted the evidentiary scales in the affirmative when weighed against the evidence . . . offered in opposition"). Arbitrary assumptions plainly do not qualify as clear and convincing evidence; nor does undisclosed information and analysis that DOE cannot rely upon without violating its basic notice-and-comment obligations. *See Owner-Operator Indep. Drivers Ass'n, Inc. v. Fed. Motor Carrier Safety Admin.*, 494 F.3d 188, 199-203, 209 (D.C. Cir. 2007).

By resolving factual gaps in the record in this manner, DOE arrogated unto itself power to regulate where Congress did not grant it. While there are cases in which agencies "tasked with setting policy" have considerable freedom to resolve uncertainties for or against the need for further regulation, *Final Rule* at 1608 (JA592), this is decidedly not one of them. The requirement for "clear and convincing evidence" is an express constraint on DOE's discretion that requires DOE to resolve substantial doubts *against* the need for standards more stringent than the American Society of Engineers standard. *See* 42 U.S.C. § 6313(a)(6)(A)(ii)(I)-(II). Absent clear and convincing evidence that the more-stringent standards *were* economically justified, DOE's only permissible option

was to conclude that new standards beyond the Society standards were unwarranted. *See Final Rule* at 1599 (JA583) (citing *Proposal* at 15851-53).

III. The Final Rule Was Unsupported By Substantial Evidence, Let Alone Clear and Convincing Evidence, and Was Arbitrary and Capricious.

The Act only authorizes DOE to impose standards it determines to be "economically justified," 42 U.S.C. § 6313(a)(6)(A)(ii)(II), and provides that "[n]o rule" imposing standards "may be affirmed unless supported by substantial evidence." *Id.* § 6306(b)(2). The "initial burden of promulgating and explaining a non-arbitrary, non-capricious rule rests with the Agency," *Nat'l Lime Ass'n v. EPA*, 627 F.2d 416, 433 (D.C. Cir. 1980), and—independent of the requirement for clear and convincing evidence—"the burden was on [DOE] to show, on the basis of substantial evidence, that" its standards were economically justified. *Indus. Union Dep't, AFL-CIO v. Am. Petrol. Inst.*, 448 U.S. 607, 653 (1980). Because the factual determinations underlying DOE's economic justification determination were arbitrary and not supported by substantial evidence, the Final Rule cannot be upheld.

A. DOE arbitrarily based the Final Rule on a basic factual premise that was unsupported by substantial evidence.

DOE's determination that the standards were economically justified was based in critical part on the claim that they would provide economic benefits for consumers in the form of life-cycle cost savings. See *Final Rule* at 1673-74

(JA657-58) (identifying life-cycle cost outcomes as a basis for its determinations that the efficiency levels required by the standards were economically justified and that more-stringent efficiency levels were not). For all of the complexity of DOE's analysis, its fundamental defect is simple:

- Standards-compliant boilers are already available in the market and account for a substantial and ever-increasing percentage of all commercial packaged boiler sales;[8]
- New standards would effectively require purchasers to make the kinds of investments in standards-compliant boilers that they are currently declining;
- Such standards can only provide life-cycle cost benefits if the investments in standards-compliant boilers purchasers are declining are—at least on average—economically beneficial; and
- There was no evidence that they are.

In fact, there were obvious reasons to question the premise that the purchasers of commercial packaged boilers are declining to make economically beneficial investments in standards-compliant products. The economics of such investments vary considerably, with the result that some investments produce economic benefits and others impose net costs. *See* No. 0083-A1 at 8-1, 8-2 (JA421-22). DOE recognized that this was true of investments in standards-compliant boilers under all four of the standards for gas boilers, *Final Rule* at

[8] *See Final Rule* at 1606-07 (JA590-91) (citing comment that the market is moving toward higher efficiency products on its own).

1655-58 (JA639-42), tbls. V.4, V.6, V.12, and V.14, most conspicuously in the case of the standard for small gas-fired steam boilers (which—according to DOE's analysis—would impose net costs in 41% of all installations). *Id.* at 1657 (JA641), tbl. V.12. Commenters explained that the business and institutional entities that purchase commercial packaged boilers "routinely balance capital and operating costs in making significant purchasing decisions" and act in their own economic interests, and argued that there was "no evidence—let alone clear and convincing evidence—that purchasers of commercial packaged boilers do not already make purchasing decisions that are in their own economic interest." No. 0073-A1 at 15 (JA284). Indeed, commenters argued that new standards would likely do more to force purchasers into economically unfavorable efficiency investments than to prevent them from missing opportunities to make economically beneficial investments. *Id.* at 15-17, 25 (JA284-86, JA294); No. 0081-A1 at 16 (JA361); No. 0076-A1 at 33 (JA332).

DOE pointed to no evidence to the contrary, and its only direct response to comment stating that there is no evidence that purchasers fail to make economically-beneficial investments in the absence of standards was an inexplicable claim that "DOE makes no such assertion." *Final Rule* at 1636 (JA620). However—while it is true that DOE did not discuss the issue—it *had to assume* that purchasers are failing to make economically-beneficial efficiency

investments on their own in order to claim that standards would provide economic benefits for consumers.

Ordinarily, the premise that purchasers decline to make economically-beneficial efficiency investments in the absence of standards rests on the assumptions that:

- Investments in standards-compliant products impose higher initial costs; and
- Market failures exist that would cause purchasers focused on those higher initial costs to forego investments that would be economically beneficial over time.

The Final Rule identified such market failures as "problems" the Final Rule was intended to address, but pointed to no evidence that there are any market failures causing purchasers of commercial packaged boilers to forgo economically-beneficial investments in standards-compliant products. *Final Rule* at 1676 (JA660). There was no reason to believe that the first of the two generic "problems" DOE referred to—"insufficient information and the high costs of gathering and analyzing relevant information"—applies in the context of commercial packaged boilers, and comment indicated that it does not. No. 0073-A1 at 15-16 (JA284-85) ("[T]here is no basis to assume that [purchasers of commercial packaged boilers] lack either the information or ability to make rational economic decisions"); No. 0076-A1 at 30 (JA329). Similarly, the second "problem"—potentially "misaligned incentives" between equipment purchasers

and those who pay utility bills—is of limited relevance in the context of commercial packaged boilers, and the scenario of greatest concern (multiple occupancy buildings in which building owners purchase the appliances and tenants pay the utility bills) generally does not occur. *Id.* at 30 & n.3 (JA329). Having identified market failures as the "problems" its rule was intended to address, DOE failed to consider whether these problems exist and simply assumed—in the face of comment to the contrary—that purchasers of commercial packaged boilers are failing to make economically beneficial investments in standards-compliant products on their own. DOE's assumption that this was true was unsupported by substantial evidence and therefore arbitrary. *Genuine Parts Co.*, 890 F.3d at 312. DOE's failure to *consider whether this was true* was also arbitrary, because a regulation that is "perfectly reasonable and appropriate in the face of a given problem may be highly capricious if that problem does not exist." *Home Box Office, Inc.*, 567 F.2d at 36 (quoting *City of Chicago*, 458 F.2d at 742). Finally, faced with comment directly challenging that assumption, DOE arbitrarily failed to "engage the arguments raised before it" by providing cogent responses to serious objections raised by interested parties. *Del. Dep't of Natural Res.*, 785 F.3d at 11, 13-14 (citation omitted); *see Carlson*, 938 F.3d at 344-45, 348-49. The Final Rule should be vacated for all of these reasons.

B. DOE's life-cycle cost analysis was arbitrary and unsupported by substantial evidence.

DOE's determination that the standards were economically justified was arbitrary in numerous respects, each of which provides an independently sufficient basis on which to vacate the Final Rule.

As discussed in Section II, *supra*, DOE lacked basic information required for purposes of its life-cycle cost analysis. It lacked information on the baseline efficiency distribution for products being sold in the absence of new standards and on two of the most critical factors needed to quantify efficiency benefits: the extent to which the product is used (in this context, burner operating hours) and the energy prices needed to determine the utility bill savings. In all three cases, DOE filled in the critical blanks in its analysis on the basis of arbitrary assumptions, information or analysis that appears nowhere in the record, or both.

Most importantly, DOE's arbitrary assumption that purchasers of commercial packaged boilers fail to make economically-beneficial efficiency investments on their own, and its failure to consider whether or to what extent they actually do, fatally undermined its life-cycle cost analysis.

With the potential for investments in standards-compliant boilers to produce favorable and negative economic outcomes, the economic impact of the standards necessarily depends on *which* investments in standards-compliant products purchasers are declining to make on their own; *i.e.*, on the extent to which

purchasers acting on their own have any statistically significant preference for economically beneficial investment outcomes or aversion to economically unfavorable outcomes. To the extent they do, the distribution of economic outcomes would be different for the "base case" investments in standards-compliant products purchasers make on their own than for the investments they would make only if standards left them no choice. Despite comment that purchasers of commercial packaged boilers generally consider the economics of their investments and act in their own economic interests, DOE made no effort to consider the impact that "base case" purchasing preferences have on the distribution of economic outcomes (and average life-cycle cost outcome) of the efficiency investments that would occur as a result of its standards. As a result, DOE's consideration of base-case "efficiency distributions" focused entirely on the distribution of efficiencies for the boilers being sold in the absence of standards, with no consideration of the economics of the efficiency investments purchasers tend to make—or leave on the table—on their own. *See* Final Rule at 1616-17, 1635-36 (JA600-01, JA619-20); No. 0054-A1 at 88-89 (JA232-33). DOE therefore lacked basic information it needed to determine the economic impact of the new standards.

Having failed to consider the impact of actual base-case purchasing preferences on the economic impact of its standards, DOE filled in this blank in its

life-cycle cost analysis by "assigning" investments in standards-compliant products to its base-case randomly, as though the investments purchasers make on their own reflect no statistically significant preference for economically-beneficial efficiency investments or aversion to economically-unfavorable efficiency investments regardless of the magnitude of the economic stakes involved. No. 0076-A1 at 29-30 (JA328-29); No. 0081-A1 at 11-12 (JA356-57). DOE's analysis thus assumed what no evidence remotely suggests: that purchasers of boilers *never* consider the economics of their investments and thus exhibit no tendency to make economically-beneficial efficiency investments (or avoid net cost investments) on their own. Commenters challenged this assumption on the grounds that it is "simply . . . absurd" and "makes no sense whatsoever in the case of commercial packaged boilers" and that "DOE has put forward no argument or evidence" to support it. No. 0076-A1 at 26, 30, 35 (JA325, JA329, JA334); *see* No. 0073-A1 at 15 (JA284).

DOE did not even attempt to justify this critical assumption on the merits; it simply stated that it lacked the evidence required to address a substantially broader range of issues potentially influencing purchasing decisions (*e.g.*, "green behavior"), and suggested that it was therefore entitled to rely on the assumption that purchasers never consider the economics of their investments at all. *Final Rule* at 1638 (JA622).

DOE plainly recognized that assumptions concerning baseline purchasing behavior have a significant impact on the results of its life-cycle cost analysis, because it rejected an alternative analysis based on the assumption that the most economically-attractive efficiency investments would occur in the absence of standards on the grounds that this "overly optimistic" assumption "may unreasonably bias" the results. *Id.* at 1637 (JA621). However, DOE's own assumption produces a systematic overstatement of life-cycle cost savings. No. 0081-A1 at 12-16 (JA357-61); No. 0073-A1 at 15-16 (JA284-85); No. 0090-A1 at 4-6 (JA570-72).

DOE knew that the magnitude of this overstatement could be enormous based on a detailed technical review of its use of the same assumption in its analysis of standards for residential furnaces. That review revealed that *over half of the total economic benefits claimed* in DOE's analysis were attributable to efficiency investments purchasers would be expected to make *even if they ignored the value of efficiency benefits entirely*: investments in which the *higher efficiency* product is the *low-cost option* in terms of initial investment.[9] In short, DOE's assumption produced average life-cycle cost outcomes that were dramatically

[9] No. 0081-A1 at 14 (JA359). The study was familiar to DOE from its submission in its residential furnace rulemaking and was specifically cited (with a link to the document) in comments submitted in response to the Proposal. No. 0076-A1 at 29 n.1 (JA328); *see* No. 0071-A1 at 16-17 (JA258-59).

skewed by a relatively small percentage of very high-benefit outcomes resulting from investments no purchaser could be expected to decline. Unsurprisingly, DOE's assumption appears to have produced a similar result in this case. *See* No. 0076-A1 at 39 (JA338).

DOE's own analysis indicates that median life-cycle cost savings are close to zero for all four of the new standards for gas boilers.[10] The reason DOE's analysis shows the higher *average* life-cycle savings relied upon to justify the standards is that the *averages* are dragged up by a relatively small percentage of outcomes with disproportionately high estimated life-cycle cost savings. This is illustrated by Figure 8.4.6 of DOE's Final Rule Technical Support Document, No. 0083-A1 at 8-46 (JA466):

[10] The Final Rule Technical Support Document provides limited information on the distribution of life-cycle cost outcomes for the "efficiency levels" DOE considered for each of these standards. No. 0083-A1 at 8-38, 8-40, 8-42 and 8-44, Figures 8.4.1, 8.4.2, 8.4.7, and 8.4.8 (JA458, JA460, JA462, JA464). To identify the "efficiency levels" representing the Standards adopted, it is necessary to understand that DOE selected "TSL 2," *see Final Rule* at 1674 (JA658), and that "TSL 2" corresponds to different "efficiency levels" for different categories of products. *Id.* at 1663 (JA647). From this it can be determined that the "efficiency levels" representing the Standards imposed for gas Boilers are Level 3 in Figures 8.4.1 and 8.4.2, Level 4 for Figure 8.4.7, and Level 5 in Figure 8.4.8.

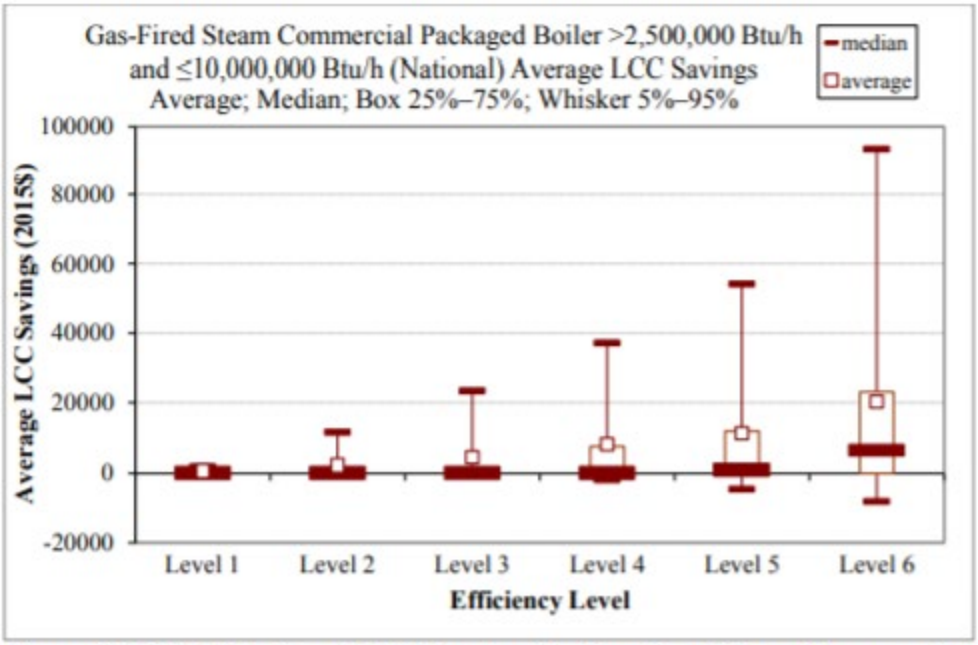

Figure 8.4.6 Distribution of LCC Savings for Gas-Fired Steam Commercial Packaged Boilers >2,500,000 Btu/h and ≤10,000,000 Btu/h

In this Figure, "Level 5" shows the distribution level for the standard DOE imposed. As the upper end of the "whisker" in the Figure shows, five percent of the economic outcomes result in estimated life-cycle cost savings in excess of about $55,000, *with no upper end of the distribution indicated*. The impact of this relatively small percentage of high-benefit outcomes is apparent from the fact that the *average* for estimated life-cycle cost savings is just over $11,000—very nearly the value for the top 25th percentile in the distribution, and by far the highest average savings among the four categories of gas boilers subject to new standards, *see Final Rule* at 1595 (JA579), tbl. 1.2, despite median savings that barely exceed zero.

The key point is that this Figure does not provide a distribution of the outcomes that would occur in the real world as a result of the standard; instead, it is a distribution of randomly-selected outcomes providing a representation of what the outcomes would be in a world in which the investments purchasers make on their own reflect no statistically significant purchaser preference for favorable economic outcomes (or aversion to negative outcomes) regardless of the economic stakes involved. As a result, the distribution depicted *includes* high-benefit outliers representing investments that would almost certainly occur in the absence of standards, and *excludes* net cost investments that purchasers would almost certainly decline in the absence of standards. The purported distribution of rule outcomes is therefore skewed, with the average outcome being artificially inflated. The only questions open to legitimate debate are *how inflated* DOE's average life-cycle cost savings are and whether a distribution of outcomes reasonably representative of actual rule outcomes would suggest that the standards would provide any net savings at all.

The critical impact of base-case purchasing preferences on the economic impact of DOE's standards was an "important aspect of the problem" presented by the statutory requirement that standards be economically justified, and DOE's failure to give it reasoned consideration was therefore arbitrary. *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 43. DOE's assumption that purchasers of commercial

packaged boilers never consider the economic consequences of their purchasing decisions was a critical factual premise that was unsupported by substantial evidence and therefore arbitrary. *Genuine Parts Co.*, 890 F.3d at 312. DOE's continued reliance on this assumption was particularly egregious in view of DOE's knowledge that assumptions with regard to base-case purchasing behavior have a material impact on the life-cycle cost analysis and that this particular assumption produces a systematic overstatement of regulatory benefits. DOE "retains a duty to examine key assumptions," and its failure to do so in this case warrants reversal. *Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 923 (D.C. Cir. 1998).

DOE's claim that it lacked the information needed to develop an alternative to its current assumption, *Final Rule* at 1638 (JA622), was a transparent attempt to make the unnecessarily elaborate the enemy of the reasonable. DOE's options plainly were not limited to a choice between its arbitrary assumption and the comprehensive modeling approach it characterized as its only alternative. *Id.* DOE could have taken steps to ensure that all of the "trial cases" in which the higher efficiency products have equal or lower installed costs are properly "assigned" to base case for analysis and that it accounted in some reasonable way for the fact that purchasers acting on their own are far more likely to make investments providing windfall economic benefits than they are to decline them. Even such simple fixes would make DOE's analyses significantly less

unreasonable. In and of itself, DOE's failure to do *anything* to improve upon its unreasonable assumption was arbitrary and capricious.

In short, DOE lacked substantial evidence for the key factual premise that the new standards would create life-cycle cost savings for boiler purchasers. Rather than demonstrating that purchasers of commercial packaged boilers are failing to make economically-beneficial investments on their own, DOE's life-cycle cost analysis simply assumed that they do. DOE asserted that "benefits exist primarily because [it] says they do," and this "unsupported assertion does not amount to substantial evidence." *Algonquin Gas Transmission Co.*, 948 F.2d at 1313; *see Safe Extensions, Inc. v. FAA*, 509 F.3d 593, 604-06 (D.C. Cir. 2007); *McDonnell Douglas Corp. v. United States Dep't of the Air Force*, 375 F.3d 1182, 1187 (D.C. Cir. 2004). An order vacating the Final Rule is justified for this reason alone.

CONCLUSION

For all the foregoing reasons, the Court should hold unlawful and set aside the Final Rule.

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CERTIFICATE OF COMPLIANCE

I 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 Times New Roman font. I further certify that this brief complies with the requirements of Federal Rule of Appellate Procedure 32(a)(7) 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 12,997 words according to the word-count feature of Microsoft Word.

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CERTIFICATE OF SERVICE

I certify that on this 21st day of April, 2021, the foregoing brief was filed via CM/ECF. Service was accomplished on all parties or their counsel of record via CM/ECF.

/s/ Scott Blake Harris
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