No. 25-879

IN THE

Supreme Court of the United States

AMERICAN GAS ASSOCIATION, ET AL., *Petitioners*

v.

DEPARTMENT OF ENERGY, ET AL., *Respondents.*

On Petition for Writ of Certiorari to the United States Court of Appeals for the District of Columbia

BRIEF OF THE UNITED ASSOCIATION OF JOURNEYMEN AND APPRENTICES OF THE PLUMBING AND PIPEFITTING INDUSTRY OF THE UNITED STATES AND CANADA, AFL-CIO IN SUPPORT OF PETITIONERS

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STATEMENT OF INTEREST

The United Association of Journeymen and Apprentices of the Plumbing and Pipefitting Industry of the United States and Canada, AFL-CIO ("United Association" or "UA"), is an international labor organization representing approximately 394,000 plumbers, pipefitters, sprinkler fitters, service technicians, and welders.[1] About one-third of the UA's membership—well over 100,000 members—are trained to work on the installation of the residential and commercial non-weatherized gas furnaces that are subject to the U.S. Department of Energy's ("Department") rulemakings which the Petitioners are challenging in this proceeding. United Association members work on the installation of these gas furnaces on a regular basis. The UA thus has extensive knowledge of the technical issues that arise when a consumer undertakes to replace their "noncondensing" gas furnace with a "condensing" furnace.

The United Association and its local union affiliates operate state-of-the-art training facilities which provide apprentices and journeymen with education on the installation of both noncondensing and condensing gas furnaces. Regardless of which type of furnace a consumer installs, UA members are trained and qualified to perform the work. However, if the Department's challenged rules go into effect and eliminate noncondensing furnaces from the market, consumers who can afford a replacement noncondensing furnace but cannot afford a replacement condens-

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[1] The United Association has provided timely notice to the parties of its intention to file an *amicus curiae* brief in this proceeding. No other party authored the UA's brief in whole or in part, and the UA has not received any monetary contributions intended to fund the preparation or submission of this brief.

ing furnace will be priced out of the market, resulting in lost work opportunities for UA members. Moreover, the work performed in this space is centered on customer service and relationships, and implementation of the challenged rule will, in many instances, place UA members in the untenable position of advancing solutions that are economically impracticable for the communities they serve. The UA is interested in this proceeding to help avert these harms. For the reasons explained in this brief, the UA does not believe that removing noncondensing furnaces from the market is consistent with the law or the economic realities facing American consumers.

SUMMARY OF ARGUMENT

Congress limited the Department's authority to issue new efficiency standards under the Energy Policy and Conservation Act ("EPCA") by prohibiting the Department from issuing new standards that would eliminate classes of products from the market that consumers rely on because of their unique "performance characteristics." 42 U.S.C. § 6295(o)(4). The Parties agree that a "performance characteristic" in this context is a "product attribute that provides utility to consumers desiring to use the product." *Am. Gas Ass'n v. U.S. Dep't of Energy,* 157 F.4th 476, 487 (D.C. Cir. 2025) ("*AGA*"). Nevertheless, it is undisputed in the record of this case that the efficiency standards the Petitioners are challenging, if allowed to go into effect, will result in the elimination of "noncondensing" gas furnaces from the market. As a result, consumers desiring to purchase a non-weatherized gas furnace after the effective date of these rules would be required to purchase the only alternative, i.e., a "condensing" furnace.

Through its extensive experience in the heating, ventilation, and air conditioning ("HVAC") industry,

the United Association is aware that the installation of condensing gas furnaces in many homes and buildings presents enormous practical challenges. These issues are particularly acute in older buildings and buildings in dense, urban environments. While technological solutions exist to overcome these challenges, they are often only achievable at great cost and inconvenience for the consumer—burdens which would be unnecessary if the consumer instead had the option to purchase a noncondensing furnace. Moreover, the expense of converting a building from heating that relies on a noncondensing gas furnace to all-electric heating can be considerable, which means that conversion to all-electric heating is not likely to be a more economically viable alternative. In fact, in many cases, this conversion will be prohibitively expensive to the consumer. These economic concerns are particularly vital in the current moment, when Americans across the country are confronting a historic affordability crisis.

The continued availability of noncondensing furnaces provides immense utility to consumers who otherwise would need to undertake extensive renovations and/or incur additional costs to install a condensing furnace or all-electric heat pump. The UA therefore respectfully submits that the challenged rulemakings are arbitrary or capricious because the Department has failed to meaningfully address these practical considerations and recognize the unique performance characteristics and necessary advantages of noncondensing furnaces, and that the lower's court failure to vacate the rules on this basis constitutes reversible error. *See* 5 U.S.C. § 706(2)(A); *Motor Vehicle Mfrs. Ass'n of U.S., Inc. v. State Farm Mut. Ins. Co.*, 463 U.S. 29, 43 (1983).

ARGUMENT

I. The Department and Lower Court Failed to Acknowledge the Enormous Practical Challenges Associated with Installing Condensing Furnaces in Many Homes and Businesses.

The Petitioners are challenging rules issued by the Department under the EPCA which increase the efficiency standards for consumer gas furnaces and commercial water heaters (collectively, the "Efficiency Rules").[2] The lower court's analysis is based on the accurate assumption that a certain type of gas furnace commonly sold in the United States known as a "noncondensing" furnace is unable to meet these standards, and that the Department's rules would therefore effectively prohibit the sale of noncondensing furnaces. *See AGA*, 157 F.4th at 481-82, 488. Under the Efficiency Rules, consumers needing to replace their gas furnace will be required to purchase a "condensing" furnace, regardless of whether their current gas furnace is noncondensing or condensing. *See* Furnace Rule, 88 Fed. Reg. at 87,536.

A. Legal Background

Congress limited the Department's authority to issue new efficiency standards under the EPCA by prohibiting the Department from issuing new standards

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[2] Energy Conservation Program: Energy Conservation Standards for Consumer Furnaces, 88 Fed. Reg. 87,502 (Dec. 18, 2023) ("Furnace Rule"); Energy Conservation Program: Energy Conservation Standards for Commercial Water Heating Equipment, 88 Fed. Reg. 69,686 (Oct. 6, 2023); Energy Conservation Program for Appliance Standards: Energy Conservation Standards for Residential Furnaces and Commercial Water Heaters, 86 Fed. Reg. 73,947 (Dec. 29, 2021).

that would eliminate classes of products from the market that consumers rely on because of their unique "performance characteristics." 42 U.S.C. § 6295(o)(4). The Parties agree that a "performance characteristic" in this statutory context is a "product attribute that provides utility to consumers desiring to use the product." *AGA*, 157 F.4th at 487. The Department therefore lacks Congressional authorization under the EPCA to issue new standards which have the effect of eliminating noncondensing furnaces from the market if it is shown by a preponderance of the evidence that noncondensing furnaces have a unique attribute relative to their condensing counterparts that provides utility to consumers (i.e., if they have a "performance characteristic"). 42 U.S.C. § 6295(o)(4).

As discussed further below, through its extensive experience in the HVAC industry, the United Association knows that the installation of condensing furnaces in many homes and businesses—particularly older buildings and buildings in dense, urban areas—presents enormous practical challenges relative to the installation of noncondensing furnaces. These challenges can often only be overcome through extensive building renovations, may require changes to other appliances, and represent a substantial expense and inconvenience for the consumer. *See generally* Ayyoub M. Momen et al., *Condensing Furnace Venting Part 1: The Issue, Prospective Solutions, and Facility for Experimental Evaluation*, at 7-8 (Oak Ridge Nat'l Lab'y 2014) ("Oak Ridge Study").[3] By contrast, a consumer can typically 'plug and play' a new noncondensing furnace in the space used by an existing noncondensing

[3] Available at https://web.ornl.gov/sci/buildings/docs/Condensing-Furnace-Venting-Part1-Report.pdf.

furnace without needing to renovate their home or business and without incurring these extra costs.

With this factual backdrop in mind, it is simply illogical to claim that consumers replacing an existing noncondensing furnace in their home or business do not value the option of purchasing a like-for-like noncondensing replacement, when the alternative of installing a condensing furnace could necessitate substantial and costly building renovations that are otherwise unnecessary and undesired. The United Association therefore respectfully submits that it was arbitrary, capricious, or an abuse of discretion for the Department to conclude that this ability of noncondensing furnaces to be easily installed in locations where there are significant practical obstacles to the installation of condensing furnaces is not a performance characteristic, and that it was reversible error for the lower court to decline to vacate the challenged rules on this basis. *See* 5 U.S.C. § 706(2)(A); *Motor Vehicle Mfrs. Ass'n of U.S., Inc.*, 463 U.S. at 43.

B. Practical Challenges Posed by the Installation of Condensing Furnaces

One of the most significant differences between condensing and noncondensing furnaces is their method of venting. *See* Oak Ridge Study, at xiii. Traditional noncondensing furnaces typically use a vertical vent, such as a chimney, to expel their exhaust. The exhaust from a noncondensing furnace is warmer than the exhaust from a condensing furnace, and this warmer temperature assists with the vertical venting process—warmer air naturally rises. *See id.* at 5. In homes and businesses that also have a hot water heater, this vertical vent is often shared by the furnace and hot water heater to help maximize the amount of livable space. *See id.* ("Manufacturer's instructions

and codes permit Category I noncondensing furnaces to be vented vertically, through chimneys, and in common-venting arrangements with other Category I gas appliances."). When a noncondensing furnace is replaced with another noncondensing furnace, the new furnace can generally be installed in the same space as the old furnace and use the same vertical vent.

A condensing furnace is more efficient than a noncondensing furnace because it recycles some of the heat that would otherwise be released from a noncondensing furnace, which is why the exhaust from a condensing furnace is inherently cooler than that from a noncondensing furnace. *See id.* at 3. Because this cooler exhaust does not rise in the same manner as warmer exhaust from a noncondensing furnace, the use of horizontal vents is the best practice for condensing furnaces. *See* Furnace Rule, 88 Fed. Reg. at 87,562 ("DOE's analysis estimated that 70 percent of condensing furnaces will be installed with a horizontal vent."). This process of recycling heat in a condensing furnace also results in the release of water, known as "condensate," which is not a factor in the operation of noncondensing furnaces. *See id.* at 87,564. These differences between condensing and noncondensing furnaces mean that when a noncondensing furnace is replaced with a condensing furnace, the new condensing furnace cannot simply hook up to the same vertical vent used by the older furnace without further work being done. Instead, the best practice is to install new plumbing for a horizontal vent, which even in the best case scenario will typically involve drilling holes through walls for the new piping. *See id.* at 87,562 ("DOE assumed that the replacement furnace would remain in the same location as the existing furnace and accounted for the new vent length and other changes, such as wall knockouts, to install new venting.") (emphasis added).

Installing a new horizontal vent, however, is not a simple or straightforward task in many buildings. For example, the UA's experience is that furnaces in older buildings are often located in a basement or subbasement, which renders the installation of a straightforward horizontal vent to the outside impossible. Such buildings with underground furnace rooms would also require a sump pump to handle the water emissions from a condensing furnace, which can lead to additional installation costs and another appliance in the HVAC system that will require maintenance. Furthermore, in buildings that share walls with other structures—such as rowhouses and other buildings in dense, urban environments—it will often be impossible to install a horizontal vent in the side of the building due to the proximity of other buildings. Local building code restrictions on venting near doors, windows or walkways may also severely limit the areas on the back of a building where a horizontal vent could be installed, while aesthetic requirements in homeowner association rules or restrictive covenants on the property may further complicate the identification of possible locations for the installation of a horizontal vent. *See* Oak Ridge Study, at 8 (listing requirements found in local building codes that restrict the locations where new vents can be installed). Further magnifying these space complexities is the fact that condensing furnaces are typically larger than their noncondensing counterparts. Corrected Preliminary Brief of *Amici Curiae* National Multifamily Housing Council, et al., *Am. Gas Ass'n v. U.S. Dep't of Energy*, No. 23-1337, at 5 (D.C. Cir. Apr. 19, 2024) ("Housing Council Brief"). If a condensing furnace cannot fit into a mechanical room used by an existing noncondensing furnace, the building owner may need to relocate the mechanical room when upgrading to a condensing furnace—a significant (and

likely costly) renovation project that will also reduce the usable space in the building.

While these obstacles to installing a horizontal vent can often be substantial, they are hardly the only practical challenge associated with replacing a noncondensing furnace with a condensing furnace. As mentioned above, noncondensing furnaces often share a vertical vent with another venting appliance such as a hot water heater. Even in a best case scenario where the installation of a horizontal vent for a new condensing furnace is relatively straightforward, where the previous noncondensing furnace shared a vertical vent with another appliance, additional work will need to be done on the vertical vent to ensure that the remaining, now-orphaned appliance that is still using the vertical vent "is not venting back into the home due to the mismatch in vent size to the requirements of the remaining appliance(s)." Pacific Gas & Elec. Co. et al., *Investigation of Installation Barriers and Costs for Condensing Gas Appliances*, at 11 (2019) ("Cost Study").[4] If this additional work is not done, "there could be insufficient draft to properly exhaust the flue gases from the water heater," which could lead to "dangerous levels of carbon monoxide and other pollutants in the home." Oak Ridge Study, at 8. When this work is required, one study found that it can increase the cost of installing a condensing furnace "by as much as 50%." Cost Study, at 11. Moreover, even where an existing noncondensing furnace does not share a vertical vent with other appliances, that vertical vent should still be sealed off if the noncondensing furnace is replaced with a condensing furnace that

[4] Available at http://www.regulations.gov/comment/EERE-2018-BT-STD-0018-0062.

uses a horizontal vent instead. *Id.* at 14. That is yet another additional cost for the consumer to bear.

In the UA's experience, most HVAC contractors will never say that a particular building heating configuration is impossible—instead, it is simply a matter of cost and technical complexity. Therefore, it is true that technical solutions exist for the issues described above. *See* Furnace Rule, 88 Fed. Reg. at 87,512 (expressing that "technological solutions" exist for the challenges posed by installing a condensing furnace). A building can be renovated to make space for a larger mechanical room necessary to fit a condensing furnace, even if it results in less usable space. Where horizontal venting is impossible, the use of a powered venting device may allow a condensing furnace to use an existing vertical vent, though care must be taken to prevent a dangerous buildup of ice in this vent due to the lower temperature of the exhaust from a condensing furnace. All these potential solutions, however, create sometimes staggering additional costs for the customer, and may result in undesirable changes to their living or business space. The ability of customers to absorb these additional installation costs is not unlimited, particularly given the fact that condensing furnaces themselves are typically about $1,300 more expensive than their noncondensing counterparts. Housing Council Brief, at 5. In the UA's experience, considering the additional installation costs and the cost of a condensing furnace itself, even a relatively straightforward replacement of a noncondensing furnace with a condensing furnace can be expected to cost several thousand dollars more than a like-for-like replacement. When the installation is not straightforward, that cost discrepancy can be expected to be even greater, and in the UA's experience can reach into the tens of thousands of dollars.

When the Efficiency Rules are viewed in the context of these practical and economic concerns, the lower court's remark that "it is obvious that consumers do not buy small furnaces or commercial water heaters because of how the appliance vents" is not only incorrect, but also woefully glib and disconnected from the realities of the HVAC industry. *AGA*, 157 F.4th at 489. While it may be true that few consumers phrase their preference for condensing or noncondensing furnaces *strictly* in terms of the type of venting they use, it is easy to imagine consumers expressing a preference, for example, for a smaller furnace that can fit into their existing utility room, or for a furnace that would not require them to undertake extensive renovations to accommodate a new ventilation system. For the reasons explained above, these understandable consumer preferences will often be best served by a noncondensing furnace. In other words, noncondensing furnaces possess unique product attributes "that provide[] utility to consumers desiring to use the product," i.e., unique performance characteristics. *Id.* at 487. The Department's cursory dismissal of the serious practical issues discussed here shows that the agency has "entirely failed to consider an important aspect of the problem," therefore rendering the Efficiency Rules unlawfully arbitrary or capricious. *Motor Vehicle Mfrs. Ass'n of U.S., Inc.*, 463 U.S at 43.

II. Converting to Electric Heating Will Not Be a More Viable Alternative for Many Homes and Businesses.

Throughout the Efficiency Rules, the Department implies it is not a serious problem if consumers find that replacing a noncondensing furnace with a condensing furnace is cost prohibitive. Instead, the Department suggests those consumers can switch to a

fully electric system instead, such as one that relies on an electric heat pump. This approach is illustrated by the following discussion, which is representative of the Department's views:

> DOE has concluded that in most cases, a condensing furnace may be installed with reasonable installation costs, and there would almost always be a technological solution to accomplish that (*e.g.,* such as through use of DuraVent FasNSeal or a draft inducer paired with a chimney liner). In cases where the consumer perceives such costs to be too high, the consumer may opt to convert to another type of space-heating appliance (e.g., a heat pump or electric resistance heating).

Furnace Rule, 88 Fed. Reg. at 87,536 (emphasis added).

Based on the UA's industry experience, however, consumers expecting to save money by switching to an all-electric heat pump system rather than replacing a noncondensing furnace with a condensing furnace are in for an unwelcome surprise. Even in a best case scenario, the cost of switching a building's heating from a gas furnace to an all-electric heat pump is considerable and can be expected to cost several thousands of dollars more than a simple like-for-like replacement of an existing noncondensing furnace with a new noncondensing furnace. *See* Jesse Will, *3 Best Whole-House Heat Pumps of 2026, Lab-Tested and Reviewed*, CONSUMER REPORTS (last visited Feb. 12, 2026) ("According to the National Renewable Energy Laboratory, average installation costs for ducted [heat pump] systems range from around $9,000 for minimum-efficiency units to $24,000 for high-efficiency cold-climate models.").[5]

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[5] https://www.consumerreports.org/appliances/heat-pumps/best-whole-house-heat-pumps-a1157154177/.

Moreover, the discussion of switching a building's heating from a noncondensing gas furnace to an all-electric system has so far assumed that the building's electrical supply could meet the significant new load placed on it by the electric heating. However, many older homes have a breaker box which supports only 60 amps or 100 amps of electrical service, which is far below the modern best practice for new homes of 200 amps—indeed, some large homes today are constructed with up to 400 amps of electrical service. *See* Ashley Robinson, *Home Electric 101: Understanding Amp Service and Electrical Panels*, OHM CONNECT (Nov. 20, 2023) ("[I]t's important to remember that as electric technologies have progressed, our home power systems have not necessarily kept up.").[6] These older homes are the same ones that were likely designed with a traditional noncondensing furnace in mind. The amperage provided to a home is a measure of the amount of electrical supply, so more amps means more energy-intensive appliances can run simultaneously. In many cases, a 60-amp or 100-amp service will be insufficient to power an electric heat pump and all the other appliances in the home that rely on electricity. N.Y. State Energy Rsch. & Dev. Auth., *The Heat Pump Installer's Guide to Assessing Residential Electrical Service*, at 3 (2024) (estimating that homes with less than 100-amp service or built prior to 1965 will "[l]ikely need more amperage" for a heat pump, while homes with 100-, 150-, or 200-amp service will "[p]ossibly" need more amperage).[7] As a result, the installation of an electric heat pump may require a building

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[6] https://www.ohmconnect.com/blog/home-improvement/home-electric-101-understanding-amp-service-and-electrical-panels.

[7] Available at https://cleanheatconnect.ny.gov/assets/pdf/CHC-CON-electricservice-br-1-v1.pdf.

owner to upgrade the building's breaker box and, in some cases, the main electrical service line to the building. This additional electrical work can be expected to add several thousand dollars to the already expensive installation costs of an electrical heat pump. This work can also be inconvenient for the consumer because it requires disconnecting and re-connecting the building's wiring to the new electrical supply.

Once the realities of converting a building's heating system from a noncondensing gas furnace to an all-electric heat pump are appreciated, it becomes plain that this conversion will not be a more convenient alternative for many consumers. The Department was aware of these concerns because public comments on the Furnace Rule attempted to highlight the high cost of heat pump installation, equipment, and other ancillary costs. *See* Furnace Rule, 88 Fed. Reg. at 87,594. The agency's continued failure to consider and adequately assess these concerns and insistence that heat pumps provide a reasonable alternative to consumers concerned with the high cost of installing a condensing furnace further demonstrate that the agency has failed to consider important aspects of its rulemaking.

III. Americans Are Facing an Affordability Crisis.

The UA does not dispute the Department's claim that, in the abstract, technical solutions generally exist for the problems that can arise during the replacement of a noncondensing gas furnace with a condensing furnace. However, as shown above, each obstacle that must be overcome during the installation of a condensing gas furnace in a building that previously used a noncondensing furnace increases the cost of that installation relative to the like-for-like installation of a new noncondensing furnace. Each of those

obstacles—whether they be the installation of new plumbing for horizontal vents, preventing dangerous backflow from newly-orphaned appliances, sealing off a now-unneeded vertical vent, or installing a powered venting device—can be expected to add thousands to the cost of installing a condensing furnace, which are already more expensive than their noncondensing counterparts. In the current economic environment, many consumers will simply be unable to absorb those additional costs.

The Department is issuing the Efficiency Rules at a time when Americans are already facing a historic affordability crisis. A September 2025 poll showed that 47% of Americans say it is harder to afford groceries than a year ago, which is supported by economic data showing that grocery prices have risen by more than 30% over the last five years. Margaret Talev & Neil Irwin, *Axios Vibes: Grocery price pain rises, in warning sign for Trump and GOP*, AXIOS (last visited Feb. 12, 2026).[8] In November 2025, another poll showed that almost three-quarters of Americans say that housing has grown more unaffordable in their communities in recent years. Aimee Picchi & Mary Cunningham, *America's deepening affordability crisis summed up in 5 charts*, CBS NEWS (last updated Nov. 19, 2025).[9] This is supported by data from the Federal Reserve, which shows that homebuyers today need to earn 43% more than the average worker to afford a typical home. *Id.* Utility costs are also surging as demand for electricity increases. Just last year, "more than 124 million Americans [were] expected to see

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[8] https://www.axios.com/2025/10/02/grocery-prices-rise-trump-poll.

[9] https://www.cbsnews.com/news/affordability-2025-inflation-food-prices-housing-child-care-health-costs/.

some sort of rate increase in their energy bill." *Id.* The result of the confluence of these factors is that many consumers—including those in the middle class—are struggling to simply make ends meet. Those consumers do not have an unlimited ability to absorb the increased costs associated with the Efficiency Rules.

While many consumers are therefore likely to find the replacement of a noncondensing gas furnace with a condensing furnace, or the conversion to an electric heating system, to be cost prohibitive, their existing noncondensing furnaces will still grow old and eventually stop functioning. Under the Efficiency Rules, when those noncondensing furnaces eventually stop functioning, many of these cost-constrained consumers will decline to purchase and install a condensing gas furnace or convert to all-electric heating because they simply will not be able to afford it. Instead, they will turn to other, more dangerous alternatives, such as relying on space heaters or leaving their ovens on at high temperatures for heating purposes. These alternatives are more likely to cause fires and can lead to dangerous levels of carbon monoxide in the home. *See Small Space Heaters*, U.S. Dep't of Energy (last visited Feb. 12, 2026);[10] Michael Frank, *The Dangers of Using Your Gas Range or Oven for Heat*, CONSUMER REPORTS (Oct. 13, 2022).[11] Alternatively, consumers who cannot afford the switch to an option that complies with the Efficiency Rules will have to sell their property to another individual or entity that can afford to make the change. While this is a likely and foreseeable effect of the Department's Efficiency

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[10] https://www.energy.gov/energysaver/small-space-heaters.

[11] https://www.consumerreports.org/home-garden/home-safety/the-dangers-of-using-your-gas-range-or-oven-for-heat-a5567310177/.

Rules, the agency has failed to meaningfully address this affordability issue.

CONCLUSION

For the foregoing reasons, the United Association respectfully urges the Court to grant the petition and review the decision below.

Respectfully submitted,

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