

**In the
Supreme Court of the United States**

KENTUCKY, ET AL.,

Petitioners,

v.

ENVIRONMENTAL PROTECTION AGENCY, ET AL.,

Respondents.

CHAMBER OF COMMERCE OF THE U.S.A., ET AL.,

Petitioners,

v.

ENVIRONMENTAL PROTECTION AGENCY, ET AL.,

Respondents.

**On Petitions for Writs of Certiorari to the
U.S. Court of Appeals for the D.C. Circuit**

**BRIEF OF THE PRIME MOVER INSTITUTE
AND THE MANHATTAN INSTITUTE AS *AMICI*
CURIAE IN SUPPORT OF PETITIONERS**

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--	--------

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INTEREST OF *AMICI CURIAE*¹

THE PRIME MOVER INSTITUTE is a 501(c)(3) that advocates for sound energy and environmental policies through regulatory engagement, education, and litigation.

THE MANHATTAN INSTITUTE is a nonprofit public policy research foundation whose mission is to develop and disseminate new ideas that foster greater economic choice, individual responsibility, and human flourishing. The Manhattan Institute has long produced scholarship and filed briefs advocating for a constitutionally limited administrative state.

Amici have a strong interest in this case because the decision below will compound the Clean Air Act's constitutionally problematic design and accelerate the Nation's slouch toward self-imposed deindustrialization and economic ruin.

¹ *Amici curiae* provided timely notice of intent to file this brief to all parties. No party's counsel authored this brief in whole or in part, and no person or entity other than *amici* or their counsel made a monetary contribution intended to fund its preparation or submission.

INTRODUCTION AND SUMMARY OF ARGUMENT

There is no “scientific” answer to the question: how safe is safe? Tradeoffs under uncertainty call for prudential judgment. See Jay Varma, *Not Every Question Has a Scientific Answer*, The Atlantic (Sept. 21, 2021), <https://tinyurl.com/yscwbc65>. During the COVID-19 pandemic, for example, some state governors decided that controlling the spread of COVID-19 was worth shutting down their state economies and even their schools. Others weighed the tradeoffs differently, thinking the “cure” worse than the disease. Citizens, eventually, held officials politically accountable by voting at the ballot box or with their feet. That “political accountability” is “key to our federal system.” *NFIB v. Sebelius*, 567 U.S. 519, 578 (2012) (plurality op.).

Imagine, now, that in order to short-circuit political accountability, at the height of the pandemic, Congress passed a statute delegating the Secretary of Health and Human Services authority to determine a level of COVID-19 cases that in his judgment is “requisite” to protect public health with an “adequate” margin of safety for sensitive populations, such as overweight elderly asthmatics. *Cf.* 42 U.S.C. § 7409(b)(1). Imagine further that the term “requisite” was read to require the Secretary to set the “safe” level of COVID-19 cases heedless of cost, ignoring all tradeoffs. *Cf. Whitman v. Am. Trucking Ass’ns*, 531 U.S. 457 (2001). Then imagine that instead of enacting the draconian policies needed to achieve this “requisite” level of COVID-19 cases, Congress tossed the hot potato to the States, threatening them with regulatory penalties, loss of federal funding, and a federal

takeover if they did not “cooperate” by enacting local legislation. *Cf.* 42 U.S.C. § 7509. Finally, imagine that any person “concerned” with COVID-19 could sue to stop every major business opening in an area that exceeds or could potentially exceed the “requisite” level of COVID-19 cases. *Cf.* 42 U.S.C. § 7604(a)(3). This statutory design would be a nightmare for political accountability. Who would citizens even “blame” for the resulting economic and social upheaval? *Cf. Murphy v. Nat’l Collegiate Athletic Ass’n*, 584 U.S. 453, 473 (2018).

This statutory design is of course no fever dream: it describes the Clean Air Act’s extraordinary approach to reducing air pollution. Enacted nearly six decades ago, the U.S. Environmental Protection Agency (“EPA”) continues to require ever “safer” air, bringing States ever closer to background levels of air pollution and “deindustrialization.” *Am. Trucking*, 531 U.S. at 494 (Breyer, J., concurring in part and concurring in the judgment).

The root of the problem is Congress’s delegation of legislative authority to EPA to set “requisite” National Ambient Air Quality Standards, or “NAAQS.” 42 U.S.C. § 7409(b). A quarter-century ago, this Court confronted Congress’s delegation in *American Trucking*. The Court held the legislative delegation constitutional because EPA must set the NAAQS “not lower or higher than is necessary.” 531 U.S. at 476. As EPA puts it, *American Trucking* does not “require that standards be set at a zero-risk level, but rather at a level that reduces risk sufficiently.” Ky.Pet.App.507a (emphasis added).

This formulation “only ... raises the question: Sufficient for what?” *FCC v. Consumers’ Rsch.*, 606

U.S. 656, 682 (2025). Twenty-five years of post-*American Trucking* litigation confirm that this floor does “no serious work” to limit EPA’s authority. *Id.* at 683. Disputes over the NAAQS are a quinquennial ritual where courts “must go through a series of motions which look like judicial review but in fact are nothing but a catalogue of reasons why, under the scheme of the Act, the courts are unable to say that the Administrator has exceeded the discretion vested in him.” *Cf. Yakus v. United States*, 321 U.S. 414, 458 (1944) (Roberts, J., dissenting). “It is not surprising,” *id.* at 459, then, that the D.C. Circuit has never held that EPA’s decision to tighten the NAAQS is arbitrary. Ky.Pet.19.

Given EPA’s effectively boundless delegation to tighten the NAAQS, one would think that courts would at least rigorously construe the few constraints imposed by Congress to ensure a fully informed agency “judgment.” 42 U.S.C. § 7409(b)(1). In the decision below, however, the D.C. Circuit took the opposite approach, rendering an important substantive safeguard optional. According to the D.C. Circuit, EPA may revise the NAAQS without the “thorough review” of the scientific evidence required by the Act. *Id.* § 7409(d)(1).

That is wrong. The D.C. Circuit purported to discern EPA’s power to skirt scientific review from section 109(b)(1), *id.* § 7409(b)(1), which does not use the words “thorough review.” Ky.Pet.App.19a–21a. This ignores that the “thorough review” required by section 109(d) reflects the Act’s general requirement that NAAQS be “based on” air quality criteria that “accurately reflect the latest scientific knowledge” for “all identifiable effects on public health or welfare.” 42

U.S.C. §§ 7408(a)(2), 7409(b)(1). Rather than empower EPA to circumvent scientific review, section 109(b)(1) confirms that EPA may only revise the NAAQS “in the same manner as promulgated”—in other words, after fully updating the scientific record, also known as the “criteria.” *Id.* § 7409(b)(1). The D.C. Circuit was wrong to hold otherwise.

The error is also consequential. It will result in frequent expedited revisions packed into a four-year presidential term rather than the conventional quinquennial scientific review. It will make the NAAQS more unpredictable and more partisan. The Court should step in now to address this important issue.

The D.C. Circuit was also wrong to hold that EPA must ignore cost and attainability when initiating an off-cycle revision. Ky.Pet.27–31; Chamber.Pet.38–42. But the court’s legal error extends beyond the decision to undertake off-cycle reviews. The D.C. Circuit relied upon circuit precedent holding that EPA may *never* consider attainability when revising a standard. That defies the text of the Act and blows right through the “sufficiency” floor that this Court established in *American Trucking*. If *American Trucking*’s floor has any meaning, it must at least prohibit unattainable standards.

This Court should grant certiorari and reverse.

ARGUMENT

I. EPA Cannot Revise the Standards Without First Fully Updating the Air Quality Criteria

Section 109(d)(1) of the Clean Air Act requires EPA to conduct a “thorough review” of existing air pollutant criteria before revising national standards, whether that revision occurs on the five-year cycle mandated by the first sentence of section 109(d)(1) or between cycles as permitted by the second sentence. 42 U.S.C. § 7409(d)(1). As Petitioners explain and EPA now agrees, the D.C. Circuit’s contrary conclusion misreads section 109(d)(1)’s text. Ky.Pet.17–18; Chamber.Pet.21–25.

As explained below, the D.C. Circuit’s conclusion also misunderstands the Clean Air Act’s scheme and ignores a critical substantive guardrail that *American Trucking* relied upon in upholding the scheme against a nondelegation challenge. Section 109(d)(1)’s demand for a “thorough review” is not a standalone requirement; it implements EPA’s obligation to base revised standards on criteria that “accurately reflect the *latest scientific knowledge ... of all identifiable effects* on public health or welfare” expected from the pollutant. 42 U.S.C. § 7408(a)(2) (emphasis added); *Am. Trucking*, 531 U.S. at 473 (standards must be “based on published air quality criteria that reflect the latest scientific knowledge”). That obligation unambiguously applies to all revisions, no matter when they occur. 42 U.S.C. § 7409(b).

Because EPA admits that its 2024 revisions to the fine particle, or “PM_{2.5},” standards were not based on fully updated air quality criteria—*i.e.*, through a

thorough review—the revised standards violate the Clean Air Act and must be “reverse[d].” 42 U.S.C. § 7607(d)(9).

A. Air Quality Standards Must Be “Based On” Fully Updated Air Quality Criteria

The Clean Air Act, as amended in 1970, establishes a comprehensive scheme for setting national air quality standards for pollutants that could harm public health and welfare. *See* Pub. L. No. 91-604, § 4, 84 Stat. 1676, 1678–83 (1970). The Act directs EPA to set primary and secondary air quality standards for each pollutant that is the subject of air quality “criteria.” 42 U.S.C. § 7409(a). Primary standards must be “based on such criteria” and set at levels “requisite to protect the public health,” “allowing an adequate margin of safety.” *Id.* § 7409(b)(1). Secondary standards also must be “based on such criteria” and set at levels “requisite to protect the public welfare.” *Id.* § 7409(b)(2). Both primary and secondary standards “may be revised in the same manner as promulgated,” meaning revised standards, too, must be “based on” air quality criteria issued under the Act. *Id.* § 7409(b).

The prerequisite scientific “criteria” are comprehensive and up-to-date assessments of an air pollutant’s effects on public health and welfare. 42 U.S.C. § 7408(a)–(d). Section 108 directs EPA to maintain a list of air pollutants whose emissions, in the Administrator’s judgment, “cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare” and which result “from numerous or diverse ... sources.” *Id.* § 7408(a)(1). Once an air pollutant is listed, EPA “shall issue air quality criteria” for the pollutant “within 12 months after” its

listing, *id.* § 7408(a)(2), and “shall from time to time review, and, as appropriate, modify, and reissue any criteria.” *Id.* § 7408(c).

Section 108 also dictates the scope and content of the criteria, whether originally issued or revised: air quality criteria for any air pollutant “shall accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected from the presence of such pollutant in the ambient air.” *Id.* § 7408(a)(2). “[T]o the extent practicable,” criteria “shall include” a wide range of information, including on “variable factors (including atmospheric conditions) which of themselves or in combination with other factors may alter the effects on public health or welfare” of the air pollutant; “the types of [other] air pollutants which ... may interact with [the] pollutant to produce” adverse health or welfare effects; and “any known or anticipated adverse effects [of the pollutant] on welfare.” *Id.* § 7408(a)(2). In other words, air quality criteria—whether originally issued or revised—must be a comprehensive and up-to-date assessment of an air pollutant’s full public health and welfare effects. *Id.* (criteria must “accurately reflect the *latest* scientific knowledge” related to “*all* identifiable” public health and welfare effects (emphases added)). The Act does not provide for selective or partial criteria updates.

In rejecting a nondelegation challenge to the Clean Air Act’s direction to set “requisite” NAAQS, *American Trucking* recognized that section 108’s requirement of comprehensive and up-to-date criteria is a crucial guardrail. The agency’s selection of air quality standards “at a level that is requisite to protect

public health,” the Court explained, is not standardless, in part because the Act “at a minimum requires” that standards be “based on published air quality criteria that reflect the latest scientific knowledge.” *Am. Trucking*, 531 U.S. at 473. Indeed, the criteria are the primary mechanism through which Congress ensured that EPA’s standards are set “at the level that is ‘ requisite’—that is, not lower or higher than is necessary—to protect the public health.” *Id.* at 475–76.

Until the mid-2000s, EPA issued and revised criteria by publishing an “Air Quality Criteria” document. *See, e.g.*, EPA, *Air Quality Criteria for Particulate Matter*, EPA/600/P-99/002aF (Oct. 2004). Since then, EPA has revised criteria through what the agency now calls an “Integrated Science Assessment.” *See, e.g.*, EPA, *Integrated Science Assessment for Particulate Matter* (“2019 ISA”), EPA/600/R-19/188 (Dec. 2019). An Integrated Science Assessment is an exhaustive evaluation of the latest scientific data on an air pollutant’s sources, atmospheric chemistry, exposure pathways, and effects on health and welfare. Because section 108(a)(2) requires criteria to address “all identifiable” health and welfare effects, the impacts an Integrated Science Assessment examines are necessarily wide-ranging.

For example, the most recent Assessment for particulate matter cataloged the latest epidemiologic, controlled human exposure, and animal toxicological studies to assess the impact of fine particles on, among others, respiratory, cardiovascular, metabolic, nervous system, and reproductive health; cancer; and mortality, *see id.*, Chs. 5–11, and assessed welfare effects by detailing studies on environmental impacts—

including visibility, climate, and effects on building materials, *see id.*, Ch. 13.

B. Section 109(d) Does Not Change the Requirement for Fully Updated Criteria

Section 109(d), added by the 1977 Clean Air Act Amendments, requires EPA to review and, as appropriate, revise air quality criteria and standards at fixed periods. *See* Pub. L. No. 95-95, § 106, 91 Stat. 685, 691 (1977). But it does not alter the fundamental requirements that air quality criteria be comprehensive and up-to-date and that revised standards be based on those fully updated criteria. *See* 42 U.S.C. §§ 7408(a)(2), 7409(b).

Rather than leaving the timeline for reassessment entirely to EPA’s discretion, section 109(d)(1) directs EPA to “complete a thorough review” of the existing air quality criteria and standards by December 31, 1980, and “at five-year intervals thereafter.” *Id.* § 7409(d)(1). At the same time, EPA “shall make such revisions in such criteria and standards and promulgate such new standards as may be appropriate in accordance with section [1]08 ... and [section 109(b)].” *Id.* Congress clarified, however, that EPA retained authority to “review and revise criteria or promulgate new standards earlier or more frequently” than the five-year cycle “required under this paragraph.” *Id.*

As explained above, section 109(d)(1)’s demand that the five-year review be “thorough” is not a standalone requirement. It reflects section 108(a)(2)’s requirement that air quality criteria be comprehensive and up-to-date. Indeed, a “thorough” review—or its equivalent—is necessary any time EPA revises cri-

teria and standards, since a comprehensive examination is the only way to ensure that air quality standards are “based on” criteria that “accurately reflect the latest scientific knowledge ... of all identifiable effects on public health or welfare” expected from the pollutant. *Id.* §§ 7408(a)(2), 7409(b). Until now, this is how EPA had proceeded each time it had revised the standards. *Cf. Murray Energy Corp. v. EPA*, 936 F.3d 597, 609 (D.C. Cir. 2019) (per curiam) (“As the record makes clear, the Administrator considered the entire body of scientific evidence available”).

Requiring a “thorough” review every five years ensures that EPA’s on-cycle review is comprehensive enough to identify any revisions to criteria and standards that “may be appropriate in accordance with section [1]08 ... and [section 109(b)].” 42 U.S.C. § 7409(d)(1). But sections 108 and 109(b) make a thorough review, or its equivalent, a prerequisite any time the agency revises standards. The D.C. Circuit’s contrary holding cannot be squared with this framework.

C. The Court of Appeals Wrongly Held That EPA Could Revise the Fine Particle Standards Without Fully Updating the Air Quality Criteria

In the decision below, the D.C. Circuit held that EPA could revise ambient air quality standards without fully updating the relevant air quality criteria, as long as the revision takes place off cycle. *Ky.Pet.App.19a*. That is wrong.

The D.C. Circuit reasoned that EPA’s authority for off-cycle revisions of the NAAQS stems from section 109(b), which does not expressly require a “thor-

ough review,” and to the extent section 109(d)(1) applies, that provision does not make “a ‘thorough review’ ... a precondition to an off-cycle revision.” Ky.Pet.App.19a–21a.

The court’s key error stems from ignoring the text of section 108(a)(2), which requires that an air pollutant’s criteria—whether originally issued or revised—“accurately reflect the *latest* scientific knowledge” for “*all* identifiable” public health and welfare effects—not just for *some* of them. 42 U.S.C. § 7408(a)(2) (emphases added). That precludes the sorts of selective, partial updates endorsed by the D.C. Circuit below. The court’s observation that section 108(c)—which grants EPA authority to “from time to time review, and, as appropriate, modify” criteria—does not expressly mandate a “thorough” review, Ky.Pet.App.24a–25a, is irrelevant for the same reason: even revised criteria must satisfy section 108(a)(2) and that necessarily entails a thorough review or its equivalent.

The D.C. Circuit also suggested that “[r]equiring a comprehensive review of all the scientific inputs to the criteria for a single standard would unnecessarily delay promulgation of a new standard.” Ky.Pet.App.23a. But EPA’s revision authority is not solely meant to enable EPA to “respond[] promptly to changes in the relevant science,” *contra id.*, but also to ensure that EPA has comprehensive, up-to-date, and “substantial guidance on setting air standards that affect the entire national economy,” *Am. Trucking*, 531 U.S. at 475. Allowing EPA to set NAAQS on anything less than fully updated criteria, simply because the agency chose to do so off cycle to compress

the decision into a presidential four-year term, undermines that congressionally mandated scientific deliberation. And it raises doubts about the constitutionality of the Clean Air Act’s provisions for NAAQS by bypassing the “substantial guidance” this Court said cabins EPA’s discretion. *Id.* at 473, 475–76.

D. EPA’s 2024 Fine Particle Standards Are Unlawful Because They Are Not Based On Fully Updated Criteria

Because EPA admits its 2024 fine particle standards are not based on fully updated criteria, those standards violate the Clean Air Act and must be vacated.

In 2019, EPA completed a thorough review and fully updated the particulate matter criteria by issuing a comprehensive Integrated Science Assessment. *2019 ISA, supra*. Based on this Assessment, EPA decided in 2020 to retain the primary annual average ambient air quality standard for fine particles of 12.0 micrograms per cubic meter ($\mu\text{g}/\text{m}^3$). 85 Fed. Reg. 82,684, 82,685 (Dec. 18, 2020). Before the next five-year review, EPA “decided to partially reopen the air quality criteria” and issued an Integrated Science Assessment “Supplement ... to facilitate evaluation” of selected new studies. Ky.Pet.App.93a; EPA, *Supplement to the 2019 Integrated Science Assessment for Particulate Matter* (“2022 Supplement”), EPA/600/R-22/028 (May 2022). In the rulemaking at issue, EPA decided, based on the 2019 Integrated Science Assessment and the 2022 Supplement, to tighten the fine particle standard to 9 $\mu\text{g}/\text{m}^3$. Ky.Pet.App.39a. In the preamble to the final rule, EPA emphasized that its Supplement was not a comprehensive review of the

latest available scientific information on fine particles, explaining that the Supplement had a “narrow scope” and did “not encompass the full multidisciplinary evaluation presented within the 2019” Integrated Science Assessment. Ky.Pet.App.87a, 93a.

The Supplement itself further details its limitations. For example, while the 2019 Integrated Science Assessment “considered and included studies conducted globally,” the Supplement’s analysis is limited to studies “conducted in the U.S. and Canada.” *2022 Supplement* at 1-3 to 1-5. And it evaluated only cardiovascular, COVID-19, and mortality health impacts. *Id.* at 1-4 to 1-5. The Supplement did not assess new studies related to non-COVID-19 respiratory, nervous system, reproductive or metabolic effects; cancer; or “non-visibility welfare effects”—topics covered in the 2019 Integrated Science Assessment. Ky.Pet.App.88a. And the Supplement’s examination of at-risk populations was limited to race, ethnicity, and socioeconomic status, *2022 Supplement* at 1-5, omitting categories like age and preexisting disease examined by the 2019 Assessment, *2019 ISA*, Ch. 12 (at-risk populations).

This selective and partial assessment of recent scientific findings falls far short of section 108(a)(2)’s requirement for air quality criteria. Even considered together, the Supplement and the 2019 Integrated Science Assessment do not “accurately reflect the *latest* scientific knowledge” for “*all* identifiable effects on public health or welfare” expected from fine particles. 42 U.S.C. § 7408(a)(2) (emphases added). They do not even reflect the latest scientific knowledge for the handful of health effects addressed by the Supplement—*e.g.*, cardiovascular health, COVID-19 complications, and mortality—since by limiting its analysis

to U.S. and Canadian studies, the Supplement surveyed only a fraction of the new literature available on those topics.

EPA’s revised standards are based on an even narrower subset of literature. EPA explained that it set a standard of $9\text{ }\mu\text{g}/\text{m}^3$ to be “near or below the 25th percentile $\text{PM}_{2.5}$ concentrations in those key U.S. epidemiologic studies that report these concentrations.” Ky.Pet.App.273a. EPA identifies only six studies that report those percentiles, and it effectively discards three of them—those that “report 25th percentile concentrations that are at or above $11.5\text{ }\mu\text{g}/\text{m}^3$ ”—because the studies “were smaller in size” than the other three. Ky.Pet.App.284a–85a. The remaining three were published in the same year by the same Harvard group using the same Medicare dataset. *Id.*² EPA’s revised standards thus do not remotely reflect the entirety of the scientific literature.

The Clean Air Act is clear: any revised ambient air quality standard must be “based on [air quality] criteria” that “accurately reflect the latest scientific knowledge useful in indicating the kind and extent of all identifiable effects on public health or welfare which may be expected” from a pollutant. 42 U.S.C. §§ 7408(a)(2), 7409(b). That revised standards be based on comprehensive and up-to-date criteria is not a suggestion, but a statutory mandate, necessary to

² Those three studies are Qian Di et al., *Association of Short-Term Exposure to Air Pollution with Mortality in Older Adults*, 318 JAMA 2446 (2017); Qian Di et al., *Air Pollution and Mortality in the Medicare Population*, 376 NEJM 2513 (2017); Yan Wang et al., *Long-Term Exposure to $\text{PM}_{2.5}$ and Mortality Among Older Adults in the Southeastern US*, 28 Epidemiology 207 (2017). See Ky.Pet.App.285a, 779a–80a, 799a.

provide the “substantial guidance” required when EPA “set[s] air standards that affect the entire national economy.” *Am. Trucking*, 531 U.S. at 475. EPA’s attempt to shortcut that requirement by basing revised standards on criteria that were not fully updated violates the Clean Air Act and requires reversal.

This issue is exceptionally important. Allowing EPA to cut short its scientific review to squeeze NAAQS revisions into a four-year presidential term will make the NAAQS more unpredictable and more partisan. “In deciding cases involving the American economy, courts should strive, where possible, for clarity and predictability.” *Seven Cnty. Infrastructure Coal. v. Eagle County*, 605 U.S. 168, 192 (2025). The Court should grant review and reverse.

II. EPA Must Consider Whether a Standard Is Attainable

The D.C. Circuit also held that EPA may not consider cost or attainability when deciding whether to undertake an off-cycle revision of the NAAQS. Ky.Pet.App.31a–32a. The court held that doing so would conflict with *American Trucking* or D.C. Circuit precedent. *Id.*

Petitioners argue that EPA must consider costs and attainability when deciding whether to revise a standard off cycle. Ky.Pet.27–31; Chamber.Pet.38–42. Petitioners are correct, but EPA’s refusal to consider attainability is wrong regardless of when a revision occurs. When revising standards, EPA must consider whether NAAQS are attainable, considering background levels of air pollution, including natural and

foreign transboundary emissions.³ EPA did not do so here.

A. EPA Must At Least Consider Whether a Standard Is Attainable

The “primary goal” of the Clean Air Act is to “promote *reasonable* Federal, State, and local governmental actions ... for pollution prevention.” See 42 U.S.C. § 7401(c) (emphasis added). Reasonable means “[n]ot more or less than reason dictates within ... limits; proper.” *Webster’s New International Dictionary* 2074 (2d ed. 1954). Generally, a standard that cannot be met by the States would be “more” stringent “than reason dictates.” *Id.*; cf. *Michigan v. EPA*, 576 U.S. 743, 753 (2015). As Justice Breyer explained in *American Trucking*, it makes no sense to promulgate standards that “lead to deindustrialization. Preindustrial society was not a very healthy society; hence a standard demanding the return of the Stone Age would not prove ‘requisite to protect the public health.’” *Am. Trucking*, 531 U.S. at 496 (Breyer, J., concurring in part and concurring in the judgment). But compelled “deindustrialization” is precisely what an unattainable NAAQS requires.

Nothing in section 109(b) suggests that EPA must ignore whether a standard is attainable when setting the NAAQS. To the contrary, section 109(b) instructs EPA to set primary NAAQS “*the attainment and maintenance of which ... are requisite to protect*

³ Background fine particulates include those from natural sources, such as “dust from the wind erosion of natural surfaces, sea salt, wildland fires, ... bacteria and pollen,” plant aerosols and volcanoes, as well as those originating “outside U.S. borders.” Ky.Pet.App.114a–15a.

the public health.” 42 U.S.C. § 7409(b)(1) (emphasis added). EPA therefore must consider “attainment.”

This text presupposes that the standards EPA sets are “attain[able].” To know whether “attainment ... of” a NAAQS is “requisite” to protect public health, EPA must know whether a standard can be attained in the first place. This is confirmed by section 109(d), which expressly tasks EPA’s advisory committee with “advis[ing] the Administrator on the relative contribution to air pollution concentrations of natural as well as anthropogenic activity.” 42 U.S.C. § 7409(d)(2)(C). If attainability were irrelevant, it wouldn’t make sense to advise EPA on “natural” concentrations.

The word “requisite” in section 109(b) as interpreted in *American Trucking* reinforces this argument. Unattainable NAAQS necessarily go beyond what is “requisite” to protect public health; indeed, an unattainable standard provides no incremental public health protection at all. If naturally occurring and transboundary emissions result in concentrations of fine particles of 5 $\mu\text{g}/\text{m}^3$ of air, lowering the standard to 4 $\mu\text{g}/\text{m}^3$ does nothing to protect public health. In the words of *American Trucking*, such a standard would be “lower ... than is necessary.” 531 U.S. at 476. If *American Trucking* imposes any floor at all, therefore, it must at least prohibit unattainable NAAQS.

Surrounding provisions of the Clean Air Act confirm this reading. The Clean Air Act contemplates that States in nonattainment *will* be able to submit plans that provide for the attainment of the NAAQS by a date certain. But compliance with that mandate is only possible if EPA’s standards are attainable in the first place. For example, to be approved by EPA,

state implementation plans must have “attainment dates” determining the “date by which attainment can be achieved,” which for a primary NAAQS is generally “no later than 5 years from the date such area was designated nonattainment.” 42 U.S.C. § 7502(a)(2)(A). State plans must “include enforceable emission limitations” that “provide for attainment” of the NAAQS by the “applicable attainment date,” *id.* § 7502(c)(6); *see also id.* § 7502(c)(9). These state requirements would be impossible to satisfy if EPA may set unattainable standards.

B. Constitutional Principles of Federalism Support This Reading

Section 109(b) should also be read with principles of federalism in mind. States that do not come into compliance with the Clean Air Act’s requirements are saddled not just with a potential federal takeover but also with devastating sanctions. *See* 42 U.S.C. § 7509; 40 C.F.R. §§ 52.31, 52.32. Circuit Judge Bress recently explained the escalating sanctions that the Clean Air Act imposes on States that do not meet the NAAQS:

The Clean Air Act imposes mandatory sanctions starting eighteen months after the EPA disapproves a [State Implementation Plan] in whole or in part. Offset sanctions come first, setting a punitive 2-to-1 emission offset ratio for any new or modified major stationary source. That means companies must find and permanently retire two tons of existing pollution for every one ton they intend to create, making it very difficult to economically justify new businesses and facility expansions. If the deficiency remains

uncorrected for another six months, the region loses federal highway funds. These sanctions start out area-specific, but after two years they can apply statewide.

Comm. for a Better Arvin v. EPA, 185 F.4th 957, 983–84 (9th Cir. 2026) (Bress, J., dissenting) (citations omitted).

These sanctions raise serious constitutional questions. Congress cannot “issue direct orders to the governments of the States.” *Murphy*, 584 U.S. at 471. Subject to narrow exceptions, Congress must “exercise its legislative authority directly over individuals rather than over States.” *Id.* at 472. This structural safeguard “promotes political accountability.” *Id.* at 473. As this Court has explained:

When Congress itself regulates, the responsibility for the benefits and burdens of the regulation is apparent. Voters who like or dislike the effects of the regulation know who to credit or blame. By contrast, if a State imposes regulations only because it has been commanded to do so by Congress, responsibility is blurred.

Id. at 473–74. Blurring political accountability is precisely the aim of the Clean Air Act’s scheme of “cooperative federalism.” See generally Michael S. Greve, *Against Cooperative Federalism*, 70 Miss. L.J. 557 (2000).

If this scheme is constitutional at all, then it would have to be justified as “spending” legislation. Cf. Jonathan H. Adler & Nathaniel Stewart, *Is the Clean Air Act Unconstitutional? Coercion, Cooperative Federalism and Conditional Spending After NFIB v.*

Sebelius, 43 Ecology L.Q. 671, 701–13 (2016) (arguing that the highway sanctions are unconstitutional). But spending legislation “must clearly and unambiguously alert a grant recipient to any condition on federal funds.” *Landor v. La. Dep’t of Corr. & Pub. Safety*, 609 U.S. 59, 69 (2026). Because the Act does not “clearly and unambiguously” alert States that NAAQS could be unattainable, it should not be construed to authorize such standards.

C. D.C. Circuit Precedent Is Wrong

The D.C. Circuit below held that its prior decision in *Murray Energy* “foreclose[d] the petitioners’ argument that the Administrator was required to consider attainability.” Ky.Pet.App.30a. Even if that is true, *Murray Energy* is wrong.

In *Murray Energy*, the petitioners argued that the Clean Air Act “requires EPA to set NAAQS that are attainable,” which required EPA to “consider background ozone when revising the NAAQS.” 936 F.3d at 622. The D.C. Circuit held that “[t]he text of the Act forecloses this argument.” *Id.* at 623. As evidence of “text,” the court pointed to the phrase “ requisite to protect the public health,” and claimed that this phrase “leaves no room” for considering whether a standard is “attainable.” *Id.* The court also reasoned that Congress *anticipated* that EPA would set “impossible” NAAQS because EPA may “relax enforcement on a case-by-case basis” in some instances. *Id.*

This is wrong. As to the text, *Murray Energy* ignores that section 109(b) directs EPA’s attention explicitly to whether “attainment” will protect public health, necessarily requiring EPA to consider whether attainment is possible. 42 U.S.C. § 7409(b)(1). And

that Congress provided EPA with limited flexibility on the back end to allow limited exceptions for isolated events or areas that experienced unique and unforeseeable emissions challenges doesn't suggest that Congress wanted EPA to mandate the impossible on the front end. Such a reading would be inconsistent with the Clean Air Act's overarching goal of "reasonable" regulation. *See id.* § 7401(c). Congress should speak clearly before authorizing EPA to compel a "return of the Stone Age." *Am. Trucking*, 531 U.S. at 496 (Breyer, J., concurring in part and concurring in the judgment).

Notably, this Court didn't address whether the statute permits or requires EPA to consider attainability in *American Trucking*, and *Murray Energy* never suggested otherwise. *American Trucking* held only that EPA may not consider "economic costs" when setting the standards. *Murray Energy*, 936 F.3d at 622. But determining whether a standard is unattainable doesn't require EPA to consider "economic costs." Indeed, if the NAAQS are not achievable in light of background emissions, no amount of economic costs would allow a State to attain the standard. This Court should reject the D.C. Circuit's decision and abrogate *Murray Energy*.

D. The Revised Standards Are Unattainable

The D.C. Circuit's decision in *Murray Energy* allowing EPA to ignore the attainability of a NAAQS is exceptionally important, and it is becoming more so as the NAAQS get closer to background levels of air pollution. There are very serious questions about whether the revised standards for fine particulates are attainable.

EPA’s own Regulatory Impact Analysis acknowledges that compliance is impossible using identified emissions controls. EPA reports that for the revised standards:

[F]or the northeast we were able to identify approximately 98 percent of the [emissions] reductions needed. For the southeast we were able to identify approximately 68 percent of the reductions needed. For the west, we were able to identify approximately 44 percent of the reductions needed, and for California the percentage is approximately 26 percent.

EPA, *Regulatory Impact Analysis* 190, EPA-452/R-24-006 (Jan. 2024) (“RIA”), <https://tinyurl.com/y82u4827>.

The upshot is that EPA’s revised standards are unattainable in 25 counties, including 17 in California stretching from the Mexico border to the San Francisco Bay. *Id.* at 194, fig. 3-6, 202, tbl. 3-12.⁴

This is largely because fine particle emissions in these areas are primarily due to natural sources, including fugitive dust and wildfire smoke, or originate outside the U.S. *See id.* at 205–13; *see also* Ky.Pet.App.96a (“Wildland fire, which encompass[es] both wildfire and prescribed fire, accounts for 44% of

⁴ This understates the problem because several control strategies assumed by EPA are impractical. For example, EPA modeled using an “electrostatic precipitator”—a device used to lower particulates from industrial equipment—for underfired “charbroilers in commercial cooking.” RIA at 219. But EPA has elsewhere pointed out that this compliance measure is “infeasible.” 88 Fed. Reg. 87,988, 88,007 (Dec. 20, 2023).

emissions of primary PM_{2.5}” in the United States).⁵ States have no real means to control these emissions, but now “face sanctions and perpetual nonattainment” for failure to meet standards that are out of reach. *See* Comments of the NAAQS Regulatory Review & Rulemaking Coalition on EPA’s Reconsideration of the National Ambient Air Quality Standards for Particulate Matter 15 (Mar. 28, 2023); *see also id.* attach. 3, NERA, Potential Costs of Fully Attaining Proposed Lower PM.⁶

The San Joaquin Valley in California is a good example. It took nearly three decades for the Valley to attain the 1997 standard. 91 Fed. Reg. 3836 (Jan. 29, 2026). In 2024, the San Joaquin Valley Air Pollution Control District claimed that to belatedly attain the 2012 standard, it needs “transformative measures”—such as electrifying the U.S. transportation sector. San Joaquin Valley Air Pollution Control Dist., *2024 Plan for the 2012 Annual PM_{2.5} Standard* 2-6 (June 20, 2024), <https://tinyurl.com/3wst38t6>.⁷ But even these “transformative measures” are likely not enough to meet the revised standards. Area sources,

⁵ EPA estimates “background concentrations” at “around 1–3 µg/m³” on average. EPA, *Policy Assessment for the Reconsideration of the National Ambient Air Quality Standards for Particulate Matter* 2-71, EPA-452/R-22-004 (May 2022), <https://tinyurl.com/yck79mkx>. But episodic events, which may be hard to exclude from monitoring data, can result in far higher background levels. *Id.* at 2-67.

⁶ Available at <https://tinyurl.com/fkcw4h5n>.

⁷ Many of the California-wide measures that the District identified as core to its 2012 standard attainment strategy are electric-vehicle mandates that have been repealed or are preempted by federal law.

such as farming, road dust, and windblown dust, account for most remaining direct fine particle emissions in the Valley. *Id.* at B-3 to B-6. In 2032, the “largest share of ... PM_{2.5} emissions” in the Valley will be “from agricultural dust, the production of crops and livestock, agricultural burning, paved and unpaved road dust, and prescribed burning.” RIA at 211.

Even “deindustrialization” may not allow the District to comply. *Am. Trucking*, 531 U.S. at 494 (Breyer, J., concurring in part and concurring in the judgment). After all, even pre-industrial agricultural societies had “agricultural dust,” “crops and livestock,” and “road dust.” Indeed, many or even most underdeveloped countries have fine particulate levels that exceed those found in the United States. *See* State of Global Air, <https://tinyurl.com/4kr5e9n2> (last visited Sept. 25, 2026).

Making the San Joaquin Valley the new Yemen cannot be “requisite” to protect public health. Yet EPA willfully blinded itself to the unattainability of its revised standards, and the D.C. Circuit approved. The Court should grant certiorari and reverse.

CONCLUSION

The petitions for certiorari should be granted.

Respectfully submitted,

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