ORAL ARGUMENT NOT YET SCHEDULED
Case No. 25-5129

IN THE UNITED STATES COURT OF APPEALS
FOR THE NINTH CIRCUIT

RINNAI AMERICA CORPORATION et al.,
Plaintiffs-Appellants,

v.

SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT,
Defendant-Appellee,
PEOPLE'S COLLECTIVE FOR ENVIRONMENTAL JUSTICE et al.,
Intervenor-Defendants-Appellees.

On Appeal from the United States District Court for the Central District of California

No. 2:24-cv-10482-PA-PD | Hon. Percy Anderson, District Judge

BRIEF OF *AMICUS CURIAE* NORTHEAST STATES FOR COORDINATED AIR USE MANAGEMENT (NESCAUM) IN SUPPORT OF DEFENDANT-APPELLEE SOUTH COAST AIR QUALITY MANAGEMENT DISTRICT

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RULE 29 STATEMENTS

Pursuant to Fed. R. App. P. 29(a)(2), *amicus curiae* certify that all parties in this proceeding have consented to the filing of this amicus brief.

Pursuant to Fed. R. App. P. 29(a)(4)(E), *amicus curiae* state that no party or party's counsel authored this brief in whole or in part, and that no other person besides *amicus curiae* or their counsel contributed money that was intended to fund preparation or submittal of this brief.

s/ Brennon K. Mendez
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INTERESTS AND IDENTITY OF *AMICUS*

Amicus curiae Northeast States for Coordinated Air Use Management ("NESCAUM") is a coalition of state air agencies that promotes regional cooperation and action by its member states in support of effective programs to reduce the adverse public health and environmental impacts of air pollution and climate change. NESCAUM works to improve public health and protect the environment by supporting state efforts to reduce air pollution and greenhouse gas emissions from electricity generation, vehicles, industry, fuels, and local sources. It provides scientific, technical, analytical, and policy support to the air quality programs of its member states in the Northeast to assist them in meeting their climate and air quality goals. Its member states are Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Rhode Island, and Vermont.

Formed as a non-profit organization in 1967, NESCAUM is the oldest regional air quality organization of its kind and a pre-eminent national voice on air pollution control technologies, strategies, and policy. NESCAUM brings decades of experience and expertise on air pollution regulation and a perspective that transcends that of any one state, air district, or jurisdiction. NESCAUM also provides expertise in the interplay between federal, state, and local agencies in the regulatory framework established by the Clean Air Act and its amendments, rooted

in cooperative federalism. It has a strong interest in ensuring that this Court understands the implications of this case for the balance of federal, state, and local power in air quality regulation, including especially the implications of this case for air pollution control in states and districts outside of California.

NESCAUM files this brief solely as an organization and not on behalf of the individual state agencies with which it is affiliated.

SUMMARY OF THE ARGUMENT

Appellants' desired outcome would endanger rules that are essential to achieving compliance with federal and state air quality standards across the country. It would undercut the longstanding and well-established authority of state and local air agencies to promulgate appliance emission standards that protect public health by regulating harmful air pollutants like nitrogen oxides (NOx). If this Court were to accept Appellants' arguments, the negative consequences would be significant and far-reaching, unnecessarily and unjustifiably calling into question a broad swath of traditional air emission control rules that incidentally affect the energy use of appliances. This could include not just zero-NOx rules but also low- and traditional NOx rules, regulations of other pollutants, and regulations applying to other categories of stationary sources. Such an outcome would jeopardize decades of hard-fought air quality improvements inside and outside of California.

This brief makes two central points. First, it describes air pollution control rules from districts across the country, including other low-NOx and zero-NOx appliance rules, to show that the regulation at issue fits squarely within the traditional exercise and scope of local and state air district authority. South Coast's Rule is not some anomalous outlier that can or should be dismissed as meaningfully different from rules in place across the country; instead, it is a type of

emission standard that air regulators nationally regularly use, and indeed depend upon, to meet federal Clean Air Act obligations.

Second and relatedly, the brief draws on our expertise related to air pollution control to show why invalidating this Rule as preempted by EPCA would unnecessarily endanger a much broader group of air quality tools. Many types of emission standards for appliances affect the energy use of those appliances; that's a foreseeable and commonplace side effect of emission controls. If such effects mean that emission standards are or may be preempted, much more than zero-NOx standards will be at risk.

Appellants counter this worry by arguing that South Coast's Rule is distinguishable because it amounts to a gas "ban," but this is wrong for at least two reasons. First, as South Coast persuasively argues, an emission standard is not ever equivalent to a gas ban—and especially not when, as here, the record and rulemaking history suggest that technology could be developed to satisfy zero-NOx standards while continuing to allow for the use of natural gas. Emission standards leave to regulated parties decisions about how to reduce emissions to required levels, including whether to use existing technology or new technology, old fuels or new. Emission standards may even be stringent enough to be technology-forcing, meaning that manufacturers might have to invent new ways to run appliances. But emission standards are, by their very nature, fuel-agnostic.

Second, this court itself has pointed out that there is nothing legally distinctive about a state enactment that "concerns energy use" by reducing energy use to zero, as compared with lesser effects. Thus, given how routinely emission standards (incidentally) affect the energy use of covered appliances, an adverse ruling here would put at risk emission standards nationwide.

Such an outcome is not legally warranted and is easily avoided. Because emission standards may affect energy consumption only as an incidental effect of efforts to reduce pollution, *NESCAUM* urges the Court to reject Appellants' overbroad interpretation of EPCA's express preemption provisions and affirm the District Court's ruling.

ARGUMENT

I. South Coast's Rule 1146.2 is a permissible exercise of air agencies' long-established authority to comply with the Clean Air Act and protect public health by regulating emissions of air pollutants like NOx

For decades, federal and state courts have recognized the authority of local air districts to promulgate stringent emission standards to control air pollution. These standards have long included rules regulating NOx emissions from appliances. South Coast's regulation derives from the very heart of its Clean Air Act authority and is similar in design and implementation to rules that have been promulgated widely across the country, in both "red" states and "blue" states. The set of rules from across the country we describe in this section are all aimed squarely at reducing the serious public health harms caused by NOx and at helping to ensure compliance with the mandates of federal law.

A. Air agencies' authority to regulate NOx emissions from boilers and water heaters pursuant to the Clean Air Act has been uniformly recognized, and Rule 1146.2 fits firmly within that tradition

The federal Clean Air Act, 42 U.S.C. § 7401 et seq., creates a regulatory structure based on cooperative federalism that calls on federal regulators to set air quality mandates for certain pollutants and gives state and local regulators the authority—and the requirement—to meet those mandates by regulating air pollution. Under the Clean Air Act, the Environmental Protection Agency (EPA) is authorized "to establish national ambient air quality standards (NAAQS) for air

pollutants that the EPA determines may reasonably be expected to endanger public health or welfare," and states are required to attain air quality of specified standards and to do so within a specified period of time. *Nat. Res. Def. Council v. EPA*, 638 F.3d 1183, 1185 (9th Cir. 2011) (quoting *Latino Issues Forum v. EPA*, 558 F.3d 936, 938 (9th Cir. 2009) (citing 42 U.S.C. §§ 7408, 7409)). State and local air agencies have "considerable latitude" and "discretion" over how exactly the NAAQS are to be achieved. *Train v. Nat. Res. Def. Council*, 421 U.S. 60, 86–87 (1975) ("Congress, consistent with its declaration that '(e)ach State shall have the primary responsibility for assuring air quality' within its boundaries, § 107(a), left to the States considerable latitude in determining specifically how the standards would be met."); *see Union Elec. Co. v. EPA*, 427 U.S. 246, 268 (1976) ("Congress plainly left with the States, so long as the national standards were met, the power to determine which sources would be burdened by regulation and to what extent."); *see also* 40 C.F.R. §§ 51.100(n), 51.101(e) (2024). If a region is found in violation of one or more of the NAAQS, the EPA designates it as a "nonattainment" area and provides deadlines and requirements that must be met to ensure that the region is on track for the NAAQS to be achieved so the region may move into "attainment" and avoid sanctions. 42 U.S.C. § 7407(d).

Within this federalist system, legal authority for the regulation of air pollution resides with state air regulators, who may then delegate that authority to

local air districts. *See id.* § 7416 (discussing the general "retention of state authority" to enforce emission standards and other "requirement[s] respecting control or abatement of air pollution"). Accordingly, states and air districts across the country have routinely promulgated emission standards for appliances governing their emissions of dangerous air pollutants like NOx. The Supreme Court has characterized the power of state and local air agencies to allocate emission limitations as "virtually absolute" so long as the national standards are met. *Union Elec. Co.*, 427 U.S. at 267.

South Coast's low-NOx and zero-NOx emission standards are classic exercises of its core regulatory authority under the Clean Air Act and its general police power—delegated by the state Legislature—to adopt regulations that benefit the health, safety, and welfare of its residents. CAL. HEALTH & SAFETY CODE §§ 40400–40540 (outlining South Coast's legal authority as delegated by the Legislature). This Court has long recognized that "air pollution prevention falls under the broad police powers of the states, which include the power to protect the health of citizens in the state." *Exxon Mobil Corp. v. EPA*, 217 F.3d 1246, 1255 (9th Cir. 2000); *see Huron Portland Cement Co. v. City of Detroit*, 362 U.S. 440, 442 (1960) ("Legislation designed to free from pollution the very air that people breathe clearly falls within the exercise of even the most traditional concept of . . . the police power."); *see also* U.S. CONST. amend. X (reserving to the states all

powers not forbidden by the Constitution or otherwise given to the federal government).

In turn, there's no doubt that South Coast's Rule will do significant and necessary work to protect residents' health and to meet federal air standards. Rule 1146.2 would reduce about 5.6 tons per day (tpd) of NOx in the South Coast Air Basin, which remains out of compliance with the NAAQS for two pollutants for which NOx is a precursor: ozone and fine particulate matter. *See* S. Coast Air Quality Mgmt. Dist., Draft Staff Report: Proposed Amended Rule 1146.2 – Emissions of Oxides of Nitrogen from Large Water Heaters, Small Boilers and Process Heaters (May 7, 2024), at 4-1, https://www.aqmd.gov/docs/default-source/rule-book/Proposed-Rules/rule-1146-1146.1-and-1146.2/par-1146-2-draft-staff-report.pdf [hereinafter "Rule 1146.2 Staff Report"]; S. Coast Air Quality Mgmt. Dist., Press Release: South Coast AQMD Approves Rule to Accelerate the Transition to Zero-Emission for Building Water Heaters (June 7, 2024), https://www.aqmd.gov/docs/default-source/news-archive/2024/1146-2-June-7-2024.pdf. That projected reduction amounts to approximately 10% of the emissions reductions needed for the South Coast Air Basin to attain the 2015 federal ozone standard, for which the basin is currently in extreme nonattainment. *See* S. Coast Air Quality Mgmt. Dist., Press Release, *supra*.

South Coast has been working for decades to come into attainment and has increasingly run out of large-scale sources of NOx to address, so South Coast has had to turn to individually smaller sources whose contributions to air pollution are remarkably significant in the aggregate, like water heaters. In its 2022 Air Quality Management Plan (AQMP), South Coast notes that its "strategy for the Basin to meet the 2015 8-hour ozone standard by 2037" necessarily relies on "an economy-wide transition to zero emissions technology wherever feasible to reduce emissions," including NOx emissions, and notes "few opportunities for further emission reductions." S. Coast Air Quality Mgmt. Dist., Final Staff Report: South Coast Air Basin Contingency Measure SIP Revision for the 2015 8-Hour Ozone NAAQS (Aug. 2025), at ES-1, https://www.aqmd.gov/docs/default-source/default-document-library/sc-contingency-measures-finalcb7e02f0c2b66f27bf6fff02004a91a9.pdf. Regulations like Rule 1146.2 are more essential than ever for South Coast, and air agencies across the nation, to be able to comply with the Clean Air Act and avoid federal sanctions.

It is worth emphasizing that NOx is extremely hazardous to human health. NOx is shorthand for the combination of nitric oxide (NO) and nitrogen dioxide (NO_2). Exposure to NOx "can irritate airways in the human respiratory system," "contribute to the development of asthma and potentially increase susceptibility to respiratory infections," and cause "respiratory symptoms (such as coughing,

wheezing or difficulty breathing)." U.S. EPA, *Basic Information about NO_2*, https://www.epa.gov/no2-pollution/basic-information-about-no2. Exposure to ozone, for which NOx is a precursor, can "make the lungs more susceptible to infection" and "aggravate lung diseases such as asthma, emphysema, and chronic bronchitis." U.S. EPA, *Health Effects of Ozone Pollution* (last updated Mar. 13, 2025), https://www.epa.gov/ground-level-ozone-pollution/health-effects-ozone-pollution. Exposure to particulate matter ($PM_{2.5}$), for which NOx is also a precursor, is associated with "a significantly higher cardiovascular incident and mortality rate," and "respiratory diseases are also exacerbated" by particulate matter, which "causes respiratory morbidity and mortality by creating oxidative stress and inflammation" and resulting in "decreased lung function." Jonathan O. Anderson et al., *Clearing the Air: A Review of the Effects of Particulate Matter Air Pollution on Human Health*, 8 J. OF MED. TOXICOLOGY, no. 2 (Dec. 23, 2011), at 166–175, https://doi.org/10.1007/s13181-011-0203-1.

Reducing exposure to these pollutants therefore yields major health and economic benefits. Both South Coast and the Bay Area AQMD have estimated the economic impacts and public health benefits of their zero-NOx rules for water heaters and furnaces. Rule 1146.2 Staff Report at B-68. The Bay Area AQMD calculated that "reductions in total $PM_{2.5}$ attributable to the targeted appliances . . . would avoid an estimated 37 to 85 premature deaths per year and about 110 new

cases of asthma each year" and "the valuations of the health impacts from total $PM_{2.5}$ were estimated to be between 400 to 890 million U.S. dollars annually." *Id.* (citing Bay Area Air Quality Mgmt. Dist., Final Staff Report, Proposed Amendments to Rules 9-4 and 9-6 (Mar. 2023), at 3). South Coast concluded that "similar benefits would accrue to communities in the South Coast AQMD" under Rule 1146.2. *Id.*

B. States and local air districts across the country have adopted low- and zero-NOx emission standards for boilers and water heaters similar in design and operation to South Coast's Rule

Appellants attempt to paint South Coast's Rule as anomalous. But in fact it is of a piece with similar rules adopted by air regulators across the country and fits squarely within a tradition of appliance emissions NOx standards that have become more stringent over time. Air regulators from Texas to Utah to Colorado and beyond have joined with South Coast in concluding that serious restrictions on NOx emissions from appliances are necessary and warranted to meet federally-imposed air quality mandates.

In the tables below, we have listed thirty-five critically important air quality regulations from around that country that impose NOx emission standards on water heaters, boilers, and furnaces. These emission standards exist on a spectrum from low-NOx, to ultra-low-NOx, to zero-NOx in stringency, but all are of the same essential character: They require covered appliances to operate differently in order

to meet emission standards, and they frequently ***induce changes in the energy use*** of covered appliances as a side effect of compliance, as discussed further in Section II.A.

Water Heater & Boiler Standards			
Jurisdiction	**Rule**	**Enacted**	**Appliances Covered**
Colorado	Colo. Rev. Stat. § 25-7-1504	2023	Gas Water Heaters < 75,000 Btu/hr
			Gas Water Heaters 75,000-2,000,000 Btu/hr
Texas	30 Tex. Admin. Code § 117.3200 to .3215	2000 (amended 2007)	Gas Water Heaters & Boilers < 75,000 Btu/hr
			Gas Water Heaters & Boilers 75,000-400,000 Btu/hr
			Gas Water Heaters & Boilers 400,000-2,000,000 Btu/hr
Utah	Utah Admin. Code R307-230-5 / Utah Code 15A-6-102	2015 (amended by legislation 2017)	Gas Water Heaters < 75,000 Btu/hr
			Gas Water Heaters 75,000-2,000,000 Btu/hr
			Gas Mobile Home Water Heaters
			Gas Pool/Spa Water Heaters < 400,000 Btu/hr
			Gas Pool/Spa Water Heaters 400,000-2,000,000 Btu/hr
WA – Southwest Clean Air Agency	Rules 400-070(13) & 400-072(5)(b)	2010 (amended 2025)	Gas Water Heaters < 400,000 Btu/hr
			Small Gas Boilers and Heaters 400,000-2,000,000 Btu/hr
CA – Antelope Valley AQMD	Rule 1121	1978 (amended 1995)	Gas Water Heaters < 75,000Btu/hr
			Mobile Home Gas Water Heaters < 75,000 Btu/hr
CA – Bay Area AQMD	Rule 9-6	1992 (amended 2023)	Gas Water Heaters < 75,000 Btu/hr

			Gas Water Heaters & Boilers 75,000-2,000,000 Btu/hr
			Gas Mobile Home Water Heaters
			Gas Pool/Spa Water Heaters 400,000-2,000,000 Btu/hr
CA – Eastern Kern APCD	Rule 424	1993	Gas Residential Water Heaters < 75,000 Btu/hr
CA – El Dorado County AQMD	Rule 239	1998	Gas Residential Water Heaters < 75,000 Btu/hr
			Gas Mobile Home Water Heaters < 75,000 Btu/hr
CA – Feather River AQMD	Rule 3.23	2016	Gas Water Heaters & Boilers < 75,000 Btu/hr
			Gas Mobile Home Water Heaters < 75,000 Btu/hr
			Gas Pool/spa water heater 400,000-1,000,000 Btu/hr
CA – Imperial County APCD	Rules 400.5 & 400.6	2019	Gas Water Heaters < 75,000 Btu/hr
			Gas Mobile Home Water Heaters < 75,000 Btu/hr
			Gas Water Heaters & Boilers 75,000-5,000,000 Btu/hr
CA – Placer County APCD	Rule 246	1997	Gas Water Heaters < 75,000 Btu/hr
			Gas Mobile Home Water Heaters < 75,000 Btu/hr

	Rule 247	2013 (amended 2014)	Gas Water Heaters & Boilers 75,000-5,000,000 Btu/hr
			Gas Pool/Spa Water Heaters 400,000-5,000,000 Btu/hr
CA – Sacramento Metropolitan AQMD	Rule 414	1996 (amended 2018)	Water Heaters & Boilers < 75,000 Btu/hr
			Mobile Home Water Heaters < 75,000 Btu/hr
			Water Heaters & Boilers 75,000-400,000 Btu/hr
			Pool/Spa Water Heaters 75,000-400,000 Btu/hr
			Water Heaters & Boilers 400,000-1,000,000 Btu/hr
CA – San Diego County APCD	Rule 69.5.1	2015	Gas Water Heaters < 75,000 Btu/hr
			Gas Mobile Home Water Heaters
	Rule 69.2.1	2009 (amended 2020)	Gas Water Heaters & Boilers 75,000-400,000 Btu/hr
			Gas Pool Heaters 75,000-400,000 Btu/hr
			Gas Water Heaters & Boilers 400,000-2,000,000 Btu/hr
			Liquid/Other Fuel Water Heaters & Boilers 75,000-400,000 Btu/hr
			Liquid/Other Fuel Water Heaters & Boilers 400,000-2,000,000 Btu/hr
CA – San Joaquin Valley APCD	Rule 4902	1993 (amended 2009)	Gas Water Heaters < 75,000 Btu/hr
			Gas Mobile Home Water Heaters

			< 75,000 Btu/hr
			Gas Pool Heaters < 75,000 Btu/hr
			Tankless Gas Water Heaters < 75,000 Btu/hr
	Rule 4308	2005 (amended 2013)	Tankless Gas Water Heaters 75,000-400,000 Btu/hr
			Tankless Gas Water Heaters 400,000-2,000,000 Btu/hr
			Gas Pool Heaters 75,000-400,000 Btu/hr
			Gas Pool Heaters 400,000-2,000,000 Btu/hr
			Boilers, Steam Generators, and Process Heaters 75,000-400,000 Btu/hr
			Boilers, Steam Generators, and Process heaters 400,000-2,000,000 Btu/hr
CA – San Luis Obispo County APCD	Rule 428	1995	Gas Water Heaters < 75,000 Btu/hr
CA – Santa Barbara County APCD	Rule 352	1999 (amended 2011)	Gas Water Heaters < 75,000 Btu/hr
	Rule 360	2002 (amended 2018)	Water Heaters & Boilers 75,000-400,000 Btu/hr
			Pool Heaters 75,000-400,000 Btu/hr
			Water Heaters & Boilers 400,000-2,000,000 Btu/hr
	Rule 1121	1978 (amended 2004)	Gas Water Heaters < 75,000 Btu/hr

CA – South Coast AQMD			Gas Mobile Home Water Heaters < 75,000 Btu/hr
	Rule 1146.2	1998 (amended 2018)	Gas Water Heaters & Boilers 75,000-2,000,000 Btu/hr
			Gas Pool Heaters 75,000-400,000 Btu/hr
CA – Ventura County APCD	Rule 74.11	1985 (amended 2010)	Gas Water Heaters < 75,000 Btu/hr
			Gas Mobile Home Water Heaters < 75,000 Btu/hr
	Rule 74.11.1	1999 (amended 2012)	Gas Water Heaters & Boilers 75,000-400,000 Btu/hr
			Gas Pool Heaters 75,000-400,000 Btu/hr
			Gas Water Heaters & Boilers 400,000-1,000,000 Btu/hr
CA – Yolo-Solano AQMD	Rule 2.37	1994 (amended 2009)	Gas Water Heaters < 75,000 Btu/hr
			Gas Mobile Home Water Heaters
			Gas Water Heaters 75,000-400,000 Btu/hr
			Gas Boilers 400,000-1,000,000 Btu/hr
			Gas Pool Heaters 400,000-1,000,000 Btu/hr

Furnace Standards			
Jurisdiction	**Rule**	**Enacted**	**Appliances covered**
Colorado	Colo. Rev. Stat. § 25-7-1504	2023	Fan-Type Central Furnaces (i.e., Space Heaters) < 175,000 Btu/hr
CA – Antelope Valley AQMD	Rule 1111	1978 (amended 1983)	Gas Furnaces < 175,000 Btu/hr
CA – Bay Area AQMD	Rule 9-4	1983 (amended 2023)	Gas Furnaces < 175,000 Btu/hr (manufactured 1984-2024)
			Gas Furnaces < 175,000 Btu/hr (manufactured 2024-2029)
			Gas Furnaces < 175,000 Btu/hr (manufactured after 2029)
CA – San Diego County APCD	Rule 69.6	1998 (amended 2024)	Gas Furnaces < 175,000 Btu/hr
CA – San Luis Obispo County APCD	Rule 428	1995	Gas Furnaces < 175,000 Btu/hr
CA – Santa Barbara County APCD	Rule 352	1999 (amended 2011)	Gas Furnaces < 175,000 Btu/hr
CA – San Joaquin Valley APCD	Rule 4905	2005 (amended 2024)	Gas Furnaces < 175,000 Btu/hr
CA – South Coast AQMD	Rule 1111	1978 (amended 2021)	Gas Furnaces < 175,000 Btu/hr
CA – Ventura County APCD	Rule 74.22	1993	Gas Furnaces < 175,000 Btu/hr
CA – Yolo-Solano AQMD	Rule 2.44	2009	Gas Furnaces < 175,000 Btu/hr

Though the majority of the rules summarized in Table 1 allow for some (very limited) NOx emissions, zero-NOx appliance emission standards are becoming more common and important as other pathways to meet required clean air standards are narrowed or foreclosed. For example, earlier this year Congress purported to overturn three California vehicle emission standard waivers and thereby invalidate the state's Advanced Clean Cars II, Advanced Clean Trucks, and Heavy-Duty Engine and Vehicle Omnibus regulations. Those regulations would have played a key role in helping California—and South Coast—reduce NOx emissions from some of the state's most significant sources of that pollutant. Lynn La, *US Senate Vote could have Dire Implications for CA Air Quality*, CAL MATTERS (May 22, 2025), https://calmatters.org/newsletter/us-senate-california-ev-waivers-newsletter/.

One other district, the Bay Area Air Quality Management District, has adopted zero-NOx rules for newly-installed residential and commercial water heaters and furnaces, respectively, which begin phasing in by equipment type in 2027.[1] Others are following, including Maryland, which is proposing a zero-NOx

[1] Bay Area Air Quality Mgmt. Dist., *Air District Strengthens Building Appliance Rules to Reduce Harmful NOx Emissions, Protect Air Quality and Public Health*

rule for certain space and water heating equipment,[2] and Colorado, which has adopted an ultra-low-NOx standard for water heaters and furnaces via a statute that also requires the state to consider lowering that standard even further by 2030.[3]

NESCAUM itself has recognized the growing need for zero-NOx emission standards and has worked to support jurisdictions in efforts to adopt such standards. NESCAUM has released a model rule that "sets zero-NOx and zero-

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(Mar. 15, 2023), https://www.baaqmd.gov/news-and-events/page-resources/2023-news/031523-ba-rules; *see* Bay Area Air Quality Mgmt. Dist., Regulation 9, Rule 4: Nitrogen Oxides from Natural Gas-Fired Furnaces (last amended Mar. 15, 2023), https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-9-rule-4-nitrogen-oxides-from-fan-type-residential-central-furnaces/2021-amendments/documents/20230315_rg0904-pdf; Bay Area Air Quality Mgmt. Dist., Regulation 9, Rule 6: Nitrogen Oxides Emissions from Natural Gas-Fired Water Heaters (last amended Mar. 15, 2023), (https://www.baaqmd.gov/~/media/dotgov/files/rules/reg-9-rule-4-nitrogen-oxides-from-fan-type-residential-central-furnaces/2021-amendments/documents/20230315_rg0906-pdf.

[2] Md. Dep't of the Env't, *Maryland's Climate Pollution Reduction Plan* (Dec. 28, 2023), at 39–40 https://mde.maryland.gov/programs/air/ClimateChange/Maryland%20Climate%20Reduction%20Plan/Maryland%27s%20Climate%20Pollution%20Reduction%20Plan%20-%20Final%20-%20Dec%2028%202023.pdf; *see* State of Md. Exec. Dep't, Executive Order 01.01.2024.19, Implementing Maryland's Climate Pollution Reduction Plan (June 4, 2024), https://governor.maryland.gov/Lists/ExecutiveOrders/Attachments/52/EO%2001.01.2024.19%20Leadership%20by%20State%20Government-%20Implementing%20Maryland's%20Climate%20Pollution%20Reduction%20Plan_Accessible.pdf.

[3] Colo. Rev. Stat. § 25-7-1504 (2025); *see* Sw. Energy Efficiency Project, *Colorado Lawmakers Approve Landmark Product Standards to Save Energy and Water, Improve Air Quality, and Reduce Toxic Mercury Pollution, and Slash Consumer Bills* (May 5, 2023), https://www.swenergy.org/colorado-hb23-1161/.

GHG emission standards for small water heaters, furnaces, and boilers, as well as ultra-low-NOx standards for both small and large water heaters." Ne. States for Coordinated Air Use Mgmt., *Zero-Emission Heating Equipment Standards*, https://www.nescaum.org/our-work/stationary-sources/zehes. The Model Rule does "not require early replacement of functioning equipment in buildings, but ensure[s] that polluting space and water heaters will be replaced by zero-emission alternatives at the end of life." Ne. States for Coordinated Air Use Mgmt., *Technical Support Document 1.2, Model Rule 1.0: NOx and GHG Emissions Standards for Space and Water Heaters* (Dec. 12, 2024), at 7, https://www.nescaum.org/documents/24.12.13-TSD-1.2---Emissions-Standards-for-Space-and-Water-Heaters.pdf. NESCAUM's multistate Building Electrification Initiative Task Force—which includes California, Colorado, D.C., Maine, Maryland, Massachusetts, New Jersey, New York, Oregon, Rhode Island, and Washington—recently released an Action Plan for transitioning to zero-emission residential buildings, which emphasized that "because space and water heating drive most [NOx] emissions, transitioning these end uses to zero-emission equipment represents the highest-impact opportunity to reduce air pollution from buildings," with the buildings sector releasing "more than 542,000 tons" of NOx annually. Ne. States for Coordinated Air Use Mgmt., *Multistate Action Plan: Accelerating the Transition to Zero-emission Residential Buildings* (Fall 2025), at

2, https://www.nescaum.org/documents/Residential-Buildings-Multistate-Action-Plan.pdf. The Action Plan "reviews the market for zero-emission equipment, the need for an equitable transition to zero-emission residential buildings, and key barriers to the transition," then "details more than 50 recommendations for state action to accelerate the transition." *Id.* at 3.

C. Many air agencies cannot comply with the Clean Air Act without being able to regulate NOx emissions via rules like South Coast's Rule 1146.2

There is a good reason why low- and zero-NOx appliance emission standards are so common: They are often necessary. It is critical that air agencies have the authority to protect public health by promulgating regulations imposing emissions-based standards on appliances. These commonplace emission standards are essential components in state and local air agencies' regulatory toolkits.

This is because appliances represent a significant source of NOx emissions relative to other sources. Appliances make an "outsized emissions contribution" because they "lack effective emission controls" and thus "emit more than twice as much NOx as gas power plants, despite consuming less gas overall"—a disparity that will only grow starker "as electricity generation and other sectors move to lower-emitting alternatives under existing and planned policies." Rocky Mountain Inst. and Sierra Club, *Factsheet: Why EPA Must Address Appliance Pollution* (June 4, 2021), at 1, https://rmi.org/wp-

content/uploads/2021/04/rmi_factsheet_appliance_pollution.pdf. Appellants' effort to undermine air agencies' core regulatory function by overextending the scope of EPCA preemption would put California and other states at risk of federal sanctions for non-compliance with the Clean Air Act, including the withholding of federal highway funding.

This risk is magnified by the U.S. Congress's recent attempt to revoke some of California's Clean Air Act waivers for vehicle emission standards. Congress's action has put at risk many states' most promising efforts to advance toward attainment of the NAAQS by strengthening emission standards for mobile sources like cars and trucks—standards which have been adopted by many other states across the country. *See also* Maxine Joselow, *Trump EPA Threatens Calif. Highway Funding*, E&E NEWS BY POLITICO (Sept. 24, 2019), https://www.eenews.net/articles/trump-epa-threatens-calif-highway-funding/ (noting the incongruity of the first Trump Administration's threat to withhold federal highway funding from California for noncompliance with the Clean Air Act because of the state's nonattainment of the NAAQS, while simultaneously hindering California's efforts to comply by attempting to revoke California's Clean Air Act waivers allowing the state to set stricter vehicle emission standards than the federal government).

In sum, Appellants seek to deny California and air districts elsewhere one of their most time-honored and critically necessary regulatory tools right when they need it the most.

II. Because many NOx emission standards incidentally but necessarily affect energy consumption, invalidating this Rule as preempted by EPCA would endanger a large swath of air quality rules across the country

We agree with South Coast that as a legal matter, Rule 1146.2 concerns appliances' NOx emissions, not their "energy use" or "energy efficiency," and does not impose a ban on the use of natural gas. *See* Def.-Appellee's Answering Br. 35 n.8, Dkt. No. 29.1 [hereinafter "Appellee's Br."]; *infra* Section II.B. We also emphasize that, as a factual matter, Rule 1146.2 is one in a large class of emissions control regulations that often—incidentally, but meaningfully—affect the energy use of appliances. We worry deeply about a ruling that would endanger that important class of regulations, because we do not assess as reliable Appellants' attempt to create a bright-line distinction between South Coast's Rule and the larger class.

A. Compliance with an emissions control standard often results in effects on the amount or type of energy consumed by covered EPCA appliances

Common compliance strategies to meet NOx emission control standards, like the standards listed in Table 1, often result in changes to the energy use or

consumption of appliances. These effects on energy use can range in their scale and nature, and they stem from the full spectrum of stringencies of NOx emission control regulations, not just from zero-NOx standards. All kinds of emission standards can induce changes in the energy use of covered appliances, merely as an incidental side effect of compliance.

Typical NOx emission standards for appliances incidentally affect energy use and consumption in a variety of ways: sometimes by *increasing* energy efficiency, sometimes by *reducing* energy efficiency, and sometimes by inducing a *change in fuel type* altogether. For example, some efforts to reduce NOx emissions may result in increases in energy efficiency and decreased fuel consumption. This is because the production of NOx emissions depends on a number of factors, including fuel to air ratio, temperature, and gross staging of combustion—all of which also impact combustion efficiency. *See* L.M. Campbell, et al., U.S. EPA, *Sourcebook: NOx Control Technology Data* (Aug. 1991), at 3–4, https://nepis.epa.gov/Exe/ZyPDF.cgi/30003U1O.PDF?Dockey=30003U1O.PDF. As an example, to comply with NOx standards, manufacturers of water heaters, boilers, and furnaces often utilize a technique that involves premixing fuel and air before combustion, which results in less excess air and a lower flame temperature. *See id.* at 4. Less excess air means a lower volume of combustion air must be heated, allowing more heat to be transferred. This both boosts energy efficiency

and limits, or can even avoid, the formation of thermal NOx. *See* George Richard, et al., Nat'l Energy Tech. Lab., *Combustion Strategies for Syngas and High-Hydrogen Fuel* (2006), at 203-06, https://www.netl.doe.gov/sites/default/files/gas-turbine-handbook/3-2.pdf.

Conversely, sometimes emission controls impede the energy efficiency of appliances. This can happen when a control technology lowers the combustion temperature in order to reduce or avoid NOx formation. An example of this is known as "flue gas recirculation," which involves recycling a portion of cooled flue gas back into the primary combustion zone. *See* L.M. Campbell, et al., *supra*, at 5; *see also* U.S. EPA, *AP 42: Compilation of Air Pollutant Emission Factors from Stationary Sources* (July 1998), at section 1.4, https://www.epa.gov/sites/default/files/2020-09/documents/1.4_natural_gas_combustion.pdf. When implemented on its own, flue gas recirculation can result in uneven heat distribution, thereby reducing energy efficiency while also lowering NOx emissions. *See* L.M. Campbell, et al., *supra*, at 5.

And sometimes emissions standards can even induce a change in fuel use altogether, when manufacturers conclude that the easiest or cheapest way to comply with a pollution standard is to do so using a different type of fuel. For example, ultra-low NOx standards for furnaces have typically been satisfied

through the use of natural gas-powered furnaces in place of oil-powered furnaces, because very few manufacturers have opted to adapt or create oil-powered furnaces that could meet those standards. *See* 89 Fed. Reg. 84,028, 84,046-47 (Oct. 18, 2024); Appellee's Br. at 42 (noting that "many *non-zero* emission limits may also be stringent enough to prevent the use of . . . many older gas-fired appliances" because they "are unlikely to meet the District's existing 14 ng/J NOx emission limit—an emission standard that Plaintiffs nonetheless argue is sufficiently 'ordinary' to avoid preemption"). As South Coast recognizes in its Answering Brief, South Coast's existing "non-zero emissions standards on industrial equipment . . . may effectively prohibit the use of fuel oil" by large-scale industrial, institutional, and commercial boilers, steam generators, and process heaters. Appellee's Br. at 42. If this Court were to accept Plaintiffs' arguments, we echo South Coast's warning that "these longstanding 'ordinary' emissions standards would also be preempted" because Plaintiffs do "not provide any limiting principle that could save such standards from preemption." *Id.*

B. Appellants' attempt to create a bright-line distinction between this Rule and others across the country rests on shaky ground, putting clean air regulations at risk nationwide

For these reasons, Appellants' reading of EPCA calls into question the validity of countless heretofore-uncontroversial air quality rules across the country. If Appellants succeed here, the traditional powers of state and local air agencies

under the Clean Air Act would be curtailed, and those agencies would be left vulnerable to claims that all regulations that incidentally affect the quantity or type of energy used by a "covered product" are preempted. Pls.-Appellants' Opening Br. 16, Dkt. No. 14.1 [hereinafter "Appellants' Br."] (quoting 42 U.S.C. § 6297(c)). Given the typical effect of pollution emission standards on appliance energy use and consumption, see *supra* Section II.A, it is difficult to imagine a NOx appliance emission standard that wouldn't be endangered under Appellants' argument because it arguably "concerns" covered appliances' "energy use." 42 U.S.C. § 6297(c).

Appellants attempt to escape the consequences of their admittedly "broad" interpretation of EPCA by trying to distinguish zero-NOx rules from others. In Appellants' telling, zero-NOx rules are different because they impose an impermissible "ban" on certain sources of energy, whereas low-NOx rules have only an "incidental" effect on energy use. Appellants' Br. at 63; *see id.* at 61 ("Preventing the District from banning appliances does not jeopardize its ability to impose emissions standards, just as Rule 1146.2 had done for decades before the District converted it into a ban."). However, Appellants' purported distinction does not allay the central concern, for two reasons.

First, the "ban" label doesn't fit the facts. Appellants fail to acknowledge that, unlike gas bans, all emission standards—including zero-NOx standards—are

fuel agnostic, by definition. Emission standards leave to regulated parties decisions about how to reduce emissions to required levels, including whether to use existing technology or new technology, old fuels or new. A standard may even be stringent enough to be technology-forcing, meaning that manufacturers might have to invent new ways to run appliances. *See Union Elec. Co. v. EPA*, 427 U.S. 246, 256–257 (1976) (holding that the Clean Air Act authorizes "a technology-forcing standard[s] designed to compel the development of new technologies to meet public health goals" by being "expressly designed to force regulated sources to develop pollution control devices that might at the time appear to be economically or technologically infeasible."). Manufacturers choose what fuels and technology to use—or to develop—to comply; the concern of emission standards is reduction of air pollution, not fuel use.

It is especially inapt to equate an emission standard to a gas ban where, as here, the rulemaking and litigation records show that technology could be developed to satisfy South Coast's zero-NOx standards while continuing to allow for the use of natural gas, primarily through fuel cells.[4] South Coast designed Rule

[4] *See* Rule 1146.2 Staff Report at 2-11; Appellee's Br. at 24 ("The District presented evidence that natural gas fuel cell technology could potentially achieve compliance, but the district court made no factual findings on this question."), 57 ("The District argued below that natural gas fuel cell technology could potentially

1146.2's compliance timelines to be technology-forcing yet appropriate given the current state and maturity of relevant technology. *See* Rule 1146.2 Staff Report at 2-26 ("When South Coast AQMD adopts rules with technology-forcing emission limits, the limits are given a future implementation date to allow time for the technology to develop . . . as the technology improves."), B-20–21 ("Staff extended . . . compliance date[s] . . . to allow more time for technology to mature," providing "shorter timelines for units where [South Coast's] BARCT assessment indicated that zero-emission technology is available now, and longer timelines where the BARCT assessment indicates more time is needed."). South Coast's staff report concluded that fuel cell technology "continue[s] to expand with emerging technologies" and "has the potential to replace existing units to meet the zero-emission limits, and it is especially promising for future high temperature applications." Rule 1146.2 Staff Report at 2-11. Researchers agree that the field of

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be developed to comply with the Rule." (citing Defendant's Mem. of Points and Auth. in Support of Cross-MSJ, *Rinnai Am. Corp. v. S. Coast Air Quality Mgmt. Dist.*, No. 2:24-cv-10482 PA (PDx) (C.D. Cal. July 14, 2025), at 28–29 ("Because it can be reasonably anticipated that compliant natural gas fuel cell technology could be developed by most of the Rule's compliance deadlines, Plaintiffs have not shown that the Rule bans natural gas appliances in all its applications."))). While traditional gas-burning appliances cause NOx emissions from the combustion of gas at high temperatures, natural gas fuel cells use gas without causing any combustion. Natural gas fuel cells prompt a reaction to convert natural gas into hydrogen and carbon dioxide, then electrochemically combine that hydrogen with the oxygen in the air to create electricity, heat, and water. U.S. Dep't of Energy, *Fuel Cell Basics*, https://www.energy.gov/eere/fuelcells/fuel-cell-basics.

natural gas fuel cells is moving rapidly in this direction. *See* Ga. Inst. Of Tech., *Finally, a Robust Fuel Cell that Runs on Methane at Practical Temperatures* (Oct. 29, 2018), https://postdocs.gatech.edu/news/finally-robust-fuel-cell-runs-methane-practical-temperatures (citing Yu Chen et al., *A Robust Fuel Cell Operated on Nearly Dry Methane at 500 °C Enabled by Synergistic Thermal Catalysis and Electrocatalysis*, 3 Nat. Energy 1042–1050 (Oct. 29, 2018), https://doi.org/10.1038/s41560-018-0262-5) (describing a pioneering fuel cell technology that allows natural gas fuel cells to convert methane to hydrogen at lower temperatures than previously thought possible, eliminating NOx emissions).

Second, if this Court holds otherwise and concludes that South Coast's Rule is preempted, we are not confident that future courts will hew to the distinction Appellants call for. A wide variety of traditional emission standards can induce non-trivial effects on fuel use and fuel type, up to and including fuel switching. *See supra* Section II.A. And *California Restaurant Ass'n v. City of Berkeley*, 89 F.4th 1094, 1102 (9th Cir. 2024), itself points out that there is nothing legally distinctive about a state enactment that "concerns energy use" by reducing energy use to zero, as compared with lesser effects. Given how routinely emission standards incidentally affect the energy use of covered appliances, an adverse ruling here would put at risk emission standards nationwide.

CONCLUSION

Appellants' proposed reading of EPCA's express preemption provisions misinterprets the statute and risks upending state and local air agencies' longstanding authority to promulgate emission standards for appliances pursuant to the federal Clean Air Act, thus contravening the manifest intent of Congress. *Amici* therefore urge the Court to reject Appellants' interpretation and uphold the District Court's decision.

Respectfully submitted,

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FOR THE NINTH CIRCUIT

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