United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued April 8, 2005 Decided July 15, 2005

No. 03-1361

COMMONWEALTH OF MASSACHUSETTS, ET AL.,
PETITIONERS

v.

ENVIRONMENTAL PROTECTION AGENCY,
RESPONDENT

ALLIANCE OF AUTOMOBILE MANUFACTURERS, ET AL.,
INTERVENORS

Consolidated with Nos.
03-1362, 03-1363, 03-1364, 03-1365, 03-1366, 03-1367,
03-1368

On Petitions for Review of an Order of the
Environmental Protection Agency

James R. Milkey and *Howard Fox* argued the cause for petitioners. With them on the briefs were *Thomas F. Reilly*, Attorney General, Attorney General's Office of the Commonwealth of Massachusetts, *William L. Pardee*, Assistant Attorney General, *Joseph Mendelson, III*, *David Bookbinder*, *Bill Lockyer*, Attorney General, Attorney General's Office of the State of California, *Nicholas Stern* and *Marc N. Melnick*, Deputy

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Rebecca L. Bernard and *Jeremy Kyle Kinner* were on the brief of *amici curiae* Indigenous Environmental Network, REDOIL and Physicians for Social Responsibility.

Jeffrey Bossert Clark, Deputy Assistant Attorney General, U.S. Department of Justice, argued the cause for respondent. With him on the brief were *Thomas L. Sansonetti*, Assistant Attorney General, *Jon M. Lipshultz*, Attorney, *Ann R. Klee*, General Counsel, U.S. Environmental Protection Agency, and *John T. Hannon* and *Nancy Ketcham-Colwill*, Counsel.

Neil D. Gordon, Assistant Attorney General, Attorney General's Office of the State of Michigan, argued the cause for intervenors States of Michigan, et al., and *amicus curiae* State of Indiana. With him on the briefs were *Alan F. Hoffman*, Assistant Attorney General, *Jane E. Atwood*, Assistant Attorney General, Attorney General's Office of the State of Texas, *Douglas Conde*, Deputy Attorney General, Attorney General's Office of the State of Idaho, *Charles M. Carvell*, Assistant Attorney General, Attorney General's Office of the State of North Dakota, *Fred Nelson*, Assistant Attorney General, Attorney General's Office of the State of Utah, *Roxanne Giedd*, Deputy Attorney General, Attorney General's Office of the State of South Dakota, *Steven E. Mulder*, Assistant Attorney General, Attorney General's Office of the State of Alaska, *David W. Davies*, Attorney, Attorney General's Office of the State of Kansas, *David D. Cookson* and *Natalee J. Hart*, Assistant Attorneys General, Attorney General's Office of the State of Nebraska, *Dale T. Vitale*, Senior Deputy Attorney General, Attorney General's Office of the State of Ohio, and *Thomas M. Fisher*, Special Counsel, Attorney General's Office of the State of Indiana.

Norman W. Fichthorn, Allison D. Wood, William A. Anderson, II., Eric P. Gotting, Russell S. Frye, John L.

Wittenborn, William L. Fang, Dell E. Perelman, Leslie A. Hulse, Richard Wasserstrom, Harry M. Ng, Ralph J. Colleli, Jr., Jan S. Amundson, Quentin Riegel, Robin S. Conrad, John T. Whatley, Julie C. Becker, Douglas I. Greenhaus, Jed R. Mandel, Timothy A. French, Robert G. Slaughter, Mark J. Washko, and *Nick Goldstein* were on the brief of industry intervenors in support of respondent.

Daniel J. Popeo, Paul D. Kamenar, Peter Glaser, and *Douglas A. Henderson* were on the brief of amicus curiae Washington Legal Foundation in support of respondent.

Edward W. Warren and *Eric B. Wolff* were on the brief of amicus curiae John D. Dingell (D-Michgan) in support of denial of petitions for review.

Before: SENTELLE, RANDOLPH, and TATEL, *Circuit Judges*.

Judgment of the Court filed by *Circuit Judge* RANDOLPH.

Opinion filed by *Circuit Judge* RANDOLPH.

Opinion dissenting in part and concurring in the judgment filed by *Circuit Judge* SENTELLE.

Opinion dissenting in Nos. 03-1361, 03-1362, 03-1363, and 03-1364 filed by *Circuit Judge* TATEL.

RANDOLPH, *Circuit Judge*: Petitioners are twelve states, three cities, an American territory, and numerous environmental organizations. They are opposed by the Environmental Protection Agency as respondent, and ten states and several trade associations as intervenors. The controversy is about EPA's denial of a petition asking it to regulate carbon dioxide (CO_2) and other greenhouse gas emissions from new motor

vehicles under § 202(a)(1) of the Clean Air Act, 42 U.S.C. § 7521(a)(1). EPA concluded that it did not have statutory authority to regulate greenhouse gas emissions from motor vehicles and that, even if it did, it would not exercise the authority at this time. 68 Fed. Reg. 52,922 (Sept. 8, 2003).

I.

We should say a few words about our jurisdiction under the Clean Air Act to review an EPA denial of a petition for rulemaking. Section 307(b)(1), 42 U.S.C. § 7607(b)(1), gives this court exclusive jurisdiction over "nationally applicable regulations promulgated, or final action taken, by the Administrator" under chapter 85 of the Act. The district courts, on the other hand, have jurisdiction over citizen suits to compel EPA to perform nondiscretionary acts or duties. 42 U.S.C. § 7604(a)(2); *see Sierra Club v. Thomas*, 828 F.2d 783, 787-92 (D.C. Cir. 1987). Because EPA refused to promulgate "nationally applicable regulations" after being asked to do so, we have jurisdiction only if EPA thereby engaged in "final action." We can be sure that its denial of the rulemaking petition was "final." But did this constitute agency "action"? To answer that question we must consult the Administrative Procedure Act -- specifically 5 U.S.C. § 551(13). The term "action" in § 307(b)(1) of the Clean Air Act, like the term "final," carries its traditional meaning in administrative law. *See Whitman v. Am. Trucking Ass'ns*, 531 U.S. 457, 478 (2001); *Indep. Equip. Dealers Ass'n v. EPA*, 372 F.3d 420, 428 (D.C. Cir. 2004); *Sierra Club v. Gorsuch*, 715 F.2d 653, 656-57 (D.C. Cir. 1983). Section 551(13) of the APA defines "agency action" as "the whole or a part of an agency rule, order, license, sanction, relief, or the equivalent or *denial thereof*, or failure to act" (italics added). While § 307 of the Clean Air Act makes several APA provisions inapplicable -- namely, 5 U.S.C. §§ 553-557 & 706 -- APA § 551 is not among them. EPA's denial of

the rulemaking petition was therefore "final action," and since the petition sought regulations national in scope, § 307(b)(1) confers jurisdiction on this court to hear these consolidated cases.

Another, related, point needs to be mentioned. Several of the petitions for judicial review treated a memorandum of EPA's General Counsel, Robert Fabricant, as "final action taken, by the Administrator" under § 307(b)(1). The memorandum, dated August 28, 2003, and addressed to the EPA Administrator, was entitled "EPA's Authority to Impose Mandatory Controls to Address Global Climate Change under the Clean Air Act." The General Counsel, after analyzing § 202(a)(1) of the Clean Air Act, and other legislative and executive actions, stated his belief that the Act "does not authorize regulation to address global climate change." He therefore withdrew a contrary memorandum issued in 1998 by one of his predecessors.

The Fabricant memorandum, consisting of legal advice to the EPA Administrator, did not in itself constitute "final action" of the Administrator. To be sure, the Administrator adopted the "General Counsel's opinion" and relied on its analysis as one of the alternative grounds for rejecting the rulemaking petition. *See* 68 Fed. Reg. at 52,925. The Administrator's explanation incorporated many of the memorandum's passages verbatim, rephrased and reordered others, and expanded on the General Counsel's reasoning. Still, it is the Administrator's denial of the rulemaking petition, with the accompanying explanation, that represents the "final action" of the Administrator subject to judicial review under § 307(b)(1). The significance of the General Counsel's opinion, as set forth in his memorandum, is the Administrator's reliance on his reasoning in deciding the matter now before us.

There is an additional jurisdictional issue presented, but not under the Clean Air Act. EPA claims that petitioners lack standing under Article III of the Constitution. Standing exists only if the complainant has suffered an injury in fact, fairly traceable to the challenged action, and likely to be redressed by a favorable decision. *See Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560 (1992). EPA's argument is that petitioners have not "adequately demonstrated" two elements of standing: that their alleged injuries were "caused by EPA's decision not to regulate emissions of greenhouse gases from mobile sources"; and that their injuries "can be redressed by a decision in their favor" by this court. Brief for Respondent at 16.

In anticipation of this argument, petitioners filed two volumes of declarations with the court, some containing lengthy exhibits. The declarations, from scientists, engineers, state officials, homeowners, users of the nation's recreational resources, and other individuals, predict catastrophic consequences from global warming caused by greenhouse gases, including loss of or damage to state and private property, frequent intense storm surge floods, and increased health care costs. Brief for Petitioners at 2-4.

For the causation and redressability aspects of standing, petitioners cite two of their declarations. One, from a climatologist, states that reductions in CO_2 and other greenhouse gases from vehicles in the United States would alone have a meaningful impact and would "delay and moderate many of the adverse impacts of global warming." He adds that if EPA took action to reduce such emissions, other countries would likely follow suit. The climatologist bases his predictions about future climate change on climate models and on "quantitative scenarios generated by the IPCC" -- the Intergovernmental Panel on Climate Change, established in 1988 by the United Nations and the World Meteorological Organization. The other declaration

is from a mechanical engineer. He states that, on the basis of his experience with controlling other pollutants, there is "no doubt that establishing emissions standards for pollutants that contribute to global warming would lead to investment in developing improved technologies to reduce those emissions from motor vehicles, and that successful technologies would gradually be mandated by other countries around the world."

We have held that, to establish standing, a petitioner challenging agency action has the same burden of production as "a plaintiff moving for summary judgment in the district court: it must support each element of its claim to standing 'by affidavit or other evidence.'" *Sierra Club v. EPA*, 292 F.3d 895, 899 (D.C. Cir. 2002) (quoting *Lujan*, 504 U.S. at 561). Petitioners' declarations do "support each element" of standing. But supporting an allegation is one thing; proving an allegation is quite another. *Lujan* holds that when a plaintiff's standing is challenged in a motion for summary judgment, the plaintiff "must 'set forth' by affidavit or other evidence 'specific facts,' Fed. Rule Civ. Proc. 56(e), which for purposes of the summary judgment motion will be taken as true." 504 U.S. at 561. If we were to analogize the situation here to one in which EPA filed such a summary judgment motion, we would conclude that petitioners had submitted enough evidence raising genuine issues of material fact to defeat the motion. *See* FED. R. CIV. P. 56(c). But *Lujan* goes on to hold that at "the final stage" the evidence plaintiff presented at summary judgment "(if controverted) must be 'supported adequately by the evidence adduced at trial.'" 504 U.S. at 561 (quoting *Gladstone, Realtors v. Village of Bellwood*, 441 U.S. 91, 115 n.31 (1979)). One might say that in this case we are at the "final stage." But the analogy is not entirely apt. As an appellate court we do not conduct evidentiary hearings in order to make findings of fact. This is why, when *Sierra Club* spoke of "other evidence" relating to standing, the court had in mind evidence presented to

the agency. 292 F.3d at 899. Here, the administrative record contains a wealth of such "other evidence," and some of it contradicts petitioners' claim that greenhouse gas emissions from new motor vehicles have caused or will cause a significant change in the global climate. That is partly why EPA decided not to regulate at this time.

Steel Co. v. Citizens for a Better Environment, 523 U.S. 83 (1998), instructs federal courts to resolve Article III standing questions before proceeding to the merits of a case. The combination of *Lujan*, *Steel Co.*, and the factual overlap of the standing issues with EPA's justifications for not regulating greenhouse gases present us with three options. The first is to refer the standing issues to a special master for a factual determination. This would be, as one commentator has suggested, "folly." 13A CHARLES A. WRIGHT ET AL., FEDERAL PRACTICE AND PROCEDURE 2D § 3531.15, at 101 (1984). Such a proceeding would largely duplicate the proceedings on the rulemaking petition and to no good end. Another option would be to remand to EPA for a factual determination of causation and redressability. That too would make no sense. For one thing, judgments about standing are the responsibility of the federal courts. For another, EPA has already reached a decision about the state of the evidence regarding global warming from greenhouse gases. The third option is to proceed to the merits with respect to EPA's alternative decision not to regulate on the grounds, among others, that the effect of greenhouse gases on climate is unclear and that models used to predict climate change might not be accurate.

We have decided to follow the third course. *Steel Co.* endorses this approach with respect to questions of statutory standing. The Court explained that "the merits inquiry and the statutory standing inquiry often overlap" and "are sometimes identical, so that it would be exceedingly artificial to draw a

distinction between the two." 523 U.S. at 97 n.2. The Court's distinction of Article III standing cases rested on the premise that there would be no such overlap and that the issue of Article III standing would be entirely separate from the merits. *Id.* The Court did not say what the proper order of decision should be when, as in this case, that premise does not hold. In this highly unusual circumstance -- encountered for the first time in this court -- we will follow the statutory standing cases. We will therefore assume *arguendo* that EPA has statutory authority to regulate greenhouse gases from new motor vehicles.[1] The question we address is whether EPA properly declined to exercise that authority.

II.

Greenhouse gases trap energy, much like the glass panels of a greenhouse. The earth's surface is warmed by absorbing solar energy (visible light). The earth, in turn, radiates infrared energy (heat) back into space. A portion of the infrared radiation is trapped by greenhouse gas molecules, resulting in additional warming of the lower atmosphere and the earth's surface. This "greenhouse effect" is a natural phenomenon, without which the planet would be significantly colder and life as we know it would not be possible. EPA, *Global Warming -- Climate, at* http://yosemite.epa.gov/oar/globalwarming.nsf/content/climate.html.

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[1] Relying on *FDA v. Brown & Williamson Tobacco Corp.*, 529 U.S. 120 (2000), EPA concluded that in light of the enormous economic and political consequences of regulating greenhouse gas emissions, Congress would have been far more specific if it had intended to authorize EPA to regulate the subject under § 202(a)(1) of the Clean Air Act. 58 Fed. Reg. at 52,928. We express no view on the validity of EPA's analysis.

Petitioners sought to have EPA regulate, under § 202(a)(1) of the Clean Air Act, carbon dioxide (CO_2), and three other greenhouse gases: methane (CH_4), nitrous oxide (N_2O), and hydrofluorocarbons (HFCs).[2] In response to EPA's request for public comments on the 1999 petition for rulemaking, the agency received nearly 50,000 submissions. 68 Fed. Reg. at 52,924. Most were short expressions of support for the petition; many were nearly identical. *Id.* The comment period closed in May 2001. In the same month, the White House requested the National Academy of Sciences to assist the Administration in its review of climate change policy. The Academy "is a private, nonprofit, self-perpetuating society of distinguished scholars engaged in scientific and engineering research . . . ." NATIONAL RESEARCH COUNCIL, CLIMATE CHANGE SCIENCE: AN ANALYSIS OF SOME OF THE KEY QUESTIONS, preface (2001). Under its congressional charter, issued in 1863, the Academy has a mandate to advise the federal government on scientific and technical matters when requested. The Academy's principal operating agency for providing such advice is its National Research Council. *Id.*

In denying the rulemaking petition, EPA found that the scientific comments petitioners and others submitted rested on information already in the public domain and did not add significantly to the body of knowledge available to the National Research Council when it prepared the report cited above. Since none of the comments caused EPA to question the Council's report, EPA decided to rely on the Council's "objective and independent assessment of the relevant science." 68 Fed. Reg. at 52,930.

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[2] The rulemaking request and the papers submitted to this court focus on the effects of CO_2.

The National Research Council concluded that "a causal linkage" between greenhouse gas emissions and global warming "cannot be unequivocally established." NATIONAL RESEARCH COUNCIL, CLIMATE CHANGE SCIENCE, at 17. The earth regularly experiences climate cycles of global cooling, such as an ice age, followed by periods of global warming. *Id.* at 7. Global temperatures have risen since the industrial revolution, as have atmospheric levels of carbon dioxide. But an increase in carbon dioxide levels is not always accompanied by a corresponding rise in global temperatures. For example, although carbon dioxide levels increased steadily during the twentieth century, global temperatures decreased between 1946 and 1975. *Id.* at 16. Considering this and other data, the National Research Council concluded that "there is considerable uncertainty in current understanding of how the climate system varies naturally and reacts to emissions of greenhouse gases." *Id.* at 1. This uncertainty is compounded by the possibility for error inherent in the assumptions necessary to predict future climate change.[3] And, as the National Research Council noted,

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[3] "As the NRC explained, predicting future climate change necessarily involves a complex web of economic and physical factors including: Our ability to predict future global anthropogenic emissions of GHGs and aerosols; the fate of these emissions once they enter the atmosphere (*e.g.*, what percentage are absorbed by vegetation or are taken up by the oceans); the impact of those emissions that remain in the atmosphere on the radiative properties of the atmosphere; changes in critically important climate feedbacks (*e.g.*, changes in cloud cover and ocean circulation); changes in temperature characteristics (*e.g.*, average temperatures, shifts in daytime and evening temperatures); changes in other climatic parameters (*e.g.*, shifts in precipitation, storms); and ultimately the impact of such changes on human health and welfare (*e.g.*, increases or decreases in agricultural productivity, human health impacts). The NRC noted, in particular, that '[t]he understanding of the relationships between weather/climate and human health is in its infancy and therefore the health consequences

past assumptions about effects of future greenhouse gas emissions have proven to be erroneously high. *Id.* at 19.

Relying on *Ethyl Corp. v. EPA*, 541 F.2d 1 (D.C. Cir. 1976) (en banc), petitioners challenge EPA's decision to forego rulemaking "[u]ntil more is understood about the causes, extent and significance of climate change and the potential options for addressing it." 68 Fed. Reg. at 52,931. In our view *Ethyl* supports EPA, not petitioners. Section 202(a)(1) directs the Administrator to regulate emissions that "in his judgment" "may reasonably be anticipated to endanger public health or welfare." Section 202(a)(1) was not at issue in *Ethyl*; the court mentioned an earlier version of that provision, in a footnote, only by way of analogy. 541 F.2d at 20 n.37. But what the court had to say about § 202(a)(1) is instructive. In requiring the EPA Administrator to make a threshold "judgment" about whether to regulate, § 202(a)(1) gives the Administrator considerable discretion. *Id.* Congress does not require the Administrator to exercise his discretion solely on the basis of his assessment of scientific evidence. *Id.* at 20. What the *Ethyl* court called "policy judgments" also may be taken into account. By this the court meant the sort of policy judgments Congress makes when it decides whether to enact legislation regulating a particular area. *Id.* at 26.

The EPA Administrator's analysis, although it did not mention *Ethyl*, is entirely consistent with the case. In addition to the scientific uncertainty about the causal effects of

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of climate change are poorly understood' (p. 20). Substantial scientific uncertainties limit our ability to assess each of these factors and to separate out those changes resulting from natural variability from those that are directly the result of increases in anthropogenic GHGs." 68 Fed. Reg. at 52,930.

greenhouse gases on the future climate of the earth, the Administrator relied upon many "policy" considerations that, in his judgment, warranted regulatory forbearance at this time. 68 Fed. Reg. at 52,929. New motor vehicles are but one of many sources of greenhouse gas emissions; promulgating regulations under § 202 would "result in an inefficient, piecemeal approach to the climate change issue." 68 Fed. Reg. at 52,931. The Administrator expressed concern that unilateral regulation of U.S. motor vehicle emissions could weaken efforts to persuade developing countries to reduce the intensity of greenhouse gases thrown off by their economies. *Id.* Ongoing research into scientific uncertainties and the Administration's programs to address climate change -- including voluntary emission reduction programs and initiatives with private entities to develop new technology -- also played a role in the Administrator's decision not to regulate. 68 Fed. Reg. at 52,931-33. The Administrator pointed to efforts to promote "fuel cell and hybrid vehicles" and ongoing efforts to develop "hydrogen as a primary fuel for cars and trucks." 68 Fed. Reg. at 52,931. The Administrator also addressed the matter of remedies. Petitioners offered two ways to reduce CO_2 from new motor vehicles: reduce gasoline consumption and improve tire performance. As to the first, the Department of Transportation -- the agency in charge of fuel efficiency standards -- recently issued new standards requiring greater fuel economy, as a result of which millions of metric tons of CO_2 will never reach the stratosphere. *Id.* As to tire efficiency, EPA doubted its authority to regulate this subject as an "emission" of an air pollutant. *Id.* "With respect to the other [greenhouse gases] -- CH_4, N_20, and HFCs -- petitioners make no suggestion as to how those emissions might be reduced from motor vehicles." *Id.*

It is therefore not accurate to say, as petitioners do, that the EPA Administrator's refusal to regulate rested entirely on scientific uncertainty, or that EPA's decision represented an

"open-ended invocation of scientific uncertainty to justify refusing to regulate," Brief for Petitioners at 51. A "determination of endangerment to public health," the court said in *Ethyl*, "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." *Ethyl*, 541 F.2d at 24. And as we have held, a reviewing court "will uphold agency conclusions based on policy judgments" "when an agency must resolve issues 'on the frontiers of scientific knowledge.'" *Envtl. Def. Fund v. EPA*, 598 F.2d 62, 82 (D.C. Cir. 1978).

We thus hold that the EPA Administrator properly exercised his discretion under § 202(a)(1) in denying the petition for rulemaking. The petitions for review in Nos. 03-1365, 03-1366, 03-1367, and 03-1368 are dismissed, and the petitions for review in Nos. 03-1361, 03-1362, 03-1363, and 03-1364 are denied.

So ordered.

SENTELLE, *Circuit Judge, dissenting in part and concurring in the judgment*: As the majority's opinion observes, courts of the United States must resolve jurisdictional questions, including "Article III standing questions, before proceeding to the merits of a case." Opinion of Judge Randolph at 9 (citing *Steel Co. v. Citizens for a Better Environment*, 523 U.S. 83 (1998)). As the majority further observes, "[s]tanding exists only if the complainant has suffered an injury in fact, fairly traceable to the challenged action, and likely to be redressed by a favorable decision." *Id.* at 6-7 (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560 (1992)). EPA argues "that petitioners have not 'adequately demonstrated' two elements of standing: that their alleged injuries were 'caused by EPA's decision not to regulate emissions of greenhouse gases from mobile sources'; and that their injuries 'can be redressed by a decision in their favor' by this court." *Id.* at 7 (quoting Brief for Respondent at 16). While I respect the majority's thorough and accurate history of the precedents on the standing question, after consulting the same authorities I have come to a different conclusion. I conclude that EPA is correct in its assertion that the petitioners have not demonstrated the element of injury necessary to establish standing under Article III.

I. Injury

As the Supreme Court has stated quite directly and succinctly:

> It is an established principle that to entitle a private individual to invoke the judicial power to determine the validity of executive or legislative action he must show that he has sustained or is immediately in danger of sustaining a direct injury as the result of that action and it is not sufficient that he has merely a general interest common to all members of the public.

Ex Parte Levitt, 302 U.S. 633 (1937) (citing *Tyler v. Judges*, 179 U.S. 405, 406 (1900); *Southern Ry. Co. v. King*, 217 U.S. 524, 534 (1910); *Newman v. Frizzell*, 238 U.S. 537, 549, 550 (1915); *Fairchild v. Hughes*, 258 U.S. 126, 129 (1922); *Massachusetts v. Mellon*, 262 U.S. 447, 488) (1923)).

Thus, the courts "have consistently held that a plaintiff raising only a generally available grievance about government – claiming only harm to his and every citizen's interest in proper application of the Constitution and laws, and seeking relief that no more directly and tangibly benefits him than it does the public at large – does not state an Article III case or controversy." *Lujan*, 504 U.S. at 573. Or, as the Supreme Court has also put it, to establish Article III standing a "plaintiff must have suffered an 'injury in fact'– an invasion of a legally protected interest which is (a) concrete and *particularized* . . . and (b) actual or imminent, not conjectural or hypothetical." *Id.* at 560 (emphasis added; citations and internal quotation marks omitted). Most tellingly, the Supreme Court has specifically declared that "[b]y particularized, we mean that the injury must affect the plaintiff in a personal and individual way." *Id*. at n.1. In the case before us, that is what the petitioners have not established. After plowing through their reams of affidavits and arguments, I am left with the unshaken conviction that they have alleged and shown no harm particularized to themselves. As we have observed in the context of determining standing even in a procedural case, in which the standards are perhaps more relaxed than in other cases, "in order to show that the interest asserted is more than a mere 'general interest . . . common to all members of the public,' the plaintiffs must show that the government act . . . will cause a distinct risk to a particularized interest of the plaintiff." *Florida Audubon Soc'y v. Bentsen*, 94 F.3d 658, 664 (D.C. Cir. 1996).

Petitioners' allegations and affidavits, and petitioners' argument and briefs, are all well made and sincere. Nonetheless, even in the light most favorable to the petitioners, in the end they come down to this: Emission of certain gases that the EPA is not regulating may cause an increase in the temperature of the earth – a phenomenon known as "global warming." This is harmful to humanity at large. Petitioners are or represent segments of humanity at large. This would appear to me to be neither more nor less than the sort of general harm eschewed as insufficient to make out an Article III controversy by the Supreme Court and lower courts.

The courts under Article III stand ready to adjudicate and redress the particularized injuries of plaintiffs, when all other elements of jurisdiction are present. But "when the plaintiff is not himself the object of the government action or inaction he challenges, [although] standing is not precluded, . . . it is ordinarily 'substantially more difficult' to establish." *Lujan*, 504 U.S. at 562 (citations omitted). This time, in my view, it is not only difficult, it is impossible. The generalized public good that petitioners seek is the thing of legislatures and presidents, not of courts. As we stated in another environmental case, to ascertain standing courts must ask the question, did the "underlying governmental act [or inaction] demonstrably increase[] some specific risk of environmental harm to the interest *of the plaintiff*"? *Florida Audubon Soc'y*, 94 F.3d at 667 (emphasis in original). Here, as in *Florida Audubon*, the alleged harm is not particularized, not specific, and in my view, not justiciable.

Therefore, I would reject and dismiss all the petitions before us. This is not to say that petitioners' complaints are wrong. This is not to say they are without redress. This is to say only that the question is not justiciable in its present form with its present champions in the present forum. A case such as this, in

which plaintiffs lack particularized injury is particularly recommended to the Executive Branch and the Congress. Because plaintiffs' claimed injury is common to all members of the public, the decision whether or not to regulate is a policy call requiring a weighing of costs against the likelihood of success, best made by the democratic branches taking into account the interests of the public at large. There are two other branches of government. It is to those other branches that the petitioners should repair.

II. Concurrence in the Judgment

My conclusion leaves a slight problem. No problem exists as to the petitions for review of nonfinal action which Judge Randolph's opinion orders dismissed. I would dismiss those as well, on either his ground or mine. The problem vexes only as to petitions for review in Nos. 03-1361, 03-1362, 03-1363, and 03-1364, which Judge Randolph would deny and Judge Tatel would grant. I would dismiss those as well, as I would hold that we have no jurisdiction to either deny or grant them. How then are we to reach a judgment?

The Supreme Court has suggested a way, or at least Justices of the Supreme Court have. Most recently, in *Hamdi v. Rumsfeld*, 124 S. Ct. 2633 (2004), Justice Souter, joined by Justice Ginsburg, differed from the plurality in a fragmented opinion adjudicating the due process rights of alleged enemy combatants held at Guantanamo Bay by the United States military. Justices Souter and Ginsburg would have vacated the judgment of the Court of Appeals and remanded for proceedings consistent with their view that the government had failed to justify holding the petitioner. However, because that view did not command a majority of the court, and because of "the need to give practical effect to the conclusion of [a majority] of the court rejecting the government's position," Justice Souter

(joined by Justice Ginsburg) joined with the plurality "in ordering a remand on terms closest to those I would impose." 124 S. Ct. at 2660 (Souter, J., concurring). I will take a similar course here.

The majority today holds that we have jurisdiction to render judgment on four of the petitions before us. Although I disagree, I will accept the decision of the majority as dictating the law of this case. Having so accepted the law of the case, I will then join Judge Randolph in the issuance of a judgment closest to that which I myself would issue. With that explanation, I join in the decision to order denying the four petitions from final action of the Environmental Protection Agency.

TATEL, *Circuit Judge*, dissenting in Nos. 03-1361, 03-1362, 03-1363, and 03-1364: Petitioners claim that motor vehicle emissions of greenhouse gases contribute to global warming and that global warming in turn is causing a host of serious problems, likely including increased flash flood potential in the Appalachians, degraded water quality and reduced water supply in the Great Lakes, sea-ice melting and permafrost thawing in Alaska, reduced summer snow-pack runoff in the Rockies, extreme water resource fluctuations in Hawaii, and rising sea levels combined with higher storm surges along the coasts of Puerto Rico, the Virgin Islands, and some eastern states. *See* Pet'rs Br. at 8-10 (summarizing U.S. Dep't of State, *U.S. Climate Action Report 2002*, at 110). Concerned about such problems, petitioners asked EPA to regulate these emissions under Clean Air Act section 202(a)(1), which provides: "The Administrator shall by regulation prescribe . . . standards applicable to the emission of any air pollutant from . . . new motor vehicles . . . which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare." 42 U.S.C. § 7521(a)(1). EPA denied the petition on two grounds—that it lacked statutory authority to regulate such emissions and that even given such authority it would not exercise it—and petitioners sought review in this court.

My colleagues agree that the petitions for review should not be granted, but they do so for quite different reasons. Judge Sentelle thinks that petitioners lack standing and would dismiss the petitions for that reason. Judge Randolph does not resolve whether petitioners have standing and would deny the petitions based on one of EPA's two given reasons.

I have yet a different view. Unlike Judge Sentelle, I think at least one petitioner has standing, as I explain in Part II. Unlike Judge Randolph, I think EPA's order cannot be sustained on the merits. EPA's first given reason—that it lacks statutory

authority to regulate emissions based on their contribution to welfare-endangering climate change, 68 Fed. Reg. 52,922, 52,925-29 (Sept. 8, 2003)—fails, as I explain in Part III, because the statute clearly gives EPA authority to regulate "*any* air pollutant" that may endanger welfare, 42 U.S.C. § 7521(a)(1), with "air pollutant" defined elsewhere in the statute as "including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air," *id.* § 7602(g). EPA's second given reason—the one accepted by Judge Randolph—is that even if it has statutory authority, it nonetheless "believes" that "it is inappropriate to regulate [greenhouse gas] emissions from motor vehicles" due to various policy reasons. As I explain in Part IV, however, none of these policy reasons relates to the statutory standard—"cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare," *id.* § 7521(a)(1)—and the Clean Air Act gives the Administrator no discretion to withhold regulation for such reasons.

In short, EPA has failed to offer a lawful explanation for its decision. I would accordingly grant the petitions for review and send the matter back to EPA either to make an endangerment finding or to come up with a reasoned basis for refusing to do so in light of the statutory standard.

I.

"Greenhouse gases are accumulating in Earth's atmosphere as a result of human activities, causing surface air temperatures and subsurface ocean temperatures to rise." So begins page one of the National Research Council's 2001 report, *Climate Change Science: An Analysis of Some of the Key Questions* ("NRC Report"), the scientific document EPA "rel[ied]" on in denying the petition for rulemaking, *see* 68 Fed. Reg. at 52,930.

As the NRC Report explains, greenhouse gases (GHGs) trap heat radiated from earth, and their atmospheric concentrations

are increasing "as a result of human activities." NRC Rep. at 1, 9. For example, "[h]uman activities . . . responsible for the increase" in atmospheric concentrations of carbon dioxide (CO_2)—the chief GHG—include "[t]he primary source, fossil fuel burning," as well as "[t]ropical deforestation." *Id.* at 2; *see also id.* at 10, 12. The resulting increases are striking. In the 400,000 years prior to the Industrial Revolution, atmospheric CO_2 concentrations "typically ranged between 190" parts per million by volume (ppmv) "during the ice ages to near 280 ppmv during the warmer 'interglacial' periods." *Id.* at 11. By 1958, atmospheric concentrations were 315 ppmv (12.5% above the pre-Industrial-Revolution high of 280 ppmv), and by 2000 they had risen to 370 ppmv (17% above the 1958 level). *Id.* at 10. Similarly, prior to the Industrial Revolution, atmospheric concentrations of methane (CH_4), another GHG, ranged from .3 ppmv to .7 ppmv; now, "current values are around 1.77 ppmv." *Id.* at 11. Atmospheric concentrations of other GHGs like nitrous oxide (N_2O) have also risen. *Id.* at 2. Notably, GHGs not only disperse throughout the lower atmosphere, but also linger there at length: "Reductions in the atmospheric concentrations of these gases following possible lowered emissions rates in the future will stretch out over decades for methane, and centuries and longer for carbon dioxide and nitrous oxide." *Id.* at 10.

Increased GHG atmospheric concentrations are causing "climate forcings"—"imposed perturbation[s] of Earth's energy balance" measured in terms of units of watts per square meter (W/m^2). *Id.* at 6. Drawing from another report—an Intergovernmental Panel on Climate Change (IPCC) report with which the NRC "generally agrees," *id.* at 1—the NRC Report quantifies these climate forcings. CO_2, "probably the most important climate forcing agent today," has "caus[ed] an increased forcing of about 1.4 W/m^2" between 1750 and 2000. *Id.* at 12, 13. More lies ahead:

> CO_2 climate forcing is likely to become more dominant in the future as fossil fuel use continues. If fossil fuels continue to be used at the current rate, the added CO_2 forcing in 50 years will be about 1 W/m^2. If fossil fuel use increases by 1-1.5% per year for 50 years, the added CO_2 forcing instead will be about 2 W/m^2.

Id. at 12-13. Thus, by 2050, the total CO_2 forcing since 1750 could be from 2.4-3.4 W/m^2. The other GHGs "together cause a climate forcing approximately equal to that of CO_2," or more if one includes certain indirect effects of increased CH_4 emissions. *Id.* at 13. While atmospheric GHG increases are not the only causes of climate forcings—for example, changes in solar irradiance and in concentrations of tropospheric ozone also appear to have caused climate forcings, and atmospheric concentration changes in aerosols like sulphates appear to have caused negative (cooling) climate forcings—all other forcings are less certain and appear less substantial than those caused by GHGs. *See id.*

The extent to which these forcings affect average global temperatures depends on the climate's sensitivity, a condition that is not precisely known. *Id.* at 7. "Well-documented climate changes . . . imply that the climate sensitivity is near . . . 3ºC" (5.4ºF) for a 4 W/m^2 forcing—a number a bit above the total CO_2 forcing predicted by 2050—"but with a range from 1.5ºC to 4.5ºC (2.7 to 8.1ºF)." *Id.*

Turning to the practical effects of GHG climate forcings, the NRC Report observes that a "diverse array of evidence points to a warming of global surface temperatures." *Id.* at 16. Though the "rate of warming has not been uniform," measurements "indicate that global mean surface air temperature warmed by about .4-.8ºC (.7-1.5ºF) during the 20th century." *Id.* The report notes that "[t]he Northern Hemisphere as a whole experienced a slight cooling from 1946-75,"—a statement Judge Randolph erroneously reads for the proposition that "*global*

temperatures decreased between 1946 and 1975," op. of Randolph, J., at 12 (emphasis added)—possibly due to the widespread burning of high sulfur coal and resultant sulfate emissions or to changes in ocean circulation in the Atlantic. NRC Rep. at 16. The report also observes that, as the IPCC report points out, the "warming of the Northern Hemisphere during the 20th century is likely to have been the largest of any century in the past thousand years." *Id.*

In evaluating the relationship between GHG atmospheric increases and twentieth-century temperature increases, the NRC Report states that due to the

> large and still uncertain level of natural variability inherent in the climate record and the uncertainties in the time histories of various forcing agents (and particularly aerosols), a causal linkage between the buildup of greenhouse gases in the atmosphere and the observed climate changes during the 20th century cannot be unequivocally established.

Id. at 17. Although Judge Randolph seizes on this uncertainty—and portrays it as applying to global warming generally rather than to twentieth-century warming, *see* op. of Randolph, J., at 11—read in context, it appears little more than an application of the principle that, as the NRC Report later puts it, "[c]onfidence limits and probabilistic information, with their basis, should always be considered as an integral part of the information that climate scientists provide to policy and decision makers," NRC Rep. at 22. Indeed, the NRC Report goes on to state that the "fact that the magnitude of the observed warming is large compared to natural variability as simulated in climate models is suggestive of such a linkage" between GHG atmospheric concentration increases and twentieth-century temperature increases, though not "proof" of it. *Id.* at 17.

The NRC Report further suggests that uncertainties about

future warming relate chiefly to its scope.

> Climate change simulations for the period of 1990 to 2100 based on IPCC emissions scenarios yield a globally-averaged surface temperature increase by the end of the century of 1.4 to 5.8ºC (2.5 to 10.4ºF) relative to 1990. The wide range of uncertainty in these estimates reflects both the different assumptions about future concentrations of greenhouse gases and aerosols in the various scenarios considered by the IPCC and the differing climate sensitivities of the various climate models used in the simulations. The range of climate sensitivities implied by these predictions is generally consistent with previously reported values.

Id. at 3. These numbers, of course, are averages: the "predicted warming is higher over higher latitudes than low latitudes, especially during winter and spring, and larger over land than over sea." *Id.*

With this warming will come secondary effects. Predicted impacts in the United States include increased likelihood of drought, greater heat stress in urban areas, rising sea levels, and disruption to many U.S. ecosystems. *Id.* at 19-20. The likelihood and scope of these impacts vary depending on the magnitude of future temperature increases. *See id.*; *see also id.* at 4. Because the "predicted temperature increase is sensitive to assumptions concerning future concentrations of greenhouse gases and aerosols," which in turn depend on future emissions, "national policy decisions made now and in the longer-term future will influence the extent of any damage suffered by vulnerable human populations and ecosystems later in this century." *Id.* at 1.

II.

EPA claims petitioners lack standing to bring this case. To reach the merits, however, we need determine only that one petitioner has standing. *See, e.g.*, *Nuclear Energy Inst., Inc. v. EPA*, 373 F.3d 1251, 1266 (D.C. Cir. 2004). In my view, declarations submitted by petitioners clearly establish that the Commonwealth of Massachusetts has satisfied each element of Article III standing—injury, causation, and redressability, *see, e.g.*, *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992).

Among other things, Massachusetts claims injury—the "substantial probability that local conditions will be adversely affected," *Sierra Club v. EPA*, 292 F.3d 895, 898 (D.C. Cir. 2002) (internal quotation marks omitted)—resulting from rising sea levels. The declaration of Paul Kirshen, a professor at Tufts University's Civil and Environmental Engineering Department, details how projected rises in sea levels in the metropolitan Boston area would lead both to permanent loss of coastal land and to "more frequent and severe storm surge flooding events along the coast." Kirshen Decl. ¶¶ 7-8; *see also* Jacqz Decl. ¶¶ 8-11. "[I]f sea level rises .3 meters (11.8 inches)—which is near the lower end of the likely range—that would mean the future 10-year flood surge elevation would be at the level of the current 100-year flood elevation and the future 100-year flood surge elevation would be at that of the current 500-year flood elevation." Kirshen Decl. ¶ 10. As other declarations make clear, such changes would lead to serious loss of and damage to Massachusetts's coastal property. *See* Hoogeboom Decl. ¶¶ 6-7; Jacqz Decl. ¶ 11.

Given these declarations, I disagree that no petitioner suffers "harm particularized to" itself. *See* op. of Sentelle, J., at 2. The Commonwealth of Massachusetts claims an injury—namely, loss of land within its sovereign boundaries—that "affects [it] in a personal and individual way,"

Lujan, 504 U.S. at 560 n.1. This loss (along with increased flood damage to the Massachusetts coast) undeniably harms the Commonwealth in a way that it harms no other state. Other states may face their own particular problems stemming from the same global warming—Maine may suffer from loss of Maine coastal land and New Mexico may suffer from reduced water supply—but these problems are different from the injuries Massachusetts faces. Massachusetts's harm is thus a far cry from the kind of generalized harm that the Supreme Court has found inadequate to support Article III standing, i.e., "harm to [its] and every citizen's interest in proper application of the Constitution and laws," or put another way "relief that no more directly and tangibly benefits [it] than it does the public at large," *id.* at 573-74.

As to causation, the declaration of Michael MacCracken, the senior scientist on global change at the Office of the U.S. Global Change Research Program from 1993-2002, states that global warming is causing sea level increases like those in Massachusetts. "[T]he warming of the oceans and the increased melting of many mountain glaciers around the world . . . were the major contributions to the rise in global sea level by 10-20 cm (4 to 8 inches) observed over the past century" and the "environmental impacts of projected global warming will include . . . an increase in sea level at an average rate of about .5 to 3.5 inches per decade, reaching 4-35 inches by the end of the century (with the most likely value being, in my expert opinion, near or above the middle of this range)." MacCracken Decl. ¶ 5(c)-(d); *see also id.* ¶ 23. MacCracken further states that global warming is chiefly triggered by human-caused GHG emissions, *see id.* ¶¶ 5(a)-(b), 12-19, with "the U.S. transportation sector (mainly automobiles) . . . responsible for about 7% of global fossil fuel emissions," *id.* ¶ 31.

Finally, as to redressability, MacCracken emphasizes that "[a]chievable reductions in emissions of CO_2 and other [GHGs]

from U.S. motor vehicles would . . . delay and moderate many of the adverse impacts of global warming." *Id.* ¶5(e). Elaborating, he states that "[g]iven the large emissions of CO_2 and other [GHGs] from motor vehicles in the United States and the lead time needed to economically introduce changes into the motor vehicle fleet, emission reductions must be initiated in the near future in order to significantly reduce and delay the impacts of global warming." *Id.* ¶ 31. Because the extent of damage to the Massachusetts coastline depends on the magnitude of the rise in sea level, a reduction in this projected adverse consequence of global warming would partially redress Massachusetts's injury. *See Tozzi v. U.S. Dep't of Health & Human Servs.*, 271 F.3d 301, 310 (D.C. Cir. 2001) (holding that a petitioner need only demonstrate it would receive "at least some" relief to establish redressability). Nowhere disputing this proposition, EPA instead claims that MacCracken's conclusion depends upon the assumption that other countries will follow the U.S. lead and regulate motor vehicle GHG emissions. Even were this reading of the declaration correct—a dubious premise given MacCracken's unqualified language focusing on U.S. emissions reduction—the uncontested declaration of Michael Walsh, a consultant on motor vehicle pollution technology and at one point director of EPA's motor vehicle pollution control efforts, provides a basis for concluding that other countries would come to mandate technology developed in response to U.S. regulation. Describing how in the past other countries have come to require such technology, Walsh concludes that "[o]n the basis of my experience with the control of other pollutants . . . I have no doubt that establishing emissions standards for pollutants that contribute to global warming would lead to investment in developing improved technologies to reduce those emissions from motor vehicles, and that successful technologies would gradually be mandated by other countries around the world." Walsh Decl. ¶¶ 7-8, 10.

Judge Randolph, accepting that the declarations "do

'support each element' of standing," nonetheless questions whether this is enough. *See* op. of Randolph, J., at 8 (quoting *Sierra Club*, 292 F.3d at 899). Specifically, he believes we confront a question left open in our *Sierra Club* decision. In that case, we held that "[t]he petitioner's burden of production in the court of appeals is . . . the same as that of a plaintiff moving for summary judgment in the district court: it must support each element of its claim to standing 'by affidavit or other evidence.'" 292 F.3d at 899 (quoting *Lujan*, 504 U.S. at 561). But we never explicitly addressed what happens if the agency submits evidence that contradicts that of petitioners. Do we resolve factual disputes in petitioners' favor, return the case to the agency for fact-finding, send the matter to a special master, or pursue some other course of action?

The issue is fascinating, but we need not confront it. Given that the burdens of production here are comparable to those at summary judgment, *see id.*, if EPA wants to challenge the facts petitioners have set forth in their affidavits, it has an obligation to respond to the petitioners by "citing any record evidence relevant to . . . standing and, if necessary, appending to its filing additional affidavits or other evidence," *see id.* at 900-01. EPA makes no such challenge.

Indeed, if anything, the order under review appears to support petitioners' standing. While, drawing on the NRC Report, EPA observes that "there continue to be important uncertainties in our understanding of the factors that may affect future climate change," 68 Fed. Reg. at 52,930, EPA never denies the "substantial probability," *see Sierra Club*, 292 F.3d at 898, that injurious global warming is occurring. Quite to the contrary, EPA "agree[s] with the President that 'we must address the issue of global climate change.'" 68 Fed. Reg. at 52,929 (quoting presidential statement of Feb. 14, 2002). As to causation and redressability, the petition denial emphasizes that "EPA is also working to encourage voluntary GHG emission

reductions from the transportation sector" and that "the Administration's global climate change policy includes promoting the development of fuel-efficient motor vehicles and trucks, researching options for producing cleaner fuels, and implementing programs to improve energy efficiency." *Id.* at 52,932; *see also* NRC Rep. at 1 (noting that "national policy decisions made now . . . will influence the extent of any damage" caused by global warming). EPA would presumably not bother with such efforts if it thought emissions reductions would have no discernable impact on future global warming.

Because EPA nowhere challenges petitioners' declarations, I see no reason to consider what we would do if it had done so. Thus, unlike Judge Randolph, I think it unnecessary to address whether we can carve out exceptions to the Supreme Court's seemingly unqualified holding that "a merits question cannot be given priority over an Article III question," *Steel Co. v. Citizens for a Better Env't*, 523 U.S. 83, 97 n.2 (1998). The Commonwealth of Massachusetts has adequately demonstrated its standing, and our jurisdiction is plain.

III.

As to the merits, the threshold question is this: does the Clean Air Act authorize EPA to regulate emissions based on their effects on global climate? Taking a constricted view, EPA insists it has no authority to regulate GHG emissions even if they contribute to substantial and harmful global warming. By contrast, petitioners claim that Congress has plainly given EPA the authority it says it lacks.

"If a court, employing traditional tools of statutory construction, ascertains that Congress had an intention on the precise question at issue, that intention is the law and must be given effect." *Chevron U.S.A., Inc. v. Natural Res. Def. Council, Inc.*, 467 U.S. 837, 843 n.9 (1984). The inquiry "begin[s], as always, with the plain language of the statute in

question." *Consumer Elecs. Ass'n v. FCC*, 347 F.3d 291, 297 (D.C. Cir. 2003) (quoting *Citizens Coal Council v. Norton*, 330 F.3d 478, 482 (D.C. Cir. 2003)). CAA section 202(a)(1), added by Congress in 1965 and amended in 1970 and 1977, provides,

> The Administrator shall by regulation prescribe . . . 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.

42 U.S.C. § 7521(a)(1). This language plainly authorizes regulation of (1) any air pollutants emitted from motor vehicles that (2) in the Administrator's judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare. EPA's claimed lack of authority relates to the first of these two elements. According to EPA, GHGs like CO_2, CH_4, N_2O, and hydrofluorocarbons (HFCs) "are not air pollutants." 68 Fed. Reg. at 52,928.

Congress, however, left EPA little discretion in determining what are "air pollutants." Added in 1970 and amended in 1977, CAA section 302(g) defines the term as follows:

> The term 'air pollutant' means 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.

42 U.S.C. § 7602(g). This exceedingly broad language plainly covers GHGs emitted from motor vehicles: they are "physical [and] chemical . . . substance[s] or matter . . . emitted into . . . the ambient air." Indeed, in one CAA provision, added in 1990, Congress explicitly included CO_2 in a partial list of "air pollutants." Section 103(g) instructs the Administrator to research "nonregulatory strategies and technologies for preventing or reducing multiple air pollutants, including sulfur

oxides, nitrogen oxides, heavy metals, PM-10 (particulate matter), carbon monoxide, and *carbon dioxide*." *Id.* § 7403(g) (emphasis added). Faced with such language, a court—as well as an agency—would normally end the analysis here and conclude that GHGs are "air pollutants," since "[w]e 'must presume that a legislature says in a statute what it means and means in a statute what it says . . . . When the words of a statute are unambiguous . . . this first canon is also the last: judicial inquiry is complete.'" *Teva Pharm. Indus. Ltd. v. Crawford*, 410 F.3d 51, 53 (D.C. Cir. 2005) (quoting *Conn. Nat'l Bank v. Germain*, 503 U.S. 249, 253-54 (1992)) (omissions in original).

Unswayed by what it calls "narrow semantic analyses," Resp't Br. at 55—but what courts typically call *Chevron* step one—EPA claims that a "more holistic analysis . . . [of] the text, structure, and history of the CAA as a whole, as well as the context provided by other legislation that is specific to climate change," justifies its conclusion that it cannot regulate GHGs like CO_2 for their effects on climate change, *id.* at 25-26. To disregard the Act's plain text in this way, EPA needs an "extraordinarily convincing justification." *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1041 (D.C. Cir. 2001). "For the EPA to avoid a literal interpretation at *Chevron* step one, it must show either that, as a matter of historical fact, Congress did not mean what it appears to have said, or that, as a matter of logic and statutory structure, it almost surely could not have meant it." *Engine Mfrs. Ass'n v. EPA*, 88 F.3d 1075, 1089 (D.C. Cir. 1996).

EPA offers four reasons for abandoning the Act's text. First, it suggests that since the 1965, 1970, and 1977 Congresses were not specifically concerned with global warming, the Act cannot apply to GHGs. Second, it claims that for both practical and policy reasons, global pollution should be tackled through specific statutory provisions rather than general ones. Third, relying on *FDA v. Brown & Williamson Tobacco Corp.*, 529

U.S. 120 (2000), it argues that Congress's passage of legislation calling for study of climate change, along with Congress's failure to pass any provisions tailored solely to regulating GHGs, demonstrates that the CAA cannot apply to GHGs. Finally, EPA suggests that Congress couldn't have intended the definition of "air pollutant" to cover CO_2, since EPA regulation of CO_2 emissions from automobiles would overlap with Department of Transportation (DOT) authority over fuel economy standards under a different act. None of these reasons provides a convincing justification—let alone an "extraordinarily convincing" one—for EPA's counter-textual position.

EPA first suggests that because the 1965, 1970, and 1977 Congresses showed little concern about the specific problem of global warming, reading the CAA's language to cover such problems would be like finding "an elephant in a mousehole." Tr. of Oral Arg. at 32; *see also* Resp't Br. at 23 (quoting *Whitman v. Am. Trucking Ass'ns*, 521 U.S. 457, 468 (2002)). EPA is correct that those Congresses spilled little ink on the issue of global warming: while the legislative history contains a few stray references to human-forced climate change, *see, e.g.*, 111 Cong. Rec. 25,061 (Sept. 24, 1965) (statement of Rep. Helstoski); 116 Cong. Rec. 32,914 (Sept. 21, 1970) (report introduced in the record by Sen. Boggs), in those years the scientific understanding of the issue was nascent at best, *see, e.g.*, *Environmental Quality: The First Annual Report of the Council on Environmental Quality* 93 (1970) (noting that "[m]an may be changing his weather" but expressing uncertainty as to whether global warming or cooling was occurring). But EPA errs in suggesting that because Congress may not have precisely foreseen global warming, the Act provides no authorization for GHG regulation. Hardly a mousehole, the definition of "air pollutants"—"including any physical, chemical, biological, radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air"—enables the Act to apply to

new air pollution problems as well as existing ones. "[T]he fact that a statute can be applied in situations not expressly anticipated by Congress," the Supreme Court has explained, "does not demonstrate ambiguity. It demonstrates breadth." *PGA Tour, Inc. v. Martin*, 532 U.S. 661, 689 (2001) (quoting *Pa. Dep't of Corrections v. Yeskey*, 524 U.S. 206, 212 (1998)). Indeed, Congress expressly instructed EPA to be on the lookout for climate-related problems in evaluating risks to "welfare." Section 302(h), added in 1970, explains that "[a]ll 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*." 42 U.S.C. § 7602(h) (emphasis added).

EPA's second reason for its interpretation—that for practical and policy reasons global warming should be dealt with through specifically tailored statutes—likewise fails to trump Congress's plain language. It may well be that a statute aimed solely at global warming would deal with the problem more effectively than one aimed generally at air pollution. But an agency may not "avoid the Congressional intent clearly expressed in the [statutory] text simply by asserting that its preferred approach would be better policy." *Engine Mfrs. Ass'n*, 88 F.3d at 1089. Perhaps recognizing this point, EPA attempts to link its policy arguments to the statute by claiming that because the 1977 and 1990 Congresses enacted provisions specific to another global pollution problem—depletion of stratospheric ozone—we must infer that the Act's general provisions do not cover such global problems. Once again, EPA makes much of very little. While the 1977 Congress did add provisions aimed specifically at ozone depletion, it also made clear that "[n]othing in this [ozone-specific] part shall be construed to alter or affect the authority of the Administrator under . . . any other provision of this Act." Pub. L. No. 95-95, § 158, 91 Stat. 685, 730 (1977); *see also* H.R. Rep. No. 95-294, at 102 (1977) (expressing the House Committee's view that

EPA could already regulate emissions to protect stratospheric ozone under an existing general provision of the CAA). Similarly, I see nothing in the 1990 Congress's enactment of other provisions specific to stratospheric ozone protection, *see* 42 U.S.C. §§ 7671 to 7671q, indicating it thought EPA lacked authority under general provisions like section 202 to regulate emissions contributing to global pollution. This is particularly true since that Congress also enacted provisions specific to certain regional pollutants, *see, e.g.*, *id.* §§ 7651 to 7651o (acid rain control), which, pursuant to general CAA provisions, EPA already had authority to regulate.

EPA also attempts an unworkability argument. Its argument goes like this: another part of the CAA provides that the Administrator shall maintain a list of air pollutants that, among other things, "in [the Administrator's] judgment, cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare." *Id.* § 7408(a)(1)(A). Once pollutants go on this list, the Administrator must set national ambient air quality standards (NAAQS) for them, i.e., ambient air concentration levels that, in the Administrator's judgment, "are requisite to protect the public health" and in some areas are "requisite to protect the public welfare." *Id.* § 7409(b); *see also id.* §§ 7407, 7410(a)(1). States must submit plans explaining how they will achieve these NAAQS. *Id.* § 7410. According to EPA, these provisions would be unworkable if applied to CO_2: because CO_2 disperses relatively evenly throughout the lower atmosphere, states would have only minimal control over their atmospheric CO_2 concentrations and thus over whether they meet the CO_2 NAAQS. EPA then concludes that because CO_2 regulation would be unworkable in the NAAQS context, no general CAA provisions, including section 202(a)(1), authorize it to regulate any GHGs.

This unwieldy argument fails. Even assuming that states'

limited ability to meet CO_2 NAAQS renders these provisions unworkable as to CO_2, *but see id.* § 7509a(a) (providing a safe harbor for states that fail to meet NAAQS due to emissions emanating from outside the country), the absurd-results canon would justify at most an exception limited to the particular unworkable provision, i.e., the NAAQS provision. *See Mova Pharm. Corp. v. Shalala*, 140 F.3d 1060, 1068 (D.C. Cir. 1998). As EPA acknowledges, regulating CO_2 emissions from automobiles is perfectly feasible. *See* 68 Fed. Reg. at 52,929 (noting that "improving fuel economy" is a "practical way of reducing tailpipe CO_2 emissions" and that other technologies for reducing emissions may develop in the future).

In support of its third justification for abandoning the plain text of sections 202(a)(1) and 302(g), EPA relies on later congressional action (and inaction). Specifically, EPA points out (1) that all direct references to CO_2 or global warming in the 1990 CAA amendments appear in nonregulatory provisions; (2) that other congressional acts such as the 1978 National Climate Program Act, the 1987 Global Climate Protection Act, the 1990 Global Change Research Act, and the 1992 Energy Policy Act, as well as several appropriations riders, touch specifically on the issue of global warming, typically by instructing agencies to study the issue; and (3) that Congress has considered and rejected many bills specifically tailored to GHG emissions regulation since at least 1990. One might well wonder what all this has to do with whether GHGs are "air pollutants" within the meaning of CAA section 302(g). But relying almost exclusively on *Brown & Williamson*, 529 U.S. 120, EPA claims that together these facts indicate that the CAA's general provisions do not cover GHGs. EPA also asserts that, as in *Brown & Williamson*, the "extraordinary" political and economic significance of the regulation requested casts doubt on the agency's authority to undertake it. *See* Resp't Br. at 21-22.

In *Brown & Williamson*, the Court considered whether the

FDA had authority to regulate tobacco products. Although the Food, Drug, and Cosmetic Act's broad language suggested that it did, the Court, acknowledging that "a specific policy embodied in a later federal statute should control our construction of the [earlier] statute, even though it ha[s] not been expressly amended," 529 U.S. at 143 (quoting *United States v. Estate of Romani*, 523 U.S. 517, 530-31 (1998)) (alterations in original), concluded that the FDA lacked such authority. In reaching this conclusion, the Court relied on a direct, irreconcilable conflict between FDA jurisdiction over tobacco under the FDCA and later statutes expressly regulating tobacco. If the FDA had jurisdiction over tobacco products, it would have had to ban them entirely due to their health risks, yet the subsequent acts "reveal[ed Congress's] intent that tobacco products remain on the market." *Id.* at 139. Moreover, as the Court emphasized—at least eighteen times by my count—the FDA had repeatedly claimed to have "no authority under the FDCA to regulate tobacco products," *id.* at 157, and "Congress's tobacco-specific statutes ha[d] effectively ratified the FDA's long-held position," *id.* at 144. *See generally id.* at 125-26, 130-31, 144-46, 151-57.

EPA's reliance on *Brown & Williamson* is misplaced. To begin with, I am unconvinced by EPA's contention that its jurisdiction over GHG emissions would be as significant as FDA jurisdiction over tobacco. Acting under the CAA, EPA already extensively regulates the energy and transportation industries, whereas the FDA had no prior authority over the tobacco industry. Moreover, EPA jurisdiction would lead only to *regulation* of GHGs—with, in the case of section 202, regulation taking effect only *after* "such period as the Administrator finds necessary" for development of technology, "giving appropriate consideration to the cost of compliance," 42 U.S.C. § 7521(a)(2). By contrast, FDA jurisdiction over tobacco would have triggered a total product ban. But even assuming the implications are equally significant, this is not an

"extraordinary" case where "common sense," *see Brown & Williamson*, 529 U.S. at 133, 159, calls into question whether Congress has delegated EPA authority to regulate GHGs. Congress gave EPA broad authority to regulate all harmful pollutants, as section 202(a)(1)'s text makes clear. Congress did so intentionally, deeming it "not appropriate to exempt certain pollutants" from the Act's "comprehensive protections." *See* H.R. Rep. No. 95-294, at 42-43. And, as I explain below, no subsequent statutory indicia comparable to those relied on by the Court in *Brown & Williamson* justify a different conclusion.

Perhaps most significantly, no conflict exists between EPA's section 202(a)(1) authority to regulate GHGs and subsequent global warming legislation. Whereas an FDA ban on tobacco would have directly conflicted with congressional intent that tobacco remain on the market, EPA regulation of GHGs would be fully compatible with statutes proposing additional research and other nonregulatory approaches to climate change. Take the three 1990 CAA additions referencing carbon dioxide or global warming. Section 103(g) calls for "nonregulatory strategies and technologies" for reducing pollutants like sulpher oxides, carbon monoxide, and carbon dioxide. 42 U.S.C. § 7403(g). While the section also provides that "[n]othing in this *subsection* shall be construed to authorize the imposition on any person of air pollution control requirements," *id.* (emphasis added), it nowhere suggests that EPA lacks authority to regulate carbon dioxide—or, for that matter, sulpher oxides, carbon monoxide, and other pollutants—under different parts of the Act. Section 602(e) is similar. One sentence requires the Administrator to "publish the global warming potential" of certain listed substances, and the next sentence notes that "[t]he preceding sentence shall not be construed to be the basis of any additional regulation under this chapter." *Id.* § 7671a(e). Once again, nothing in this provision bars regulation under other parts of the Act. The third provision—an uncodified section—merely requires sources

subject to the Act's Title V to "monitor carbon dioxide emissions," and says nothing about regulation one way or the other. Pub. L. No. 101-549, § 821, 104 Stat. 2399, 2699 (1990). Other climate-related acts similarly demonstrating congressional intent that global climate issues receive study and attention are likewise perfectly compatible with GHG regulation. *See generally* National Climate Program Act of 1978, Pub. L. No. 95-367, 92 Stat. 601; Global Climate Protection Act of 1987, Pub. L. No. 100-204, §§ 1101-1106, 101 Stat. 1331, 1407-09; Global Change Research Act of 1990, Pub. L. No. 101-606, 104 Stat. 3096; Energy Policy Act of 1992, Pub. L. No. 102-486, 106 Stat. 2776.

Furthermore, and unlike subsequent tobacco legislation that "effectively ratified the FDA's previous position," *Brown & Williamson*, 529 U.S. at 156, this subsequent global-warming-related legislation passed without any assurance from EPA that the agency lacked authority to regulate GHGs. Quite to the contrary, at the time of the two appropriations riders relied on by EPA, *see, e.g.*, Pub. L. No. 105-276, 112 Stat. 2461, 2496 (1998) (barring use of funds for implementation of the Kyoto Protocol), EPA was taking the position that it possessed general authority to regulate GHG emissions under section 202(a)(1). *See* Memorandum, J. Cannon to C. Browner (April 10, 1998). Finally, the fact that later Congresses failed to pass bills specifically tailored to regulating global warming hardly provides a basis for inferring that earlier Congresses meant to exclude climate-endangering pollutants from the coverage of the CAA's general provisions. Not only is "subsequent legislative history . . . a 'hazardous basis for inferring the intent of an earlier' Congress," but it "is a particularly dangerous ground . . . when it concerns, as it does here . . . proposal[s] that do[] not become law." *Pension Benefit Guar. Corp. v. LTV Corp.*, 496 U.S. 633, 650 (1990) (citation omitted). Indeed, in interpreting the scope of the FDA's authority, the *Brown & Williamson* Court itself expressly declined to rely on failed legislation. 529

U.S. at 155.

EPA has one last argument, applicable to CO_2 emissions alone, for claiming it lacks the authority the language of sections 202(a)(1) and 302(g) expressly bestow upon it. According to EPA, the only practical way to regulate CO_2 emissions from motor vehicles is to require increased fuel economy, since CO_2 is a byproduct of fuel combustion and "[n]o technology currently exists or is under development that can capture and destroy or reduce" CO_2 "emissions from motor vehicle tailpipes." 68 Fed. Reg. at 52,929. Such regulation, EPA reasons, would overlap substantially with DOT's authority under the 1975 Energy Policy and Conservation Act (EPCA) to set average fuel economy standards for certain classes of motor vehicles. *See* Pub. L. No. 94-163, § 502, 89 Stat. 871, 902-07 (1975). Though recognizing that no direct conflict would occur since both agencies would set minimum standards, EPA concludes that "any EPA effort to set CO_2 tailpipe emissions under the CAA would either abrogate EPCA's regime (if the standards were effectively more stringent than the applicable [DOT] standard) or be meaningless (if they were effectively less stringent)." 68 Fed. Reg. at 52,929.

EPA may well be correct that setting standards for fuel economy (rather than for capturing tailpipe emissions) represents its only currently practical option for regulating CO_2 emissions. *But cf*. 42 U.S.C. § 7521(a)(2) (requiring section 202(a)(1) regulation to take effect only "after such period as the Administrator finds necessary to permit the development and application of the requisite technology"). But given that the two regulatory regimes—one targeted at fuel conservation and the other at pollution prevention—are overlapping, not incompatible, there is no reason to assume that Congress exempted CO_2 from the meaning of "air pollutant" within the CAA, particularly since section 103(g) explicitly calls CO_2 an "air pollutant." Where two "statutes are 'capable of co-

existence,' it becomes the *duty* of this court 'to regard each as effective'—at least absent clear congressional intent to the contrary." *FTC v. Ken Roberts Co.*, 276 F.3d 583, 593 (D.C. Cir. 2001) (quoting *Morton v. Mancari*, 417 U.S. 535, 551 (1974)). Moreover, Congress acknowledged, and indeed accepted, the possibility of regulatory overlap. Not only does the current EPCA recognize the relevance of "the effect of other motor vehicle standards of the Government on fuel economy," 49 U.S.C. § 32902(f); *see also* EPCA, Pub. L. No. 94-163, § 502(e), 89 Stat. at 905, but in passing the 1977 CAA amendments Congress emphasized that EPA regulation under the CAA should go forward even where it overlaps with responsibilities given to other agencies under other acts, *see* H.R. Rep. No. 95-294, at 42-43 (explaining that Congress was amending section 302(g) to broaden the meaning of "air pollutants" and make clear that EPA has authority even over pollutants already regulated by another agency). As the 1977 House Report explained, "the Clean Air Act is the comprehensive vehicle for protection of the Nation's health from air pollution. In the committee's view, it is not appropriate to exempt certain pollutants or certain sources from the comprehensive protections afforded by the Clean Air Act." *Id.*

In sum, GHGs plainly fall within the meaning of "air pollutant" in section 302(g) and therefore in section 202(a)(1). If "in [the Administrator's] judgment" they "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare," 42 U.S.C. § 7521(a)(1), then EPA has authority—indeed, the obligation—to regulate their emissions from motor vehicles.

IV.

EPA's second reason for refusing to act—what EPA's counsel termed "the fallback argument," Tr. of Oral Arg. at 41—is that even if GHGs are air pollutants, the agency gave

appropriate reasons and acted within its discretion in denying the petition for rulemaking. EPA stresses that our "arbitrary and capricious" standard of review is particularly deferential in reviewing an agency refusal to institute rulemaking. *See* Resp't Br. at 11-12; *cf. Motor Vehicle Mfrs. Ass'n v. EPA*, 768 F.2d 385, 389 n.6 (D.C. Cir. 1985) (observing that the CAA judicial review provisions are identical to those in the APA). This is certainly true, but this court must nonetheless "consider whether the agency's decisionmaking was reasoned," and we will not permit the agency to make "plain errors of law." *See Am. Horse Protection Ass'n, Inc. v. Lyng*, 812 F.2d 1, 5 (D.C. Cir. 1987) (internal quotation marks omitted). Indeed, "the agency has the heaviest of obligations to explain and expose every step of its reasoning," so that we can "exercis[e] our responsibility to determine whether [its] decision is 'arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.'" *See Am. Lung Ass'n v. EPA*, 134 F.3d 388, 392-93 (D.C. Cir. 1998) (quoting 42 U.S.C. § 7607(d)(9)) (reviewing EPA's denial of a petition to revise a NAAQS).

In my view, EPA has failed to satisfy this standard. Indeed, reading the relevant sections of EPA's petition denial—one titled "No Mandatory Duty," another "Different Policy Approach," and a third "Administration Global Climate Change Policy," *see* 68 Fed. Reg. at 52,929, 52,931—I find it difficult even to grasp the basis for EPA's action. In its brief, EPA describes the petition denial as claiming that if the agency thinks regulating GHGs is a bad idea, the Administrator has discretion to withhold making a "judgment," known as an "endangerment finding," that GHG emissions "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare," *see* 42 U.S.C. § 7521(a)(1). Yet the denial itself seems to rest more clearly (albeit still not clearly) on a belief that even if the Administrator makes an endangerment finding, that finding triggers no duty to set emission standards. In the end, though, it makes no difference

whether one or both rationales are genuinely given in the petition denial or whether they instead amount to post hoc rescue attempts. As I explain below, neither rationale is acceptable in light of section 202(a)(1)'s mandate.

EPA's Discretion to Make an Endangerment Finding

In the petition denial, EPA states:

> [T]he CAA provision authorizing regulation of motor vehicle emissions does not impose a mandatory duty on the Administrator to exercise her judgment. Instead, section 202(a)(1) provides the Administrator with discretionary authority to address emissions . . . . While section 202(a)(1) uses the word 'shall,' it does not require the Administrator to act by a specified deadline and it conditions authority to act on a discretionary exercise of the Administrator's judgment regarding whether motor vehicle emissions cause or contribute to air pollution that may reasonably be anticipated to endanger public health or welfare.

68 Fed. Reg. at 52,929. Expounding on this passage, EPA argues in its brief that "[t]he ICTA Petition Denial reflects EPA's decision not to make *any* endangerment finding—either affirmative or negative—under section 202(a)(1)." Resp't Br. at 62-63. In EPA's view, "the Agency's authority to make the threshold finding is discretionary" and petitioners err in suggesting that "if the statutory test for making the finding is met, EPA has no choice but to set standards." *Id.* at 57 (internal quotation marks omitted).

EPA's brief also turns several policy concerns raised in other portions of its petition denial into rationales for holding off examining endangerment. These concerns include the following: (1) "there continue to be important uncertainties in our understanding of the factors that may affect future climate change and how it should be addressed"; (2) petitioners

identified no technologies for reducing CH_4, N_2O, and HFC emissions, and technologies for reducing CO_2 emissions either overlap with DOT's authority or require further development; (3) regulation "would also result in an inefficient, piecemeal approach to addressing the climate change issue," as the "U.S. motor vehicle fleet is one of many sources of GHG emissions both here and abroad"; (4) "[u]nilateral EPA regulation of motor vehicle GHG emissions could also weaken U.S. efforts to persuade key developing countries to reduce the GHG intensity of their economies"; and (5) "EPA disagrees with the regulatory approach urged by petitioners," instead preferring "a number of nonregulatory approaches to reducing GHG emissions" in line with "the President's global climate change policy" of "support[ing] vital global climate research and lay[ing] the groundwork for future action by investing in science, technology, and institutions." *See* 68 Fed. Reg. at 52,929-33.

EPA's reasoning is simply wrong. In effect, EPA has transformed the limited discretion given to the Administrator under section 202—the discretion to determine whether or not an air pollutant causes or contributes to pollution which may reasonably be anticipated to endanger public health or welfare—into the discretion to withhold regulation because it thinks such regulation bad policy. But Congress did not give EPA this broader authority, and the agency may not usurp it.

Section 202(a)(1)'s language—the "Administrator shall by regulation prescribe . . . standards applicable to the emission of any air pollutant from . . . new motor vehicles . . . which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare," 42 U.S.C. § 7521(a)(1)—establishes the limits of EPA's discretion. This section gives the Administrator the discretion only to "judg[e]," within the bounds of substantial evidence, whether pollutants "cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or

welfare." If conflicting credible evidence exists, e.g., some evidence suggesting that GHGs may reasonably be anticipated to endanger welfare and other evidence suggesting the opposite, then the Administrator has discretion in weighing this evidence. If the facts are known but require no single conclusion as to whether a pollutant "may reasonably be anticipated to endanger public health or welfare"—such as in a case where there exists a small-to-moderate risk that a pollutant will cause a small-to-moderate amount of harm—then the Administrator has discretion in assessing whether these facts amount to endangerment. If the Administrator concludes based on substantial evidence that more research is needed before he can judge whether GHGs may reasonably be anticipated to endanger welfare, then he has discretion to hold off making a finding.

But section 202(a)(1) plainly limits the Administrator's discretion—his judgment—to determining whether the statutory standard for endangerment has been met. The Administrator has no discretion either to base that judgment on reasons unrelated to this standard or to withhold judgment for such reasons. In claiming otherwise, EPA not only ignores the statute's language, but also fails to reckon with this circuit's related precedent.

Our en banc decision in *Natural Resources Defense Council, Inc. v. EPA*, 824 F.2d 1146 (D.C. Cir. 1987), makes clear that the Administrator may only exercise "judgment" in evaluating whether the statutory standard has been met. There, considering a CAA provision authorizing the Administrator to set emission standards "at the level which in his judgment provides an ample margin of safety to protect the public health," 42 U.S.C. § 7412(b)(1)(B) (1982) (quoted in 824 F.2d at 1147), we held that the Administrator had to base his determination on what level would "provide an 'ample margin of safety.'" *See* 824 F.2d at 1164-65. We struck down his proposed standards because he failed to ground them in the statute. *See id.* at 1163-64 ("[T]he Administrator has made no finding with respect to

the effect of the chosen level of emissions on health. . . . Nowhere in the decision did the Administrator state that the 1976 emission standards provide an 'ample margin of safety.'").

Similarly, in *Ethyl Corp. v. EPA*, 541 F.2d 1 (D.C. Cir. 1976) (en banc), we considered whether EPA appropriately linked its policy analysis to the statutory standard. That case involved EPA's decision to regulate leaded gasoline pursuant to CAA section 211(c)(1)(A), 42 U.S.C. § 1857f-6c(1)(A) (1976), *currently codified as amended at* 42 U.S.C. § 7545(c)(1)(A), which at that time provided that the Administrator "may" regulate fuel additives "if any emission products of such . . . fuel additive[s] will endanger the public health or welfare." Determining that lead in gasoline presented "'a significant risk of harm' to the public health," 541 F.2d at 7, EPA regulated it. Industry petitioners objected, claiming that the Administrator needed "proof of actual harm rather than of 'a significant risk of harm.'" *Id*. at 12. Siding with EPA, we held that the agency had discretion in determining what level of harm—or risk of harm—constitutes endangerment. *Id.* We indicated that such determinations involve policy issues, but—as Judge Randolph neglects to mention, *see* op. of Randolph, J., at 13—these policy issues all related to whether the statutory standard had been met, i.e., to whether lead in gasoline endangered public health. *See, e.g.*, 541 F.2d at 24 (observing 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 26 (noting that "the statute accords the regulator flexibility to assess risks and make essentially legislative policy judgments"). Indeed, *Ethyl* makes quite clear that the Administrator's policy-based discretion is limited to the terms of the statute. "All this is not to say that Congress left the Administrator free to set policy on his own terms. To the contrary, the policy guidelines are largely set, both in the statutory term 'will endanger' and in the relationship of that

term to other sections of the Clean Air Act. These prescriptions direct the Administrator's actions." *Id*. at 29; *cf*. *Brown & Williamson*, 529 U.S. at 140 (noting that the FDA's "judgment" about how best to achieve public health goals is "no substitute for the specific safety determinations required by the FDCA's various operative provisions").

In yet another case, *Her Majesty the Queen in Right of Ontario v*. *EPA*, 912 F.2d 1525 (D.C. Cir. 1990), we held that for EPA to decline to make an endangerment finding, it must have a statutorily based reason for doing so. The CAA section at issue provided that when the Administrator had "reason to believe that any air pollutant or pollutants emitted in the United States cause or contribute to air pollution which may reasonably be anticipated to endanger public health or welfare in a foreign country . . . , the Administrator shall give formal notice thereof to the Governor of the State in which such emissions originate." *Id.* at 1527-28 (quoting 42 U.S.C. § 7415(a) (1982)) (omission in original). Petitioners alleged that the Administrator acted unreasonably in holding off making an endangerment finding as to acid rain, which strong evidence (including informal EPA statements) indicated was coming from the United States and endangering Canadian welfare. *Id.* at 1529. We held that EPA acted reasonably in postponing a formal endangerment finding *only* because it gave a reasonable statutory basis for doing so. Specifically, because EPA still lacked information as to which states were causing the harmful acid rain, it would have been "pointless" for the agency to make an endangerment finding given the "specific [statutory] linkage between the endangerment finding and the remedial procedures," i.e., notifying offending states. *Id.* at 1533. "For this reason," we found EPA's decision to postpone an endangerment finding "both reasonable and consistent with the statute." *Id.*

In short, EPA may withhold an endangerment finding only if it needs more information to determine whether the statutory

standard has been met. Similarly, for EPA to find no endangerment (as Judge Randolph, going beyond the agency's own arguments, appears to claim happened here, *see* op. of Randolph, J., at 13, 15), it must ground that conclusion in the statutory standard and may not rely on unrelated policy considerations.

The statutory standard, moreover, is precautionary. At the time we decided *Ethyl*, section 202(a)(1) and similar CAA provisions either authorized or required the Administrator to act on finding that emissions led to "air pollution *which endangers* the public health or welfare." *See* 42 U.S.C. § 1857f-1(a)(1) (1976) (emphasis added). After Ethyl found that "the statutes and common sense *demand* regulatory action to prevent harm, even if the regulator is less than certain that harm is otherwise inevitable," *Ethyl*, 541 F.2d at 25 (emphasis added), the 1977 Congress not only approved of this conclusion, *see* H.R. Rep. No. 95-294, at 49, but also wrote it into the CAA. Section 202(a)(1) (along with other provisions, *see* H.R. Rep. No. 95-294, at 50) now requires regulation to precede certainty. It requires regulation where, in the Administrator's judgment, emissions "contribute to air pollution *which may reasonably be anticipated to endanger* public health or welfare." 42 U.S.C. § 7521(a)(1) (emphasis added). As the House Report explained: "In order to emphasize the precautionary or preventative purpose of the act (and, therefore, the Administrator's *duty* to assess risks rather than wait for proof of actual harm), the committee not only retained the concept of endangerment to health; the committee also added the words 'may reasonably be anticipated to.'" H.R. Rep. No. 95-294, at 51 (emphasis added).

Given this framework, it is obvious that none of EPA's proffered policy reasons justifies its refusal to find that GHG emissions "contribute to air pollution which may reasonably be anticipated to endanger public health or welfare." Unlike in *Her Majesty the Queen*, EPA's proffered reasons for refusing to

make an endangerment finding have no connection to the statutory standard. Instead, as in *Natural Resources Defense Council* (where we found EPA to have acted arbitrarily and capriciously), EPA has "ventured into a zone of impermissible action" by "simply substitut[ing]" freestanding policy concerns for the sort of evaluation required by the statute. *See* 824 F.2d at 1163. A look at these policy concerns proves the point.

First, EPA claims that global warming still has many scientific uncertainties associated with it. *See* 68 Fed. Reg. at 52,930-31; *see also* op. of Randolph, J., at 11-13. In this regard, EPA makes much of the NRC's statements that a link between human-caused atmospheric GHG concentration increases and this past century's warming "cannot be unequivocally established"; that "a wide range of uncertainty" remains "inherent in current model predictions" due to imprecise variables like future emissions rates, climate sensitivity, and the forcing effects of aerosols; and that "current estimate [sic] of the magnitude of future warming should be regarded as tentative and subject to future adjustments (either upward or downward)." *See* 68 Fed. Reg. at 52,930 (quoting NRC Rep. at 1, 17); *see also* op. of Randolph, J., at 11-13. But the CAA nowhere calls for proof. It nowhere calls for "unequivocal" evidence. Instead, it calls for the Administrator to determine whether GHGs "contribute to air pollution which *may reasonably be anticipated* to endanger" welfare. EPA never suggests that the uncertainties identified by the NRC Report prevent it from determining that GHGs "may reasonably be anticipated to endanger" welfare. In other words, just as EPA failed in *Natural Resources Defense Council* to explain its chosen emissions level in light of the statutory standard, so the agency has failed here to explain its refusal to find endangerment in light of the statutory standard.

EPA's silence on this point is telling. Indeed, looking at the NRC Report as a whole, I doubt EPA could credibly conclude that it needs more research to determine whether GHG-caused

global warming "may reasonably be anticipated to endanger" welfare. Though not offering certainty, the report demonstrates that matters are well within the "frontiers of scientific knowledge," *see* op. of Randolph, J., at 15 (quoting *Envtl. Def. Fund v. EPA*, 598 F.2d 62, 82 (D.C. Cir. 1978)). The report also indicates that the projected consequences of global warming are serious. Because neither EPA nor Judge Randolph acknowledges, let alone evaluates, these projected effects, I quote the NRC's discussion of the "Consequences of Increased Climate Change of Various Magnitudes" in its entirety.

> The U.S. National Assessment of Climate Change Impacts, augmented by a recent NRC report on climate and health, provides a basis for summarizing the potential consequences of climate change. The National Assessment directly addresses the importance of climate change of various magnitudes by considering climate scenarios from two well-regarded models (the Hadley model of the United Kingdom and the Canadian Climate Model). These two models have very different globally-averaged temperature increases (2.7 and 4.4º C (4.9 and 7.9º F), respectively) by the year 2100. A key conclusion from the National Assessment is that U.S. society is likely to be able to adapt to most of the climate change impacts on human systems, but these adaptations may come with substantial cost. The primary conclusions from these reports are summarized for agriculture and forestry, water, human health, and coastal regions.
>
> In the near term, agriculture and forestry are likely to benefit from CO_2 fertilization effects and the increased water efficiency of many plants at higher atmospheric CO_2 concentrations. Many crop distributions will change, thus requiring significant regional adaptations. Given their resource base, the Assessment concludes that such changes will be costlier for small farmers than for large corporate

farms. However, the combination of the geographic and climatic breadth of the United States, possibly augmented by advances in genetics, increases the nation's robustness to climate change. These conclusions depend on the climate scenario, with hotter and drier conditions increasing the potential for declines in both agriculture and forestry. In addition, the response of insects and plant diseases to warming is poorly understood. On the regional scale and in the longer term, there is much more uncertainty.

Increased tendency towards drought, as projected by some models, is an important concern in every region of the United States even though it is unlikely to be realized everywhere in the nation. Decreased snow pack and/or earlier season melting are expected in response to warming because the freeze line will be moving to higher elevations. The western part of the nation is highly dependent on the amount of snow pack and the timing of the runoff. The noted increased rainfall rates have implications for pollution run-off, flood control, and changes to plant and animal habitat. Any significant climate change is likely to result in increased costs because the nation's investment in water supply infrastructure is largely tuned to the current climate.

Health outcomes in response to climate change are the subject of intense debate. Climate change has the potential to influence the frequency and transmission of infectious disease, alter heat- and cold-related mortality and morbidity, and influence air and water quality. Climate change is just one of the factors that influence the frequency and transmission of infectious disease, and hence the assessments view such changes as highly uncertain. This said, changes in agents that transport infectious diseases (e.g., mosquitoes, ticks, rodents) are likely to occur with any significant change in precipitation and temperature.

Increases in mean temperatures are expected to result in new record high temperatures and warm nights and an increase in the number of warm days compared to the present. Cold-related stress is likely to decline whereas heat stress in major urban areas is projected to increase if no adaptation occurs. The National Assessment ties increases in adverse air quality to higher temperatures and other air mass characteristics. However, much of the United States appears to be protected against many different adverse health outcomes related to climate change by a strong public health system, relatively high levels of public awareness, and a high standard of living. Children, the elderly, and the poor are considered to be the most vulnerable to adverse health outcomes. The understanding of the relationships between weather/climate and human health is in its infancy and therefore the health consequences of climate change are poorly understood. The costs, benefits, and availability of resources for adaptation are also uncertain.

Fifty-three percent of the U.S. population lives within the coastal regions, along with billions of dollars in associated infrastructure. Because of this, coastal areas are more vulnerable to increases in severe weather and sea level rise. Changes in storm frequency and intensity are one of the more uncertain elements of future climate change prediction. However, sea level rise increases the potential damage to coastal regions even under conditions of current storm intensities and can endanger coastal ecosystems if human systems or other barriers limit the opportunities for migration.

In contrast to human systems, the U.S. National Assessment makes a strong case that ecosystems are the most vulnerable to the projected rate and magnitude of climate change, in part because the available adaptation

> options are very limited. Significant climate change will cause disruption to many U.S. ecosystems, including wetlands, forests, grasslands, rivers, and lakes. Ecosystems have inherent value, and also supply the country with a wide variety of ecosystem services.
>
> The impacts of these climate changes will be significant, but their nature and intensity will depend strongly on the region and timing of the occurrence. At a national level, the direct economic impacts are likely to be modest. However, on a regional basis the level and extent of both beneficial and harmful impacts will grow. Some economic sectors may be transformed substantially and there may be significant regional transitions associated with shifts in agriculture and forestry. Increasingly, climate change impacts will have to be placed in the context of other stresses associated with land use and a wide variety of pollutants. The possibility of abrupt or unexpected changes could pose greater challenges for adaptation.
>
> Even the mid-range scenarios considered in the IPCC result in temperatures that continue to increase well beyond the end of this century, suggesting that assessments that examine only the next 100 years may well underestimate the magnitude of the eventual impacts. For example a sustained and progressive drying of the land surface, if it occurred, would eventually lead to desertification of regions that are now marginally arable, and any substantial melting or breaking up of the Greenland and Antarctic ice caps could cause widespread coastal inundation.

NRC Rep. at 19-20 (footnotes omitted). I have grave difficulty seeing how EPA, while treating the NRC Report as an "objective and independent assessment of the relevant science," 68 Fed. Reg. at 52,930, could possibly fail to conclude that global warming "may reasonably be anticipated to endanger public health or welfare," 42 U.S.C. § 7521(a)(1), with effects

on welfare including "effects on soil, 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," *id.* § 7602(h). It thus comes as no surprise that EPA's petition denial not only undertakes none of the risk assessments described in *Ethyl*, 541 F.2d at 28 & n.58, but also utterly ignores the statutory standard.

EPA similarly fails to link its second policy justification—that setting fuel economy standards represents the only currently available way to regulate CO_2 emissions and petitioners "make no suggestion[s]" for how to reduce CH_4, N_2O, and HFC emissions, 68 Fed. Reg. at 52,931—with the statutory standard. As discussed earlier, *supra* at 21-22, the fact that DOT sets fuel economy standards pursuant to the EPCA in no way prevents EPA from setting standards pursuant to the CAA. It is true that DOT has recently increased fuel economy standards for light trucks, *see* 68 Fed. Reg. at 52,931; *see also* op. of Randolph, J., at 14—a fact EPA didn't even bother to mention in its brief—but unless DOT's action affects whether GHGs "contribute to air pollution which may reasonably be anticipated to endanger public health or welfare," it provides no support for EPA's decision.

As to EPA's point about other GHGs, it may well be that no current technologies exist for reducing their emissions. But once again, this has nothing at all to do with the statutory endangerment standard. Indeed, in section 202(a)(2), Congress has made it crystal clear that endangerment findings must not wait on technology.

> 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.

42 U.S.C. § 7521(a)(2). As the Senate Report explained, EPA "is expected to press for the development and application of improved technology rather than be limited by that which exists." S. Rep. No. 91-1196, at 24 (1970); *see also Natural Res. Def. Council, Inc. v. EPA*, 655 F.2d 318, 328 (D.C. Cir. 1981) (referencing this legislative history). In refusing to make an endangerment finding because it lacks currently available technology for controlling these emissions, EPA goes well beyond the bounds of its statutory discretion.

EPA's final policy reasons likewise fail. Because other domestic and foreign sources contribute to atmospheric GHG concentrations, GHG regulation might well "result in an inefficient, piecemeal approach to addressing the climate change issue," 68 Fed. Reg. at 52,931. But again, Congress has expressly demanded such an approach. Section 202(a)(1) requires EPA to regulate if it judges that U.S. motor vehicle emissions "cause, or *contribute to*, air pollution," 42 U.S.C. § 7521(a)(1) (emphasis added); *see also Ethyl*, 541 F.2d at 29-31 (holding that the same language from section 211 plainly means that emissions merit regulation even if they are not the only source of air pollution). EPA (understandably) offers no basis for thinking that U.S. automobile emissions are not *contributing* to global warming. Indeed, why would the "Administration's global climate change policy plan support[] increasing automobile fuel economy," *see* 68 Fed. Reg. at 52,933, if motor vehicle emissions were contributing nothing to global warming? Similarly, EPA's concern that regulation could weaken U.S. negotiating power with other nations has nothing at all to do with whether GHGs contribute to welfare-endangering air pollution. Finally, while EPA obviously prefers nonregulatory approaches to regulatory ones, *see id.* at 52,932-33, Congress gave the Administrator discretion only in assessing whether

global warming "may reasonably be anticipated to endanger" welfare, not "free[dom] to set policy on his own terms," *Ethyl*, 541 F.2d at 29.

In short, EPA has utterly failed to relate its policy reasons to section 202(a)(1)'s standard. Indeed, nowhere in its policy discussion does EPA so much as mention this standard—"may reasonably be anticipated to endanger public health or welfare." *See* 68 Fed. Reg. at 52,929-33 (the sections titled "Different Policy Approach" and "Administration Global Climate Change Policy"). EPA apparently dislikes the fact that section 202(a)(1) says the Administrator "shall" regulate—rather than "may" regulate—on making an endangerment finding. But EPA cannot duck Congress's express directive by declining to evaluate endangerment on the basis of policy reasons unrelated to the statutory standard. Although EPA is free to take its policy concerns to Congress and seek a change in the Clean Air Act, it must obey the law in the meantime.

EPA's Discretion After Making an Endangerment Finding

Alternatively, EPA may have believed that even if it made an endangerment finding, it had no obligation to regulate GHG emissions. The petition denial states,

> EPA also disagrees with the premise of the petitioners' claim—that if the Administrator were to find that GHGs, in general, may reasonably be anticipated to endanger public health or welfare, she must necessarily regulate GHG emissions from motor vehicles. Depending on the particular problem, motor vehicles may contribute more or less or not at all. An important issue before the Administrator is whether, given motor vehicles' relative contribution to a problem, it makes sense to regulate them. . . . The discretionary nature of the Administrator's section 202(a)(1) authority allows her to consider these important policy issues and decide to regulate motor vehicle

> emissions as appropriate to the air pollution problem being addressed. Accordingly, even were the Administrator to make a formal finding regarding the potential health and welfare effects of GHGs in general, section 202(a)(1) would not require her to regulate GHG emission from motor vehicles.

68 Fed. Reg. at 52,929. This passage is puzzling. Motor vehicles emit GHGs in significant quantities, *see* U.S. Dep't of State, *U.S. Climate Action Report 2002*, at 40—a point EPA nowhere contests. The statute clearly states that the Administrator "s*hall* by regulation prescribe . . . standards" governing the emissions of air pollutants from motor vehicles if the Administrator makes an endangerment finding regarding these pollutants. 42 U.S.C. § 7521(a)(1) (emphasis added). *Compare id.* § 7545(c)(1)(A) (using "may"). Refusing to regulate following an endangerment finding would violate the law. Indeed, EPA appears to have abandoned this argument. In a (rare) concession to the Act's text, EPA counsel acknowledged at oral argument, "I don't think that we would contest that if the agency had made an endangerment finding, that then you would have to give some significance to the term 'shall' in [section] 202(a)." Tr. of Oral Arg. at 44.

V.

Although 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? For the reasons given above, I believe that EPA has both misinterpreted the scope of its statutory authority and failed to provide a statutorily based justification for refusing to make an endangerment finding. I would thus grant the petitions for review.