ORAL ARGUMENT NOT YET SCHEDULED

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

No. 09-1322, and consolidated cases (Complex)

COALITION FOR RESPONSIBLE REGULATION, et al.,

Petitioners,

v.

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY AND LISA P. JACKSON, ADMINISTRATOR,

Respondents.

ON CONSOLIDATED PETITIONS FOR REVIEW OF FINAL ACTIONS BY THE UNITED STATES ENVIRONMENTAL PROTECTION AGENCY

BRIEF FOR RESPONDENTS

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DATED: August 18, 2011 (Initial Brief)

RESPONDENTS' CERTIFICATE AS TO PARTIES, RULINGS, AND RELATED CASES

Pursuant to D.C. Circuit R. 28(a)(1), Respondents United States Environmental Protection Agency ("EPA") and Lisa P. Jackson, Administrator of EPA, submit this certificate as to parties, rulings and related cases.

(A) Parties and amici: With two exceptions, the parties and amici to this action are those set forth in the certificates filed with the Joint Opening Brief of Non-State Petitioners and Supporting Intervenors (hereinafter "Ind. Br."), the Brief of Texas for State Petitioners and Supporting Intervenors (hereinafter "Tx. Br."), and the Opening Brief for State Petitioners Texas and Virginia on Denial of Reconsideration of the Endangerment Finding and of State Petitioners and Supporting State Intervenors on Endangerment Finding Delegation Issues (hereinafter "Va. Br."). The exceptions are: (1) on July 7, 2011, the Court granted the State of Kansas leave to file an amicus brief in support of Petitioners; and (2) on August 5, 2011, the Court granted the Commonwealth of Pennsylvania's motion to withdraw as an Intervenor.

(B) Rulings under review: This case is a set of consolidated petitions for review of EPA's "Endangerment Finding," 74 Fed. Reg. 66,496 (Dec. 15, 2009), and denial of petitions to reconsider the Endangerment Finding ("Reconsideration Denial"), 75 Fed. Reg. 49,556 (Aug. 13, 2010).

(C) Related cases: Each of the petitions for review consolidated under No. 09-1322 is related. In addition, pursuant to this Court's prior orders, this case (No. 09-1322) will be argued before the same panel as the consolidated actions in Nos. 10-1167, 10-1092, and 10-1073.

DATED: August 18, 2011

/s/ Angeline Purdy
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GLOSSARY

ANPR	Advanced Notice of Proposed Rulemaking
AR4	Fourth Assessment Report (Intergovernmental Panel on Climate Change)
CAA	Clean Air Act or the Act
CAFE	corporate average fuel economy
CH_4	methane
CO_2	carbon dioxide
DOT	United States Department of Transportation
EPA	Respondent United States Environmental Protection Agency
HFCs	hydroflourocarbons
IPCC	Intergovernmental Panel on Climate Change
Ind. Br.	Joint Opening Brief of Non-State Petitioners and Supporting Intervenors
JA	Joint Appendix
Kan. Br.	Brief Amicus Curiae of the State of Kansas in Support of Petitioners
NAAQS	national ambient air quality standards
N_2O	nitrous oxide
NHTSA	National Highway Traffic Safety Administration
NRC	National Research Council of the National Academies

Non-State Amicus Br.	Brief of Amici Curiae in Support of Petitioners
PFCs	perflourocarbons
PM	particulate matter
PSD	prevention of significant deterioration
RTC	Response to Comments
RTP	Response to Petitions to Reconsider Endangerment Finding
SAB	Science Advisory Board
SF_6	sulfur hexafluoride
TSD	Technical Support Document
Tx. Br.	Brief of Texas for State Petitioners and Supporting Intervenors
USGCRP	United States Global Change Research Program
Va. Br.	Opening Brief for State Petitioners Texas and Virginia on Denial of Reconsideration of the Endangerment Finding and of State Petitioners and Supporting State Intervenors on Endangerment Finding Delegation Issues
VOCs	volatile organic chemicals
W/m^2	watts per square meter

INTRODUCTION

In Massachusetts v. EPA, 549 U.S. 497, 529, 533 (2007), the Supreme Court reversed EPA's denial of a petition seeking regulation of greenhouse gas emissions from new motor vehicles under section 202(a) of the Clean Air Act ("CAA" or the "Act"), 42 U.S.C. § 7521(a). See 68 Fed. Reg. 52,922 (Sept. 8, 2003). The Court required EPA to determine on remand whether greenhouse gases endanger public health or welfare, or else explain why it could not, focusing the Agency's inquiry narrowly on the science. General "policy judgments" that are not grounded in the statutory endangerment factors "have nothing to do with whether greenhouse gas emissions contribute to climate change" and cannot provide a "reasoned justification for declining to form a scientific judgment." Id. at 533-34. The Court further instructed that "residual uncertainty" about the science of climate change is "irrelevant" to EPA's inquiry; only "scientific uncertainty . . . so profound that it precludes EPA from making a reasoned judgment as to whether greenhouse gases contribute to global warming" could justify a decision not to regulate.

In the December 2009 "Endangerment Finding," the Administrator determined that greenhouse gas concentrations in the atmosphere may reasonably be anticipated to endanger public health and welfare and that emissions from motor vehicles contribute to this pollution. 74 Fed. Reg. 66,496 (Dec. 15, 2009). In support of this judgment, the Agency explained, inter alia, that greenhouse gas

concentrations in the atmosphere have risen to unprecedented levels as the result of human activities, that this buildup of atmospheric gases has been a substantial cause of warming over the past half-century, and that this warming is causing and will continue to cause a variety of adverse effects to human health and welfare in this country. Numerous parties filed administrative petitions for reconsideration and the Administrator denied those petitions in the "Reconsideration Denial." 75 Fed. Reg. 49,556 (Aug. 13, 2010). This case, No. 09-1322, is a consolidated set of petitions for review of the Endangerment Finding and the Reconsideration Denial.

As we will explain herein, the conclusions reached by EPA in both the Endangerment Finding and the Reconsideration Denial are fully consistent with the statute and are well-supported, if not compelled, by the scientific information in the extensive administrative record compiled by EPA. Indeed, many of the arguments Petitioners present in this case are similar to those the Supreme Court rejected in Massachusetts, e.g., that Congress could not possibly have intended EPA to regulate greenhouse gases under the Act, that the science of climate change is too uncertain, that the costs of regulating are too great, and that greenhouse gas emissions from new motor vehicles are better addressed through the Department of Transportation's ("DOT's") fuel economy standards.

Because section 202(a) obligates EPA to issue vehicle emission standards following a positive endangerment finding, see Massachusetts, 549 U.S. at 532,

EPA then promulgated greenhouse gas standards for new light-duty motor vehicles for model years 2012-2016. See 75 Fed. Reg. 25,324 (May 7, 2010) (the "Vehicle Rule," challenged in No. 10-1092). Significantly, no one challenges the substance of the Vehicle Rule's emission standards (i.e., no one contends either that they are too stringent or not stringent enough).

Instead, although the Endangerment Finding and the Vehicle Rule address greenhouse gas emissions from motor vehicles, a substantial part of Petitioners' challenges to those actions is based on concerns about the costs and other burdens of regulating such emissions from *stationary* sources. This is because once greenhouse gas emissions from motor vehicles became regulated through the Vehicle Rule, the Act automatically made certain large stationary sources of greenhouse gas emissions (such as factories and power plants) subject to the CAA prevention of significant deterioration ("PSD") and Title V permit programs. On these issues, the Administrator properly determined that she had no leeway to decline to find endangerment or to decline to promulgate greenhouse gas standards for motor vehicles solely to stave off stationary source regulation of greenhouse gas emissions, given her clear responsibilities under the statute and the compelling scientific record regarding endangerment.

The Agency nonetheless took action to assure that regulation of greenhouse gas emissions from stationary sources under the PSD and Title V programs would

be implemented in the most appropriate and orderly manner possible. First, in the "Timing Decision," 75 Fed. Reg. 17,004 (Apr. 2, 2010), EPA determined that greenhouse gases did not become "subject to regulation" (and thus subject to PSD and Title V requirements) until January 2, 2011, the first date on which certain newly-manufactured vehicles must comply with the emission standards in the Vehicle Rule. Second, in the "Tailoring Rule," 75 Fed. Reg. 31,514 (June 3, 2010), EPA developed a format and timeframe to phase-in PSD and Title V requirements in a manner that accounts for the practical constraints of the permitting system, starting with the largest sources of greenhouse gas emissions. The challenges to the Timing Decision and the Tailoring Rule have been consolidated in No. 10-1073.

As demonstrated below, there is overwhelming legal and technical support for the Administrator's judgment that greenhouse gases may reasonably be anticipated to endanger public health and welfare, and that motor vehicle emissions contribute to the problem. Further, as EPA's briefs in all these companion cases collectively show, the Endangerment Finding, the Vehicle Rule, the Timing Decision, and the Tailoring Rule represent, as a whole, a regulatory response to climate change that is fair, feasible, and faithful to the Agency's duties under the Act.

JURISDICTION

The consolidated petitions for review of the Endangerment Finding and Reconsideration Denial were timely filed pursuant to 42 U.S.C. § 7607(b). The Court does not need to scrutinize the standing of all Petitioners since at least some Petitioners appear to have alleged standing adequately to challenge the Endangerment Finding based on asserted injuries as fleet purchasers of motor vehicles. See Ind. Br. 12; Va. Br. 21; Tx. Br. 14; see also, e.g., Massachusetts v. EPA, 549 U.S. at 518.

STATUTES AND REGULATIONS

The pertinent statutes and regulations are set forth in the addendum to Petitioners' briefs. EPA has also included certain frequently-cited authorities in the addendum to this brief.

STATEMENT OF ISSUES

Section 202(a)(1) of the Act, 42 U.S.C. § 7521(a)(1), directs the Administrator to determine whether, in her "judgment," "air pollution" (in this case the mix of six greenhouse gases in the atmosphere) may "reasonably be anticipated to endanger public health or welfare." If the Administrator determines that it does, the statute directs her to determine whether motor vehicle emissions "cause" or "contribute" to this "air pollution." Id. If the Administrator answers that question in the affirmative, the Act requires the Agency to set emission standards taking

into account the cost and technology factors set forth in Section 202(a)(2), 42 U.S.C. § 7521(a)(2). Against this background:

1. Did EPA reasonably construe Section 202(a)(1) to limit the endangerment inquiry to scientific issues bearing on the Administrator's "judgment" as to the effects of atmospheric greenhouse gas concentrations on public health and welfare, and the question of whether greenhouse gas emissions from motor vehicles cause or contribute to that air pollution?

2. Did the extensive administrative record compiled by EPA, including a 210-page technical support document ("TSD"), an 11-volume response to comments document ("RTC"), and a 50-page Federal Register notice, adequately explain and support the Administrator's judgment that elevated concentrations of greenhouse gases in the atmosphere may reasonably be anticipated to endanger public health and welfare?

3. Did EPA properly deny the petitions for administrative reconsideration of the Endangerment Finding, where, among other things, the Petitioners failed to raise issues of "central relevance" and could have but failed to raise some issues in comments on the proposed Endangerment Finding?

4. Did EPA reasonably define the "air pollutant" at issue in this case to be a mix of six greenhouse gases that are all directly-emitted, long-lived, contributors to climate change?

5. Did EPA reasonably decline to construe Section 202(a)(1) as requiring the Agency to gauge the presence or absence of an endangerment through a quantitative assessment of safe and unsafe levels of air pollution and climate change?

6. Did EPA reasonably decline to construe Section 202(a)(1) as requiring EPA to determine, before making an endangerment finding, the extent to which motor vehicle emission standards could ameliorate any endangerment?

7. Does Section 202(a)(1) preclude EPA from considering (or at least not require EPA to consider), before making an endangerment finding, additional factors not mentioned in Section 202(a)(1), such as the impact of possible stationary source regulation of greenhouse gas emissions, the social benefits of pollution-causing activities, and the extent to which society can mitigate, or adapt to, the adverse effects of climate change?

8. Are Petitioners' claims concerning review of the Endangerment Finding by the Science Advisory Board ("SAB") barred by various waiver principles and, in any event, meritless?

STATEMENT OF THE CASE

The central issue at the core of this case – climate change – is undoubtedly one of "unusual importance," Massachusetts v. EPA, 549 U.S. at 506, and "[t]he harms associated with climate change are serious and well-recognized." Id. at 521.

Yet, as in Massachusetts, "[a]lthough this case comes to us in the context of a highly controversial question – global warming – it actually presents a quite traditional legal issue: has the Environmental Protection Agency complied with the Clean Air Act?" Massachusetts v. EPA, 415 F.3d 50, 82 (D.C. Cir. 2005) (Tatel, J., dissenting), reversed, 549 U.S. 497 (2007). In this case, the Endangerment Finding and Reconsideration Denial must be upheld because those decisions are fully consistent with the Act and are well-supported by a comprehensive administrative record.

STATEMENT OF FACTS

I. STATUTORY BACKGROUND

A. Definitions.

Section 302(g) of the Act, 42 U.S.C. § 7602(g), defines "air pollutant" as "any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air[,]" including any precursors to the formation of such air pollutant. The term "effects on welfare" is defined by Section 302(h), 42 U.S.C. § 7602(h), to include "effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to . . . property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being . . . ."

B. CAA Mobile Source Provisions.

Title II of the Act, 42 U.S.C. §§ 7521-7590, establishes a regulatory framework for controlling pollution from motor vehicles and other mobile sources. Section 202(a)(1), 42 U.S.C. § 7521(a)(1), authorizes EPA to establish standards for "the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in [the Administrator's] judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." Once the Administrator makes such a positive "endangerment finding," the Act requires her to issue emission standards taking into account specified technological and cost considerations. Id. § 7521(a)(1)&(2).

C. The PSD Program.

The primary requirement of the prevention of significant deterioration ("PSD") program, adopted as part of the 1977 amendments to the Act, is a permitting requirement for stationary sources. See Part C of Title I of the CAA, 42 U.S.C. §§ 7470-7492. Congress described the overall purpose of the PSD program as, inter alia, "to protect public health and welfare from any actual or potential adverse effect which in the Administrator's judgment may reasonably be anticipate[d] to occur from air pollution . . . notwithstanding attainment and maintenance of all national ambient air quality standards." 42 U.S.C. § 7470(1).

Generally speaking, under section 165(a) of the Act, 42 U.S.C. § 7475(a), a "major emitting facility" may not be constructed or modified without first obtaining a pre-construction permit under the PSD program. A modification of an existing major emitting facility is defined by statute as a physical change or change in the method of operation that results in an increase in the amount of any air pollutant. 42 U.S.C. § 7479(2)(C); 42 U.S.C. § 7411(a)(4). Consistent with these statutory provisions, under longstanding EPA regulations, the PSD permit requirement can be triggered by, inter alia, emissions of the specified quantities of "[a]ny pollutant that otherwise is subject to regulation under the Act." 40 C.F.R. § 52.21(a)(1)-(2), (b)(50)(d)(iv); see also id. § 51.166(a)(1)-(2), (49)(iv).

D. The Title V Operating Permit Program.

In 1990, Congress enacted Title V of the Act, 42 U.S.C. §§ 7661-7661f, which establishes an operating permit program covering stationary sources of air pollution. Under this "Title V" permit program, all CAA requirements applicable to a particular source are contained in a comprehensive permit. The permit requirement applies to, among other sources, any "major source" within the meaning of section 501(2) of the Act, 42 U.S.C. § 7661(2).

II. THE ENDANGERMENT FINDING

As noted above, following the Supreme Court's 2007 decision in Massachusetts, EPA was directed to reconsider its denial of an administrative petition seeking regulation of greenhouse gas emissions from motor vehicles. In December 2009, EPA issued the Endangerment Finding. In that Finding, the Administrator defined the relevant Section 202 "air pollution" as the atmospheric mix of six long-lived and directly-emitted greenhouse gases: carbon dioxide (CO_2), methane (CH_4), nitrous oxide (N_2O), hydroflourocarbons (HFCs), perflourocarbons (PFCs), and sulfur hexafluoride (SF_6). 74 Fed. Reg. at 66,497, 66,516-22. The Administrator further found that this air pollution may "reasonably be anticipated both to endanger public health and to endanger public welfare," and that greenhouse gas emissions from new motor vehicles and engines contribute to this air pollution. 74 Fed. Reg. at 66,496-97, 66,523-36. EPA then issued greenhouse gas emissions standards for new light-duty motor vehicles through the Vehicle Rule. 75 Fed. Reg. 25,324 (May 7, 2010). Finally, in August 2010, EPA denied petitions seeking reconsideration of the Endangerment Finding in the Reconsideration Denial. See 75 Fed. Reg. 49,556 (Aug. 13, 2010).

Along with the Endangerment Finding, EPA issued a 210-page TSD detailing the Agency's summary of the state of the science and relevant emissions data. A draft TSD had been released as part of the lengthy Advance Notice of

Proposed Rulemaking ("ANPR") published on July 30, 2008 (73 Fed. Reg. 44,354), and was later revised and updated to reflect more recent science assessments and following comments received during the 120-day public comment period on the ANPR. 74 Fed. Reg. at 66,510. The revised TSD published with the proposed Endangerment Finding in April, 2009 was again updated in response to public comments received during the 60-day comment period. Id.; EPA HQ OAR 2009-0171011639 (JA XX-XX). EPA also published an 11-volume response to comments with the final Endangerment Finding.[1]

A. The Administrator's Approach To Evaluating The Evidence.

The Administrator relied on thorough and peer-reviewed assessments of climate change science prepared by the Intergovernmental Panel on Climate Change ("IPCC"), the United States Global Change Research Program ("USGCRP"), and the National Research Council of the National Academies ("NRC") as the primary scientific and technical basis for the Endangerment Finding. EPA evaluated these assessments in several ways: by reviewing the process employed to develop each assessment, by reviewing their substantive content in light of in-house expertise, and by taking into consideration the depth of scientific consensus represented in the assessments. Response to Petitions to

[1] Excerpts from the TSD and RTC are set forth in the Joint Appendix. The complete TSD, RTC, and other related documents are available at http://www.epa.gov/climatechange/endangerment.html (last visited Aug. 10, 2011).

Reconsider Endangerment Finding ("RTP") 3-2 (JA XX-XX); see also 74 Fed. Reg. at 66,510-12; 75 Fed. Reg. at 49,581-82. EPA also took comment on using these assessments as the primary scientific and technical basis for its determination, and affirmed its view after considering comments. 74 Fed. Reg. at 66,510-12.

The Administrator concluded that the scientific assessments of the IPCC, the USGCRP, and the NRC were "the best reference materials for determining the general state of knowledge on the scientific and technical issues before the agency in making an endangerment decision." 74 Fed. Reg. at 66,511. These assessments comprehensively address the scientific issues the Administrator had to examine, providing her both data and information on a wide range of issues pertinent to the Endangerment Finding. 74 Fed. Reg. at 66,510. They are recent, and represent the current state of knowledge on key elements of the endangerment analysis. 74 Fed. Reg. at 66,511. They are also comprehensive, evaluating and synthesizing thousands of individual studies to convey the consensus of the body of scientific literature. Id.; see also RTC 1-2 (JA XX-XX) (assessments "look at the range of the scientific literature without 'cherry-picking'"); RTC 1-14 (JA XX-XX) (discussing IPCC assessment process). These assessments have been rigorously reviewed not only by the expert community, but also by United States government agencies and scientists; indeed, EPA itself took an active part in reviewing and

approving these assessments. 74 Fed. Reg. at 66,511. The assessments therefore "essentially represent the U.S. government's view of the state of knowledge on greenhouse gases and climate change." Id.

B. Scientific Support For The Endangerment Finding.

As we now summarize, EPA concluded that the "air pollution" consisting of the six globally well-mixed greenhouse gases may reasonably be anticipated to endanger public health and welfare.

Greenhouse gases cause warming: Greenhouse gases in the atmosphere trap heat on Earth that would otherwise escape into space. 74 Fed. Reg. at 66,517. These gases are part of the natural greenhouse effect that keeps the planet habitable. As greenhouse gases are added to the atmosphere, the natural greenhouse effect is intensified and the planet warms. 74 Fed. Reg. at 66,499.

Levels of greenhouse gases are increasing in the atmosphere due to human activity: Evidence shows that atmospheric greenhouse gas concentrations "are at elevated and essentially unprecedented levels" as the result of human activities. 74 Fed. Reg. at 66,517. Since pre-industrial times, carbon dioxide concentrations have increased by 38%; methane levels by 149%; and nitrous oxide by 23%. Id. Data reaching farther back in time show current atmospheric concentrations of CO_2 and methane are above the natural range compared to at least the last 650,000 years. Id.

The climate is warming: Datasets developed by the National Oceanic and Atmospheric Administration and the National Aeronautics and Space Administration of the United States and the United Kingdom's Hadley Center all show a global average warming trend over the last century, with the greatest warming occurring over the last 30 years. 74 Fed. Reg. at 66,517. All three datasets showed that 8 of the 10 warmest years on record had occurred since 2001, and that the 20 warmest years on record had all occurred since 1981. Id. Global mean surface temperature was higher during the last few decades of the 20th century than during any comparable period in the preceding four centuries. Id. Observational evidence around the globe shows that warming is occurring – e.g., there is widespread melting of snow and ice; global average sea level is rising; and widespread changes in extreme temperatures have been observed in all world regions in the last 50 years. Id. at 66,517-18.

Recent warming has been attributed to the increase in greenhouse gases: EPA's conclusion that anthropogenic greenhouse gas emissions very likely caused most of the past half-century of warming is based on three lines of evidence:

> The first line of evidence arises from our basic physical understanding of the effects of changing concentrations of greenhouse gases, natural factors, and other human impacts on the climate system. The second line of evidence arises from indirect, historical estimates of past climate changes that suggest that the changes in global surface temperature over the last several decades are unusual. The third line of

> evidence arises from the use of computer-based climate models to simulate the likely patterns of response to the climate system to different forcing mechanisms (both natural and anthropogenic).

74 Fed. Reg. at 66,518. The first two lines of evidence include the information discussed above. In addition, the past half century of warming has occurred at a time when natural forces such as solar activity and volcanoes would likely have produced *cooling*, not warming. Id. The vertical pattern of observed warming – with warming in the bottommost layer of the atmosphere and cooling immediately above – is consistent with warming caused by greenhouse gases, and inconsistent with other possible causes. 75 Fed. Reg. at 49,566; RTC 3-35 (JA XX-XX). The third line of evidence is that multiple analyses using various climate models show that the observed warming can only be reproduced by incorporating *both* natural and man-made influences on the climate. 74 Fed. Reg. at 66,518; see also 75 Fed. Reg. at 49,565-67.

Warming of the climate threatens human health and welfare: EPA comprehensively considered "both observed and projected effects of greenhouse gases in the atmosphere, their effect on climate, and the public health and welfare risks and impacts associated with such climate change."[2] 74 Fed. Reg. at 66,497.

[2] Because the vast majority of impacts are related to climate change, the general public (and this brief) uses the term "climate change" as short-hand for all such impacts. Other relevant impacts associated with elevated concentrations of CO_2 include ocean acidification and potential growth stimulus to plants. 74 Fed. Reg. at 66,532, 66,534.

The Administrator used her best judgment, guided by the statute and based on the science, to weigh potential risks and benefits and to determine whether, on balance, those effects may reasonably be anticipated to endanger public health or welfare. Id.

Regarding public health, the Administrator evaluated "the risks associated with changes in air quality, increases in temperatures, changes in extreme weather events, increases in food-and water-borne pathogens, and changes in aeroallergens" associated with climate change. 74 Fed. Reg. at 66,497, 66,524-31. Adverse effects observed and projected to occur include risks of sickness or mortality from reduced air quality, intensified heat waves, and more frequent and intense storms. 74 Fed. Reg. at 66,497-99, 66,516-36. The Administrator also considered that certain populations (e.g., children and the elderly) are more vulnerable to these effects. 74 Fed. Reg. at 66,526. The Administrator ultimately determined that "the public health of current generations is endangered," and that public health threats will mount over time as greenhouse gases continue to accumulate in the atmosphere. 74 Fed. Reg. at 66,524.

Regarding public welfare, the Administrator likewise considered the "multiple pathways" by which climate change generates risks. 74 Fed. Reg. at 66,531. Adverse public welfare effects observed to date and projected to occur in the future include increased drought, sea level rise, harm to agriculture, and harm

to wildlife and ecosystems. The Administrator found that the balance of evidence in every area considered provides support for an endangerment finding to public welfare, with strong support in the areas of water resources, sea level rise and coastal areas, infrastructure and settlements, ecosystems and wildlife, and adverse effects of extreme weather events. Id. at 66,497-99, 66,530-36.

C. The "Cause or Contribute" Finding.

For purposes of the "cause or contribute" finding, EPA defined the relevant "air pollutant" as "the aggregate group of the same six long-lived and directly-emitted greenhouse gases [used to define the relevant air pollution]," referred to in the Endangerment Finding as well-mixed greenhouse gases.[3] 74 Fed. Reg. at 66,536; see also id. at 66,499. These six gases share several common attributes that make their aggregation logical – among other things, all are directly-emitted, long-lived, and have well-understood heating effects. 74 Fed. Reg. at 66,537. After looking at both the share of global and of U.S. aggregate greenhouse gas emissions represented by emissions from Section 202(a) sources, the Administrator found that emissions of well-mixed greenhouse gases from new motor vehicles and

[3] The concept of defining an aggregation of compounds as a single "air pollutant" is not new. 74 Fed. Reg. at 66,540-41; infra at 80-81.

new motor vehicle engines "contribute" to the "air pollution" for which the endangerment finding was made.[4] 74 Fed. Reg. at 66,499, 66,537-45.

D. The Denial of Reconsideration.

EPA received ten voluminous petitions seeking administrative reconsideration of the Endangerment Finding. See 42 U.S.C. § 7607(d)(7)(B). These petitions raised two primary categories of objections regarding climate science. They challenged the validity of certain temperature data, arguing that it had been distorted, concealed, or manipulated by certain climate scientists. 75 Fed. Reg. at 49,570-76. The petitions also alleged that new information demonstrated mistakes and biases in analyses conducted by, or for, the IPCC, which they claimed undermined EPA's use of those analyses. Id. at 49,569-83.[5] These Petitioners' arguments focused on email communications involving scientists at the Climate Research Unit ("CRU") of the University of East Anglia in the United Kingdom (the so-called "climategate" emails). See id. at 49,563.

After a comprehensive review, EPA concluded that the arguments and evidence in these petitions were inadequate, generally unscientific, and failed to

[4] For example, the Administrator noted that the amount of annual greenhouse gas emissions from Section 202(a) sources in the United States ranked behind only greenhouse gas emissions from China, the United States as a whole, Russia, and India. 74 Fed. Reg. at 66,539.

[5] The petitions for reconsideration also raised legal objections that EPA rejected as untimely and not of central relevance to the Endangerment Finding. 75 Fed. Reg. at 49,584-94.

show that the science supporting the Endangerment Finding was flawed, misinterpreted, or inappropriately applied. 75 Fed. Reg. at 49,557. As EPA explained, its understanding of how manmade emissions contribute to climate change, and of the risks and impacts of such change, "has been decades in the making," and has only become clearer over time – and Petitioners offered nothing to alter or undermine that understanding. Id. In general, EPA found that Petitioners relied on exaggerated, isolated, out-of-context evidence that was insufficient to challenge "the voluminous and well-documented body of science that is the technical foundation of the Administrator's Endangerment Finding." Id.; see also id. at 49,570.

EPA's conclusion was consistent with those reached by multiple independent bodies examining the CRU emails. Id. at 49,557. Although these inquiries concluded that some of the CRU's procedures could be improved, they – like EPA – ultimately found "no evidence of scientific misconduct or intentional data manipulation on the part of the climate researchers associated with the CRU e-mails." Id. at 49,558.

EPA thus denied the petitions because the Petitioners failed to provide substantial support for the argument that the Endangerment Finding should be revised, and therefore their objections were not of "central relevance" to that Finding. 75 Fed. Reg. at 49,558, 49,583-84; see generally id. at 49,563-84,

49,584-94 (detailing EPA's response to scientific, legal, and policy claims). EPA also concluded that, in many cases, the reconsideration Petitioners had failed to demonstrate that it would have been impracticable to raise their comments during the public comment period. Id.[6]

STANDARD OF REVIEW

This case is subject to the standard of review set forth in CAA Section 307(d)(9), 42 U.S.C. § 7607(d)(9),[7] under which the Court asks whether the challenged action was "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." Id. This standard of review "is a narrow one," and the Court is not "to substitute its judgment for that of the agency." Citizens to Preserve Overton Park, Inc. v. Volpe, 401 U.S. 402, 416 (1971). The pertinent question is simply "whether the [agency's] decision was based on a consideration of the relevant factors and whether there has been a clear error of judgment."

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[6] The three-volume RTP provides a more detailed response to the petitions. Pertinent excerpts are included in the Joint Appendix. A complete copy of the RTP, as well as the administrative petitions and other related materials, is available at http://www.epa.gov/climatechange/endangerment/petitions.html (last visited Aug. 10, 2011).

[7] The requirements of CAA Section 307(d) apply to a set of enumerated agency actions and any other EPA action so designated by the Agency. See 42 U.S.C. § 7607(d)(1). Here, EPA noted the application of Section 307(d) in both the proposed and final Endangerment Finding. See 74 Fed. Reg. at 18,886, 18,889 n.4 (Apr. 24, 2009) (proposal); 74 Fed. Reg. at 66,504-05 (final). As discussed herein, Petitioners challenge some aspects of the application of Section 307(d)(8), 42 U.S.C. § 7607(d)(8), to their claims regarding review by the Science Advisory Board, but they do not otherwise challenge the application of Section 307(d) to the Endangerment Finding.

Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co., 463 U.S. 29, 43-44 (1983).

Particular deference is given to an agency with regard to technical matters within its area of expertise.[8] Although Petitioners acknowledge this general rule, they wrongly contend that EPA forfeited this deference by using third-party scientific assessments as the primary scientific and technical basis for the Endangerment Finding.[9] See Ind. Br. 42-43. Petitioners base this argument on Achernar Broad. Co. v. FCC, 62 F.3d 1441, 1447 (D.C. Cir. 1995), but Achernar concerned an agency's failure to consider options other than a complete denial of the license application at issue. There is nothing in the opinion to suggest that the Court withheld deference from the agency based on the agency's failure to exercise its own technical expertise. Id. at 1447-48.[10] By contrast, in this case, there can be no serious contention that EPA failed to consider any aspect of the complex scientific issues underlying the Endangerment Finding. See infra II.B.-D. Petitioners' claims that the record does not support the Endangerment Finding are

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[8] See Baltimore Gas & Elec. Co. v. NRDC, 462 U.S. 87, 103 (1983); see also, e.g., West Virginia v. EPA, 362 F.3d 861, 867-68 (D.C. Cir. 2004).

[9] Petitioners' claim that EPA did not exercise independent judgment in evaluating the scientific evidence and making the Endangerment Finding, see Ind. Br. 42-43, is addressed infra at 36-38

[10] Petitioners also cite NLRB v. P.I.E. Nationwide, Inc., 923 F.2d 506, 518 n.16 (7th Cir. 1991) for the proposition that an agency "must exercise its touted expertise and explain the rationale and factual basis for its decision.'" (citation omitted) As discussed in detail below, EPA has done so.

not a basis for denying EPA deference on what is inarguably a highly complex scientific issue on which EPA has expertise. To the contrary, Petitioners' arguments are to be assessed *in light of* that deference.

Judicial deference also extends to an agency's interpretation of a statute it administers. Chevron U.S.A. Inc. v. NRDC, 467 U.S. 837, 842-45 (1984). Under the first step of Chevron, if Congress has "directly spoken to the precise question at issue," that intent must be given effect. 467 U.S. at 842-43. However, under Chevron's second step, "if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency's answer is based on a permissible construction of the statute." Id. at 843.

SUMMARY OF ARGUMENT

The Endangerment Finding and the Reconsideration Denial are entirely consistent with the Act and more than amply explained by the Agency and supported by the record. Perhaps because of this, Petitioners' challenges to these actions are mostly indirect and take insufficient account of the comprehensive administrative record and the requirements of the statute. Petitioners argue at length that the legal and technical framework for the Endangerment Finding should be wholly (and unjustifiably) re-engineered to fit Petitioners' notion of rational decisionmaking, all the while ignoring that their preferred approach is completely at odds with clear congressional intent. They also pay scant attention to the actual,

articulated basis for EPA's scientific findings, and instead focus almost entirely on their own inappropriate and unjustified characterization of the record. Such tactics do not meet Petitioners' burden of proving that the Endangerment Finding and Reconsideration Denial are arbitrary, capricious, or contrary to law.

In the first part of this brief, we explain why the basic legal framework EPA used to analyze the endangerment question is entirely consistent with the statute, its legislative history, and applicable judicial guidance. The present version of Section 202(a)(1), 42 U.S.C. § 7521(a)(1), was drafted specifically to endorse this Court's en banc decision in Ethyl Corp. v. EPA, 541 F.2d 1 (D.C. Cir. 1976), which articulated an approach to "endangerment" that focuses on prevention of adverse impacts to public health and welfare before they occur and, to that end, explicitly eliminated just the sort of empirical hurdles Petitioners advocate here.

Next, we explain in detail why the administrative record offers overwhelming support for the Agency's conclusion that air pollution, in the form of atmospheric concentrations of six greenhouse gases, may be reasonably anticipated to endanger public health and welfare. In fact, most of the key components of EPA's scientific analysis are essentially undisputed. Although Petitioners mount numerous scattershot challenges to the science and data on which EPA relied, these amount to little more than mistaken or essentially irrelevant characterizations of isolated parts of an abundant and convincing

technical record. The petitions for administrative reconsideration of the Endangerment Finding were based entirely on arguments that did not raise issues of "central relevance" to the Endangerment Finding within the meaning of CAA Section 307(d)(7)(B), 42 U.S.C. § 7607(d)(7)(B), and that in many cases could have been raised during the comment period. Accordingly, EPA also acted reasonably in denying those petitions.

Neither is there merit to Petitioners' contention that EPA erred in classifying the atmospheric mix of six long-lived, heat-trapping gases as the "air pollutant" that was the focus of the Agency's contribution analysis. Both the statute and EPA's regulatory precedent support such an approach. Furthermore, these gases, collectively, are the primary driver of the climate effects that are the focus of the Endangerment Finding and share common, relevant attributes that make their aggregation as a single air pollutant sensible. The air pollutant is properly defined as the same mix of gases as the air pollution.

It was more than reasonable for EPA to reject the suggestion that judging the presence or absence of an "endangerment" required the Agency to quantify safe and unsafe levels of risk from climate change and to gauge the extent to which subsequent emission standards might ameliorate these risks. EPA also reasonably deemed irrelevant to its endangerment analysis a variety of factors that are not mentioned in section 202(a)(1) and that do not directly relate to a determination of

the effects of the air pollution at issue. For example, Petitioners argue at length that EPA should have considered the impacts that eventual regulation of greenhouse gas emissions from stationary sources might have, but stationary source issues are nowhere even mentioned in Section 202(a)(1). EPA also correctly determined that consideration of other factors stressed by Petitioners – such as the alleged societal benefits of pollution-causing activities and the extent to which Americans might adapt to or mitigate adverse impacts to public health and welfare – is not required by Section 202(a)(1) and would be antithetical to congressional goals and intent.

Finally, Petitioners' claims concerning the alleged necessity of review by the SAB should be denied on waiver grounds and because they are meritless, in any event.

ARGUMENT

I. THE ENDANGERMENT FINDING IS PREMISED ON EPA'S SOUND AND APPROPRIATE CONSTRUCTION OF THE CLEAN AIR ACT

As discussed above, Section 202 of the Act, 42 U.S.C. § 7521, establishes a two-step path to regulation of emissions from new motor vehicles and engines. In the first step, pursuant to Section 202(a)(1), EPA is to determine whether, in the Administrator's "judgment," emissions of "any air pollutant" from such sources "cause or contribute" to "air pollution which may reasonably be anticipated to

endanger public health or welfare." 42 U.S.C. § 7521(a)(1). This is commonly referred to as an "endangerment" finding. If the Administrator makes a positive endangerment finding, EPA is directed to issue standards applicable to those emissions, id., taking into account the cost and technological factors set forth separately in subsection 202(a)(2), 42 U.S.C. § 7521(a)(2).

In this case, EPA made the Endangerment Finding in a separate proceeding from the emission standards (i.e., the Vehicle Rule). While this is a slightly different procedure than EPA has most often used in the past,[11] there is no substantive difference, since EPA customarily sets forth its "endangerment" analysis separately from its analysis of the related regulatory standards even where both are combined into one Federal Register notice.[12]

While Petitioners do not contest EPA's procedural discretion to make a separate endangerment finding, see Ind. Br. 13, they argue that EPA cannot make an endangerment finding unless it quantifies the degree of risk posed by the identified endangerment and finds that corresponding motor vehicle standards will

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[11] But see, e.g., 65 Fed. Reg. 76,790 (Dec. 7, 2000) (stand-alone endangerment finding for certain types of spark-ignition engines).

[12] See, e.g., 69 Fed. Reg. 38,958, 38,962-63 (June 29, 2004); 59 Fed. Reg. 31,306, 31,318 (June 17, 1994) (regulation of certain emissions from nonroad engines pursuant to CAA Section 213(a)(4), 42 U.S.C. § 7513(a)(4) (1994) (final rules); 68 Fed. Reg. 28,328, 28,336-37 (May 23, 2003); 58 Fed. Reg. 28,809, 28,845-46 (May 17, 1993) (nonroad engines proposed rules); see also, e.g., 66 Fed. Reg. 5002, 5007-08 (Jan. 18, 2001) (standards for highway heavy duty diesel engines and diesel sulfur fuel - final); 65 Fed. Reg. 35,430, 35,435-46 (June 2, 2000) (proposal).

substantially address that risk. Indeed, Petitioners even contend that EPA should have integrated certain aspects of *stationary* source regulation of greenhouse gas emissions into its analysis for the Endangerment Finding. As we discuss in Parts V and VI of this brief, infra, none of Petitioners' arguments on these points is correct.[13]

Instead, as we discuss in this section, EPA properly construed the statute (in light of its text, structure, legislative history, and applicable precedent) as requiring the Endangerment Finding to be focused solely on a precautionary, science-based judgment by the Administrator as to whether or not the motor vehicle emissions in question cause or contribute to air pollution that is reasonably anticipated to endanger public health or welfare. EPA's approach to the endangerment question should be upheld as, at the very least, "reasonable" under Chevron, 467 U.S. at 844.

A. The Endangerment Finding Is Properly Focused Solely on the Science Pertaining to the Public Health and Welfare Impacts of the Air Pollution Under Consideration.

As the Supreme Court made clear in Massachusetts, the endangerment and contribution criteria enumerated in Section 202(a)(1) limit the Agency to a science-

[13] Some of Petitioners' challenges appear to relate, at least in part, to the Vehicle Rule, which is not before the Court in this case. See, e.g., Ind. Br. 13, 24-28. EPA's record for the Vehicle Rule fully addresses all factors properly before the agency in adopting emissions standards, and any objections to the Vehicle Rule are properly raised in the litigation on that rule, not in this action.

based judgment as to whether greenhouse gas concentrations in the atmosphere constitute "air pollution" that may reasonably be anticipated to endanger public health or welfare, and whether vehicle emissions cause or contribute to that air pollution. 74 Fed. Reg. at 66,507 (citing Massachusetts, 549 U.S. at 532-34). The cost and technology considerations relevant to promulgation of subsequent mobile source emission standards are separately enumerated in the standard-setting provisions of Section 202(a)(2) of the Act, and it is solely in that context that Congress intended EPA to consider cost of compliance and the period necessary to permit the development and application of the requisite technology. See 74 Fed. Reg. at 66,508; see also Massachusetts, 549 U.S. at 533-34. Nor are issues regarding stationary sources, which are not mentioned in Section 202(a)(1) or (2) at all, related to "the science of greenhouse gases or climate change, or the impacts of climate change on public health or welfare." 74 Fed. Reg. at 66,515; see also id. at 66,500-01 ("EPA is limited to consideration of science when undertaking an endangerment finding . . . ."). As the Supreme Court stated ''EPA can avoid taking further action only if it determines that greenhouse gases do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do.'' 549 U.S. at 533; see also id. at 533–34 (rejecting certain by EPA policy arguments, noting that those arguments "have nothing to do with whether greenhouse gas emissions contribute

to climate change. Still less do they amount to a reasoned justification for declining to form *a scientific judgment*'') (emphasis added). As EPA reasonably concluded, the Administrator "must base her decision about endangerment on the science, and not on policy considerations about the repercussions or impact of such a finding." 74 Fed. Reg. at 66,515.

B. The Legislative History of Section 202(a)(1) Confirms That "Endangerment" Is a Protective, Science-Based Judgment Focused Solely on the Potential Threat to Public Health and Welfare From Air Pollution.

Pertinent legislative history also confirms that an endangerment finding under Section 202(a)(1) was intended by Congress to be a protective, science-based judgment (not a fact-finding exercise) that is focused solely on potential threats to public health and welfare posed by air pollution.

The present text of the endangerment provision in Section 202(a)(1) was added by Congress in 1977 as an affirmation of Ethyl Corp v. EPA, 541 F.2d 1 (D.C. Cir. 1976) (en banc), which upheld EPA regulations restricting the amount of lead in gasoline. Before the Court in Ethyl was a pre-1977 fuel provision in Section 211(c)(1)(A), 42 U.S.C. § 1857f-6c(1)(A) (1976), which provided that EPA could regulate fuel additives whose emissions "will endanger the public health or welfare." See Ethyl, 541 F.2d at 7. After a thorough analysis, this Court concluded that even this older "will endanger" standard "is precautionary in nature

and does not require proof of actual harm before regulation is appropriate." Id. at 17.

The Court in Ethyl opined that "a determination of endangerment to public health is necessarily a question of policy that is to be based on an assessment of risks and that should not be bound by either the procedural or the substantive rigor proper for questions of fact." Id. at 24. Such an approach is particularly important in the environmental context, where an elusive search for scientific "certainty" will "often allow for only reactive, not preventive, regulation." Id. at 25.

The Ethyl court specifically distinguished the "will endanger the public health or welfare" provision from another CAA provision which required EPA to make a finding as to whether the fuel additive would impair the performance of emission control devices. See Ethyl, 541 F.2d at 23-24. The Court explained that those other provisions call for a "peculiarly factual finding" that is "inherently unlike" the endangerment standard: "[d]anger is a risk, and so must be decided by assessment of risks as well as by proof of facts." Id. at 24. The Court noted that in 1970, Congress had expressly considered, but rejected, a House bill that would have established fact-based findings that the Administrator would have had to make in conjunction with an endangerment finding. Id. at 21-23. Further, this aspect of the en banc Court's decision in Ethyl was vigorously criticized in the dissent, which would instead have imputed a fact-finding requirement into the

"will endanger" determination. See Ethyl, 541 F.2d at 94-97 (Wilkey, J., dissenting). Thus, this Court clearly, knowingly, and expressly rejected the argument that detailed fact-finding must accompany a "judgment" of endangerment under the Act.

When Congress amended the Act in 1977 to ratify the approach taken in Ethyl, it explained its goals in remarkable detail. See H.R. Rep. No. 95-294, at 43-51, reprinted in 1977 U.S.C.C.A.N. 1077, 1121-29.[14] Among other things, Congress stressed that it intended to emphasize "the preventative or precautionary nature of the act" and "the predominant value of protection of public health." Id. at 49, 1977 U.S.C.C.A.N. at 1127. Further, Congress stressed that it "authorize[d] the Administrator to weigh risks and make reasonable projections of future trends" and directed the Administrator "[t]o assure that the health of susceptible individuals, as well as healthy adults, will be encompassed in the term 'public health' . . . ." Id. at 49-50, 1977 U.S.C.C.A.N. at 1127-28.

Congress also recognized that in light of the inherent "uncertainties and limitations in the data which will be available to the Administrator," courts should conduct "adequate judicial review of the reasonableness of the Administrator's

[14] These revisions to the endangerment provisions in the Act were part of the House bill and were concurred in by the Senate. See 1977 U.S.C.C.A.N. 1502, 1564. The House Report was cited and discussed in both the D.C. Circuit and Supreme Court decisions in Massachusetts v. EPA. See Massachusetts v. EPA, 549 U.S. at 506 n.7; Massachusetts v. EPA, 415 F.3d 50, 76-77 (D.C. Cir. 2005) (Tatel, J., dissenting), reversed, 549 U.S. 497 (2007).

judgment in assessing risks" but should not "attempt[] to act 'as the equivalent of a combined Ph. D. in chemistry, biology, and statistics' . . . ." Id. at 50, 1977 U.S.C.C.A.N. at 1128. Congress therefore changed the former "will endanger" criterion to the present "may reasonably be anticipated to endanger," and expressly characterized the finding as an exercise of "judgment" by the Administrator. Id. at 51, 1977 U.S.C.C.A.N. at 1129. Congress explained that while the Administrator must exercise her judgment reasonably, and cannot base an endangerment finding on "'crystal ball' speculation," she is authorized to make "comparative assessment[s] of risks" and "projections of future possibilities" based on "extrapolat[ions] from limited data." Id. at 50-51, 1977 U.S.C.C.A.N. at 1128-29. In this regard, the Committee noted that it had considered and "expressly rejected" an amendment that would have deleted the phrase "in his judgment" and replaced it with a provision requiring factual findings instead. Id. at 51, 1977 U.S.C.C.A.N. at 1129.

A number of pertinent conclusions are apparent from the foregoing. First, Congress' overwhelming focus in crafting the present language of the endangerment provision in Section 202(a)(1) was the protection of the public from risks to health and welfare from air pollution. Second, Congress recognized that the Administrator must be able to take action even with incomplete and uncertain data if she is going to be able to effectuate the goal of acting to prevent harm

before it occurs.[15] Third, while Congress recognized that the Administrator must take reasonable account of available evidence, it also specifically intended an endangerment finding to be an exercise of judgment, not a factual finding. Fourth, Congress intended the Administrator's duty to protect public health to be quite broad, including, for example, the obligation to protect the health even of especially "sensitive" populations.

In sum, for all the foregoing reasons, EPA properly construed the Act as focusing an endangerment finding under Section 202(a)(1) solely on two questions: (1) whether "air pollution" (in this case atmospheric concentrations of six greenhouse gases) may reasonably be anticipated to endanger public health or welfare; and (2) whether motor vehicle emissions cause or contribute to this air pollution. As we will discuss in the following sections, EPA had overwhelming evidence in the record to support its judgment that both of these questions should be answered in the affirmative here, and ample legal basis to reject the alternative approaches to the endangerment inquiry advocated by Petitioners.

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[15] As EPA explained, see 74 Fed. Reg. at 66,508, Congress' discussion of "prevention" of harm was meant to rebut the suggestion that EPA should be precluded from making an endangerment finding before actual harm had occurred, and had nothing to do with any assessment of possible emission controls. Id.; see also H.R. Rep. No. 95-294, at 48-49, 1977 U.S.C.C.A.N. at 1126-27.

II. THE RECORD SUPPORTS THE ADMINISTRATOR'S FINDING THAT ELEVATED CONCENTRATIONS OF GREENHOUSE GASES ARE REASONABLY ANTICIPATED TO ENDANGER PUBLIC HEALTH AND WELFARE

The Endangerment Finding is based on an extensive, intensely scrutinized and peer-reviewed scientific record. See supra at 12-14; 74 Fed. Reg. at 66,497, 66,510-12. Much of the basic scientific information underlying the Administrator's finding is, moreover, essentially undisputed. That greenhouse gases trap heat; that trapped heat in turn warms the climate; that levels of greenhouse gases in the atmosphere are increasing; that this increase is caused by human activity; and that greenhouse gas levels in the atmosphere are projected to continue rising for the foreseeable future – none of this is seriously disputed.

Petitioners are unable to rebut these well-documented conclusions, and thus launch unfocused and unjustified attacks on isolated elements of the administrative record. Given EPA's comprehensive review of a robust scientific record, EPA's imperative to act to prevent harm even in the face of uncertainty, and the high degree of deference due EPA on matters of scientific interpretation within the Agency's core area of expertise, Petitioners' attacks fail. [16]

[16] Petitioners suggest that EPA rushed the Endangerment Finding for policy reasons. See Ind. Br. 5-6, 33; see also Kan. Br. 7. EPA explained, however, that given the ten years since the original petition, it had "a responsibility to respond to the Supreme Court's decision and to fulfill its obligation under current law," and that there was "good reason to act now given the urgency of the threat of climate change and the compelling scientific evidence." 74 Fed. Reg. 66,500-01.

A. The Administrator Relied On Well-Founded Science to Make Her Judgment.

The Administrator properly relied on the thorough assessments prepared by the IPCC, the NRC, and the USGCRP as the primary scientific and technical basis for the Endangerment Finding. 74 Fed. Reg. at 66,510-12; 75 Fed. Reg. at 49,581-82. In EPA's view, these assessments were, and remain, the best source materials for determining the state of science with regard to climate change.[17] 74 Fed. Reg. at 66,511; supra at 13-14. The assessments synthesize an extensive body of scientific studies, and ultimately demonstrate the broad scientific consensus on how greenhouse gases affect the climate, as well as the impact of present and projected future climate changes on human health, society, and the environment. [18] 74 Fed. Reg. 66, 511. Both EPA's summary of the science and its rationale for relying primarily on these assessment reports underwent notice and comment. 74

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[17] A subsequent 2010 National Research Council assessment confirms the robustness of these analyses. This study is in the record supporting the denial of reconsideration. See National Research Council (NRC) (2010), Advancing the Science of Climate Change, National Academy Press, Washington, D.C., EPA HQ OAR-2009-0171-12091; 75 Fed. Reg. at 49,558.

[18] Contrary to Petitioners' contention, EPA was not required to place the "scientific data underlying" the hundreds to thousands of studies summarized in these assessments in the docket. See Va. Br. 30; see also Kan. Br. 26-27. This Court has flatly rejected the same argument in prior cases under the Act. See Coal. of Battery Recyclers Ass'n v. EPA, 604 F.3d 613, 622-23 (D.C. Cir. 2010); Am. Trucking Ass'ns v. EPA, 283 F.3d 355, 372 (D.C. Cir. 2002) ("requiring agencies to obtain and publicize the data underlying all studies on which they rely 'would be impractical and unnecessary'") (citation omitted).

Fed. Reg. at 18,894. EPA's conclusion that it "has no reason to believe that the assessment reports do not represent the best source material" for an endangerment finding, and that putting the existing assessments aside and attempting to develop a new assessment would not "provide any better basis for making the endangerment decision," 74 Fed. Reg. at 66,511, was thus reached only after a careful and thorough review.

Although the scientific assessments reviewed by EPA provided the principal source materials for the Endangerment Finding, the Administrator exercised her own judgment in making that Finding. See, e.g., 74 Fed. Reg. at 66,497 (Administrator determined that scientific evidence compellingly supports an endangerment finding; assessments by USGCRP, IPCC, and others "serve as the primary scientific basis supporting the Administrator's endangerment finding"); see generally id. at 66,497-99; RTP 3-2 (JA XX-XX). This Court has stated that an agency does not improperly delegate its authority or judgment merely by using work performed by outside parties as the factual basis for its decision making. See U.S. Telecom Ass'n v. FCC, 359 F.3d 554, 567-68 (D.C. Cir. 2004); United Steelworkers of Am. v. Marshall, 647 F.2d 1189, 1216-17 (D.C. Cir. 1980).[19]

[19] In U.S. Telecomm Ass'n, the D.C. Circuit concluded that an agency had acted unlawfully by expressly delegating its decision-making authority to state commissions. 359 F.3d at 565; see Va. Br. 29. Petitioners do not allege that EPA expressly delegated its Section 202(a) authority, nor did EPA do so.

In United Steelworkers, the Court rejected an argument that an agency had improperly relied on outside consultants where the petitioning party "[could not] buttress its general allegation of excessive reliance with any specific proof that the Assistant Secretary failed to confront personally the essential evidence and arguments" at issue. 647 F.2d at 1217. As the Court elaborated, "unsupported allegation[s]" could not "overcome the presumption that agency officials and those who assist them have acted properly." Id. Petitioners' conclusory assertion that the Administrator did not exercise her own judgment (see, e.g. Ind. Br. 33, Va. Br. 31) is both "unsupported" by "specific proof" and directly contradicted by the administrative record. See generally Va. Br. 23, 27-30, 35; Ind. Br. 7-8, 33, 42; see also Amicus Brief of the State of Kansas ("Kan. Br.") 1-2.[20]

Neither can Petitioners overcome the overwhelming weight of the record establishing that the IPCC, NRC, and USGCRP assessments represent a "comprehensive assessment of the scientific literature," and the best possible scientific foundation for the Endangerment Finding.[21] See RTC 1-2 (JA XX-XX). Industry Petitioners suggest that the IPCC assessments are unreliable because the

[20] Amicus State of Kansas claims that the IPCC "concluded that anthropogenic emissions endanger public health and welfare." Kan. Br. 2. Kansas' only support for the proposition that the *IPCC* reached this conclusion is a general citation to *EPA's* Endangerment Finding. See id. n.1. Kansas has thus provided no evidence that the IPCC, as opposed to EPA, was responsible for this conclusion.

[21] Petitioners' meritless arguments concerning alleged deficiencies in the IPCC assessment that were raised in the petitions for reconsideration are addressed infra at 73-75.

IPCC was allegedly chartered "for the express purpose of studying human-induced climate change." Ind. Br. 8. The IPCC, however, unquestionably considered *both* natural climate variability and human factors. See, e.g., TSD at 48 (JA XX-XX) (IPCC finds that manmade greenhouse gases, increasing solar output, and relative lack of volcanic activity contributed to temperature rise during early part of 20th century).[22]

There was, moreover, ample opportunity for public review and comment on these assessments and EPA's use of them. The 2008 ANPR sought comment on the best available science for an endangerment finding, including the IPCC and U.S. Climate Change Science Program (now the USGCRP). 73 Fed. Reg. at 44,425. The assessments also underwent their own peer review and (for the IPCC and the USGCRP) public review process.[23] 74 Fed. Reg. at 66,503. Counting the comment period for the ANPR and for the Endangerment Finding itself, the public had at least 180 days – six months – to comment on the scientific and technical

[22] Kansas' related claim that the IPCC "is not a scientific body but a political body," Kan. Br. 12, is backed by nothing more than Kansas' own speculations regarding the "expected" motivations of scientists participating in the IPCC.

[23] Petitioners claim that the public did not have an opportunity to comment on these assessments while they were being prepared, Va. Br. 34, but cite nothing to support this statement.

basis for that Finding. Petitioners offer no evidence to support their conclusory claim that this period was inadequate.[24] Va. Br. 34-35; see also Kan. Br. 25-26.

Petitioners' claim that EPA improperly delegated its judgment, or improperly relied on thorough scientific assessments, must therefore be rejected.

B. EPA's Conclusions Were Reached After Careful Consideration of Uncertainty.

Where a statute is precautionary, actions under that statute are designed to protect the public health, evidence is "difficult to come by, uncertain, or conflicting because it is on the frontiers of scientific knowledge," and the ultimate endangerment determination is "that of an expert administrator," the Court "will not demand rigorous step-by-step proof of cause and effect." Ethyl Corp., 541 F.2d at 27-28; see also Part I.B, supra. This is particularly true in the environmental context, where demanding scientific certainty would "often allow for only reactive, not preventive, regulation." Ethyl, 541 F.2d at 25. Section 202(a) is just such a provision; thus, EPA can act to prevent harm even in the face of uncertainty. See supra at 32-34; Lead Indust. Ass'n v. EPA, 647 F.2d 1130,

[24] Petitioners also suggest that EPA merely cited scientific assessments in its response to public comments. Va. Br. 35. Petitioners have, however, failed to offer even a single example of an allegedly inadequate comment response. See id. n.20. EPA naturally cited the assessments that form the primary technical and scientific basis for the Endangerment Finding; however, in doing so, it typically also considered the underlying literature. See, e.g., RTC 3-16 (JA XX-XX); RTC 3-28 (JA XX-XX); RTC 3-33 (JA XX-XX). The record thus contradicts Petitioners' claim that EPA "dismiss[ed]" public comments based on third-party disagreement. Va. Br. 35.

1155 (D.C. Cir. 1980) (requiring EPA to conclusively demonstrate adverse health effects would be inconsistent with precautionary and preventive nature of statute).

Given that Petitioners cannot reasonably claim that EPA is *required* to achieve 100% certainty, they turn to claiming that EPA *chose* to assign a near-100% level of certainty to its conclusions, as well as to the scientific evidence supporting those conclusions (the "high risk" aspect of Petitioners' high risk/high harm straw man). See, e.g., Ind. Br. 2, 43, 44, 45, 48. In fact, the 90-99% certainty Petitioners reference was used by the Administrator in regards to specific statements, including the Administrator's conclusion that "[m]ost of the observed increase in global average temperatures since the mid-20th century is very likely [i.e., 90 to 99% likely] due to the observed increase in anthropogenic greenhouse gas concentrations." 74 Fed. Reg. at 66,518. Petitioners improperly cite this Federal Register passage (which refers to the causes of recent warming, not the risks from climate change) to assert that EPA "is 90-99% certain that human-caused climate change threatens public health and welfare." Ind. Br. 2.

Petitioners do not offer any citations to support their claims that EPA was uniformly 90-99% certain of all aspects of the Endangerment Finding. See, e.g., Ind. Br. 44 (referring, without citation, to "EPA's 90-99% confidence risk assessment"); 54-55 (suggesting, without citation, that EPA claimed to be 90-99% certain of particular evidence). Petitioners cannot do so. In fact, the

Administrator's endangerment finding was based on a consideration of "the *totality* of scientific evidence, *some of which was assessed as being virtually certain . . . while other evidence was less certain*." RTC 1-35 (JA XX) (emphasis added); see also 74 Fed. Reg. at 66,497 (recognizing variety in nature and potential risks and impacts of human-induced climate change), 66,506 (recognizing "varying degrees of uncertainty" in scientific issues).

The question for the Court is not whether EPA can demonstrate that the Endangerment Finding and the evidence supporting it are beyond questioning, or that every piece of evidence points only in support of that Finding.[25] It is, rather, whether EPA took all relevant record material into account in a "rational manner;" if it did so, the Court will not overrule EPA's expert judgment. See Am. Petroleum Inst. v. Costle, 665 F.2d 1176, 1187 (D.C. Cir. 1981). As discussed in

[25] Petitioners cite New York v. EPA, 413 F.3d 3, 31 (D.C. Cir. 2005) for the proposition that an agency "must offer [an] adequate rationale where 'evidence in the record may also support other conclusions.'" Ind. Br. 46. New York actually states that "the fact that the evidence in the record may also support other conclusions" *did not prevent the Court from concluding that EPA's decisions were rational and supported by the record*. 413 F.3d at 31 (citations and internal quotations omitted). To the extent Petitioners suggest the existence of conflicting or uncertain evidence calls EPA's conclusions into question, their argument is inconsistent with well-established precedent. See, e.g., Lead Indust., 647 F.2d at 1160 ("disagreement among the experts is inevitable when the issues involved are at the 'very frontiers of scientific knowledge,' and such disagreement does not preclude us from finding that the Administrator's decisions are adequately supported by the evidence in the record").

the following sections, EPA did so, and the robust administrative record fully supports the Endangerment Finding.

C. The Record Supports Attribution of Most of the Recent Climate Change to Manmade Greenhouse Gas Emissions.

EPA's conclusion that manmade greenhouse gas emissions have very likely caused most of the past half-century of warming is supported by three lines of evidence: a "basic physical understanding" of the impacts of various changes (both natural and manmade) on the climate system, historical estimates that suggest recent changes in global surface temperature are unusual, and computer-based models that simulate the climate's likely response to various forcing mechanisms. 74 Fed. Reg. at 66,518. Petitioners offer nothing that contradicts the overwhelming weight of the administrative record, which demonstrates that each of these three lines of evidence provides significant support for the Endangerment Finding.

1. The Endangerment Finding is consistent with a basic physical understanding of the climate.

Regarding the first line of evidence, Petitioners do not dispute certain basic physical facts about the effect of greenhouse gases. Ind. Br. 45 ("The physical properties of [greenhouse gases] are well understood . . ."); Ind. Br. 47 (greenhouse gases increase amount of heat retained in atmosphere). Instead, they suggest that there is too much uncertainty about *other* factors for EPA to have high confidence

that manmade greenhouse gases are very likely responsible for most recent warming. See Ind. Br. 44-46. Petitioners have, however, dramatically overstated the nature and significance of uncertainties in the record, and have failed to demonstrate that, when the record is viewed as a whole, EPA's conclusion regarding the likely cause of recent warming is arbitrary or capricious.

a. Solar energy.

Solar energy plays a key role in the earth's temperature, and a change in solar energy can lead to either warming or cooling of the climate. The assessment reports found that the warming of the past half-century occurred when natural forcings – including changes in solar activity – would likely have produced cooling, not warming. 74 Fed. Reg. at 66,518; see also, e.g., TSD at 50 (JA XX) (natural external forcing factors would likely have produced cooling rather than warming during past half century). In addition, the pattern of recent warming in the atmosphere is consistent with warming from increased greenhouse gases, and inconsistent with warming from increased solar radiation. RTC 3-24, 3-25 (JA XX-XX, XX-XX). Petitioners do not contest this evidence.

Instead, Petitioners point to the IPCC's assignment of a low level of scientific understanding to a quantification of the heating effect of solar energy ("radiative forcing") from 1750 to 2005, and assert that this uncertainty is inconsistent with a conclusion that most of the recent warming is very likely

caused by human activity. See Ind. Br. 45. EPA's conclusion, however, concerns warming since the mid-20th century, not over the last 250 years. See IPCC Table 2.12 (JA XX); TSD at 24 (JA XX).[26] In addition, the IPCC categorized two specific factors related to solar energy as "uncertainties" over this 250-year time period: "relationship between proxy data and total solar irradiance," and "indirect ozone effects." Table 2.11, Ind. Br. C-3. The "proxy data" uncertainty refers to inferring historical solar activity by using *indirect* measures.[27] See RTC 3-35 (JA XX-XX). Importantly, for over a quarter of a century, there has been continuous *direct* monitoring of total solar energy – and in the table cited by Petitioners, the IPCC characterizes these direct measurements as a "certainty." Table 2.11, Ind. Br. C-3; RTC 3-24 (JA XX-XX).

EPA's conclusion regarding warming over the last half-century is thus supported by "certain" measurements of solar energy extending over half of that period. In addition, EPA properly accounted for uncertainty regarding historical solar irradiance by acknowledging solar heating effects as a *range*, not as an absolute figure. See TSD at 26 (JA XX) ("[c]hanges in solar irradiance since 1750

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[26] EPA referred to warming since 1750 to support the view that greenhouse gases are the largest of the manmade drivers of warming. 74 Fed. Reg. at 66,517, n.19.

[27] The "ozone effects" uncertainty refers to changes in the ozone layer due to changes in UV radiation from the sun. The IPCC estimated that accounting for UV variations could lead to a decrease in estimates of solar heating of up to 15%, meaning this uncertainty points to *less* warming attributable to solar activity, not more. IPCC Fourth Assessment Report ("AR4") at 192 (JA XX).

are estimated to cause a radiative forcing of . . . +.06 to +.30 W/m^2 ["watts per square meter," a measure of net heating effect]) (emphasis added); see also RTC 3-24 (JA XX-XX). Even the *maximum* warming effect that could have been caused by solar energy changes over the past 250 years (+.30 W/m^2) is only about 13% of the *minimum* +2.38 W/m^2 warming effect due to the increase in concentrations of the long-lived greenhouse gases during the same time period. See TSD at 24 (JA XX); RTC 3-24 (JA XX-XX). Petitioners have not demonstrated that uncertainty regarding historical solar irradiance over 250 years undermines EPA's conclusions regarding the dominant cause of warming over the last half-century.

b. Reflection of solar energy.

Clouds and aerosols in the atmosphere reflect solar radiation, thus limiting solar warming of the climate. See AR4 at 96 (JA XX). As with their claims regarding solar radiation, Petitioners argue that a low level of scientific understanding regarding the quantification of cloud effects on the climate over the last 250 years undermines EPA's conclusions regarding the cause of warming over the last half-century. Ind. Br. 45. And as with solar radiation, this uncertainty concerns quantifying effects over a much longer time period than the recent warming addressed in the Endangerment Finding. This uncertainty is again accounted for by expressing these effects as a range; moreover, heating caused by

increased greenhouse gases is shown to outweigh any potential cloud effects. See TSD at 23-24 and Figure 4.1 (JA XX-XX).

c. Climate feedbacks.

There is no dispute that greenhouse gases trap heat that would otherwise escape the planet; the more greenhouse gases in the atmosphere, the more heat is trapped. See supra at 14. "Feedbacks" are processes that can either amplify or dampen the climate system's initial response to heating – positive feedbacks tend to increase warming, while negative feedbacks tend to reduce warming. TSD at 26 (JA XX). Contrary to Petitioners' claims, feedbacks are not "poorly understood," nor are they mere "assumptions." Ind. Br. 47; see also id. at 45. They result from scientific principles representing interactions between different elements of the climate system. For example, it is well-established that as air temperature increases, the air can hold more water. Increased water vapor in the atmosphere traps even more heat, thus causing even more warming (a positive feedback). See TSD at 26, 66 (JA XX, XX).

There is strong evidence that when all feedbacks are considered together and all uncertainties are accounted for, the net effect is one of increased warming – in other words, negative (cooling) feedbacks are insufficient to cancel positive (warming) feedbacks. See TSD at 66 (JA XX) (IPCC concludes that climate sensitivity is very likely greater than 2.7°F, which means a net warming effect

from feedbacks). Petitioners' suggestion that the effect of greenhouse gases could somehow be "canceled" by feedbacks, Ind. Br. 45, is thus inconsistent with the administrative record.

Petitioners have, in sum, failed to demonstrate that recognized uncertainties regarding quantifying the precise effects of solar radiation, the reflection of that radiation by clouds and aerosols, and climate feedbacks undermine the Endangerment Finding.[28]

2. The record supports EPA's conclusions regarding temperature trends.

With respect to the second line of evidence, EPA concluded that historical estimates of past climate changes suggest that global average temperatures over the last half-century are unusual relative to at least the past 1,300 years (although uncertainty is significant prior to 1600). These historical estimates are based in part on various temperature reconstructions that the NRC found yield a generally consistent picture of temperature trends during the preceding millennium. See 74 Fed. Reg. at 66,518; 75 Fed. Reg. at 49,570-71; TSD 31-32 (JA XX-XX).

[28] Petitioners point to "the climate's response to external forcings" as a purported fourth factor. Ind. Br. 44, 45. Changes in solar energy, reflectivity, and greenhouse gas concentrations are external forcings; the climate's response is what *follows* from these forcings. See AR4, WG1 at 96 (JA XX). Petitioners' claim that modeled projections of this response are inaccurate, Ind. Br. 45, is addressed infra at 55.

Petitioners do not attack EPA's comparison of recent warming to the past 1300 years, but instead make straw man arguments. Petitioners contend that because EPA did not attribute a warming trend from 1910 to 1945 to greenhouse gas concentrations, EPA cannot so attribute later warming. Ind. Br. 52. EPA did not, however, state that the 1910-1945 warming trend was "not caused" by manmade greenhouse gases. To the contrary, EPA explicitly acknowledged that both greenhouse gas emissions and natural forces contributed to the earlier warming trend:

> *The IPCC . . . finds that anthropogenic greenhouse gas emissions were one of the influences contributing to temperature rise during the early part of the 20th century along with increasing solar output and a relative lack of volcanic activity.* During the 1950s and 1960s, when temperature leveled off, increases in aerosols from fossil fuels and other sources are thought to have cooled the planet. For example, the eruption of Mt. Agung in 1963 put large quantities of reflective dust into the atmosphere. The rapid warming since the 1970s has occurred in a period when the increase in [greenhouse gases] has dominated over all other factors.

TSD at 48 (JA XX) (emphasis added); see also RTC 3-57 (JA XX-XX). Neither, by the same token, did EPA find that recent warming was solely caused by manmade greenhouse gas emissions (see Ind. Br. 52) – only that such emissions explained *most* of the warming in this period. See generally TSD at 47-53 (JA XX-XX).

Petitioners' claim that there is some inconsistency between EPA's treatment of the 1910-1945 warming period and of post-1960s warming is therefore rebutted

by the administrative record. In neither case did EPA adopt the simple manmade/nature dichotomy that Petitioners posit. In both cases, EPA concluded that observed temperature change was based on both natural *and* manmade factors – what differs is the relative role of natural and manmade forces in different periods.

Petitioners also assert that EPA employed a "double standard" by allegedly "[relying] on a 21-year warming trend from 1977 to 1998" while also maintaining that it is difficult to determine the cause of warming over periods of less than fifty years. Ind. Br. 52-53, 54. Petitioners cite nothing in the record to support their assertion that EPA "relied" on warming during this particular period – nor could they, because EPA did not do so. See 74 Fed. Reg. at 66,518 (discussing observed global warming over past 50 years); RTC 2-45 (JA XX-XX) (warming over the last 50 years almost double that of last 100 years). Nowhere did EPA identify this 21-year span as a "period[] of pronounced temperature increases." Ind. Br. 52. Petitioners' purported "double standard" thus arises from the 1977-1998 straw man they set up, not from any time period EPA relied on.[29]

[29] Petitioners claim that there has been no warming since 1998, and that EPA has "dismissed" this purported trend as "meaningless." Ind. Br. 53, 54. EPA acknowledged that some data sets show no real temperature trend from 1998 to 2008 when these years are viewed in isolation, RTC 3-4 (JA XX-XX), but did not conclude that there was no warming during that time period. More significantly, EPA explained that global temperatures from 1998-2008 remained "well above the long-term average," RTC 2-41 at 31 (JA XX), and that the relatively flat

Petitioners likewise claim that EPA "touted" information regarding recent upward trends in CO_2 emissions, increased melting of Arctic ice, and increased sea level rise as "evidence for EPA's conclusions." Ind. Br. 53-54. Petitioners rely on a partially-quoted passage taken out of context. The statement is by the Academies of Science for the G8+5 countries, and was cited by EPA in response to comments "question[ing] the notion of scientific consensus around the conclusion of human-induced global warming." RTC 1-43 at 38, 40-41 (JA XX, XX-XX). EPA cited this statement to demonstrate that major national and international scientific bodies have expressed support for the assessment literature upon which EPA relied. Id. at 40 (JA XX-XX). EPA did not, however, rely on the information in the quoted passage (which does not even discuss the cause of warming) to support its conclusion attributing most warming since the mid-20th century to increased greenhouse gases.

Petitioners also mischaracterize the conclusion EPA actually reached, i.e., that the evidence suggests that temperatures over the past half-century are unusually warm in comparison to the long-term past. Petitioners point out that there is significant uncertainty regarding the temperature record before 1600. This uncertainty was fully considered by EPA (which, contrary to Petitioners' assertion, did not label this evidence "compelling"). Ind. Br. 54-55; 74 Fed. Reg. 66,523;

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temperatures during this short period "do[] not fundamentally alter the longer term warming signal." TSD at 31 (JA XX).

TSD at 31-32 (JA XX-XX); RTC 2-62 (JA XX-XX). Nor did EPA ever claim to be 90-99% certain of its conclusion on this particular point; it found only that the evidence suggests and supports this conclusion. See 74 Fed. Reg. at 66,523; see also RTP Section 1.1.2 at 8 (JA XX); Ind. Br. 54-55. Petitioners do not argue that the evidence does not support EPA's actual, more limited, conclusion. Nor have they shown that it was arbitrary for EPA, having acknowledged the uncertainties, to rely on evidence concerning the long-term temperature record as one piece of support for its overall attribution of most recent warming to greenhouse gases.

3. EPA properly relied on climate models.

a. Climate models provide reasonable projections of long-term climate trends.

Computer-based climate model simulations are the third line of evidence supporting the attribution of recent temperature change to increases in greenhouse gases. As the Court has recognized, modeling is "an established technique of environmental analysis" that "facilitates timely decision making." Chem. Mfrs. Ass'n v. EPA, 28 F.3d 1259, 1264 (D.C. Cir. 1994); see also Small Refiner Lead Phase-Down Task Force v. EPA, 705 F.2d 506, 535 (D.C. Cir. 1983) (EPA has "undoubted power" to use models as long as it "explain[s] the assumptions and methodology used.") Global climate models developed over several decades simulate the climate's likely long-term response to natural and manmade forcing mechanisms such as volcanic eruptions, changes in solar radiation, and changes in

concentrations of greenhouse gases. These models are founded on basic principles of physics and scientific knowledge about the climate, are constantly tested against known climate conditions, and have been validated by simulating both current and past global climate situations for which there is observed data. Model results typically are presented as ranges, thus accounting for uncertainty. See generally RTC 4-1 (JA XX-XX); see also TSD at 63-64 (JA XX-XX); RTC 4-24, 4-25, 4-27 (JA XX-XX, XX-XX, XX-XX).

EPA has recognized that models are not completely certain (let alone "magic talismans," Ind. Br. 46). RTC 4-1 at 1 (JA XX); RTC 4-27 (JA XX-XX). As EPA explained, however, "the issue at hand is not 'Are the models perfect?' but 'Are they reasonable and useful representations of our understanding of the climate system?'" RTC 4-27 at 25 (JA XX); see also Chem. Mfrs. Ass'n, 28 F.3d at 1265 ("That the model does not fit every application perfectly is no criticism; a model is meant to simplify reality in order to make it tractable."); Appalachian Power Co. v. EPA, 135 F.3d 791, 802 (D.C. Cir. 1998) (invalidating model because it does not fit every data point "would be to defeat the purpose of using a model"). This issue was "thoroughly reviewed by the [United States Climate Change Science Program]," which – even after considering the uncertainties and limitations of climate models – described climate modeling as "one of the great success stories of scientific simulation." RTC 4-27 at 25 (JA XX). EPA is thus confident that

climate models "are useful for attribution, projections, and understanding of climate phenomena," particularly on a large scale. Id.; see also RTC 4-1 at 2 (JA XX).

Petitioners argue that the fact that temperatures have not risen steadily over the last 10 to 15 years is contrary to model projections, and that therefore climate models are unreliable because they "fail the basic test of predicting *recent* climate." Ind. Br. 48-49 (emphasis added). Climate models are, however, designed and used to project *long-term*, large-scale trends. Over relatively short periods, temperature trends can be heavily influenced by natural variability (e.g., El Niño), which can either amplify or mask the long-term trends that climate models project. See RTC 3-6 (JA XX-XX); RTC 4-47 (JA XX-XX). Over the long term, however, external forcings such as increased greenhouse gas concentrations play a much more significant role, and dominate changes from natural variability. See RTC 3-6 (JA XX-XX). There thus is no inconsistency between a decade of relatively flat temperatures and a modeled projection that over the long term temperatures will rise as greenhouse gas concentrations increase.[30]

[30] Petitioners' claim that "no warming has occurred since 1998," and that therefore the understanding of the climate system reflected in the models must be wrong, is based on a mischaracterization of an email. See Ind. Br. 49-50. The author of the e-mail has himself rebutted Petitioners' interpretation. See RTP 1-21 (JA XX-XX) (quoting Dr. K. Trenberth) ("It is amazing to see this particular quote lambasted so often. It stems from a paper I published this year bemoaning our inability to effectively monitor the energy flows associated with short-term climate

Petitioners also claim that uncertainty regarding the sign of feedback (positive or negative) from "changes on extratopical clouds" contrasts with model "assumptions" of "positive cloud feedback." [31] Ind. Br. 47. Petitioners confuse the feedback from a subset of clouds (i.e., extratropical clouds) with cloud feedbacks globally. On a *global* scale, and taking into account the uncertainty over extratropical clouds, the IPCC recognized that virtually all models predict positive cloud feedbacks. There is significant uncertainty regarding the size of this feedback, but not regarding its warming effect. AR4 at 633 (JA XX). EPA properly recognized, moreover, that cloud modeling is one source of uncertainty. RTC 4-3 at 5 (JA XX); RTC 4-16 (JA XX).

Neither is "the CO_2 signal . . . lost in the noise of model uncertainties." Ind. Br. 48. The supposed -25 W/m^2 "uncertainty range" that Petitioners point to is not an uncertainty range for model outputs at all. [32] It is derived from a graph

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variability. It is quite clear from the paper that I was not questioning the link between anthropogenic greenhouse gas emissions and warming, or even suggesting that recent temperatures are unusual in the context of short-term natural variability."). His comments on geoengineering relate to actions such as injecting reflective aerosols into the stratosphere, not to reducing greenhouse gas emissions. See RTP 1-26 (JA XX-XX); Ind. Br. 50.

[31] As discussed supra at 47, feedbacks are not "assumptions," but the result of the model's application of scientific principles.

[32] It does not appear that either this argument or Petitioners' "circular logic" argument (infra at 56) were raised in comments on the proposed Endangerment Finding. If Petitioners cannot demonstrate that they raised these concerns during the comment period, these argument have been waived. See 42 U.S.C. § 7607 (d)(7)(b).

identifying the amount of solar reflection from clouds, for different latitudes, from each of several individual models. The -25 W/m^2 value is the maximum difference in reflectivity between the models for any one of the various latitudes, not the uncertainty range in the model results for any single model. See AR4, Ch. 8, Supp. Materials 8-27 (JA XX). The variation across the models in global averages for cloud reflection is much closer, approximately -6 W/m2. AR4 at 610 (JA XX). This difference in the models reflects somewhat different baselines for global cloud cover. What matters for purposes of model projections, however, is the *change* from baseline conditions. Regardless of the difference in baselines, *all* models calculate that increasing CO_2 concentrations will result in both direct warming from the CO_2 and a positive (warming) feedback from a change in clouds. AR 4 at 631-33 (JA XX-XX). Petitioners do not contest this fact. The direct and indirect warming from increased CO_2 is by no means lost in the "noise" of model results.

Petitioners also claim that EPA has "use[d] models that *assume* anthropogenic global warming to try to *prove* anthropogenic global warming." Ind. Br. 51. Models do not "assume" this result; rather, they rely on the basic laws of physics and scientific knowledge about the climate. The models simulate the effect of various changes – increases in greenhouse gas concentrations, changes in solar variability, changes in aerosol levels, and so forth – in light of these known

physical principles. See TSD at 63 (JA XX); RTC 4-1 (JA XX-XX). While models "are not the foundation of climate science," they are critical "tools used to better understand information and data from multiple sources and disciplines," and together with the other evidence in the record provide important support for EPA's conclusion that increases in manmade greenhouse gases are very likely the cause of most warming since the mid-20th century. RTC 4-1 at 1 (JA XX).

b. Climate models have been properly validated.

Whether intentionally or not, Petitioners misunderstand the nature of model validation. Models are constantly tested against known climate conditions, and have been validated by simulating both current and past global climate situations. See TSD at 63 (JA XX); RTC 4-1 (JA XX-XX); Dkt. No. 12192 at 23 (JA XX). Petitioners ignore this evidence, pointing to a purported "problem of circular logic" allegedly derived from (1) using model-generated data to fill "gaps" in the observational record, and (2) using that augmented data to validate climate models. See Ind. Br. 50-51. As to the first point, the "observational record" is comprised of a variety of observations of factors such as temperature, wind, and precipitation across the globe, at various levels in the atmosphere, over time. See, e.g., Dkt. No. 12192 at 8 (JA XX). It is not surprising that there are some regions or types of information for which there is less observed information than others; that there is a varying quality of observed data; or that there is less information about historic

events than about more recent conditions. For some purposes, the climate change scientific community uses modeling to augment observations by filling in unobserved regions in a manner consistent with the physics of the atmosphere.[33] See Dkt. No. 12192 at 17 (JA XX).

Using the observational record with the augmented data described above provides "valuable benchmarks against which key features of model simulations can be meaningfully assessed." See Dkt. No. 12192 at 52 (JA XX). Importantly, augmented observational records are typically used to validate models other than the ones that provided the augmented data in the first place. Finally, for many variables, models are validated by evaluating their ability to predict known current and past climate conditions, without augmented data. AR4 at 594-95 (JA XX-XX). The "reanalysis" process that Petitioners attack is therefore neither circular (as they claim) nor the only means by which models are validated.

D. The Record Supports EPA's Finding That The Air Pollution May Reasonably Be Anticipated To Endanger Public Health And Welfare.

After reviewing a wide range of evidence, EPA found that climate change caused by greenhouse gas emissions may reasonably be anticipated to endanger public health and welfare in many ways. See supra at 16-18; 74 Fed. Reg. at

[33] For example, a model might be used to interpolate wind speed between different measured locations, in a manner consistent with observed temperatures between those locations.

66,497-99, 66,523-36. Petitioners do not contest the body of evidence supporting these findings, or the overwhelming majority of EPA's conclusions, and do not otherwise demonstrate that EPA's endangerment finding was arbitrary or capricious.

1. EPA's findings on harm are supported by the record.

Petitioners again misstate both the nature and the uniformity of EPA's conclusions. See, e.g., Ind. Br. 4 (referring to EPA's purported "combined finding of high probability/high severity of harm"), 43 (same). Petitioners cite no record support for their claim that EPA found universally "severe" harm arising from climate change, or that EPA forecast an inevitable onslaught of "fire, floods, and pestilence." Ind. Br. 55; see also id. at 42. EPA's conclusions were, in fact, far more comprehensive and reasoned. EPA canvassed the evidence and carefully weighed the likelihood and severity of a range of potential harms to public health and welfare. See 74 Fed. Reg. at 66,506. Some projected harms are more significant, some less; some more likely, some less; some more imminent, some at greater reach. See generally 74 Fed. Reg. at 66,497-99, 66,524-36. The record shows that EPA did not make "crystal ball" projections, Ind. Br. 55, but instead carefully evaluated the evidence and drew reasoned and balanced conclusions from it.

The "laundry list" that Petitioners offer, Ind. Br. 55, covers only a fraction of the potential harms reviewed by EPA. Petitioners' list identifies instances in which EPA identified and accounted for an uncertainty in the evidence. See 74 Fed. Reg. at 66,524-36. Potential impacts on particulate matter (PM) levels, disease vectors, aeroallergens, forage quality, renewable energy production, and the power grid, Ind. Br. 55-56, were less certain than other impacts, and therefore were not impacts on which the Administrator placed "primary weight." See 74 Fed. Reg. at 66,525-26; TSD 87-88 (JA XX-XX). Accounting for the strengths and weaknesses of the evidence demonstrates careful evaluation and reasoning, not arbitrariness.

Where Petitioners discuss factors that were of greater significance to the Endangerment Finding, they mischaracterize EPA's findings to suggest greater uncertainty than actually exists. For example, Petitioners truncated EPA's discussion of potential impacts on human settlements in a misleading manner. What EPA concluded is that "[e]ffects of climate change on human settlements in the United States are very likely to vary considerably according to location-specific vulnerabilities, *with the most vulnerable areas likely to include Alaska, flood-risk coastal zones and river basins, arid areas with associated water scarcity, and areas where the economic base is sensitive (CCSP, 2007a)."* TSD at 129 (JA XX) (italics added to identify language omitted by Petitioners); see also 74 Fed. Reg. at

66,533 (discussing effects of sea level rise). Petitioners' omissions incorrectly imply that EPA expressed far more uncertainty than it actually did, since the omitted language identifies areas where the effects are more certain and potentially severe.

Petitioners also omit a key portion of the TSD's discussion of hurricanes, citing only the statement that frequency changes in hurricanes cannot be confidently projected. Ind. Br. 56. The prior sentence in the TSD, however, states that "[i]t is likely that hurricanes will become more intense, with stronger peak winds and more heavy precipitation . . . ." TSD at ES-4 (JA XX); see also 74 Fed. Reg. at 66,524-25 (discussing increased storm severity). Thus, while EPA appropriately concludes there is less certainty of more hurricanes, it is relatively confident that climate change increases the risk of any given hurricane becoming more intense – a factor that legitimately contributed to the Endangerment Finding.

Petitioners similarly note that it is difficult to predict changes in ozone levels based solely on temperature, Ind. Br. 55, while omitting the fact that although there is expected to be regional and temporal variation, EPA found that the overall effect of climate change would be increased ozone levels, especially in the most populated and worst polluted regions. See 74 Fed. Reg. at 66,525. Further, Petitioners note that EPA recognized that it is not clear whether increased heat will prevent more cold-related deaths than it will cause heat-related deaths – but omit

the fact that the USGCRP study cited by EPA ultimately concluded that "increases in heat-related mortality due to global warming in the United States *are unlikely to be compensated for by decreases in cold-related mortality*." Id. (emphasis added).

With regard to erosion and ecosystem loss, Petitioners note uncertainty over the degree to which these losses result from rises in sea level attributed to climate change, as opposed to other factors such as land subsidence. Ind. Br. 56. But they fail to acknowledge that (1) although EPA cannot precisely quantify the amount of such losses ultimately traceable to climate change, it is clear that climate change will make such losses worse; and (2) erosion and ecosystem loss were merely one of many impacts of sea level rise that EPA considered. See TSD at 118-120 (JA XX-XX); 74 Fed. Reg. at 66,533.

Petitioners complain that EPA's analysis is "one-sided," alleging that EPA "disregard[ed]" particular uncertain evidence of the benefits of climate change while crediting uncertain evidence of harm. Ind. Br. 56-57. To the contrary, the record demonstrates that EPA thoughtfully weighed this and other evidence of both the risks and the benefits of various potential impacts of climate change. See, e.g., 74 Fed. Reg. at 66,531 (in near term, concern for adverse effects in certain agricultural sectors is "generally comparable" to potential benefits, but over the long term evidence points towards increasing risk of net adverse effects on food production and agriculture); TSD 93-95 (JA XX-XX) (discussing multiple ways in

which climate change could either increase or decrease PM levels). The fact that EPA, after carefully weighing all record evidence and fully explaining its rationale, reached a different conclusion than Petitioners would prefer does not mean EPA's action was "one-sided" or arbitrary.

2. EPA properly found harm to both public health and welfare.

In concluding that greenhouse gases may reasonably be anticipated to endanger both public health and welfare, EPA interpreted the term "public health" to include health impacts arising from climate change caused by greenhouse gases, and did not limit itself to health effects from direct exposure to greenhouse gases.[34] See 74 Fed. Reg. at 66,526. EPA explained the basis for its interpretation in depth, and Petitioners offer no evidence that EPA's interpretation is unreasonable. See 74 Fed. Reg. at 66,526-29.

There is no support for Petitioners' claim that only direct, inhalational effects of exposure to an air pollutant qualify as impacts on "public health." See Ind. Br. 57-58. NRDC v. EPA, 902 F.2d 962 (D.C. Cir. 1990), vacated in other part, 921 F.2d 326 (D.C. Cir. 1991), Ind. Br. 58, does not support Petitioners' argument. In that case, the Court rejected the argument that EPA should have considered the health consequences of the unemployment that would allegedly

[34] Petitioners' conclusory assertion that evidence regarding public health effects in the United States is somehow lacking, Ind. Br. 58, is belied by the administrative record. 74 Fed. Reg. at 66,514, 66,523-26.

result from a too-stringent air quality standard. See id. at 972-73. The Court held that under the applicable statute, EPA could only consider "health effects relating to pollutants in the air." Id. at 973 (citing 42 U.S.C. § 7408(a)(2)). It did not say that such health effects had to originate from inhalation, or what Petitioners call "direct" effects. EPA has, moreover, previously considered effects other than direct, inhalational effects in finding a threat to public health. See, e.g., Coal. of Battery Recyclers v. EPA, 604 F.3d at 615 (public-health-based primary NAAQS includes consideration of adverse health effects from ingestion as well as inhalation of lead emitted into the air); see also Am. Trucking Ass'ns v. EPA, 175 F.3d 1027, 1051-53 (D.C. Cir. 1999) (in setting public-health-based NAAQS, EPA must consider potential for indirect health benefits from ozone in the atmosphere blocking UVb radiation), aff'd in part, rev'd in part sub. nom. Whitman v. Am. Trucking Ass'ns, 531 U.S. 457 (2001).

Even if Petitioners could demonstrate that harms to public health identified by EPA could be considered only as effects on public "welfare," EPA's findings would be proper. Section 202(a) requires a determination of whether air pollution may reasonably be anticipated to endanger "public health *or* [not "and"] welfare." 42 U.S.C. § 7521(a). EPA has thus found all that the statute requires.

III. EPA PROPERLY DENIED THE RECONSIDERATION PETITIONS

EPA received ten petitions for reconsideration of the Endangerment Finding (and seven supplements thereto). These petitions and supplements ran to over 500 pages, cited dozens of studies totaling hundreds of pages, and referenced more than 1000 emails and 300 pages of computer code. As we discuss in the following sections, after a thorough review EPA concluded that the evidence presented did not support the claims made in the petitions for reconsideration and did not offer any support for a revision of the Endangerment Finding.[35] See generally 75 Fed. Reg. at 49,556, 49,557-58, 49,563-78, 49,583-84. EPA therefore declined to convene a reconsideration proceeding.

A. EPA Was Entitled to Weigh the Evidence Submitted With The Reconsideration Petitions Before Deciding Whether to Grant Reconsideration.

Section 307(d)(7)(B) of the Act provides that if a petitioner can demonstrate both that it was "impracticable" to raise an objection during the comment period, or the grounds for that objection arose after the comment period, "*and [that] such objection is of central relevance to the outcome of the rule*," EPA shall convene a

[35] EPA also found that many of the objections raised in the petitions could have been raised during the comment period. See 75 Fed. Reg. at 49,584; 42 U.S.C. § 7607(d)(7)(B) (reconsideration petitioner required to demonstrate that it was impracticable to raise objection during original comment period). Petitioners do not challenge this aspect of EPA's decision.

reconsideration proceeding. 42 U.S.C. § 7607 (d)(7)(B) (emphasis added).[36] The "central relevance" standard places the burden on the party seeking to disturb a settled agency action to demonstrate that new evidence identified in the reconsideration petition would "provide *substantial support* for the argument that the regulation should be revised." 75 Fed. Reg. at 49,561 (emphasis added).

The "substantial support" standard "gives proper weight to . . . the importance Congress attributed to preserving the finality of agency rulemaking decisions." Id. This is a high standard, but not insurmountable. EPA did not, as Kansas claims, require that the reconsideration Petitioners demonstrate that their argument "must ultimately prevail." Kan. Br. 19; see also id. at 4. EPA did, however, reasonably require that information submitted with the reconsideration petitions, when viewed in the context of the entire record, substantially support the argument that the Endangerment Finding should be reopened.[37]

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[36] Petitioners appear to view EPA's Denial as analogous to an agency procedural error in promulgating a rule, arguing that EPA should have applied Section 307(d)(8) of the Act, 42 U.S.C. § 7607(d)(8). Va. Br. 22-23. Amicus State of Kansas, on the other hand, argues that EPA improperly applied Section 307(d)(8). Kan. Br. 19-21. Both are wrong. Section 307(d)(7)(B) explicitly governs administrative petitions for reconsideration, and EPA applied the Section 307(d)(7)(B) standard in considering the reconsideration petitions. See 75 Fed. Reg. at 49,561. EPA discussed the language in Section 307(d)(8) only in interpreting Section 307(d)(7)(B)'s "central relevance" language. See id.

[37] Petitioners argue that the length of EPA's response to the petitions for reconsideration means the claims made in the petitions must have warranted a reconsideration proceeding. See, e.g., Va. Br. 4, 14, 19. Petitioners offer no authority to support this page-count argument, and fail to explain why –

Petitioners pay only lip service to the principle that a party that seeks reconsideration must offer substantial support for its request, proposing to gut this requirement by prohibiting EPA from considering the weight or validity of evidence presented in a petition for reconsideration without first seeking public comment.[38] See Va. Br. 14, 23-24; see also Kan. Br. 9, 18-19. If EPA could not consider the merits of a petitioner's arguments and evidence, EPA would *never* be able to deny a reconsideration petition without first seeking comment. As long as a petition included any evidence or argument that, when viewed in the abstract and assumed to be correct, could substantially support an argument that an agency action should be revised, EPA would be forced to grant reconsideration – no matter how flawed the proffered evidence, or how insignificant in comparison to other evidence in the administrative record. Section 307(d)(7)(B) does not impose such a standard, and Petitioners offer no justification for their demand that EPA

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particularly in light of the length and complexity of the numerous reconsideration petitions – EPA should be penalized for providing a full and detailed explanation of its bases for declining to convene a reconsideration proceeding.

[38] Petitioners go so far as to argue that an agency "is *incapable* of knowing and deciding scientific matters in the absence of notice and comment." Va. Br. 17 (emphasis added). Unsurprisingly, the case cited as support for this extreme proposition says nothing of the sort. In Kennecott Corp. v. EPA, 684 F.2d 1007 (D.C. Cir. 1982), this Court held that EPA had violated the Act's procedural requirements by not including documents that formed part of the basis for its original action in the docket for public comment. Kennecott, 684 F.2d at 1018. In this case, by contrast, Petitioners argue that EPA should *reconsider* the Endangerment Finding based on new evidence submitted by the Petitioners. Nothing in Kennecott speaks to this situation. See generally 75 Fed. Reg. at 49,561-62 (discussing Kennecott).

consider a petitioner's evidence in a vacuum, assume its correctness, and decline to use the Agency's experience and expertise in evaluating that evidence and deciding whether to disturb a final agency action and convene a reconsideration proceeding.

B. EPA Was Not Required to Seek Public Comment on Material It Considered Before Denying the Reconsideration Petitions.

Petitioners argue that EPA improperly relied on documents placed in the docket after the close of the comment period on the Endangerment Finding in denying the petitions.[39] See Va. Br. 16; Kan. Br. 9-10, 21-22, 23-24. Almost half of the "more than four hundred documents," Va. Br. 16, placed in the docket after the close of the comment period on the Endangerment Finding were placed in the docket before signature of that Finding, and are properly part of the record for that action.[40] EPA also placed a number of documents in the record for the Denial after signature of the Finding, including the CRU emails that were a significant focus of the reconsideration petitions; independent investigations related to those emails;

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[39] In a related point, Petitioners contend that in denying the petitions for reconsideration, EPA altered the basis of the Endangerment Finding. See Va. Br. 14-16, 24-27 see also Kan. Br. 22. EPA's response to the petitions for reconsideration is solely that – a response, not a "supplement[]" to or revision of the Endangerment Finding. See Va. Br. 27. EPA's action on the petitions for reconsideration thus does not trigger the need for a new notice and comment period on the Endangerment Finding itself.

[40] These added documents are typical of those routinely added to an administrative record as EPA finalizes an action, including material updated since the original proposal; drafts provided for interagency review (required to be docketed by Section 307(d)(4)(B)(ii), but not part of the record); pre-publication versions of the Findings; the Response to Comments; the final TSD; and scientific articles and data cited by EPA in responding to public comments.

scientific articles cited in responding to the petitions for reconsideration; and final versions of the Denial and the Response to Petitions. The "additional" material placed in the record by EPA was in many cases submitted or referred to by Petitioners, or was otherwise directly relevant to responding to the reconsideration petitions.

The suggestion that an agency is not entitled to rely on the full record for the underlying agency action, or to place *any* additional material in the reconsideration record without seeking comment, again ignores the role of agency expertise and knowledge. See Va. Br. 4; Kan. Br. 9-10. Suppose, for example, that a reconsideration petitioner submits Study A which, on its face, could be viewed as rebutting some fact or principle that EPA relied on in making the Endangerment Finding. Suppose further that Studies B-G, additional studies in the relevant field, all refute the conclusions reached in Study A. Petitioners offer no authority for the proposition that EPA's only choices are to (a) pretend that studies B-G do not exist, or (b) convene a reconsideration proceeding in order to consider Studies B-G. This is not a hypothetical situation: as EPA noted in the Denial, in addition to Petitioners misstating the meaning and significance of recent scientific information in their petitions, "there are instances where the Petitioners have failed to

acknowledge other new studies in making their arguments." 75 Fed. Reg. at 49,584.[41]

In a related claim, Amicus State of Kansas argues that (1) by stating that a reconsideration petition may be filed regarding a "rule," Section 307(d)(7)(B) "necessarily includes the lawful record that supports the rule"; (2) Section 307(d)(6)(C) provides that a rule may not be based on material placed in the docket after its promulgation; and (3) EPA therefore could not consider any material other than that already in the docket or presented with the petitions for reconsideration. Kan. Br. 22-23. Section 307(d)(7)(B) contains no limitation on the record EPA may consider in acting on a petition for reconsideration. Nor does Kansas offer any logical justification for reading a statutory limitation on the *rulemaking* record as an additional, unstated limitation on the *reconsideration* record.

C. The CRU Emails Did Not Require EPA to Convene a Reconsideration Proceeding.

State Petitioners and amicus State of Kansas focus on the so-called "climategate" emails from the University of East Anglia's Climate Research Unit

[41] Petitioners' claim that EPA improperly relied on a May 2010 National Research Council assessment, Va. Br. 16-17, is contradicted by the administrative record. See 75 Fed. Reg. at 49,558 (appropriately citing NRC assessment as "clear affirmation" that the scientific bases for the Endangerment Finding "are robust, credible, and appropriately characterized by EPA"); compare id. at 49,563-79 (discussing EPA's own review of science issues). The "no published criticisms" statement cited by Petitioners refers to studies cited *in* the NRC assessment, not to the assessment itself. See RTP 1-29 at 50 (JA XX).

(the "CRU emails"), arguing that these emails undermined the Endangerment Finding and therefore required EPA to convene a reconsideration proceeding to consider them. See generally Va. Br. 10-11, 31-36; Kan. Br. 5-6, 8-9, 24. As EPA explained, the assertions made by Petitioners regarding these emails were "exaggerated," are "often contradicted by other evidence," and did not provide a "material or reliable basis to question the validity and credibility of the body of science underlying the Administrator's Endangerment Finding." 75 Fed. Reg.at 49,557.

EPA did not reach this conclusion lightly. It thoroughly reviewed and analyzed *all* of the emails presented in the reconsideration petitions. See, e.g., 75 Fed. Reg. at 49,557, 49,570-71, 49,573-74, 49,578-84.[42] EPA found that "[p]etitioners' assumptions and subjective assertions regarding what the e-mails purport to show about the state of climate change science are woefully inadequate pieces of evidence to challenge the voluminous and well documented body of science that is the technical foundation of the Administrator's Endangerment Finding." 75 Fed. Reg. at 49,584. As EPA noted, moreover, multiple independent investigative bodies similarly concluded that the CRU emails provided no evidence

[42] Petitioners' briefs repeat many of the claims regarding the CRU emails that were in the petitions for reconsideration, yet Petitioners barely acknowledge EPA's extensive and detailed analysis of those claims in the three-volume RTP. Even less do Petitioners respond to that analysis. In fact, Petitioners do not identify even a single alleged error in EPA's response.

of scientific misconduct or data manipulation by climate scientists, and did not cast doubt on the underlying body of science they had developed.[43] 75 Fed. Reg. at 49,558.

Petitioners claim that by failing to seek comment on the CRU emails, EPA left the record incomplete and denied the Court the benefit of EPA's response to comments. Va. Br. 17-18; Kan. Br. 24. First, Petitioners were free to raise their objections by filing petitions for reconsideration (and indeed the petitions that were submitted exceeded 500 pages). Second, a record that includes a 36-page Federal Register notice explaining the basis for EPA's denial of the reconsideration petitions and a three-volume Response to Petitions that examines in detail each and every issue and piece of evidence raised in the petitions clearly provides an adequate basis for judicial review.

[43] Petitioners criticize these investigations on the ground that they allegedly failed to address whether the CRU emails "undercut the reliability of the science," Va. Br. 4, then reverse course and cite the investigations as support for their arguments regarding alleged uncertainties in the science. Va. Br. 4-8. EPA does not agree with Petitioners' characterization of the conclusions reached by the various investigations. Those investigations were, however, cited only as being "in line with *EPA's* review and analysis of [the CRU emails]." 74 Fed. Reg. at 49,557 (emphasis added); see also, e.g., id. at 49,578-79, 49,581-83 (discussing EPA analysis of CRU emails).

D. The Reconsideration Petitions Did Not Demonstrate Any Departure From EPA's Information Quality Guidelines or Call Into Question EPA's Use of the IPCC Reports.

EPA followed its Information Quality Act guidelines, relying on information that was, and is, "accurate, reliable, and unbiased." See Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity of Information Disseminated by the Environmental Protection Agency (October, 2002), available at http://www.epa.gov/quality/informationguidelines (last visited Aug. 16, 2011). The guidelines may apply to a subsequent dissemination of the information in which EPA adopts, endorses, or uses the information to formulate or support a regulation, guidance, or other Agency decision or position. Id. at 16. The public comment process EPA used in the development of the Endangerment Finding provided for the thorough consideration of the information relied upon by EPA, and served the purposes of the Guidelines by providing an opportunity for correction of any information that does not comply with the Guidelines. See id. at 32. Petitioners have failed to demonstrate that the reconsideration petitions showed otherwise. See generally Va. Br. 31-36; Kan. Br. 12-18.

Petitioners claim that the reconsideration petitions demonstrated that the IPCC "frequently" relied on "unscientific," non-peer-reviewed studies. Va. Br. 33-34; see also Kan. Br. 14-16. Petitioners cannot support this conclusion, as the vast majority of studies reviewed by the IPCC were fully peer-reviewed. RTP 2-33 at

71 (JA XX). The IPCC's policy recognized and allowed limited use of "gray" literature where necessary and appropriate. Id.; see also RTC 1-14 (JA XX-XX). The limited use of a small number of non-peer-reviewed studies among the much larger body of peer-reviewed material does not undermine the IPCC's overall conclusions, nor does it warrant reconsideration of EPA's reliance on those conclusions as the technical basis for the Endangerment Finding.

Petitioners also attack the IPCC's peer review process, claiming that IPCC authors are free to disregard critical comments or rewrite material after the close of the review period. Va. Br. 11; Kan. Br. 14-16. This is simply untrue; as EPA explained, each IPCC chapter has a separate review editor who is not involved with writing that chapter and is responsible for ensuring that all reviewer comments are appropriately addressed by the chapter authors. See RTP 2-31 (JA XX-XX). Kansas also claims that EPA ignored its own peer review policy by using government scientists as peer reviewers. Kan. Br. 26. However, EPA's peer-review policy allows for the use of non-EPA federal scientists as peer reviewers, which is what EPA did. See U.S. Environmental Protection Agency, Peer Review Handbook, 3rd Edition, 2006, at 26 (JA XX) (peer reviewers "can come from EPA, another Federal agency, or from outside of the Federal government"); see also RTP 3-7 (JA XX-XX); RTC 1-10 (JA XX).

Neither have Petitioners offered any support for their other attacks on the IPCC process. Va. Br. 10-11, 36; Kan. Br. 11, 16-18. Petitioners rely on various investigations of the CRU emails. See id. These investigations were not, as a general matter, directed at the IPCC process; they were, instead, limited to a review of practices at the CRU and by a particular researcher in the United States. The overall conclusion of the independent investigations has, moreover, been that, while some IPCC procedures could be improved, any procedural deficiencies did not cast doubt on either the work performed by the CRU or the IPCC's use of that work. See, e.g., The Independent Climate Change E-Mails Review at 11 (JA XX).[44]

Finally, as we next discuss, the few alleged factual errors made by the IPCC either were not errors at all or were immaterial to the Endangerment Finding. The petitions to reconsider thus failed to support the Petitioners' claims that the science relied on in the Endangerment Finding should be reconsidered.

[44] EPA responded in detail to Petitioners' conclusory claims of withheld, lost or destroyed data (RTP Sections 1.3.3.1-.2, JA XX-XX; RTP Section 3.4.1, JA XX-XX; RTP Section 3.4.2, JA XX-XX), reliance on IPCC authors' own studies (RTP Section 2.2.3.2, JA XX-XX); conflicts of interest among IPCC personnel (RTP Section 2.2, JA XX-XX), and attempts to stymie adverse studies (RTP Section 2.2.3.4, JA XX-XX). See Va. Br. 10-11; Kan. Br. 15-16. Petitioners do not even attempt to identify any deficiencies in EPA's response.

E. Evidence Presented In The Reconsideration Petitions Did Not Provide Substantial Support For An Argument That The Endangerment Finding Should Be Reopened.

Petitioners point to a supposedly pervasive "pattern" of flawed science, but identify only a handful of isolated, insignificant alleged missteps. See Va. Br. 12; Kan. Br. 13-14. Only two of these are actually errors in the IPCC's assessment report, and neither was part of the basis for the Endangerment Finding. 75 Fed. Reg. 49,576. The claimed factual errors thus were clearly not of central relevance to the Endangerment Finding.

Percentage of Netherlands lying below sea level: The IPCC has acknowledged that, based on information received from the Netherlands, AR4 misstated the percentage of that country that is below sea level. The IPCC has since published a correction. In so doing, the IPCC confirmed that this statistic was originally used "for background information only, and the updated statistic remains consistent with overall conclusions." RTP 2-1 at 8 (JA XX) (noting mistaken and correct percentages). EPA concluded that this error was "minor and inconsequential" to the Endangerment Finding, which did not in any way refer to or rely on the percentage of the Netherlands that is below sea level. Id. at 9 (JA XX); see also 75 Fed. Reg. at 49,576.

Himalayan glaciers: The IPCC has acknowledged misstating the *rate* at which Himalayan glaciers are receding, but the fact that they *are* receding is not in

question. See 75 Fed. Reg. at 49,577; RTP 2-2 (JA XX-XX). Moreover, EPA did not rely on the erroneous projection in the Endangerment Finding. Id.

African agriculture yields: As explained in response to the petitions for reconsideration, the "policy paper" concerning agricultural yields that Petitioners attack was used in accordance with IPCC policies on "gray" literature. See RTP Section 2.1.7 at 24-25 (JA XX-XX). After a careful review, EPA concluded that statements made by the IPCC in reliance on the challenged paper were neither faulty nor included uncritically. Id. at 26 (JA XX). In addition, this paper relates to impacts *outside* the United States, and therefore did not materially impact the Administrator's determination regarding impacts *within* the United States. Id. at 24-25 (JA XX-XX).

Amazon rain forests: The reaction of Amazon rain forests to reductions in precipitation is not discussed anywhere in the Endangerment Finding or TSD, and is thus of little relevance to the Finding. RTP 2-9 at 21 (JA XX). EPA noted, moreover, that although the IPCC used a non-peer-reviewed study on this issue, that study was in turn based on peer-reviewed literature. Id.

Projections of more violent storms: Petitioners list "*projections* of more violent storms" as an alleged error, but cite references concerning *historical* trends in storms. Va. Br. 12 (emphasis added). EPA considered new studies submitted with the petitions for reconsideration concerning such trends, and concluded that

these studies were consistent with the TSD and the Endangerment Finding. RTP 1-85 at 143-44 (JA XX-XX).

EPA's discussion of these points demonstrates the weakness of Petitioners' claims regarding the quality or reliability of the scientific basis for the Endangerment Findings. All that State Petitioners can find to attack are minor, isolated errors (or non-errors) occurring in a few scattered studies selected from a multi-volume assessment containing thousands of pages of findings and conclusions. These attacks do not undermine the IPCC's conclusions or EPA's Endangerment Finding. See 75 Fed. Reg. at 49,558, 49,576-77.

IV. EPA REASONABLY CLASSIFIED SIX GASES AS ONE POLLUTANT

Section 202(a) requires EPA to determine whether emissions of any "air pollutant" from motor vehicles cause or contribute to "air pollution" that may reasonably be anticipated to endanger public health or welfare. 42 U.S.C. § 7521(a)(1). EPA concluded that an aggregate group of six greenhouse gases constitutes both the "air pollution" endangering health and welfare and the "air pollutant" that contributes to this pollution. See supra at 18-19; 74 Fed. Reg. at 66,536-38. EPA carefully set forth the common attributes shared by the six greenhouse gases that supported the Agency's decision to aggregate them as a

single air pollutant.[45] Among other things, these gases are all directly-emitted (i.e., not formed in the atmosphere through the interaction of precursor gases), long-lived (so they become globally well-mixed in the atmosphere), and have well-understood warming effects. 74 Fed. Reg. at 66,537. Importantly, the common attributes that EPA relied on in deciding to aggregate these gases as a single air *pollutant* are relevant as well to the air *pollution* for which greenhouse gases are agents – it is because of these commonly shared attributes that these six gases are known to be the primary driver of climate change and thus the primary focus of climate change science and policy. 74 Fed. Reg. at 66,517; RTC 10-1 (JA XX-XX).

Petitioners do not dispute this rationale, but argue instead that EPA's definition is inconsistent with the Act under Chevron. Ind. Br. 30-33. As to Chevron step one, Section 302(g) of the Act defines "air pollutant" as "*any air pollution agent or combination of such agents*, . . . which is emitted into or otherwise enters the ambient air." 42 U.S.C. § 7602(g) (emphasis added). As the Supreme Court held in Massachusetts, this is a "sweeping" definition, "embrac[ing] all airborne compounds of whatever stripe." 549 U.S. at 528. The

[45] Petitioners' claim that EPA improperly "group[ed] six *separate* air pollutants" into one, Ind. Br. 30 (emphasis added), misses the point. Each of the six substances individually is an "air pollution agent;" consistent with Section 302(g), 42 U.S.C. § 7602(g), EPA defined the combination of these agents as an "air pollutant."

Court further concluded that greenhouse gases "fit well" within this "capacious" definition, and that they are "unquestionably 'agents' of air pollution." Id. at 532, 529 n.26. Petitioners inexplicably assert that EPA has violated Chevron step one by doing precisely what the statute explicitly authorizes EPA to do. Ind. Br. 30-31. Given that Congress has "directly spoken to the precise question at issue," 467 U.S. at 842-43 – saying that EPA may consider a "combination of . . . agents" to be a single "air pollutant," which is precisely what EPA did here – Petitioners' conclusory Chevron step one argument necessarily fails.

Petitioners also inaccurately assert that EPA's grouping of six greenhouse gases as a single air pollutant is inconsistent with past Agency practice. Ind. Br. 30-31. They focus on EPA's grouping of particles of less than 2.5 microns in diameter as a single air pollutant ($PM_{2.5}$), but ignore the closer analog of volatile organic compounds (VOCs) or particulate matter (PM) – hundreds of different chemical compounds, all of which are treated as a single "air pollutant." See 74 Fed. Reg. at 66,540-41; see also id. at 66,537. VOCs, like the six gases at issue here (and, for that matter, like $PM_{2.5}$ or PM) are grouped as a single "pollutant" because they all have similar attributes and effects related to their impact on the air pollution. See 74 Fed. Reg. at 66,541; RTC 10-4 (JA XX-XX). Indeed, EPA's approach makes sense applying Petitioners' own argument regarding $PM_{2.5}$ to the greenhouse gas air pollutant, because "it is the [compound's greenhouse gas

effect], not its composition, that poses the relevant risks to public health and welfare." Ind. Br. at 31. EPA thus acted consistently with past Agency practice in grouping six greenhouse gases into a single "air pollutant."

Petitioners further claim that EPA's grouping of six greenhouse gases as the "air pollutant" "subverts" the purpose of the Act, Ind. Br. 31, but never explain precisely how. Section 202(a) requires a contribution finding for the *air pollutant*, not for each and every air pollution *agent* within a defined "air pollutant;" thus, the fact that EPA did not make a separate contribution finding for each of the six greenhouse gases individually is irrelevant. What matters for purposes of a Section 202 contribution analysis is the total amount of the greenhouse gas *air pollutant* emitted by motor vehicles, not the amount of each agent emitted.

Petitioners try to make much of the fact that motor vehicles do not emit all of the greenhouse gases in the defined "air pollutant."[46] Ind. Br. 31, 32-33. As EPA explained, the fact that these six greenhouse gases share relevant attributes and are similar agents of the same air pollution remains true regardless of what sources or source categories may emit the greenhouse gases. See 74 Fed. Reg. at 66,541; RTC 10-2 (JA XX-XX). Petitioners' approach would disregard the fact

[46] To the extent that Petitioners argue that EPA should not have included substances not emitted by motor vehicles in the definition of "air pollutant," Ind. Br. at 32, there is a serious question whether Petitioners have standing. Petitioners have not identified even one emissions source that is subject to regulation due to EPA's definition, but that would escape regulation if the definition of "air pollutant" did not include substances not emitted by motor vehicles.

that SF_6 and PFCs share common attributes with the other four greenhouse gases, simply because they are not emitted by motor vehicles, thus ignoring relevant scientific considerations. See RTC 10-2 (JA XX-XX).

Petitioners' approach would also produce odd and potentially cumbersome outcomes. If EPA were required to limit its definition of "air pollutant" according to which specific air pollution agents a particular source category emitted, the result would be the proliferation of multiple defined air pollutants, all very similar to one another in effect (as all contribute to climate change) and all containing many overlapping air pollution agents (such as CO_2, which is emitted by almost all sources), yet each differing from the other according to what is *not* emitted by a particular source category. Such an approach makes no sense, and is by no means compelled by the statute.

There is longstanding precedent for defining an air pollutant broadly, even if a particular source category may not emit every substance covered by that air pollutant. 74 Fed. Reg. at 66,541 (discussing heavy duty truck standards applicable to VOCs and PM, and noting "it is highly unlikely that heavy duty trucks emit every substance that is included in the group defined as VOC or PM"). Petitioners do not challenge EPA's conclusion that motor vehicle emissions contribute to the air pollution consisting of the six well-mixed greenhouse gases – a finding that EPA would have made even if it defined the relevant air pollutant to

consist solely of the four gases emitted by Section 202 sources. Id. Petitioners have thus failed to demonstrate that EPA's definition of "air pollutant" here to include substances not emitted by motor vehicles was unreasonable.

Finally, there is no support for Petitioners' claim that EPA's definition of "air pollutant" as an aggregate of six greenhouse gases will unfairly impact some stationary sources.[47] A coal mine would not be "subject to methane regulation because automobiles emit relatively large quantities of CO_2," but because the mine and motor vehicles both emit greenhouse gases. Nor would a facility emitting four tons of SF_6, 50 tons of CO_2, and 50 tons of N_2O (i.e., 104 tons of greenhouse gases, more than the 100-ton statutory threshold) become subject to permitting requirements because of a CO_2 equivalence calculation. Ind. Br. 31-32. If a source does not emit more than the required threshold amount of greenhouse gases on a mass basis, it will not be subject to PSD or Title V, regardless of the CO_2 equivalence of any greenhouse gas emissions. 75 Fed. Reg. at 31,514, 31,522.

V. EPA FULLY CONSIDERED AND REASONABLY REJECTED PETITIONERS' ALTERNATIVE ENDANGERMENT APPROACH

Petitioners argue that before exercising her judgment regarding endangerment, the Administrator must quantify risks and various climate metrics, and then, on the basis of these data, establish quantitative decision-making criteria

[47] EPA was not required to consider such impacts in making the Endangerment Finding. Infra at 108-110.

that distinguish harmful from safe climate change effects. See Ind. Br. 26-27; Tx. Br. 17, 21. They further suggest that even if the Agency completes this empirical task, she can only find endangerment if she can also answer the following question: "How might GHG regulation under CAA Section 202 reduce emissions in a way that would meaningfully address the alleged 'endangerment'?" Ind. Br. 27; see also Tx. Br. 19.

EPA fully considered and reasonably rejected the approach advocated by Petitioners. Below, we will first explain why EPA was not required to define "endangerment" in the quantitative terms advocated by Petitioners, and then discuss why the statute does not require EPA to include, as part of its endangerment inquiry, analysis and findings as to the extent to which any endangerment can be ameliorated by Section 202 emission standards.

A. EPA Was Not Required to Define "Endangerment" in the Quantitative Terms Advocated by Petitioners.

To begin with, Petitioners' arguments completely disregard the vast and compelling quantity of empirical data and scientific evidence that EPA *did* analyze and discuss in the Endangerment Finding. In support of its ultimate finding of endangerment, EPA made a wide array of more specific findings related to the impact of elevated atmospheric greenhouse gas concentrations on climate, as well as the associated health and welfare effects of such air pollution and climate change, and the Agency documented the scientific basis for these findings in an

extensive technical support document ("TSD").[48] These findings and data are discussed in detail in Part II, supra, but the key point here is that the Endangerment Finding rested on precisely the type of foundation contemplated by Congress in adopting the present version of section 202(a)(1). See 1977 U.S.C.C.A.N. at 1128-29. Properly understood, therefore, Petitioners cannot argue that EPA failed to support the Endangerment Finding with suitable technical data and analysis – it is indisputable that the Agency did so. Rather, they instead appear to contend that EPA also was required to shape these data into quantitative thresholds distinguishing "safe" from "unsafe" levels of climate change before it could find endangerment.

This argument is utterly inconsistent with the Ethyl decision, where the Court was explicit that endangerment is a fact-specific, case-by-case determination, with no minimum threshold for either risk or severity of harm. Ethyl, 541 F.2d at 18-20; see also 74 Fed. Reg. at 66,509; RTC Section 9.3.2 (JA XX-XX). Instead, EPA simply is to judge both the likelihood that harm will occur and the severity of the harm if it were to occur; varying combinations of risk and harm can amount to endangerment. Ethyl, 541 F.2d at 18-20. The Court stressed

[48] See 74 Fed. Reg. at 66,517-19 (describing the evidence showing that the concentration of six greenhouse gases is the primary driver of current and projected climate change), 66,523-36 (summarizing effects on health and welfare); see also Am. Elec. Power v. Connecticut, 131 S. Ct. 2527, 2532-33 (2011) (noting these and related findings).

that in reviewing the Administrator's endangerment determination "we will not demand rigorous step-by-step proof of cause and effect" and will uphold the determination as long as it is "rationally justified." Id. at 28.

Petitioners' description of this aspect of Ethyl is mistaken and incomplete. Petitioners suggest that the Court only upheld the endangerment finding in Ethyl because the Agency supposedly conducted an analysis that demonstrated in a quantitative fashion that the challenged fuel additive standards would lower airborne exposures in a way that would help keep blood lead levels in a "safe" range. Ind. Br. 25. By contrast, Petitioners argue, EPA's approach here was flawed because it involved a more "qualitative" analysis. Id. at 26. However, upon examination, the distinction Petitioners posit between this case and the cited portion of Ethyl simply does not exist.

As the Court in Ethyl noted, EPA *initially* attempted to develop an equation "to predict a person's blood lead level as a direct function of the air lead concentration to which he was exposed," which could "then be used to find a 'safe' air lead concentration to avoid elevated blood levels." Ethyl, 541 F.2d at 56. However, EPA later "abandoned" this "attempt to *quantify* a safe level of exposure" due to technical complications "and settled on its current, *more qualitative*, approach to the evidence." Id. (emphasis added). The analysis the Court upheld was therefore "much more modest in scope," id., and, in the end, was

a qualitative judgment based on review of a variety of studies analyzing the effects of airborne exposure to and ingestion of lead. Id. at 55-56. Thus, while there certainly was a significant empirical aspect to EPA's analysis in Ethyl (as there was in this case as well), EPA's ultimate use of these data was, in the Court's own words, essentially qualitative in nature, and the Court upheld that approach as sufficient even under the prior version of the statute.[49]

Furthermore, this Court has more recently repeatedly held that it is reasonable for EPA to base health and welfare-related findings in analogous contexts under the CAA and other environmental statutes on qualitative rather than quantitative information.[50] In sum, EPA does not need to quantify the myriad possible combinations of risk of harm and severity of harm, covering the very wide range of relevant climate and environmental circumstances, that would *not* constitute endangerment before it may make a fully rational judgment that the specific facts and circumstances here *do* in fact amount to endangerment.[51]

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[49] As discussed below, the Court's analysis was based on the risk from airborne lead, not the reduction in risk that the fuel control would achieve.

[50] See Am. Farm Bureau Fed'n v. EPA, 559 F.3d 512, 535 (D.C. Cir. 2009); Cement Kiln Recycling Coal. v. EPA, 493 F.3d 207, 223 (D.C. Cir. 2007); Am. Trucking Ass'ns v. EPA, 283 F.3d at 369; see also, e.g., Catawba County v. EPA, 571 F.3d 20, 39-40 (D.C. Cir. 2009) (upholding use of a qualitative weight of evidence approach in applying the contribution test to NAAQS designations).

[51] Cf. Lead Indus., 647 F.2d at 1161-62 (in determining the ambient level of an air pollutant that is requisite to protect public health with an adequate margin of safety, under CAA Section 109, 42 U.S.C. § 7409, EPA is not required to first

Imposing the burden of proof on EPA that Petitioners advocate would also conflict with the Supreme Court's admonition in Massachusetts that EPA cannot decline to make an endangerment finding merely because there is "some residual uncertainty." Massachusetts, 549 U.S. at 534. Instead, only uncertainty that is "so profound that it precludes EPA from making a reasoned judgment as to whether greenhouse gases contribute to global warming" could justify such inaction.

Also unavailing is the Non-State Amici's reference to Industrial Union Department, AFL-CIO v. American Petroleum Inst., 448 U.S. 607, 645 (1980), and a subsequent decision of this Court citing that case. See Brief of Amici Curiae In Support of Petitioners ("Non-State Amicus Br.") at 13-14. Most importantly, the plurality in Industrial Union stressed that, regardless of any problems with the particular analysis in front of it, in general the agency has just the sort of discretion to implement a preventative approach in making a threshold determination of risk that this Court articulated in Ethyl, free of the empirical constraints advocated by Petitioners. See Industrial Union, 448 U.S. at 655-56 (explaining, inter alia, that a threshold determination of risk "is not a mathematical straitjacket," the agency "has no duty to calculate the exact probability of harm," and it "is not required to support its finding that a significant risk exists with anything approaching scientific certainty"). The Court further stressed that the agency has "some leeway where its

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define a protective ambient level and then determine a margin of safety from that point).

findings must be made on the frontiers of scientific knowledge" and "so long as [the agency's findings] are supported by a body of reputable scientific thought, the Agency is free to use conservative assumptions in interpreting the data with respect to carcinogens, risking error on the side of overprotection rather than underprotection." Id. at 656; see also, e.g., Nat'l Maritime Safety Ass'n v. OSHA, No. 09-1050, 2011 WL 2417109, at *3, *5 (D.C. Cir. June 17, 2011) (following this aspect of Industrial Union and applying a similar deferential standard of review to OSHA rules for shipping).

For all of these reasons, as well as the reasons discussed in Part I, supra, EPA was not required to define endangerment in the empirical terms advocated by Petitioners.

B. The Extent to Which the Vehicle Rule Will Ameliorate Climate Change is Irrelevant to the Endangerment Finding.

In making the Endangerment Finding, EPA correctly rejected the suggestion that the Agency cannot make an affirmative endangerment finding unless it also finds that regulatory control measures "would prevent at least a substantial part of the danger from the global climate change at which the regulation is aimed." 74 Fed. Reg. at 66,507; see Ind. Br. 13-14, 28-29. Indeed, in Massachusetts, the Supreme Court rejected essentially the very argument Petitioners advance. See Massachusetts, 549 U.S. at 533 (characterizing "effective" voluntary measures as having "nothing to do with whether greenhouse gas emissions contribute to climate

change"), 534 (characterizing the effectiveness and appropriateness of greenhouse gas emission standards for motor vehicles as "irrelevant" to the endangerment finding).

The approach followed by EPA is consistent with the structure of Section 202(a). First, Congress separated the criteria governing the endangerment and contribution findings from the factors governing the establishment of emission standards. See 74 Fed. Reg. at 66,507; see also 42 U.S.C. § 7521(a)(1)&(2). After EPA makes a positive endangerment finding under Section 202(a)(1), issues associated with the cost and availability of controls are relevant to the subsequent setting of emission standards, as expressly provided for in Section 202(a)(2). See 42 U.S.C. § 7521(a)(2). Congress' express reference to cost and technology in Section 202(a)(2) reinforces the absence of any similar factor in Section 202(a)(1). See Whitman v. American Trucking Ass'ns, 531 U.S. 457, 466-68 (2001).

In addition, Section 202(a)(1) also specifically directs EPA to consider whether "air pollution" – not motor vehicle emissions – may reasonably be anticipated to present an "endangerment to public health or welfare." 42 U.S.C. § 7521(a)(1). Thus, the first and most important statutory inquiry for EPA – whether the "air pollution" (the atmospheric concentration of six greenhouse gases) may present an "endangerment" to public health or welfare – has no relationship to the origins of this air pollution. See 74 Fed. Reg. at 66,505-06. Rather, the source of

these emissions is only relevant to the second part of EPA's inquiry, whether motor vehicle emissions "cause or contribute" to the air pollution the Administrator has judged may reasonably be anticipated to endanger. Even in that part of Section 202(a)(1), however, there is no suggestion that Congress intended EPA to analyze the extent or adequacy of future emission *controls* as part of the initial "cause or contribute" finding. This is another strong indication from the structure of Section 202(a) that Congress did not intend the efficacy of potential control strategies, nor any other issue unrelated to the public health and welfare impacts of the air pollution under consideration, to be a relevant factor for EPA to have considered in the Endangerment Finding.

It is also worth noting that this separation between the endangerment determination and the setting of standards is repeated in comparable provisions of the Act, particularly those addressing the establishment of National Ambient Air Quality Standards ("NAAQS") under 42 U.S.C. §§ 7408-09. The "endangerment" finding under Section 108(a)(1), 42 U.S.C. § 7408(a)(1), can lead to the listing of an air pollutant, which leads to the development of "air quality criteria" under Section 108(a)(2), 42 U.S.C. § 7408(a)(2), and then establishment of a NAAQS under Section 109, 42 U.S.C. § 7409, at the level that is "requisite" to protect public health and welfare. Clearly EPA is not required to know the results of the subsequent NAAQS standard-setting in order to make the endangerment finding

under Section 108(a)(1). As with Section 202(a), Congress clearly contemplated that EPA would first determine that an air pollutant contributed to air pollution that endangered public health and welfare, and then that EPA would separately determine the appropriate level (or standard) for that pollutant.

Thus, not only is there nothing in Section 202(a)(1) itself that suggests EPA should consider the efficacy of emission standards as part of the Endangerment Finding, but this separation of endangerment and standard-setting criteria is repeated in comparable contexts throughout the Act, and certainly is not unusual or inappropriate as Petitioners suggest. See also, e.g., CAA Sections 111(b), 213(a)(4), and 231(a), 42 U.S.C. §§ 7411(b), 7547(a)(4), and 7571(a). In sum, it is Petitioners, not EPA, who would distort congressional intent by improperly collapsing these criteria into one decision, in effect revising section 202(a).

Petitioners' reliance on Small Refiner Lead Phase-Down Task Force v. EPA, 705 F.2d 506, 525 (D.C. Cir. 1983), is clearly misplaced. See Ind. Br. 24, 26. In the cited portion of Small Refiner, the Court considered whether the Agency had adequately explained why it imposed a uniform lead-content fuel standard on both small and large refiners when it had proposed to differentiate between the two. Small Refiner did not address the criteria for an endangerment finding (under the then-existing CAA Section 211(c)) at all; rather it addressed the appropriateness of the regulatory controls on small refiners (under then-existing CAA Section 211(g))

many years after the endangerment finding was made. See generally Small Refiner, 705 F.2d at 511-16. The aspect of Small Refiner Petitioners cite thus is irrelevant to this case. This case does not involve the setting of a regulatory standard under Section 202(a)(2), but instead solely involves the finding of whether an endangerment exists under Section 202(a)(1). If Small Refiner provides any pertinent guidance here, it supports EPA's approach because it clearly distinguishes the factors that guide a threshold finding of "endangerment" from those that guide the subsequent establishment of emission standards. See Small Refiner, 705 F.2d at 517.

Petitioners also inappropriately base much of their argument on these points on an obvious misreading of Ethyl, claiming that the Court framed the "relevant issue" in that case "not as whether there was evidence that environmental lead could be a public health hazard, but whether the record 'present[ed] a rational basis for the low-level regulations' that EPA actually adopted." Ind. Br. 24 (quoting Ethyl, 541 F.2d at 38). When read in context, it is clear that this quote is merely a general preface to the Court's substantive review of the EPA action before it. While the petitioners' challenge (and the Court's analysis) in Ethyl focused on the threshold "endangerment" question, that litigation, unlike this case, ultimately constituted a challenge to the substantive fuel additive standards themselves. See Ethyl, 541 F.2d at 10-11 (discussing procedural history and summarizing

Petitioners' challenges). Thus, it is not at all surprising that the Court would introduce its analysis with the type of shorthand quoted by Petitioners, which simply describes the overall nature of the claims before the Court (i.e., a challenge to the lead standards adopted by EPA), and recognizes that the rationality of the endangerment finding was a necessary legal prerequisite for adopting a fuel control under the statutory provision at issue. Petitioners' suggestion that this prefatory snippet from Ethyl was somehow meant to make a showing of regulatory efficacy the sine qua non of all "endangerment" determinations is wholly unjustified.

Petitioners then suggest that the Court's decision in Ethyl precluded EPA from making an endangerment finding unless the Agency first determined that the promulgated restrictions on leaded fuel additives would "fruitfully attack" certain very specific indicia of public health threats from lead that EPA cited to support the endangerment finding. Ind. Br. 25 (citing Ethyl, 541 F.2d at 31 & n.62, 55-65). However, in the cited portion of Ethyl, the Court was specifically addressing arguments that EPA's endangerment finding should only have considered the *incremental* effects on public health of lead from fuel additives, not the *cumulative* effects of such lead combined with lead from other sources. The Court's point was that the incremental approach advocated by Petitioners there was inappropriate in

gauging whether an endangerment was posed by lead-containing fuel additives.[52] By contrast, the Court pointed out (in the text cited by Petitioners) that the incremental effect of lead from fuel additives could be a relevant consideration in deciding what *control requirements* might be appropriate to address that endangerment under the pertinent provisions of the Act in place at that time.[53] Thus, read in context, the text on which Petitioners rely simply states that while the efficacy of potential regulatory approaches may be relevant to the selection of control requirements under the CAA provision at issue in that case, it has no bearing on the threshold question of whether or not the air pollution endangers public health or welfare. See 74 Fed. Reg. at 66,507-08.

Petitioners fare no better in their attempt to find such a limitation on the endangerment finding in Ethyl's review of EPA's scientific determinations. See Ind. Br. 25 (citing Ethyl, 541 F.2d at 55-65). Petitioners improperly characterize the appendices in Ethyl as addressing how EPA's lead regulation would lower exposures and ameliorate the underlying danger from airborne lead. To the contrary, the appendices deal exclusively with scientific studies concerning the risk

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[52] See Ethyl, 541 F.2d at 30-31 ("Congress understood that the body lead burden is caused by multiple sources" and that "[i]t did not mean for 'endanger' to be measured only in incremental terms").

[53] Ethyl, 541 F.2d at 31 n.62 ("While the incremental effect of lead emissions on the total body lead burden is of no practical value in determining whether health is endangered, it is of value, of course, in deciding whether the lead exposure problem can fruitfully be attacked through control of fuel additives."); see also 74 Fed. Reg. at 66,508 (discussing this aspect of Ethyl).

to health from airborne lead, whether inhaled or ingested as dust, such as clinical studies and epidemiologic studies. They do not discuss the control strategy adopted by EPA, the amount of reductions this strategy would achieve, or how these reductions would directly impact public health. The appendices do not give any indication that the Court was reviewing the efficacy of the control strategy in reviewing the science on which the endangerment finding was based. Moreover, as discussed in the preceding section, what is perhaps the most salient point about the appendices in Ethyl is that they reflect this Court's acceptance of a qualitative rather than quantitative analysis in this context.

As EPA aptly pointed out, Petitioners' approach would also be unworkable in practice. It would require EPA, at the time of the endangerment finding, to project the result and effectiveness of "perhaps not one, but even several, future rulemakings stretching over perhaps a decade or decades." 74 Fed. Reg. at 66,508. Contrary to Petitioners' argument, there is nothing in the statute or applicable judicial precedent that supports, let alone compels, this irrational and unwieldy result.

Finally, there is no merit to Petitioners' suggestion that EPA was required to defer making the Endangerment Finding until after undertaking a full analysis of the effect of updated fuel economy standards adopted by the National Highway Traffic Safety Administration ("NHTSA"). Ind. Br. 39-41. Petitioners base this

argument largely on the fact that the NHTSA's authorizing fuel-economy statute (the Energy Policy and Conservation Act, or "EPCA") was updated (by the Energy Independence and Security Act, or "EISA") after the Supreme Court decided Massachusetts. Id. at 40. However, this chronology is irrelevant. Regardless of the amendments Congress may have made to EPCA and when it made them, the operative provision here is Section 202(a)(1) of the Clean Air Act, and that provision has been unchanged since 1977. Under that section, EPA simply had no obligation to consider, as part of the Endangerment Finding, the impact of NHTSA's regulation; instead, issues such as this are governed exclusively by the regulatory criteria established by Congress in Section 202(a)(2), 42 U.S.C. § 7521(a)(2). Massachusetts, 549 U.S. at 532 ("that DOT sets mileage standards in no way licenses EPA to shirk its environmental responsibilities"); see also 74 Fed. Reg. at 66,507-08, 66,544; 75 Fed. Reg. at 49,589-90.[54]

[54] Petitioners also argue that there should be little practical need for EPA regulation of greenhouse gas emissions from motor vehicles once NHTSA's corporate average fuel economy ("CAFE") standards are updated. Ind. Br. 40. While these issues are legally irrelevant to the Endangerment Finding (for the reasons discussed in the text here), in response to reconsideration petitions raising this issue, the Agency explained that the EPA light- duty vehicle standards will achieve greater overall greenhouse gas reductions than CAFE standards. See 75 Fed. Reg. at 49,590. In fact, EPA's vehicle standards are projected to result in 47 percent greater greenhouse gas reductions than projected under the CAFE standards over the lives of model year 2012-2016 vehicles. 75 Fed. Reg. at 25,490, Table III.F.1-2; 75 Fed. Reg. 25,635-36, Table IV.G.1-4.

For all these reasons, as well as those discussed in Part I, supra, there simply is no support in the statute or applicable case law for Petitioners' suggestion that EPA should take into account the efficacy of emission standards before making an endangerment finding.

VI. EPA PROPERLY DECLINED TO CONSIDER THE ADDITIONAL FACTORS IDENTIFIED BY PETITIONERS AS PART OF ITS ENDANGERMENT ANALYSIS

This Court has long made clear that where a statute directs an agency to consider certain specific factors in making a determination, it is inappropriate for the agency to inject other factors into that analysis. See, e.g., Am. Petroleum Inst. v. EPA, 52 F.3d 1113, 1119-20 (D.C. Cir. 1995); Ethyl Corp. v. EPA, 51 F.3d 1053, 1059-60 (D.C. Cir. 1995); see also National Ass'n of Home Bldrs. v. Defenders of Wildlife, 551 U.S. 644, 663-64 (2007) (list of nine factors for challenged Clean Water Act program approval is "exclusive"). With even more direct relevance to this case, the Supreme Court held that the Administrator's exercise of "judgment" under the endangerment criterion of Section 202(a)(1) must "relate to whether an air pollutant 'cause[s], or contribute[s] to, air pollution which may reasonably be anticipated to endanger public health or welfare.'" Massachusetts, 549 U.S. at 532-33 (quoting 42 U.S.C. § 7521(a)(1)). The Court intended the Administrator to base her decision on science, not general "policy judgments" divorced from these statutory factors. Massachusetts, 549 U.S. at 533-

34. "Put another way," the Court added, "the use of the word 'judgment' is not a roving license to ignore the statutory text[;]" rather, it is "but a direction to exercise discretion within defined statutory limits." Id. at 533; see also Am. Elec. Power Co. v. Connecticut, 131 S. Ct. 2527, 2539 (2011) (quoting Massachusetts).

Yet, such a "license to ignore the statutory text" is essentially what Petitioners seek here. Specifically, Petitioners argue that EPA should have added a number of additional, unmentioned factors into the health and welfare endangerment criteria expressly set forth in Section 202(a)(1), namely, the costs and administrative burdens attendant to stationary source regulation of greenhouse gas emissions, the extent to which society can adapt to or mitigate the adverse effects of the endangerment and the extent to which adverse climate effects can be justified in the name of economic progress. These arguments are meritless.

Petitioners' approach would require EPA to turn a blind eye to air quality degradation and associated health and welfare impacts, so long as the increased pollution could in some sense be justified, tolerated, or adapted to in the name of "progress." However, as discussed in Part I.B, supra, Congress' express, overriding purpose in enacting the precautionary endangerment language in Section 202(a)(1) was to enable EPA to take action to avoid adverse impacts to public health and welfare from air pollution before they occur to the extent possible. See also 42 U.S.C. § 7401(b)(1) (general purpose of the Clean Air Act is

"*to protect and enhance the quality of the nation's air resources* so as to promote the public health and welfare and the productive capacity of the population") (emphasis added). For these and other reasons, EPA's determination that such considerations were irrelevant to the Endangerment Finding represented, at the very least, a "reasonable" construction of the statute that should be upheld under the second step of Chevron,[55] or, alternatively, a reasonable and well-explained determination under the deferential arbitrary or capricious standard of review.[56]

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[55] The Court need not reach the question of whether the statute unambiguously precludes EPA from considering these factors since, for the reasons discussed herein, at the very least it was reasonable for EPA to deem such factors irrelevant to its analysis. See Entergy Corp. v. Riverkeeper, Inc., 129 S. Ct. 1498, 1505 n.4 (2009) (rejecting argument that a Chevron step one analysis is required in every case since "surely if Congress has directly spoken to an issue then any agency interpretation contradicting what Congress has said would be unreasonable").

[56] We acknowledge that statutory questions bearing on the appropriate factors to consider in making an endangerment finding overlap with the Court's inquiry into whether the challenged action is arbitrary or capricious, which also in part asks whether the agency's decision "was based on a consideration of the relevant factors." Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc., 419 U.S. 281, 285 (1974) (citation omitted). This Court has recognized such an overlap in other cases. See, e.g., Am. Fed'n of Gov't Employees v. Nicholson, 475 F.3d 341, 346 (D.C. Cir. 2007); Nat'l Ass'n of Regulatory Utility Comm'rs v. ICC, 41 F.3d 721, 726-27 (D.C. Cir. 1994). While admittedly a close question, the Court has suggested that analysis under the Chevron framework is more appropriate where (as here) the agency is acting pursuant to a relatively specific statutory provision, see Nat'l Ass'n of Regulatory Utility Comm'rs v. ICC, 41 F.3d at 727, so we have generally structured our argument accordingly. However, EPA believes the same analysis also demonstrates that the Agency's framework for addressing the endangerment question was neither arbitrary nor capricious.

A. EPA Was Not Required to Consider the Costs and Administrative Burdens Attendant to Stationary Source Regulation of Greenhouse Gas Emissions.

Petitioners argue that EPA was required to consider the possible effect of future regulation of stationary sources – and especially the costs and administrative burdens of such stationary source regulation – since: (1) the Endangerment Finding obligated EPA to issue corresponding emission standards for motor vehicles; (2) issuance of such standards (through the Vehicle Rule) made greenhouse gases "subject to regulation" under the Act; and (3) PSD and Title V permit requirements apply to stationary sources based on their emissions of any pollutant subject to regulation under the Act. See Ind. Br. 20-23; see also Non-State Amicus Br. at 19-31. EPA properly rejected this argument for a variety of reasons. See 75 Fed. Reg. at 49,584-89; 74 Fed. Reg. at 66,515-16.

1. Costs play no role in determining whether the air pollution endangers public health or welfare.

It was at the very least reasonable, under Chevron, for EPA to conclude that it was precluded from considering costs as part of the Endangerment Finding.

First, as discussed in Part I of this brief, supra, the only factors relevant to an endangerment finding under section 202(a)(1) are whether an endangerment to public health or welfare from the relevant air pollution may reasonably be anticipated. Where, as here, the scientific inquiry conducted by EPA indicates that these statutory criteria are met, the Administrator simply does not have the

discretion to decline to make a positive endangerment finding to serve other policy goals. See Massachusetts v. EPA, 549 U.S. at 532-35.

Petitioners suggest that EPA could decline to make an endangerment finding under Section 202 to stave off stationary source regulation under the Act's PSD program, see Ind. Br. 21; see also Non-State Amicus Br. 22-24, but there simply is no basis in Section 202(a)(1) for EPA to do so.[57] While it is true that the Act makes PSD requirements applicable to newly-regulated pollutants, including greenhouse gases, this reflects a congressional choice wholly independent of the focused health and welfare endangerment criteria established in Section 202(a)(1). See also Am. Elec. Power Corp. v. Connecticut, 131 S. Ct. at 2537 (noting that CAA "speaks directly" to regulation of carbon dioxide emissions from coal-fired power plants). The lack of any statutory support for Petitioners' approach indicates that it should be rejected as inconsistent with clear Congressional intent. At the very least, however, EPA acted reasonably and consistently with the statute in determining that the regulatory effects that may follow an endangerment finding

[57] Petitioners' citation to EPA's 2008 ANPR, see Ind. Br. 23, is irrelevant. In the cited portion of the ANPR, EPA simply described the potential relationships among various provisions of the Act and the possible statutory implications of a positive endangerment finding. See 73 Fed. Reg. 44,354, 44,418-20 (July 30, 2008). There is nothing in the ANPR that supports Petitioners' argument that EPA believed it could properly consider potential stationary source implications as a factor in making or declining to make an endangerment finding and, in any case, it is EPA's final Endangerment Finding, not the ANPR, that is the focus of judicial review here.

simply are not relevant factors in determining whether an endangerment to health or welfare exists from the air pollution. 74 Fed. Reg. at 66,515.

In this respect, EPA's position is somewhat like the position of the Department of Transportation in DOT v. Public Citizen, 541 U.S. 752 (2004). In that case, the Supreme Court held that where a statute limited DOT's regulatory authority exclusively to safety-related impacts of Mexican truck operations in the United States, the agency was not required by the CAA or the National Environmental Policy Act also to consider the environmental impacts of increased truck traffic that likely would result from promulgation of the safety regulations. Similarly, in this case Section 202(a)(1) simply has no provision that would allow EPA to delay, adjust, or avoid making the Endangerment Finding solely to address concerns about stationary source regulatory implications.

On these points, EPA also aptly analogized an endangerment finding to the setting of a national ambient air quality standard ("NAAQS") under section 109(b) of the Act, 42 U.S.C. § 7409(b), which in pertinent part calls on the Administrator to set standards that in her "judgment" are "requisite to protect the public health." See 74 Fed. Reg. at 66,515-16; see also Part V.B, supra. Like the endangerment provision at issue here, Section 109(b) is focused solely on the public health and welfare impacts of air pollution, and the Supreme Court has made clear that cost-related impacts may not be a factor in making this determination. 74 Fed. Reg. at

66,515-16 (citing Whitman v. Am. Trucking Ass'ns, 531 U.S. 457, 466 (2001)). The Court in Whitman noted that the Act expressly allows costs to be taken into account when EPA takes regulatory action under other provisions, and the Court refused to infer an "authorization to consider costs" into the health-focused NAAQS provision. Whitman, 531 U.S. at 466-67.[58] For this reason, whatever authority EPA may have to consider costs in other contexts, see Non-State Amicus Br. at 14, the Agency properly declined to consider costs under the endangerment criteria of Section 202(a)(1), since that health and welfare-based provision is similar in relevant respects to the NAAQS provisions at issue in Whitman.

As EPA further explained, the Supreme Court in Whitman also rejected the suggestion that the cost impacts of regulation should be considered part of the public health and welfare inquiry itself. See 74 Fed. Reg. at 66,516. In the portion of Whitman cited by EPA, the Court explained:

> Even so, respondents argue, many more factors than air pollution affect public health. In particular, the economic cost of implementing a very stringent standard might produce health losses sufficient to offset the health gains achieved in cleaning the air – for example, by closing down whole industries and thereby impoverishing the workers and consumers dependent upon those industries.

[58] See also 531 U.S. at 469 ("That factor [costs] is *both* so indirectly related to public health *and* so full of potential for canceling the conclusions drawn from direct health effects that it would surely have been expressly mentioned in §§ 108 and 109 had Congress meant it to be considered.") (emphasis in original).

Whitman, 531 U.S. at 466. While the Court found this proposition to be "unquestionably true," it also found that "Congress was unquestionably aware of it," but chose to address this issue by specifying in various provisions when, and to what extent, costs may properly be considered. Id. at 466-67 (citing Section 202(a)(2), among other provisions, as a specific provision providing for consideration of costs). The Court therefore rejected Petitioners' attempt to inject costs, implicitly, as a factor to be considered in establishing a NAAQS, a provision focused on public health and welfare effects of air pollution much like Section 202(a)(1). Id. at 467-68. The same reasoning applies here.

Ultimately, as EPA pointed out, Petitioners' concern about the costs and administrative burdens of stationary source regulation of greenhouse gas emissions pertains to the operation of the statute, not to any choices EPA made or had the authority to make in the Endangerment Finding. 74 Fed. Reg. at 66,515. Except where Congress so specifies (which is not the case here), EPA has no obligation to consider all the interrelationships among various provisions of the Act when taking regulatory action under one. See Small Refiner, 705 F.2d at 516-17 (rejecting contention that EPA needed to consider whether regulation of lead fuel additives under Section 211 of the Act was necessary to meet the lead NAAQS, noting that "when Congress wanted EPA to consider other sections of the Act before regulating fuel additives, it said so"). Simply put, EPA's authority and

responsibility to make an endangerment finding under Section 202(a) are completely separate from Congress' decision to apply the PSD program to any pollutant regulated under the Act.

EPA further aptly explained in response to comments that while Section 202(a) and the Supreme Court's guidance in Massachusetts gave EPA some discretion to delay making an endangerment finding if the available scientific information is insufficient to allow for an informed exercise of judgment, EPA does not have discretion to delay or avoid such a finding simply to serve policy concerns that have no foundation in the science and health and welfare-based factors set forth in Section 202(a)(1). 74 Fed. Reg. at 66,507-08, 66,515-16. EPA noted that the Endangerment Finding in and of itself did not trigger PSD requirements under then-current EPA policy, and that the Tailoring Rule (which at the time of the Endangerment Finding was only a proposed rule) would address the cost and administrative burden issues associated with the implementation of PSD and Title V permitting requirements for stationary sources of greenhouse gas emissions. Id. at 66,516 n.17; see also 74 Fed. Reg. 18,886, 18,905 n.29 (Apr. 24, 2009) (proposed rule preamble noting that Endangerment Finding itself would not trigger PSD requirements). EPA later reiterated these same points as part of the Reconsideration Denial. See 75 Fed. Reg. at 49,586 (endangerment inquiry under Section 202(a)(1) is limited to questions of public health and welfare stemming

from the air pollution, and does not allow the Agency to decline to issue an endangerment finding "based on concerns with implementing stationary source permitting"). Notably, Petitioners cannot point to any specific provision in Section 202 that would require – or even allow – EPA to alter, defer, or avoid an endangerment finding based on concerns about regulatory impacts on stationary sources.[59]

[59] The Non-State Amici present a variety of claims concerning EPA's alleged duty to consider economic impacts and other cost-related issues under Sections 317 and 321 of the Act, 42 U.S.C. §§ 7617, 7621, the Regulatory Flexibility Act ("RFA"), and Executive Order No. 12,866 ("EO 12866"). See Non-State Amicus Br. 7-12. Since no party to this case has raised any claims arising under these authorities, they may not be raised by the Non-State Amici. See D.C. Cir. R. 29(a) (amici may discuss "points not made or adequately elaborated upon in the principal brief" but only as "relevant to the issues before this court"); Edison Elec. Inst. v. OSHA, 849 F.2d 611, 625 (D.C. Cir. 1988) ("issues before the court" is limited to claims advanced by the parties); see also Michel v. Anderson, 14 F.3d 623, 625 (D.C. Cir. 1994) (Court does not entertain arguments presented only by an amicus unless it pertains to the Court's jurisdiction). In any event, EPA amply considered and discussed all of these issues in the rulemaking record, to the extent they were raised by commenters. See Response to Comments, Sections 11.5 (economic considerations, including CAA § 317 and EO 12,866), 11.7.1 (RFA) (JA XX-XX); see also 74 Fed. Reg. at 66,545 (addressing statutory and executive order reviews including EO 12866 and RFA). No comments filed during the comment period on the Endangerment Finding raised claims based on CAA Section 321; accordingly, any claims premised on that provision are also waived by operation of 42 U.S.C. § 7607(d)(7)(B).

2. EPA also was not required to consider stationary source impacts as part of the Endangerment Finding to avoid allegedly absurd results.

Neither is there merit to Petitioners' related suggestion that EPA needed to consider stationary source impacts as part of the endangerment inquiry in order to avoid "absurd" results related to stationary sources. See, e.g., Ind. Br. 20, 23.

The gist of this argument, which was primarily presented to EPA as part of the reconsideration petitions, is that because EPA invoked the "absurd results" doctrine, in part, to justify the modified PSD and Title V applicability thresholds established in the Tailoring Rule, EPA had an obligation to interpret its "endangerment" authority in Section 202(a)(1) in such a way as to avoid that absurd result. See 75 Fed. Reg. at 49,586-89 (portion of Reconsideration Denial discussing these issues).[60] In denying those petitions, EPA correctly stressed at the outset that the absurdity that needs to be addressed is not in Section 202(a)(1),[61]

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[60] Specifically, Petitioners argue that the absurd results of applying the major stationary source statutory thresholds to greenhouse gases provide "reasons for action or inaction in the statute" that EPA can, if not must, rely on to decline to make an Endangerment Finding under Section 202(a). Ind. Br. 18-19 (quoting Massachusetts, 549 U.S. at 534-35); see also Non-State Amicus Br. 29-32. We note that the discussion of "absurd results" is only one facet of the analysis EPA set forth in conjunction with the Tailoring Rule, and we respectfully refer the Court to the preamble for the Tailoring Rule, 75 Fed. Reg. 31,514 (June 3, 2010), as well as EPA's briefing in No. 10-1073, for a more comprehensive discussion of that rule.

[61] Petitioners erroneously suggest that EPA views the Endangerment Finding as "the root cause of the absurdity," and that the Endangerment Finding "rests on an interpretation of the CAA … that results in 'absurd' consequences . . . ." Ind.

since that provision can be applied in a very straightforward way to determine whether or not atmospheric concentrations of greenhouse gases endanger public health or welfare. See 75 Fed. Reg. at 49,587. There is nothing absurd about regulating mobile source emissions of greenhouse gases under Section 202. Instead, the Agency explained, the absurdity only arises when the "major emitting facility" quantitative thresholds set forth in Section 169(1) of the Act, 42 U.S.C. § 7479(1), are applied to greenhouse gases. Therefore, EPA's efforts to address this absurd result through the Tailoring Rule are properly and narrowly focused on the stationary source provisions "where the absurdity originates," while leaving intact and giving full effect to other provisions of the Act, such as the mobile source provisions in Section 202(a)(1), which are necessary to serve the Act's goals of promoting public health and welfare, and which are not the cause of the absurdity. 75 Fed. Reg. at 49,586. Whereas the Tailoring Rule reasonably and narrowly resolves the absurdity by phasing-in stationary source regulation of greenhouse gas emissions starting with the largest emitters, Petitioners' blunt "solution" to the absurdity would indefinitely defer *any* regulation of greenhouse gas emissions from mobile *or* stationary sources. Id. at 49,587. As discussed in the preceding

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Br. 20. To the contrary, EPA explained that it is only the major stationary source statutory thresholds that would lead to absurd results if applied immediately to greenhouse gases. EPA did not take the position in the Endangerment Finding or subsequent actions that regulating greenhouse gases generally under the Act, or specifically under Section 202(a), is "absurd." 75 Fed. Reg. at 49,589.

section, there is nothing in Section 202(a)(1) that allows EPA to alter, defer, or avoid an otherwise-justified endangerment finding based on cost or other concerns unrelated to the science-based judgment of the impacts of air pollution on public health or welfare. EPA therefore correctly concluded that nothing in the Act or extant case law required or even permitted the Agency to pursue such an unwise and unjustified course.

For these reasons, EPA reasonably concluded that the costs and administrative burdens of stationary source regulation of greenhouse gases that may eventually flow from the Endangerment Finding simply were not relevant factors for EPA to consider in making the endangerment determination in the first instance.

B. EPA Was Not Required to Consider the Benefits of Pollution-Causing Activities.

Petitioners also argue that EPA should have considered the extent to which pollution-causing activities have benefitted society as part of the Agency's endangerment analysis. Ind. Br. 35-37. Exactly what Petitioners mean by this is unclear. Nearly *every* pollution-causing activity in the United States can be argued to have *some* social benefit (otherwise there presumably would be scant incentive to engage in the activity), but Congress has chosen to regulate the pollution caused by such activities under the CAA and countless other environmental statutes.

Petitioners may challenge the manner in which EPA considered the air

pollution in this case, but it is nonsensical to suggest that EPA somehow had to weigh all the alleged societal benefits of greenhouse gas-emitting activities before finding that atmospheric greenhouse gas concentrations may reasonably be anticipated to endanger public health and welfare under Section 202. As EPA explained: "The fact that we as a society are better off now than 100 years ago, and that processes that produce greenhouse gases are a large part of this improvement, does not mean that those processes do not have unintended adverse impacts." 74 Fed. Reg. at 66,516. The very point of Section 202 is that EPA should address these "unintended adverse impacts" as they are manifested in the specific form of air pollution caused or contributed to by motor vehicles. The Agency was not tasked by Congress to engage in a wide-ranging sociological and philosophical exercise to determine whether this air pollution is somehow "worth it."[62]

The authority cited by Petitioners is completely inapposite. For example, Petitioners rely on Competitive Enterprise Inst. v. NHTSA, 956 F.2d 321, 327 (D.C. Cir. 1992), noting that this Court required NHTSA to further consider safety impacts when setting fuel economy standards. Ind. Br. 35; see also Non-State Amicus Br. 13. While that point is true, Petitioners overlook that the Court was

[62] See Ethyl, 541 F.2d at 6 ("It is only recently that we have begun to appreciate the danger posed by unregulated modification of the world around us, and have created watchdog agencies whose task it is to warn us, and protect us, when technological 'advances' present dangers unappreciated or unrevealed by their supporters.").

reviewing a fuel economy standard in light of the statutory criteria for setting such standards and stressed that the statute required NHTSA to consider "feasibility" and the Agency had long interpreted feasibility to include safety. Competitive Enterprise, 956 F.2d at 322. Here, by contrast, the weighing of air pollution detriments against economic and social benefits sought by Petitioners has absolutely no basis in the statutory requirement to make an endangerment determination concerning air pollution, and such an approach would in fact undermine the goals of that provision.

Petitioners also point to this Court's decision that EPA had to consider both positive and negative health effects from ambient levels of ozone pollution in setting a NAAQS for that pollutant. See Ind. Br. 35 (citing Am. Trucking Ass'ns v. EPA, 175 F.3d 1027, 1052 (D.C. Cir. 1999), aff'd in part, reversed in part on other grounds sub nom. Whitman v. Am. Trucking Ass'ns, 531 U.S. 457 (2001)). However, Petitioners are not arguing that EPA overlooked any positive effects of greenhouse gas concentrations in the atmosphere; rather, they are arguing that EPA should have (at least in part) simply ignored the negative effects of this pollution based on perceived social benefits from the activities that initially gave rise to the pollution-causing emissions.

For all the foregoing reasons, there simply is no justification for supposing that Congress, sub silentio, intended to block EPA from making an appropriate

endangerment determination under Section 202 until after the Agency balanced the adverse health and welfare effects of air pollution against the claimed social benefits of the activities giving rise to that pollution.

C. EPA Was Not Required to Consider the Extent to Which Society Might Adapt to or Mitigate the Effects of Pollution.

Petitioners also miss the mark in arguing that EPA was required to consider society's ability to adapt to, or mitigate, the adverse effects of climate change before determining endangerment. See Ind. Br. 37-39; Tx. Br. 21-22. Petitioners provide no specific examples of such adaptation and mitigation, but presumably they are referring generally to social, scientific, technological, or natural *responses* to climate change that will better enable humans to live with those effects *after* they have already occurred. (Adaptation generally refers to planning and actions to ameliorate present and anticipated harms, such as developing crops that are more drought-resistant. Mitigation generally refers to actions to reduce emissions of greenhouse gases.)

In response to comments on these issues, EPA began by acknowledging that adaptation and mitigation is "a strong focal area of scientists and policy makers, including EPA." 74 Fed. Reg. at 66,512. Indeed, to the extent Petitioners are challenging the autonomous ability of natural ecosystems to blunt the impacts of climate change, EPA's analysis took such adaptation into account to the extent "the literature on which [EPA's TSD] relies already uses assumptions about

autonomous adaptation when projecting the future effects of climate change." Id. That said, because adaptation and mitigation are otherwise "*responses* to endangerment," the Agency "determined that they are outside the scope of the endangerment analysis." Id.

EPA's approach to these issues reflects, at the very least, a reasonable construction of the statute. To begin with, were EPA to venture beyond the scientific record regarding adaptation of natural ecosystems to fully consider how society might adapt to or mitigate the effects of climate change, EPA would have to make judgments going far beyond "the kind of scientific or technical judgments that Congress envisioned for the endangerment test." 74 Fed. Reg. at 66,514. For example, EPA would have to formulate some estimate, going perhaps decades into the future, as to "the political actions likely to be taken by various local, State, and Federal governments" as well as "judgments on the business or other decisions that are likely to be made by companies or other organizations, or the changes in personal behavior that may be occasioned by the adverse impacts of air pollution." Id. This would both "dramatically increase the complexity of the issues before EPA," 74 Fed. Reg. at 66,513, and "would take EPA far away from the kind of judgments Congress envisioned for the endangerment test." Id. at 66,514.[63] The

[63] EPA set forth several reasons for not considering adaptation and mitigation as part of the endangerment determination; it did not, as Petitioners suggest, decline to do so *solely* because such an undertaking would be complex. Tx. Br. 22.

endangerment analysis, EPA reasoned, "involves evaluating the risks to public health and welfare from the air pollution if we do not take action to address it." Id. Adaptation and mitigation, on the other hand, "address an important but different issue – how much risk will remain assuming some projection of how people and society will respond to the threat." Id.

EPA's approach is consistent with the structure and intent of Section 202. As discussed above, Section 202(a) creates a two-part decision-making approach, separating the endangerment criteria in Section 202(a)(1) from the standard-setting criteria in Section 202(a)(2). See supra Parts I, V.B. In this way, the structure of the Act clearly supports the Administrator's approach of separating the analysis of whether an endangerment to public health or welfare "may reasonably be anticipated," 42 U.S.C. § 7521(a)(1), from the entirely separate inquiry as to what the proper shape and content of the regulatory response to this endangerment should be.

Further, when Congress amended the Act in 1977 to add the present "endangerment" language to Section 202, its overriding, express purpose was "[t]o emphasize the preventive or precautionary nature of the act, i.e., to assure that regulatory action can effectively *prevent* harm *before* it occurs . . . ." 1977 U.S.C.C.A.N. at 1127 (emphasis added). Congress intended EPA to take actions that would "assure that the health of susceptible individuals, as well as healthy

adults, will be encompassed in the term 'public health.'" Id. at 1128. Petitioners' argument thus stands in direct conflict with this purpose, since it would re-direct EPA's focus from prevention to after-the-fact remediation and accommodation, and would undercut the goal of protecting even the most vulnerable members of society from harm.

For all these reasons, EPA reasonably determined that adaptation and mitigation (other than the natural adaptation of ecosystems discussed above) generally are not factors the Agency was required to consider as part of its endangerment analysis.

VII. PETITIONERS' ARGUMENTS CONCERNING REVIEW BY THE SCIENCE ADVISORY BOARD HAVE BEEN WAIVED AND ARE, IN ANY EVENT, MERITLESS

The Science Advisory Board ("SAB") was established by Congress in 1978. See 42 U.S.C. § 4365; see also 1977 U.S.C.C.A.N. 3283-99. The SAB's members are appointed by the EPA Administrator, and its general purpose is to provide EPA with advice on certain types of scientific decisions. Of particular relevance to Petitioners' claims here is 42 U.S.C. § 4365(c)(1), which, inter alia, directs EPA to provide the SAB with "any proposed criteria document, standard, limitation, or regulation" under the Clean Air Act and other statutes. Upon review, the SAB may (but is not required to) provide scientific advice to the Administrator regarding the document in question. Id. § 4365(c)(2).

In this case, EPA did not submit the proposed Endangerment Finding to the SAB for review. No party submitted comments on the proposed Endangerment Finding raising the statutory argument made by Petitioners,[64] but some parties did raise this argument as part of their petitions for reconsideration. In its denial of those petitions, EPA explained that this argument was both procedurally defective (because it could have been raised during the comment period on the proposed Endangerment Finding) and substantively defective (because, among other things, the Endangerment Finding is not a "criteria document, standard, limitation, or regulation" within the meaning of 42 U.S.C. § 4365(c)(1)). See RTP 3-7 (JA XX-XX).

In their brief, Industry Petitioners argue, with little explanation, that EPA violated 42 U.S.C. § 4365 by failing to submit the proposed Endangerment Finding for SAB review. This argument must fail.

A. Any Challenges Regarding SAB Review Have Been Waived.

Under Section 307(d)(7)(B), 42 U.S.C. § 7607(d)(7)(B), parties may not seek judicial review of issues they failed to raise with "reasonable specificity" during the comment period. The only exception to this rule is if it was "impracticable" to raise the issue during that comment period; even in that case, a

[64] One commenter did generally suggest that EPA consult with the SAB regarding regulatory options that would follow the Endangerment Finding but no comments raised the statutory argument advanced by Petitioners herein.

party must first present the issue through a reconsideration petition to EPA, demonstrating why the issue could not have been raised and why it is "of central relevance to the outcome of the rule." Id. This Court enforces these requirements "strictly." NRDC v. EPA, 571 F.3d 1245, 1259 (D.C. Cir. 2009); Motor & Equip. Mfrs. Ass'n v. Nichols, 142 F.3d 449, 462 (D.C. Cir. 1998). In this case, EPA made an express finding in denying the reconsideration petitions that the SAB review issue could have been raised during the public comment period, and Petitioners have not contested this finding in their brief. Accordingly, Petitioners' present challenge on this issue should be denied on this basis alone.

Curiously, although Petitioners do not challenge the application here of Section 307(d)(7)(B), 42 U.S.C. § 7607(d)(7)(B), they do contend that Section 307(d)(8), 42 U.S.C. § 7607(d)(8), which discusses the general standard of review applicable to procedural claims, does not apply to their SAB review claim. Ind. Br. 60. To begin with, this argument is irrelevant. Since Petitioners, by their silence on the failure-to-comment issue, concede that their SAB review claim is completely barred as a threshold matter by operation of Section 307(d)(7)(B), it makes no difference what standard of review might apply to the claim under Section 307(d)(8) were it allowed to proceed.

In any event, Petitioners' Section 307(d)(8) argument is incorrect. The gist of that argument is that Section 307(d)(8) only applies to claims based on

procedural requirements established by the Clean Air Act itself, not on provisions such as 42 U.S.C. § 4365. Ind. Br. 60. However, in American Petroleum Institute v. Costle, 665 F.2d 1176, 1187-89 (D.C. Cir. 1981), this Court expressly applied the requirements of Section 307(d)(7)&(8), 42 U.S.C. § 7607(d)(7)&(8), to an SAB review claim similar to that presented by Petitioners here. Petitioners do not address, let alone distinguish, this aspect of American Petroleum and their reliance on Small Refiner Lead Phase-Down Task Force v. EPA, 705 F.2d 506, 522 (D.C. Cir. 1983), is wholly misplaced. The cited aspect of Small Refiner simply noted that Section 307(d)(8)'s standard of review was essentially meant to be something of a counterweight to Congress' decision to add "new procedural protections" in certain provisions of Section 307(d). Nothing in the cited discussion suggests that the Court viewed application of the standard of review in Section 307(d)(8) to be limited to claims based on procedural requirements created by Section 307(d) itself.

For all the foregoing reasons, Petitioners' SAB review claim is barred by the requirements of Section 307(d)(7)(B), 42 U.S.C. § 7607(d)(7)(B).

B. Petitioners' SAB Review Claim Is, in Any Event, Meritless.

Even if the Court were to reach the merits of Petitioners' SAB review claim it should deny that claim on its merits.

EPA posited two reasons why the SAB review requirement does not apply here. First, the Agency explained that the proposed Endangerment Finding was not a "criteria document, standard, limitation, or regulation" within the meaning of that provision. See RTP 3-7 (JA XX-XX). Second, EPA noted that this review requirement applies only when a proposal is submitted to other federal agencies for "formal" inter-agency review, and EPA believed that the type of inter-agency review conducted under EO 12,866, which was conducted here, was by contrast "informal." Id. Since Petitioners do not expressly contest either of these conclusions in their brief, they are conceded. See, e.g., American Wildlands v. Kempthorne, 530 F.3d 991, 1001 (D.C. Cir. 2008) (parties must fully develop arguments in opening brief and arguments made for first time in reply brief are waived).[65]

In light of EPA's reasonable and uncontested conclusion that the SAB review requirement in 42 U.S.C. § 4365(c)(1) does not apply here, Petitioners'

[65] Petitioners do refer, without explanation, to the Endangerment Finding as a "rule" but this cannot be equated to a legal argument challenging EPA's conclusion that the Endangerment Finding is not a "criteria document, standard, limitation, or regulation" within the meaning of 42 U.S.C. § 4365(c)(1). In any event, EPA adequately explained in the record its basis for concluding that the Endangerment Finding is not a regulation. See RTC 11-7 (JA XX-XX).

arguments as to the extent to which SAB review may or may not have satisfied Section 307(d)(8)'s standard of review for procedural claims, Ind. Br. 60-61, simply are irrelevant. Simply put, if there is no actual procedural violation, it is irrelevant how "serious" the consequences of such a violation are alleged to be. However, even if the Court were to reach those issues, EPA reasonably explained why such review would not, in fact, undermine the scientific basis for the Endangerment Finding, which was based on multiple and comprehensive scientific assessments by distinguished American and international scientific bodies. See RTP 3-7 (JA XX-XX)

For all the foregoing reasons, Petitioners' claims regarding SAB review should either be dismissed by operation of CAA Section 307(d)(7)(B), 42 U.S.C. § 7607 (d)(7)(B), or denied on the merits.

CONCLUSION

For all the foregoing reasons, EPA properly found that air pollution in the form of atmospheric concentrations of six greenhouse gases may reasonably be anticipated to endanger public health or welfare and that emissions from motor vehicles cause or contribute to this air pollution. No more was required. Accordingly, the petitions for review should be denied.

Respectfully submitted,

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STATUTORY ADDENDUM

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§ 7408. Air quality criteria and control techniques

(a) Air pollutant list; publication and revision by Administrator; issuance of air quality criteria for air pollutants

(1) For the purpose of establishing national primary and secondary ambient air quality standards, the Administrator shall within 30 days after December 31, 1970, publish, and shall from time to time thereafter revise, a list which includes each air pollutant—

(A) emissions of which, in his judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare;

(B) the presence of which in the ambient air results from numerous or diverse mobile or stationary sources; and

(C) for which air quality criteria had not been issued before December 31, 1970 but for which he plans to issue air quality criteria under this section.

(2) The Administrator shall issue air quality criteria for an air pollutant within 12 months after he has included such pollutant in a list under paragraph (1). Air quality criteria for an 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, in varying quantities. The criteria for an air pollutant, to the extent practicable, shall include information on—

(A) those variable factors (including atmospheric conditions) which of themselves or in combination with other factors may alter the effects on public health or welfare of such air pollutant;

(B) the types of air pollutants which, when present in the atmosphere, may interact with such pollutant to produce an adverse effect on public health or welfare; and

(C) any known or anticipated adverse effects on welfare.

(b) Issuance by Administrator of information on air pollution control techniques; standing consulting committees for air pollutants; establishment; membership

(1) Simultaneously with the issuance of criteria under subsection (a) of this section, the Administrator shall, after consultation with appropriate advisory committees and Federal departments and agencies, issue to the States and appropriate air pollution control agencies information on air pollution control techniques, which information shall include data relating to the cost of installation and operation, energy requirements, emission reduction benefits, and environmental impact of the emission control technology. Such information shall include such data as are available on available technology and alternative methods of prevention and control of air pollution. Such information shall also include data on alternative fuels, processes, and operating methods which will result in elimination or significant reduction of emissions.

(2) In order to assist in the development of information on pollution control techniques, the Administrator may establish a standing consulting committee for each air pollutant included in a list published pursuant to subsection (a)(1) of this section, which shall be comprised of technically qualified individuals representative of State and local governments, industry, and the academic community. Each such committee shall submit, as appropriate, to the Administrator information related to that required by paragraph (1).

(c) Review, modification, and reissuance of criteria or information

The Administrator shall from time to time review, and, as appropriate, modify, and reissue any criteria or information on control techniques issued pursuant to this section. Not later than six months after August 7, 1977, the Administrator shall revise and reissue criteria relating to concentrations of NO_2 over such period (not more than three hours) as he deems appropriate. Such criteria shall include a discussion of nitric and nitrous acids, nitrites, nitrates, nitrosamines, and other carcinogenic and potentially carcinogenic derivatives of oxides of nitrogen.

(d) Publication in Federal Register; availability of copies for general public

The issuance of air quality criteria and information on air pollution control techniques shall be announced in the Federal Register and copies shall be made available to the general public.

(e) Transportation planning and guidelines

The Administrator shall, after consultation with the Secretary of Transportation, and after providing public notice and opportunity for comment, and with State and local officials, within nine months after November 15, 1990,[1] and periodically thereafter as necessary to maintain a continuous transportation-air quality planning process, update the June 1978 Transportation-Air Quality Planning Guidelines and publish guidance on the development and implementation of transportation and other measures necessary to demonstrate and maintain attainment of national ambient air quality standards. Such guidelines shall include information on—

(1) methods to identify and evaluate alternative planning and control activities;

(2) methods of reviewing plans on a regular basis as conditions change or new information is presented;

(3) identification of funds and other resources necessary to implement the plan, including interagency agreements on providing such funds and resources;

(4) methods to assure participation by the public in all phases of the planning process; and

(5) such other methods as the Administrator determines necessary to carry out a continuous planning process.

(f) Information regarding processes, procedures, and methods to reduce or control pollutants in transportation; reduction of mobile source related pollutants; reduction of impact on public health

(1) The Administrator shall publish and make available to appropriate Federal, State, and

[1] See Codification note below.

local environmental and transportation agencies not later than one year after November 15, 1990, and from time to time thereafter—

(A) information prepared, as appropriate, in consultation with the Secretary of Transportation, and after providing public notice and opportunity for comment, regarding the formulation and emission reduction potential of transportation control measures related to criteria pollutants and their precursors, including, but not limited to—

(i) programs for improved public transit;

(ii) restriction of certain roads or lanes to, or construction of such roads or lanes for use by, passenger buses or high occupancy vehicles;

(iii) employer-based transportation management plans, including incentives;

(iv) trip-reduction ordinances;

(v) traffic flow improvement programs that achieve emission reductions;

(vi) fringe and transportation corridor parking facilities serving multiple occupancy vehicle programs or transit service;

(vii) programs to limit or restrict vehicle use in downtown areas or other areas of emission concentration particularly during periods of peak use;

(viii) programs for the provision of all forms of high-occupancy, shared-ride services;

(ix) programs to limit portions of road surfaces or certain sections of the metropolitan area to the use of non-motorized vehicles or pedestrian use, both as to time and place;

(x) programs for secure bicycle storage facilities and other facilities, including bicycle lanes, for the convenience and protection of bicyclists, in both public and private areas;

(xi) programs to control extended idling of vehicles;

(xii) programs to reduce motor vehicle emissions, consistent with subchapter II of this chapter, which are caused by extreme cold start conditions;

(xiii) employer-sponsored programs to permit flexible work schedules;

(xiv) programs and ordinances to facilitate non-automobile travel, provision and utilization of mass transit, and to generally reduce the need for single-occupant vehicle travel, as part of transportation planning and development efforts of a locality, including programs and ordinances applicable to new shopping centers, special events, and other centers of vehicle activity;

(xv) programs for new construction and major reconstructions of paths, tracks or areas solely for the use by pedestrian or other non-motorized means of transportation when economically feasible and in the public interest. For purposes of this clause, the Administrator shall also consult with the Secretary of the Interior; and

(xvi) program to encourage the voluntary removal from use and the marketplace of pre-1980 model year light duty vehicles and pre-1980 model light duty trucks.[2]

(B) information on additional methods or strategies that will contribute to the reduction of mobile source related pollutants during periods in which any primary ambient air quality standard will be exceeded and during episodes for which an air pollution alert, warning, or emergency has been declared;

(C) information on other measures which may be employed to reduce the impact on public health or protect the health of sensitive or susceptible individuals or groups; and

(D) information on the extent to which any process, procedure, or method to reduce or control such air pollutant may cause an increase in the emissions or formation of any other pollutant.

(2) In publishing such information the Administrator shall also include an assessment of—

(A) the relative effectiveness of such processes, procedures, and methods;

(B) the potential effect of such processes, procedures, and methods on transportation systems and the provision of transportation services; and

(C) the environmental, energy, and economic impact of such processes, procedures, and methods.

(g) Assessment of risks to ecosystems

The Administrator may assess the risks to ecosystems from exposure to criteria air pollutants (as identified by the Administrator in the Administrator's sole discretion).

(h) RACT/BACT/LAER clearinghouse

The Administrator shall make information regarding emission control technology available to the States and to the general public through a central database. Such information shall include all control technology information received pursuant to State plan provisions requiring permits for sources, including operating permits for existing sources.

(July 14, 1955, ch. 360, title I, § 108, as added Pub. L. 91–604, § 4(a), Dec. 31, 1970, 84 Stat. 1678; amended Pub. L. 95–95, title I, §§ 104, 105, title IV, § 401(a), Aug. 7, 1977, 91 Stat. 689, 790; Pub. L. 101–549, title I, §§ 108(a)–(c), (*o*), 111, Nov. 15, 1990, 104 Stat. 2465, 2466, 2469, 2470; Pub. L. 105–362, title XV, § 1501(b), Nov. 10, 1998, 112 Stat. 3294.)

CODIFICATION

November 15, 1990, referred to in subsec. (e), was in the original ''enactment of the Clean Air Act Amendments of 1989'', and was translated as meaning the date of the enactment of Pub. L. 101–549, popularly known as the Clean Air Act Amendments of 1990, to reflect the probable intent of Congress.

Section was formerly classified to section 1857c–3 of this title.

PRIOR PROVISIONS

A prior section 108 of act July 14, 1955, was renumbered section 115 by Pub. L. 91–604 and is classified to section 7415 of this title.

AMENDMENTS

1998—Subsec. (f)(3), (4). Pub. L. 105–362 struck out par. (3), which required reports by the Secretary of Transportation and the Administrator to be submitted to Congress by Jan. 1, 1993, and every 3 years thereafter, reviewing and analyzing existing State and local air quality related transportation programs, evaluating

[2] So in original. The period probably should be a semicolon.

achievement of goals, and recommending changes to existing programs, and par. (4), which required that in each report after the first report the Secretary of Transportation include a description of the actions taken to implement the changes recommended in the preceding report.

1990—Subsec. (e). Pub. L. 101–549, § 108(a), inserted first sentence and struck out former first sentence which read as follows: ''The Administrator shall, after consultation with the Secretary of Transportation and the Secretary of Housing and Urban Development and State and local officials and within 180 days after August 7, 1977, and from time to time thereafter, publish guidelines on the basic program elements for the planning process assisted under section 7505 of this title.''

Subsec. (f)(1). Pub. L. 101–549, § 108(b), in introductory provisions, substituted present provisions for provisions relating to Federal agencies, States, and air pollution control agencies within either 6 months or one year after Aug. 7, 1977.

Subsec. (f)(1)(A). Pub. L. 101–549, § 108(b), substituted present provisions for provisions relating to information prepared in cooperation with Secretary of Transportation, regarding processes, procedures, and methods to reduce certain pollutants.

Subsec. (f)(3), (4). Pub. L. 101–549, § 111, added pars. (3) and (4).

Subsec. (g). Pub. L. 101–549, § 108(*o*), added subsec. (g).

Subsec. (h). Pub. L. 101–549, § 108(c), added subsec. (h).

1977—Subsec. (a)(1)(A). Pub. L. 95–95, § 401(a), substituted ''emissions of which, in his judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare'' for ''which in his judgment has an adverse effect on public health or welfare''.

Subsec. (b)(1). Pub. L. 95–95, § 104(a), substituted ''cost of installation and operation, energy requirements, emission reduction benefits, and environmental impact of the emission control technology'' for ''technology and costs of emission control''.

Subsec. (c). Pub. L. 95–95, § 104(b), inserted provision directing the Administrator, not later than six months after Aug. 7, 1977, to revise and reissue criteria relating to concentrations of NO_2 over such period (not more than three hours) as he deems appropriate, with the criteria to include a discussion of nitric and nitrous acids, nitrites, nitrates, nitrosamines, and other carcinogenic and potentially carcinogenic derivatives of oxides of nitrogen.

Subsecs. (e), (f). Pub. L. 95–95, § 105, added subsecs. (e) and (f).

EFFECTIVE DATE OF 1977 AMENDMENT

Amendment by Pub. L. 95–95 effective Aug. 7, 1977, except as otherwise expressly provided, see section 406(d) of Pub. L. 95–95, set out as a note under section 7401 of this title.

MODIFICATION OR RESCISSION OF RULES, REGULATIONS, ORDERS, DETERMINATIONS, CONTRACTS, CERTIFICATIONS, AUTHORIZATIONS, DELEGATIONS, AND OTHER ACTIONS

All rules, regulations, orders, determinations, contracts, certifications, authorizations, delegations, or other actions duly issued, made, or taken by or pursuant to act July 14, 1955, the Clean Air Act, as in effect immediately prior to the date of enactment of Pub. L. 95–95 [Aug. 7, 1977] to continue in full force and effect until modified or rescinded in accordance with act July 14, 1955, as amended by Pub. L. 95–95 [this chapter], see section 406(b) of Pub. L. 95–95, set out as an Effective Date of 1977 Amendment note under section 7401 of this title.

§ 7409. National primary and secondary ambient air quality standards

(a) Promulgation

(1) The Administrator—

(A) within 30 days after December 31, 1970, shall publish proposed regulations prescribing a national primary ambient air quality standard and a national secondary ambient air quality standard for each air pollutant for which air quality criteria have been issued prior to such date; and

(B) after a reasonable time for interested persons to submit written comments thereon (but no later than 90 days after the initial publication of such proposed standards) shall by regulation promulgate such proposed national primary and secondary ambient air quality standards with such modifications as he deems appropriate.

(2) With respect to any air pollutant for which air quality criteria are issued after December 31, 1970, the Administrator shall publish, simultaneously with the issuance of such criteria and information, proposed national primary and secondary ambient air quality standards for any such pollutant. The procedure provided for in paragraph (1)(B) of this subsection shall apply to the promulgation of such standards.

(b) Protection of public health and welfare

(1) National primary ambient air quality standards, prescribed under subsection (a) of this section shall be ambient air quality standards the attainment and maintenance of which in the judgment of the Administrator, based on such criteria and allowing an adequate margin of safety, are requisite to protect the public health. Such primary standards may be revised in the same manner as promulgated.

(2) Any national secondary ambient air quality standard prescribed under subsection (a) of this section shall specify a level of air quality the attainment and maintenance of which in the judgment of the Administrator, based on such criteria, is requisite to protect the public welfare from any known or anticipated adverse effects associated with the presence of such air pollutant in the ambient air. Such secondary standards may be revised in the same manner as promulgated.

(c) National primary ambient air quality standard for nitrogen dioxide

The Administrator shall, not later than one year after August 7, 1977, promulgate a national primary ambient air quality standard for NO_2 concentrations over a period of not more than 3 hours unless, based on the criteria issued under section 7408(c) of this title, he finds that there is no significant evidence that such a standard for such a period is requisite to protect public health.

(d) Review and revision of criteria and standards; independent scientific review committee; appointment; advisory functions

(1) Not later than December 31, 1980, and at five-year intervals thereafter, the Administrator shall complete a thorough review of the criteria published under section 7408 of this title and the national ambient air quality standards promulgated under this section and shall make such revisions in such criteria and standards and promulgate such new standards as may be appropriate in accordance with section 7408 of this title and subsection (b) of this section. The Ad-

ministrator may review and revise criteria or promulgate new standards earlier or more frequently than required under this paragraph.

(2)(A) The Administrator shall appoint an independent scientific review committee composed of seven members including at least one member of the National Academy of Sciences, one physician, and one person representing State air pollution control agencies.

(B) Not later than January 1, 1980, and at five-year intervals thereafter, the committee referred to in subparagraph (A) shall complete a review of the criteria published under section 7408 of this title and the national primary and secondary ambient air quality standards promulgated under this section and shall recommend to the Administrator any new national ambient air quality standards and revisions of existing criteria and standards as may be appropriate under section 7408 of this title and subsection (b) of this section.

(C) Such committee shall also (i) advise the Administrator of areas in which additional knowledge is required to appraise the adequacy and basis of existing, new, or revised national ambient air quality standards, (ii) describe the research efforts necessary to provide the required information, (iii) advise the Administrator on the relative contribution to air pollution concentrations of natural as well as anthropogenic activity, and (iv) advise the Administrator of any adverse public health, welfare, social, economic, or energy effects which may result from various strategies for attainment and maintenance of such national ambient air quality standards.

(July 14, 1955, ch. 360, title I, §109, as added Pub. L. 91–604, §4(a), Dec. 31, 1970, 84 Stat. 1679; amended Pub. L. 95–95, title I, §106, Aug. 7, 1977, 91 Stat. 691.)

CODIFICATION

Section was formerly classified to section 1857c–4 of this title.

PRIOR PROVISIONS

A prior section 109 of act July 14, 1955, was renumbered section 116 by Pub. L. 91–604 and is classified to section 7416 of this title.

AMENDMENTS

1977—Subsec. (c). Pub. L. 95–95, §106(b), added subsec. (c).

Subsec. (d). Pub. L. 95–95, §106(a), added subsec. (d).

EFFECTIVE DATE OF 1977 AMENDMENT

Amendment by Pub. L. 95–95 effective Aug. 7, 1977, except as otherwise expressly provided, see section 406(d) of Pub. L. 95–95, set out as a note under section 7401 of this title.

MODIFICATION OR RESCISSION OF RULES, REGULATIONS, ORDERS, DETERMINATIONS, CONTRACTS, CERTIFICATIONS, AUTHORIZATIONS, DELEGATIONS, AND OTHER ACTIONS

All rules, regulations, orders, determinations, contracts, certifications, authorizations, delegations, or other actions duly issued, made, or taken by or pursuant to act July 14, 1955, the Clean Air Act, as in effect immediately prior to the date of enactment of Pub. L. 95–95 [Aug. 7, 1977] to continue in full force and effect until modified or rescinded in accordance with act July 14, 1955, as amended by Pub. L. 95–95 [this chapter], see section 406(b) of Pub. L. 95–95, set out as an Effective Date of 1977 Amendment note under section 7401 of this title.

TERMINATION OF ADVISORY COMMITTEES

Advisory committees established after Jan. 5, 1973, to terminate not later than the expiration of the 2-year period beginning on the date of their establishment, unless, in the case of a committee established by the President or an officer of the Federal Government, such committee is renewed by appropriate action prior to the expiration of such 2-year period, or in the case of a committee established by the Congress, its duration is otherwise provided for by law. See section 14 of Pub. L. 92–463, Oct. 6, 1972, 86 Stat. 776, set out in the Appendix to Title 5, Government Organization and Employees.

ROLE OF SECONDARY STANDARDS

Pub. L. 101–549, title VIII, §817, Nov. 15, 1990, 104 Stat. 2697, provided that:

''(a) REPORT.—The Administrator shall request the National Academy of Sciences to prepare a report to the Congress on the role of national secondary ambient air quality standards in protecting welfare and the environment. The report shall:

''(1) include information on the effects on welfare and the environment which are caused by ambient concentrations of pollutants listed pursuant to section 108 [42 U.S.C. 7408] and other pollutants which may be listed;

''(2) estimate welfare and environmental costs incurred as a result of such effects;

''(3) examine the role of secondary standards and the State implementation planning process in preventing such effects;

''(4) determine ambient concentrations of each such pollutant which would be adequate to protect welfare and the environment from such effects;

''(5) estimate the costs and other impacts of meeting secondary standards; and

''(6) consider other means consistent with the goals and objectives of the Clean Air Act [42 U.S.C. 7401 et seq.] which may be more effective than secondary standards in preventing or mitigating such effects.

''(b) SUBMISSION TO CONGRESS; COMMENTS; AUTHORIZATION.—(1) The report shall be transmitted to the Congress not later than 3 years after the date of enactment of the Clean Air Act Amendments of 1990 [Nov. 15, 1990].

''(2) At least 90 days before issuing a report the Administrator shall provide an opportunity for public comment on the proposed report. The Administrator shall include in the final report a summary of the comments received on the proposed report.

''(3) There are authorized to be appropriated such sums as are necessary to carry out this section.''

§ 7410. State implementation plans for national primary and secondary ambient air quality standards

(a) Adoption of plan by State; submission to Administrator; content of plan; revision; new sources; indirect source review program; supplemental or intermittent control systems

(1) Each State shall, after reasonable notice and public hearings, adopt and submit to the Administrator, within 3 years (or such shorter period as the Administrator may prescribe) after the promulgation of a national primary ambient air quality standard (or any revision thereof) under section 7409 of this title for any air pollutant, a plan which provides for implementation, maintenance, and enforcement of such primary standard in each air quality control region (or portion thereof) within such State. In addition, such State shall adopt and submit to the Admin-

modified after November 15, 1990, in any manner unless the modification insures equivalent or greater emission reductions of such air pollutant.

(July 14, 1955, ch. 360, title I, §193, as added Pub. L. 101–549, title I, §108(*l*), Nov. 15, 1990, 104 Stat. 2469.)

SUBCHAPTER II—EMISSION STANDARDS FOR MOVING SOURCES

PART A—MOTOR VEHICLE EMISSION AND FUEL STANDARDS

§ 7521. Emission standards for new motor vehicles or new motor vehicle engines

(a) Authority of Administrator to prescribe by regulation

Except as otherwise provided in subsection (b) of this section—

(1) The Administrator shall by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare. Such standards shall be applicable to such vehicles and engines for their useful life (as determined under subsection (d) of this section, relating to useful life of vehicles for purposes of certification), whether such vehicles and engines are designed as complete systems or incorporate devices to prevent or control such pollution.

(2) Any regulation prescribed under paragraph (1) of this subsection (and any revision thereof) shall take effect after such period as the Administrator finds necessary to permit the development and application of the requisite technology, giving appropriate consideration to the cost of compliance within such period.

(3)(A) IN GENERAL.—(i) Unless the standard is changed as provided in subparagraph (B), regulations under paragraph (1) of this subsection applicable to emissions of hydrocarbons, carbon monoxide, oxides of nitrogen, and particulate matter from classes or categories of heavy-duty vehicles or engines manufactured during or after model year 1983 shall contain standards which reflect the greatest degree of emission reduction achievable through the application of technology which the Administrator determines will be available for the model year to which such standards apply, giving appropriate consideration to cost, energy, and safety factors associated with the application of such technology.

(ii) In establishing classes or categories of vehicles or engines for purposes of regulations under this paragraph, the Administrator may base such classes or categories on gross vehicle weight, horsepower, type of fuel used, or other appropriate factors.

(B) REVISED STANDARDS FOR HEAVY DUTY TRUCKS.—(i) On the basis of information available to the Administrator concerning the effects of air pollutants emitted from heavy-duty vehicles or engines and from other sources of mobile source related pollutants on the public health and welfare, and taking costs into account, the Administrator may promulgate regulations under paragraph (1) of this subsection revising any standard promulgated under, or before the date of, the enactment of the Clean Air Act Amendments of 1990 (or previously revised under this subparagraph) and applicable to classes or categories of heavy-duty vehicles or engines.

(ii) Effective for the model year 1998 and thereafter, the regulations under paragraph (1) of this subsection applicable to emissions of oxides of nitrogen (NO_x) from gasoline and diesel-fueled heavy duty trucks shall contain standards which provide that such emissions may not exceed 4.0 grams per brake horsepower hour (gbh).

(C) LEAD TIME AND STABILITY.—Any standard promulgated or revised under this paragraph and applicable to classes or categories of heavy-duty vehicles or engines shall apply for a period of no less than 3 model years beginning no earlier than the model year commencing 4 years after such revised standard is promulgated.

(D) REBUILDING PRACTICES.—The Administrator shall study the practice of rebuilding heavy-duty engines and the impact rebuilding has on engine emissions. On the basis of that study and other information available to the Administrator, the Administrator may prescribe requirements to control rebuilding practices, including standards applicable to emissions from any rebuilt heavy-duty engines (whether or not the engine is past its statutory useful life), which in the Administrator's judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare taking costs into account. Any regulation shall take effect after a period the Administrator finds necessary to permit the development and application of the requisite control measures, giving appropriate consideration to the cost of compliance within the period and energy and safety factors.

(E) MOTORCYCLES.—For purposes of this paragraph, motorcycles and motorcycle engines shall be treated in the same manner as heavy-duty vehicles and engines (except as otherwise permitted under section 7525(f)(1)[1] of this title) unless the Administrator promulgates a rule reclassifying motorcycles as light-duty vehicles within the meaning of this section or unless the Administrator promulgates regulations under subsection (a) of this section applying standards applicable to the emission of air pollutants from motorcycles as a separate class or category. In any case in which such standards are promulgated for such emissions from motorcycles as a separate class or category, the Administrator, in promulgating such standards, shall consider the need to achieve equivalency of emission reductions between motorcycles and other motor vehicles to the maximum extent practicable.

(4)(A) Effective with respect to vehicles and engines manufactured after model year 1978, no emission control device, system, or element of design shall be used in a new motor vehicle or new motor vehicle engine for purposes of complying with requirements prescribed under this subchapter if such device, system, or element of design will cause or contribute to an unreason-

[1] See References in Text note below.

able risk to public health, welfare, or safety in its operation or function.

(B) In determining whether an unreasonable risk exists under subparagraph (A), the Administrator shall consider, among other factors, (i) whether and to what extent the use of any device, system, or element of design causes, increases, reduces, or eliminates emissions of any unregulated pollutants; (ii) available methods for reducing or eliminating any risk to public health, welfare, or safety which may be associated with the use of such device, system, or element of design, and (iii) the availability of other devices, systems, or elements of design which may be used to conform to requirements prescribed under this subchapter without causing or contributing to such unreasonable risk. The Administrator shall include in the consideration required by this paragraph all relevant information developed pursuant to section 7548 of this title.

(5)(A) If the Administrator promulgates final regulations which define the degree of control required and the test procedures by which compliance could be determined for gasoline vapor recovery of uncontrolled emissions from the fueling of motor vehicles, the Administrator shall, after consultation with the Secretary of Transportation with respect to motor vehicle safety, prescribe, by regulation, fill pipe standards for new motor vehicles in order to insure effective connection between such fill pipe and any vapor recovery system which the Administrator determines may be required to comply with such vapor recovery regulations. In promulgating such standards the Administrator shall take into consideration limits on fill pipe diameter, minimum design criteria for nozzle retainer lips, limits on the location of the unleaded fuel restrictors, a minimum access zone surrounding a fill pipe, a minimum pipe or nozzle insertion angle, and such other factors as he deems pertinent.

(B) Regulations prescribing standards under subparagraph (A) shall not become effective until the introduction of the model year for which it would be feasible to implement such standards, taking into consideration the restraints of an adequate leadtime for design and production.

(C) Nothing in subparagraph (A) shall (i) prevent the Administrator from specifying different nozzle and fill neck sizes for gasoline with additives and gasoline without additives or (ii) permit the Administrator to require a specific location, configuration, modeling, or styling of the motor vehicle body with respect to the fuel tank fill neck or fill nozzle clearance envelope.

(D) For the purpose of this paragraph, the term ''fill pipe'' shall include the fuel tank fill pipe, fill neck, fill inlet, and closure.

(6) ONBOARD VAPOR RECOVERY.—Within 1 year after November 15, 1990, the Administrator shall, after consultation with the Secretary of Transportation regarding the safety of vehicle-based (''onboard'') systems for the control of vehicle refueling emissions, promulgate standards under this section requiring that new light-duty vehicles manufactured beginning in the fourth model year after the model year in which the standards are promulgated and thereafter shall be equipped with such systems. The standards required under this paragraph shall apply to a percentage of each manufacturer's fleet of new light-duty vehicles beginning with the fourth model year after the model year in which the standards are promulgated. The percentage shall be as specified in the following table:

IMPLEMENTATION SCHEDULE FOR ONBOARD VAPOR RECOVERY REQUIREMENTS

Model year commencing after standards promulgated	Percentage*
Fourth	40
Fifth	80
After Fifth	100

*Percentages in the table refer to a percentage of the manufacturer's sales volume.

The standards shall require that such systems provide a minimum evaporative emission capture efficiency of 95 percent. The requirements of section 7511a(b)(3) of this title (relating to stage II gasoline vapor recovery) for areas classified under section 7511 of this title as moderate for ozone shall not apply after promulgation of such standards and the Administrator may, by rule, revise or waive the application of the requirements of such section 7511a(b)(3) of this title for areas classified under section 7511 of this title as Serious, Severe, or Extreme for ozone, as appropriate, after such time as the Administrator determines that onboard emissions control systems required under this paragraph are in widespread use throughout the motor vehicle fleet.

(b) Emissions of carbon monoxide, hydrocarbons, and oxides of nitrogen; annual report to Congress; waiver of emission standards; research objectives

(1)(A) The regulations under subsection (a) of this section applicable to emissions of carbon monoxide and hydrocarbons from light-duty vehicles and engines manufactured during model years 1977 through 1979 shall contain standards which provide that such emissions from such vehicles and engines may not exceed 1.5 grams per vehicle mile of hydrocarbons and 15.0 grams per vehicle mile of carbon monoxide. The regulations under subsection (a) of this section applicable to emissions of carbon monoxide from light-duty vehicles and engines manufactured during the model year 1980 shall contain standards which provide that such emissions may not exceed 7.0 grams per vehicle mile. The regulations under subsection (a) of this section applicable to emissions of hydrocarbons from light-duty vehicles and engines manufactured during or after model year 1980 shall contain standards which require a reduction of at least 90 percent from emissions of such pollutant allowable under the standards under this section applicable to light-duty vehicles and engines manufactured in model year 1970. Unless waived as provided in paragraph (5),[1] regulations under subsection (a) of this section applicable to emissions of carbon monoxide from light-duty vehicles and engines manufactured during or after the model year 1981 shall contain standards which require a reduction of at least 90 percent from emissions of such pollutant allowable

Pub. L. 95–95, title III, § 305(e), Aug. 7, 1977, 91 Stat. 776; Pub. L. 101–549, title I, §§ 107(d), 108(i), Nov. 15, 1990, 104 Stat. 2464, 2467.)

CODIFICATION

Section was formerly classified to section 1857g of this title.

AMENDMENTS

1990—Subsec. (a)(1). Pub. L. 101–549, § 108(i), inserted ''subject to section 7607(d) of this title'' after ''regulations''.

Subsec. (d). Pub. L. 101–549, § 107(d), added subsec. (d).

1977—Subsec. (a). Pub. L. 95–95 designated existing provisions as par. (1) and added par. (2).

1970—Subsec. (a). Pub. L. 91–604, § 15(c)(2), substituted ''Administrator'' for ''Secretary'' and ''Environmental Protection Agency'' for ''Department of Health, Education, and Welfare''.

Subsec. (b). Pub. L. 91–604, § 3(b)(2), substituted ''Environmental Protection Agency'' for ''Public Health Service'' and struck out provisions covering the payment of salaries and allowances.

Subsec. (c). Pub. L. 91–604, § 15(c)(2), substituted ''Administrator'' for ''Secretary''.

1967—Pub. L. 90–148 reenacted section without change.

EFFECTIVE DATE OF 1977 AMENDMENT

Amendment by Pub. L. 95–95 effective Aug. 7, 1977, except as otherwise expressly provided, see section 406(d) of Pub. L. 95–95, set out as a note under section 7401 of this title.

MODIFICATION OR RESCISSION OF RULES, REGULATIONS, ORDERS, DETERMINATIONS, CONTRACTS, CERTIFICATIONS, AUTHORIZATIONS, DELEGATIONS, AND OTHER ACTIONS

All rules, regulations, orders, determinations, contracts, certifications, authorizations, delegations, or other actions duly issued, made, or taken by or pursuant to act July 14, 1955, the Clean Air Act, as in effect immediately prior to the date of enactment of Pub. L. 95–95 [Aug. 7, 1977] to continue in full force and effect until modified or rescinded in accordance with act July 14, 1955, as amended by Pub. L. 95–95 [this chapter], see section 406(b) of Pub. L. 95–95, set out as an Effective Date of 1977 Amendment note under section 7401 of this title.

DISADVANTAGED BUSINESS CONCERNS; USE OF QUOTAS PROHIBITED

Title X of Pub. L. 101–549 provided that:

''SEC. 1001. DISADVANTAGED BUSINESS CONCERNS.

''(a) IN GENERAL.—In providing for any research relating to the requirements of the amendments made by the Clean Air Act Amendments of 1990 [Pub. L. 101–549, see Tables for classification] which uses funds of the Environmental Protection Agency, the Administrator of the Environmental Protection Agency shall, to the extent practicable, require that not less than 10 percent of total Federal funding for such research will be made available to disadvantaged business concerns.

''(b) DEFINITION.—

''(1)(A) For purposes of subsection (a), the term 'disadvantaged business concern' means a concern—

''(i) which is at least 51 percent owned by one or more socially and economically disadvantaged individuals or, in the case of a publicly traded company, at least 51 percent of the stock of which is owned by one or more socially and economically disadvantaged individuals; and

''(ii) the management and daily business operations of which are controlled by such individuals.

''(B)(i) A for-profit business concern is presumed to be a disadvantaged business concern for purposes of subsection (a) if it is at least 51 percent owned by, or in the case of a concern which is a publicly traded company at least 51 percent of the stock of the company is owned by, one or more individuals who are members of the following groups:

''(I) Black Americans.

''(II) Hispanic Americans.

''(III) Native Americans.

''(IV) Asian Americans.

''(V) Women.

''(VI) Disabled Americans.

''(ii) The presumption established by clause (i) may be rebutted with respect to a particular business concern if it is reasonably established that the individual or individuals referred to in that clause with respect to that business concern are not experiencing impediments to establishing or developing such concern as a result of the individual's identification as a member of a group specified in that clause.

''(C) The following institutions are presumed to be disadvantaged business concerns for purposes of subsection (a):

''(i) Historically black colleges and universities, and colleges and universities having a student body in which 40 percent of the students are Hispanic.

''(ii) Minority institutions (as that term is defined by the Secretary of Education pursuant to the General Education Provision Act (20 U.S.C. 1221 et seq.)).

''(iii) Private and voluntary organizations controlled by individuals who are socially and economically disadvantaged.

''(D) A joint venture may be considered to be a disadvantaged business concern under subsection (a), notwithstanding the size of such joint venture, if—

''(i) a party to the joint venture is a disadvantaged business concern; and

''(ii) that party owns at least 51 percent of the joint venture.

A person who is not an economically disadvantaged individual or a disadvantaged business concern, as a party to a joint venture, may not be a party to more than 2 awarded contracts in a fiscal year solely by reason of this subparagraph.

''(E) Nothing in this paragraph shall prohibit any member of a racial or ethnic group that is not listed in subparagraph (B)(i) from establishing that they have been impeded in establishing or developing a business concern as a result of racial or ethnic discrimination.

''SEC. 1002. USE OF QUOTAS PROHIBITED.—Nothing in this title shall permit or require the use of quotas or a requirement that has the effect of a quota in determining eligibility under section 1001.''

§ 7602. Definitions

When used in this chapter—

(a) The term ''Administrator'' means the Administrator of the Environmental Protection Agency.

(b) The term ''air pollution control agency'' means any of the following:

(1) A single State agency designated by the Governor of that State as the official State air pollution control agency for purposes of this chapter.

(2) An agency established by two or more States and having substantial powers or duties pertaining to the prevention and control of air pollution.

(3) A city, county, or other local government health authority, or, in the case of any city, county, or other local government in which there is an agency other than the health authority charged with responsibility for enforcing ordinances or laws relating to the prevention and control of air pollution, such other agency.

(4) An agency of two or more municipalities located in the same State or in different States and having substantial powers or duties pertaining to the prevention and control of air pollution.

(5) An agency of an Indian tribe.

(c) The term ''interstate air pollution control agency'' means—

(1) an air pollution control agency established by two or more States, or

(2) an air pollution control agency of two or more municipalities located in different States.

(d) The term ''State'' means a State, the District of Columbia, the Commonwealth of Puerto Rico, the Virgin Islands, Guam, and American Samoa and includes the Commonwealth of the Northern Mariana Islands.

(e) The term ''person'' includes an individual, corporation, partnership, association, State, municipality, political subdivision of a State, and any agency, department, or instrumentality of the United States and any officer, agent, or employee thereof.

(f) The term ''municipality'' means a city, town, borough, county, parish, district, or other public body created by or pursuant to State law.

(g) The term ''air pollutant'' means any air pollution agent or combination of such agents, including any physical, chemical, biological, radioactive (including source material, special nuclear material, and byproduct material) substance or matter which is emitted into or otherwise enters the ambient air. Such term includes any precursors to the formation of any air pollutant, to the extent the Administrator has identified such precursor or precursors for the particular purpose for which the term ''air pollutant'' is used.

(h) All language referring to effects on welfare includes, but is not limited to, effects on soils, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate, damage to and deterioration of property, and hazards to transportation, as well as effects on economic values and on personal comfort and well-being, whether caused by transformation, conversion, or combination with other air pollutants.

(i) The term ''Federal land manager'' means, with respect to any lands in the United States, the Secretary of the department with authority over such lands.

(j) Except as otherwise expressly provided, the terms ''major stationary source'' and ''major emitting facility'' mean any stationary facility or source of air pollutants which directly emits, or has the potential to emit, one hundred tons per year or more of any air pollutant (including any major emitting facility or source of fugitive emissions of any such pollutant, as determined by rule by the Administrator).

(k) The terms ''emission limitation'' and ''emission standard'' mean a requirement established by the State or the Administrator which limits the quantity, rate, or concentration of emissions of air pollutants on a continuous basis, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction, and any design, equipment, work practice or operational standard promulgated under this chapter..[1]

(*l*) The term ''standard of performance'' means a requirement of continuous emission reduction, including any requirement relating to the operation or maintenance of a source to assure continuous emission reduction.

(m) The term ''means of emission limitation'' means a system of continuous emission reduction (including the use of specific technology or fuels with specified pollution characteristics).

(n) The term ''primary standard attainment date'' means the date specified in the applicable implementation plan for the attainment of a national primary ambient air quality standard for any air pollutant.

(*o*) The term ''delayed compliance order'' means an order issued by the State or by the Administrator to an existing stationary source, postponing the date required under an applicable implementation plan for compliance by such source with any requirement of such plan.

(p) The term ''schedule and timetable of compliance'' means a schedule of required measures including an enforceable sequence of actions or operations leading to compliance with an emission limitation, other limitation, prohibition, or standard.

(q) For purposes of this chapter, the term ''applicable implementation plan'' means the portion (or portions) of the implementation plan, or most recent revision thereof, which has been approved under section 7410 of this title, or promulgated under section 7410(c) of this title, or promulgated or approved pursuant to regulations promulgated under section 7601(d) of this title and which implements the relevant requirements of this chapter.

(r) INDIAN TRIBE.—The term ''Indian tribe'' means any Indian tribe, band, nation, or other organized group or community, including any Alaska Native village, which is Federally recognized as eligible for the special programs and services provided by the United States to Indians because of their status as Indians.

(s) VOC.—The term ''VOC'' means volatile organic compound, as defined by the Administrator.

(t) PM–10.—The term ''PM–10'' means particulate matter with an aerodynamic diameter less than or equal to a nominal ten micrometers, as measured by such method as the Administrator may determine.

(u) NAAQS AND CTG.—The term ''NAAQS'' means national ambient air quality standard. The term ''CTG'' means a Control Technique Guideline published by the Administrator under section 7408 of this title.

(v) NO_x.—The term ''NO_x'' means oxides of nitrogen.

(w) CO.—The term ''CO'' means carbon monoxide.

(x) SMALL SOURCE.—The term ''small source'' means a source that emits less than 100 tons of regulated pollutants per year, or any class of persons that the Administrator determines, through regulation, generally lack technical ability or knowledge regarding control of air pollution.

[1] So in original.

(y) FEDERAL IMPLEMENTATION PLAN.—The term ''Federal implementation plan'' means a plan (or portion thereof) promulgated by the Administrator to fill all or a portion of a gap or otherwise correct all or a portion of an inadequacy in a State implementation plan, and which includes enforceable emission limitations or other control measures, means or techniques (including economic incentives, such as marketable permits or auctions of emissions allowances), and provides for attainment of the relevant national ambient air quality standard.

(z) STATIONARY SOURCE.—The term ''stationary source'' means generally any source of an air pollutant except those emissions resulting directly from an internal combustion engine for transportation purposes or from a nonroad engine or nonroad vehicle as defined in section 7550 of this title.

(July 14, 1955, ch. 360, title III, § 302, formerly § 9, as added Pub. L. 88–206, § 1, Dec. 17, 1963, 77 Stat. 400, renumbered Pub. L. 89–272, title I, § 101(4), Oct. 20, 1965, 79 Stat. 992; amended Pub. L. 90–148, § 2, Nov. 21, 1967, 81 Stat. 504; Pub. L. 91–604, § 15(a)(1), (c)(1), Dec. 31, 1970, 84 Stat. 1710, 1713; Pub. L. 95–95, title II, § 218(c), title III, § 301, Aug. 7, 1977, 91 Stat. 761, 769; Pub. L. 95–190, § 14(a)(76), Nov. 16, 1977, 91 Stat. 1404; Pub. L. 101–549, title I, §§ 101(d)(4), 107(a), (b), 108(j), 109(b), title III, § 302(e), title VII, § 709, Nov. 15, 1990, 104 Stat. 2409, 2464, 2468, 2470, 2574, 2684.)

CODIFICATION

Section was formerly classified to section 1857h of this title.

PRIOR PROVISIONS

Provisions similar to those in subsecs. (b) and (d) of this section were contained in a section 1857e of this title, act July 14, 1955, ch. 360, § 6, 69 Stat. 323, prior to the general amendment of this chapter by Pub. L. 88–206.

AMENDMENTS

1990—Subsec. (b)(1) to (3). Pub. L. 101–549, § 107(a)(1), (2), struck out ''or'' at end of par. (3) and substituted periods for semicolons at end of pars. (1) to (3).

Subsec. (b)(5). Pub. L. 101–549, § 107(a)(3), added par. (5).

Subsec. (g). Pub. L. 101–549, § 108(j)(2), inserted at end ''Such term includes any precursors to the formation of any air pollutant, to the extent the Administrator has identified such precursor or precursors for the particular purpose for which the term 'air pollutant' is used.''

Subsec. (h). Pub. L. 101–549, § 109(b), inserted before period at end '', whether caused by transformation, conversion, or combination with other air pollutants''.

Subsec. (k). Pub. L. 101–549, § 303(e), inserted before period at end '', and any design, equipment, work practice or operational standard promulgated under this chapter.''

Subsec. (q). Pub. L. 101–549, § 101(d)(4), added subsec. (q).

Subsec. (r). Pub. L. 101–549, § 107(b), added subsec. (r).

Subsecs. (s) to (y). Pub. L. 101–549, § 108(j)(1), added subsecs. (s) to (y).

Subsec. (z). Pub. L. 101–549, § 709, added subsec. (z).

1977—Subsec. (d). Pub. L. 95–95, § 218(c), inserted ''and includes the Commonwealth of the Northern Mariana Islands'' after ''American Samoa''.

Subsec. (e). Pub. L. 95–190 substituted ''individual, corporation'' for ''individual corporation''.

Pub. L. 95–95, § 301(b), expanded definition of ''person'' to include agencies, departments, and instrumentalities of the United States and officers, agents, and employees thereof.

Subsec. (g). Pub. L. 95–95, § 301(c), expanded definition of ''air pollutant'' so as, expressly, to include physical, chemical, biological, and radioactive substances or matter emitted into or otherwise entering the ambient air.

Subsecs. (i) to (p). Pub. L. 95–95, § 301(a), added subsecs. (i) to (p).

1970—Subsec. (a). Pub. L. 91–604, § 15(c)(1), substituted definition of ''Administrator'' as meaning Administrator of the Environmental Protection Agency for definition of ''Secretary'' as meaning Secretary of Health, Education, and Welfare.

Subsecs. (g), (h). Pub. L. 91–604, § 15(a)(1), added subsec. (g) defining ''air pollutant'', redesignated former subsec. (g) as (h) and substituted references to effects on soil, water, crops, vegetation, manmade materials, animals, wildlife, weather, visibility, and climate for references to injury to agricultural crops and livestock, and inserted references to effects on economic values and on personal comfort and well being.

1967—Pub. L. 90–148 reenacted section without change.

EFFECTIVE DATE OF 1977 AMENDMENT

Amendment by Pub. L. 95–95 effective Aug. 7, 1977, except as otherwise expressly provided, see section 406(d) of Pub. L. 95–95, set out as a note under section 7401 of this title.

§ 7603. Emergency powers

Notwithstanding any other provision of this chapter, the Administrator, upon receipt of evidence that a pollution source or combination of sources (including moving sources) is presenting an imminent and substantial endangerment to public health or welfare, or the environment, may bring suit on behalf of the United States in the appropriate United States district court to immediately restrain any person causing or contributing to the alleged pollution to stop the emission of air pollutants causing or contributing to such pollution or to take such other action as may be necessary. If it is not practicable to assure prompt protection of public health or welfare or the environment by commencement of such a civil action, the Administrator may issue such orders as may be necessary to protect public health or welfare or the environment. Prior to taking any action under this section, the Administrator shall consult with appropriate State and local authorities and attempt to confirm the accuracy of the information on which the action proposed to be taken is based. Any order issued by the Administrator under this section shall be effective upon issuance and shall remain in effect for a period of not more than 60 days, unless the Administrator brings an action pursuant to the first sentence of this section before the expiration of that period. Whenever the Administrator brings such an action within the 60-day period, such order shall remain in effect for an additional 14 days or for such longer period as may be authorized by the court in which such action is brought.

(July 14, 1955, ch. 360, title III, § 303, as added Pub. L. 91–604, § 12(a), Dec. 31, 1970, 84 Stat. 1705; amended Pub. L. 95–95, title III, § 302(a), Aug. 7, 1977, 91 Stat. 770; Pub. L. 101–549, title VII, § 704, Nov. 15, 1990, 104 Stat. 2681.)

CODIFICATION

Section was formerly classified to section 1857h–1 of this title.

lishes that such action is based on such a determination. Any petition for review under this subsection shall be filed within sixty days from the date notice of such promulgation, approval, or action appears in the Federal Register, except that if such petition is based solely on grounds arising after such sixtieth day, then any petition for review under this subsection shall be filed within sixty days after such grounds arise. The filing of a petition for reconsideration by the Administrator of any otherwise final rule or action shall not affect the finality of such rule or action for purposes of judicial review nor extend the time within which a petition for judicial review of such rule or action under this section may be filed, and shall not postpone the effectiveness of such rule or action.

(2) Action of the Administrator with respect to which review could have been obtained under paragraph (1) shall not be subject to judicial review in civil or criminal proceedings for enforcement. Where a final decision by the Administrator defers performance of any nondiscretionary statutory action to a later time, any person may challenge the deferral pursuant to paragraph (1).

(c) Additional evidence

In any judicial proceeding in which review is sought of a determination under this chapter required to be made on the record after notice and opportunity for hearing, if any party applies to the court for leave to adduce additional evidence, and shows to the satisfaction of the court that such additional evidence is material and that there were reasonable grounds for the failure to adduce such evidence in the proceeding before the Administrator, the court may order such additional evidence (and evidence in rebuttal thereof) to be taken before the Administrator, in such manner and upon such terms and conditions as to[5] the court may deem proper. The Administrator may modify his findings as to the facts, or make new findings, by reason of the additional evidence so taken and he shall file such modified or new findings, and his recommendation, if any, for the modification or setting aside of his original determination, with the return of such additional evidence.

(d) Rulemaking

(1) This subsection applies to—

(A) the promulgation or revision of any national ambient air quality standard under section 7409 of this title,

(B) the promulgation or revision of an implementation plan by the Administrator under section 7410(c) of this title,

(C) the promulgation or revision of any standard of performance under section 7411 of this title, or emission standard or limitation under section 7412(d) of this title, any standard under section 7412(f) of this title, or any regulation under section 7412(g)(1)(D) and (F) of this title, or any regulation under section 7412(m) or (n) of this title,

(D) the promulgation of any requirement for solid waste combustion under section 7429 of this title,

(E) the promulgation or revision of any regulation pertaining to any fuel or fuel additive under section 7545 of this title,

(F) the promulgation or revision of any aircraft emission standard under section 7571 of this title,

(G) the promulgation or revision of any regulation under subchapter IV–A of this chapter (relating to control of acid deposition),

(H) promulgation or revision of regulations pertaining to primary nonferrous smelter orders under section 7419 of this title (but not including the granting or denying of any such order),

(I) promulgation or revision of regulations under subchapter VI of this chapter (relating to stratosphere and ozone protection),

(J) promulgation or revision of regulations under part C of subchapter I of this chapter (relating to prevention of significant deterioration of air quality and protection of visibility),

(K) promulgation or revision of regulations under section 7521 of this title and test procedures for new motor vehicles or engines under section 7525 of this title, and the revision of a standard under section 7521(a)(3) of this title,

(L) promulgation or revision of regulations for noncompliance penalties under section 7420 of this title,

(M) promulgation or revision of any regulations promulgated under section 7541 of this title (relating to warranties and compliance by vehicles in actual use),

(N) action of the Administrator under section 7426 of this title (relating to interstate pollution abatement),

(O) the promulgation or revision of any regulation pertaining to consumer and commercial products under section 7511b(e) of this title,

(P) the promulgation or revision of any regulation pertaining to field citations under section 7413(d)(3) of this title,

(Q) the promulgation or revision of any regulation pertaining to urban buses or the clean-fuel vehicle, clean-fuel fleet, and clean fuel programs under part C of subchapter II of this chapter,

(R) the promulgation or revision of any regulation pertaining to nonroad engines or nonroad vehicles under section 7547 of this title,

(S) the promulgation or revision of any regulation relating to motor vehicle compliance program fees under section 7552 of this title,

(T) the promulgation or revision of any regulation under subchapter IV–A of this chapter (relating to acid deposition),

(U) the promulgation or revision of any regulation under section 7511b(f) of this title pertaining to marine vessels, and

(V) such other actions as the Administrator may determine.

The provisions of section 553 through 557 and section 706 of title 5 shall not, except as expressly provided in this subsection, apply to actions to which this subsection applies. This subsection shall not apply in the case of any rule or circumstance referred to in subparagraphs (A) or (B) of subsection 553(b) of title 5.

[5] So in original. The word ''to'' probably should not appear.

(2) Not later than the date of proposal of any action to which this subsection applies, the Administrator shall establish a rulemaking docket for such action (hereinafter in this subsection referred to as a ''rule''). Whenever a rule applies only within a particular State, a second (identical) docket shall be simultaneously established in the appropriate regional office of the Environmental Protection Agency.

(3) In the case of any rule to which this subsection applies, notice of proposed rulemaking shall be published in the Federal Register, as provided under section 553(b) of title 5, shall be accompanied by a statement of its basis and purpose and shall specify the period available for public comment (hereinafter referred to as the ''comment period''). The notice of proposed rulemaking shall also state the docket number, the location or locations of the docket, and the times it will be open to public inspection. The statement of basis and purpose shall include a summary of—

(A) the factual data on which the proposed rule is based;

(B) the methodology used in obtaining the data and in analyzing the data; and

(C) the major legal interpretations and policy considerations underlying the proposed rule.

The statement shall also set forth or summarize and provide a reference to any pertinent findings, recommendations, and comments by the Scientific Review Committee established under section 7409(d) of this title and the National Academy of Sciences, and, if the proposal differs in any important respect from any of these recommendations, an explanation of the reasons for such differences. All data, information, and documents referred to in this paragraph on which the proposed rule relies shall be included in the docket on the date of publication of the proposed rule.

(4)(A) The rulemaking docket required under paragraph (2) shall be open for inspection by the public at reasonable times specified in the notice of proposed rulemaking. Any person may copy documents contained in the docket. The Administrator shall provide copying facilities which may be used at the expense of the person seeking copies, but the Administrator may waive or reduce such expenses in such instances as the public interest requires. Any person may request copies by mail if the person pays the expenses, including personnel costs to do the copying.

(B)(i) Promptly upon receipt by the agency, all written comments and documentary information on the proposed rule received from any person for inclusion in the docket during the comment period shall be placed in the docket. The transcript of public hearings, if any, on the proposed rule shall also be included in the docket promptly upon receipt from the person who transcribed such hearings. All documents which become available after the proposed rule has been published and which the Administrator determines are of central relevance to the rulemaking shall be placed in the docket as soon as possible after their availability.

(ii) The drafts of proposed rules submitted by the Administrator to the Office of Management and Budget for any interagency review process prior to proposal of any such rule, all documents accompanying such drafts, and all written comments thereon by other agencies and all written responses to such written comments by the Administrator shall be placed in the docket no later than the date of proposal of the rule. The drafts of the final rule submitted for such review process prior to promulgation and all such written comments thereon, all documents accompanying such drafts, and written responses thereto shall be placed in the docket no later than the date of promulgation.

(5) In promulgating a rule to which this subsection applies (i) the Administrator shall allow any person to submit written comments, data, or documentary information; (ii) the Administrator shall give interested persons an opportunity for the oral presentation of data, views, or arguments, in addition to an opportunity to make written submissions; (iii) a transcript shall be kept of any oral presentation; and (iv) the Administrator shall keep the record of such proceeding open for thirty days after completion of the proceeding to provide an opportunity for submission of rebuttal and supplementary information.

(6)(A) The promulgated rule shall be accompanied by (i) a statement of basis and purpose like that referred to in paragraph (3) with respect to a proposed rule and (ii) an explanation of the reasons for any major changes in the promulgated rule from the proposed rule.

(B) The promulgated rule shall also be accompanied by a response to each of the significant comments, criticisms, and new data submitted in written or oral presentations during the comment period.

(C) The promulgated rule may not be based (in part or whole) on any information or data which has not been placed in the docket as of the date of such promulgation.

(7)(A) The record for judicial review shall consist exclusively of the material referred to in paragraph (3), clause (i) of paragraph (4)(B), and subparagraphs (A) and (B) of paragraph (6).

(B) Only an objection to a rule or procedure which was raised with reasonable specificity during the period for public comment (including any public hearing) may be raised during judicial review. If the person raising an objection can demonstrate to the Administrator that it was impracticable to raise such objection within such time or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule, the Administrator shall convene a proceeding for reconsideration of the rule and provide the same procedural rights as would have been afforded had the information been available at the time the rule was proposed. If the Administrator refuses to convene such a proceeding, such person may seek review of such refusal in the United States court of appeals for the appropriate circuit (as provided in subsection (b) of this section). Such reconsideration shall not postpone the effectiveness of the rule. The effectiveness of the rule may be stayed during such reconsideration, however, by the Administrator or the court for a period not to exceed three months.

(8) The sole forum for challenging procedural determinations made by the Administrator under this subsection shall be in the United States court of appeals for the appropriate circuit (as provided in subsection (b) of this section) at the time of the substantive review of the rule. No interlocutory appeals shall be permitted with respect to such procedural determinations. In reviewing alleged procedural errors, the court may invalidate the rule only if the errors were so serious and related to matters of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made.

(9) In the case of review of any action of the Administrator to which this subsection applies, the court may reverse any such action found to be—

(A) arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law;

(B) contrary to constitutional right, power, privilege, or immunity;

(C) in excess of statutory jurisdiction, authority, or limitations, or short of statutory right; or

(D) without observance of procedure required by law, if (i) such failure to observe such procedure is arbitrary or capricious, (ii) the requirement of paragraph (7)(B) has been met, and (iii) the condition of the last sentence of paragraph (8) is met.

(10) Each statutory deadline for promulgation of rules to which this subsection applies which requires promulgation less than six months after date of proposal may be extended to not more than six months after date of proposal by the Administrator upon a determination that such extension is necessary to afford the public, and the agency, adequate opportunity to carry out the purposes of this subsection.

(11) The requirements of this subsection shall take effect with respect to any rule the proposal of which occurs after ninety days after August 7, 1977.

(e) Other methods of judicial review not authorized

Nothing in this chapter shall be construed to authorize judicial review of regulations or orders of the Administrator under this chapter, except as provided in this section.

(f) Costs

In any judicial proceeding under this section, the court may award costs of litigation (including reasonable attorney and expert witness fees) whenever it determines that such award is appropriate.

(g) Stay, injunction, or similar relief in proceedings relating to noncompliance penalties

In any action respecting the promulgation of regulations under section 7420 of this title or the administration or enforcement of section 7420 of this title no court shall grant any stay, injunctive, or similar relief before final judgment by such court in such action.

(h) Public participation

It is the intent of Congress that, consistent with the policy of subchapter II of chapter 5 of title 5, the Administrator in promulgating any regulation under this chapter, including a regulation subject to a deadline, shall ensure a reasonable period for public participation of at least 30 days, except as otherwise expressly provided in section[6] 7407(d), 7502(a), 7511(a) and (b), and 7512(a) and (b) of this title.

(July 14, 1955, ch. 360, title III, §307, as added Pub. L. 91–604, §12(a), Dec. 31, 1970, 84 Stat. 1707; amended Pub. L. 92–157, title III, §302(a), Nov. 18, 1971, 85 Stat. 464; Pub. L. 93–319, §6(c), June 22, 1974, 88 Stat. 259; Pub. L. 95–95, title III, §§303(d), 305(a), (c), (f)–(h), Aug. 7, 1977, 91 Stat. 772, 776, 777; Pub. L. 95–190, §14(a)(79), (80), Nov. 16, 1977, 91 Stat. 1404; Pub. L. 101–549, title I, §§108(p), 110(5), title III, §302(g), (h), title VII, §§702(c), 703, 706, 707(h), 710(b), Nov. 15, 1990, 104 Stat. 2469, 2470, 2574, 2681–2684.)

REFERENCES IN TEXT

Section 7521(b)(4) of this title, referred to in subsec. (a), was repealed by Pub. L. 101–549, title II, §230(2), Nov. 15, 1990, 104 Stat. 2529.

Section 7521(b)(5) of this title, referred to in subsec. (b)(1), was repealed by Pub. L. 101–549, title II, §230(3), Nov. 15, 1990, 104 Stat. 2529.

Section 1857c–10(c)(2)(A), (B), or (C) of this title (as in effect before August 7, 1977), referred to in subsec. (b)(1), was in the original ''section 119(c)(2)(A), (B), or (C) (as in effect before the date of enactment of the Clean Air Act Amendments of 1977)'', meaning section 119 of act July 14, 1955, ch. 360, title I, as added June 22, 1974, Pub. L. 93–319, §3, 88 Stat. 248, (which was classified to section 1857c–10 of this title) as in effect prior to the enactment of Pub. L. 95–95, Aug. 7, 1977, 91 Stat. 691, effective Aug. 7, 1977. Section 112(b)(1) of Pub. L. 95–95 repealed section 119 of act July 14, 1955, ch. 360, title I, as added by Pub. L. 93–319, and provided that all references to such section 119 in any subsequent enactment which supersedes Pub. L. 93–319 shall be construed to refer to section 113(d) of the Clean Air Act and to paragraph (5) thereof in particular which is classified to subsec. (d)(5) of section 7413 of this title. Section 7413(d) of this title was subsequently amended generally by Pub. L. 101–549, title VII, §701, Nov. 15, 1990, 104 Stat. 2672, and, as so amended, no longer relates to final compliance orders. Section 117(b) of Pub. L. 95–95 added a new section 119 of act July 14, 1955, which is classified to section 7419 of this title.

Part C of subchapter I of this chapter, referred to in subsec. (d)(1)(J), was in the original ''subtitle C of title I'', and was translated as reading ''part C of title I'' to reflect the probable intent of Congress, because title I does not contain subtitles.

CODIFICATION

In subsec. (h), ''subchapter II of chapter 5 of title 5'' was substituted for ''the Administrative Procedures Act'' on authority of Pub. L. 89–554, §7(b), Sept. 6, 1966, 80 Stat. 631, the first section of which enacted Title 5, Government Organization and Employees.

Section was formerly classified to section 1857h–5 of this title.

PRIOR PROVISIONS

A prior section 307 of act July 14, 1955, was renumbered section 314 by Pub. L. 91–604 and is classified to section 7614 of this title.

Another prior section 307 of act July 14, 1955, ch. 360, title III, formerly §14, as added Dec. 17, 1963, Pub. L. 88–206, §1, 77 Stat. 401, was renumbered section 307 by Pub. L. 89–272, renumbered section 310 by Pub. L. 90–148, and renumbered section 317 by Pub. L. 91–604, and is set out as a Short Title note under section 7401 of this title.

[6] So in original. Probably should be ''sections''.

regulatory program offices, while maintaining a high level of scientific quality. Such report shall be submitted on or before March 31, 1978.

(Pub. L. 95–155, § 7, Nov. 8, 1977, 91 Stat. 1259.)

REFERENCES IN TEXT

This Act, referred to in subsec. (a), is Pub. L. 95–155, Nov. 8, 1977, 91 Stat. 1257, as amended, known as the Environmental Research, Development, and Demonstration Authorization Act of 1978, which to the extent classified to the Code enacted sections 300j–3a, 4361a, 4361b, and 4363 to 4367 of this title. For complete classification of this Act to the Code, see Tables.

CODIFICATION

Section was enacted as part of the Environmental Research, Development, and Demonstration Authorization Act of 1978, and not as part of the National Environmental Policy Act of 1969 which comprises this chapter.

§ 4365. Science Advisory Board

(a) Establishment; requests for advice by Administrator of Environmental Protection Agency and Congressional committees

The Administrator of the Environmental Protection Agency shall establish a Science Advisory Board which shall provide such scientific advice as may be requested by the Administrator, the Committee on Environment and Public Works of the United States Senate, or the Committee on Science, Space, and Technology, on Energy and Commerce, or on Public Works and Transportation of the House of Representatives.

(b) Membership; Chairman; meetings; qualifications of members

Such Board shall be composed of at least nine members, one of whom shall be designated Chairman, and shall meet at such times and places as may be designated by the Chairman of the Board in consultation with the Administrator. Each member of the Board shall be qualified by education, training, and experience to evaluate scientific and technical information on matters referred to the Board under this section.

(c) Proposed environmental criteria document, standard, limitation, or regulation; functions respecting in conjunction with Administrator

(1) The Administrator, at the time any proposed criteria document, standard, limitation, or regulation under the Clean Air Act [42 U.S.C. 7401 et seq.], the Federal Water Pollution Control Act [33 U.S.C. 1251 et seq.], the Resource Conservation and Recovery Act of 1976 [42 U.S.C. 6901 et seq.], the Noise Control Act [42 U.S.C. 4901 et seq.], the Toxic Substances Control Act [15 U.S.C. 2601 et seq.], or the Safe Drinking Water Act [42 U.S.C. 300f et seq.], or under any other authority of the Administrator, is provided to any other Federal agency for formal review and comment, shall make available to the Board such proposed criteria document, standard, limitation, or regulation, together with relevant scientific and technical information in the possession of the Environmental Protection Agency on which the proposed action is based.

(2) The Board may make available to the Administrator, within the time specified by the Administrator, its advice and comments on the adequacy of the scientific and technical basis of the proposed criteria document, standard, limitation, or regulation, together with any pertinent information in the Board's possession.

(d) Utilization of technical and scientific capabilities of Federal agencies and national environmental laboratories for determining adequacy of scientific and technical basis of proposed criteria document, etc.

In preparing such advice and comments, the Board shall avail itself of the technical and scientific capabilities of any Federal agency, including the Environmental Protection Agency and any national environmental laboratories.

(e) Member committees and investigative panels; establishment; chairmenship

The Board is authorized to constitute such member committees and investigative panels as the Administrator and the Board find necessary to carry out this section. Each such member committee or investigative panel shall be chaired by a member of the Board.

(f) Appointment and compensation of secretary and other personnel; compensation of members

(1) Upon the recommendation of the Board, the Administrator shall appoint a secretary, and such other employees as deemed necessary to exercise and fulfill the Board's powers and responsibilities. The compensation of all employees appointed under this paragraph shall be fixed in accordance with chapter 51 and subchapter III of chapter 53 of title 5.

(2) Members of the Board may be compensated at a rate to be fixed by the President but not in excess of the maximum rate of pay for grade GS–18, as provided in the General Schedule under section 5332 of title 5.

(g) Consultation and coordination with Scientific Advisory Panel

In carrying out the functions assigned by this section, the Board shall consult and coordinate its activities with the Scientific Advisory Panel established by the Administrator pursuant to section 136w(d) of title 7.

(Pub. L. 95–155, § 8, Nov. 8, 1977, 91 Stat. 1260; Pub. L. 96–569, § 3, Dec. 22, 1980, 94 Stat. 3337; Pub. L. 103–437, § 15(*o*), Nov. 2, 1994, 108 Stat. 4593; Pub. L. 104–66, title II, § 2021(k)(3), Dec. 21, 1995, 109 Stat. 728.)

REFERENCES IN TEXT

The Clean Air Act, referred to in subsec. (c)(1), is act July 14, 1955, ch. 360, 69 Stat. 322, as amended, which is classified generally to chapter 85 (§ 7401 et seq.) of this title. For complete classification of this Act to the Code, see Short Title note set out under section 7401 of this title and Tables.

The Federal Water Pollution Control Act, referred to in subsec. (c)(1), is act June 30, 1948, ch. 758, as amended generally by Pub. L. 92–500, § 2, Oct. 18, 1972, 86 Stat. 816, which is classified generally to chapter 26 (§ 1251 et seq.) of Title 33, Navigation and Navigable Waters. For complete classification of this Act to the Code, see Short Title note set out under section 1251 of Title 33 and Tables.

The Resource Conservation and Recovery Act of 1976, referred to in subsec. (c)(1), is Pub. L. 94–580, Oct. 21, 1976, 90 Stat. 2796, as amended, which is classified generally to chapter 82 (§ 6901 et seq.) of this title. For

RESPONDENTS' CERTIFICATE OF COMPLIANCE WITH WORD LIMITATION AND TYPEFACE REQUIREMENTS

Respondents United States Environmental Protection Agency ("EPA") and Lisa P. Jackson, Administrator of EPA, hereby represent that this brief complies with the type-volume limitation of Fed. R. App. P. 32(a)(7)(B) and the briefing format adopted by the Court for this case because it contains 29,619 words, as counted by Microsoft Word, excluding the signature block and the parts of the brief exempted by Fed. R. App. P. 32(a)(7)(B)(iii), and that it complies with the typeface and type style requirements of Fed. R. App. P. 32(a)(5) and 32(a)(6) because it has been prepared in a proportionally spaced typeface using Microsoft Word in Times New Roman 14-point type.

DATED: August 18, 2011

/s/ Angeline Purdy
Counsel for Respondents

CERTIFICATE OF SERVICE

I hereby certify that copies of the foregoing Brief for Respondents have been served through the Court's CM/ECF system on all registered counsel this 18th day of August, 2011.

DATED: August 18, 2011

/s/ Angeline Purdy
Counsel for Respondents