

United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued February 28 and 29, 2012 Decided June 26, 2012

No. 09-1322

COALITION FOR RESPONSIBLE REGULATION, INC., ET AL.,
PETITIONERS

v.

ENVIRONMENTAL PROTECTION AGENCY,
RESPONDENT

STATE OF MICHIGAN, ET AL.,
INTERVENORS

Consolidated with 10-1024, 10-1025, 10-1026, 10-1030,
10-1035, 10-1036, 10-1037, 10-1038, 10-1039, 10-1040,
10-1041, 10-1042, 10-1044, 10-1045, 10-1046, 10-1234,
10-1235, 10-1239, 10-1245, 10-1281, 10-1310, 10-1318,
10-1319, 10-1320, 10-1321

On Petitions for Review of Final Actions
of the Environmental Protection Agency

Patrick R. Day, Harry W. MacDougald, and Jeffrey Bossert Clark argued the causes for Non-State Petitioners and Supporting Intervenors. With them on the briefs were *John J. Burns*, Attorney General, Office of the Attorney General of the State of Alaska, *Steven E. Mulder*, Chief Assistant Attorney

General, *Peter Glaser, Mark E. Nagle, Matthew Dukes, Paul D. Phillips, John A. Bryson, Ellen Steen, Eric Groten, John P. Elwood, James A. Holtkamp, Chet M. Thompson, Robin S. Conrad, Rachel L. Brand, Sheldon Gilbert, Quentin Riegel, Jeffrey A. Rosen, Robert R. Gasaway, William H. Burgess, Sam Kazman, Hans Bader, Matthew G. Paulson, Harry Moy Ng, Michele Marie Schoeppe, Michael R. Barr, Alexandra M. Walsh, Adam J. White, Jeffrey A. Lamken, Timothy K. Webster, Roger R. Martella, Neal J. Cabral, Theodore Hadzi-Antich, Ashley C. Parrish, Cynthia A. M. Stroman, Scott C. Oostdyk, Gordon R. Alphonso, Shannon L. Goessling, Edward A. Kazmarek, F. William Brownell, Norman W. Fichthorn, Henry V. Nickel, and Allison D. Wood. Paul D. Clement, Mark W. DeLaquil, Andrew M. Grossman, and David B. Rivin, Jr.* entered appearances.

E. Duncan Getchell, Jr., Solicitor General, Office of the Attorney General for the Commonwealth of Virginia, argued the cause for State Petitioners Texas and Virginia on Denial of Reconsideration of the Endangerment Finding and State Petitioners and Supporting Intervenors on Endangerment Finding Delegation Issues. With him on the briefs were *Kenneth T. Cuccinelli, II*, Attorney General, *Stephen R. McCullough*, Senior Appellate Counsel, *Charles E. James Jr.*, Chief Deputy Attorney General, and *Wesley G. Russell, Jr.*, Deputy Attorney General.

Greg Abbott, Attorney General, Office of the Attorney General for the State of Texas, *Bill Cobb*, Deputy Attorney General for Civil Litigation, *J. Reed Clay, Jr.*, Special Assistant and Senior Counsel to the Attorney General, *Jonathan F. Mitchell*, Solicitor General, *Michael P. Murphy*, Assistant Solicitor General, *Luther Strange III*, Attorney General, Office of the Attorney General for the State of Alabama, *Pamela Jo Bondi*, Attorney General, Office of the Attorney General for the

State of Florida, *Gregory F. Zoeller*, Attorney General, Office of the Attorney General for the State of Indiana, *Jack Conway*, Attorney General, Office of the Attorney General for the Commonwealth of Kentucky, *James D. “Buddy” Caldwell*, Attorney General, Office of the Attorney General for the State of Louisiana, *Bill Schuette*, Attorney General, Office of the Attorney General for the State of Michigan, *John J. Bursch*, Solicitor General, *Neil D. Gordon*, Assistant Attorney General, *Gary C. Rikard*, *Jon Bruning*, Attorney General, Office of the Attorney General for the State of Nebraska, *Katherine J. Spohn*, Special Counsel to the Attorney General, *Wayne Stenehjem*, Attorney General, Office of the Attorney General for the State of North Dakota, *Margaret Olson*, Assistant Attorney General, *Scott Pruitt*, Attorney General, Office of the Attorney General for the State of Oklahoma, *Alan Wilson*, Attorney General, Office of the Attorney General for the State of South Carolina, *Marty Jackley*, Attorney General, Office of the Attorney General for the States of South Dakota, *Roxanne Giedd*, Chief, Civil Litigation Division, *Mark L. Shurtleff*, Attorney General, Office of the Attorney General for the State of Utah, and *Kenneth T. Cuccinelli, II*, Attorney General, Office of the Attorney General for the Commonwealth of Virginia were on the briefs for State Petitioners and Supporting Intervenors. *Robert D. Tambling*, Assistant Attorney General, Office of the Attorney General for the State of Alabama, entered an appearance.

Christian J. Ward, *Scott A. Keller*, and *April L. Farris* were on the brief for *amici curiae* Scientists in support of Petitioners.

Derek Schmidt, Attorney General, Office of the Attorney General for the State of Kansas, and *John Campbell*, Chief Deputy Attorney General, were on the brief for *amicus curiae* State of Kansas in support of Petitioners.

Martin R. Levin, *Michael J. O’Neill*, *Donald M. Falk*, *Mark*

S. Kaufman, Steven J. Lechner, and Richard P. Hutchison were on the brief for *amici curiae* Landmark Legal Foundation, et al. in support of Petitioners.

Jon M. Lipshultz and Angeline Purdy, Attorneys, U.S. Department of Justice, argued the causes for respondent. With them on the brief were *John Hannon, Carol Holmes, and Steven Silverman*, U.S. Environmental Protection Agency, Attorneys. *Thomas A. Lorenzen*, Attorney, U.S. Department of Justice, entered an appearance.

Carol Iancu, Assistant Attorney General, Office of the Attorney General for the Commonwealth of Massachusetts, argued the cause for State and Environmental Intervenors in support of respondents. With her on the briefs were *Martha Coakley*, Attorney General, *William L. Pardee*, Attorney Assistant General, *Sean H. Donahue, Howard I. Fox, David S. Baron, Megan Ceronsky, Vickie L. Patton, Peter Zalzal, Kamala D. Harris*, Attorney General, Office of the Attorney General for the State of California, *Kathleen A. Kenealy*, Senior Assistant Attorney General, *Marc N. Melnick and Nicholas Stern*, Deputy Attorneys General, *Joseph R. Biden, III*, Attorney General, Office of the Attorney General for the State of Delaware, *Valerie M. Satterfield*, Deputy Attorney General, *George Jepsen*, Attorney General, Office of the Attorney General for the State of Connecticut, *Kimberly P. Massicotte, Matthew I. Levine, Scott N. Koschwitz*, Assistant Attorneys General, *Lisa Madigan*, Attorney General, Office of the Attorney General for the State of Illinois, *Gerald T. Karr*, Assistant Attorney General, *Thomas J. Miller*, Attorney General, Office of the Attorney General for the State of Iowa, *David R. Sheridan*, Assistant Attorney General, *Douglas F. Gansler*, Attorney General, Office of the Attorney General for the State of Maryland, *Mary E. Raivel*, Assistant Attorney General, *Michael A. Delaney*, Attorney General, Office of the Attorney General for the State

of New Hampshire, *K. Allen Brooks*, Senior Assistant Attorney General, *William J. Schneider*, Attorney General, Office of the Attorney General for the State of Maine, *Gerald D. Reid*, Assistant Attorney General, *Lori Swanson*, Attorney General, Office of the Attorney General for the State of Minnesota, *Jocelyn F. Olson*, Assistant Attorney General, *Gary K. King*, Attorney General, Office of the Attorney General for the State of New Mexico, *Stephen R. Farris*, Assistant Attorney General, *Eric T. Schneiderman*, Attorney General, Office of the Attorney General for the State of New York, *Michael J. Myers* and *Yueh-Ru Chu*, Assistant Attorneys General, *John Kroger*, Attorney General, Office of the Attorney General for the State of Oregon, Paul Logan, Assistant Attorney-in-Charge, *Robert M. McKenna*, Attorney General, Office of the Attorney General for the State of Washington, *Leslie R. Seffern*, Assistant Attorney General, *Peter F. Kilmartin*, Attorney General, Office of the Attorney General for the State of Rhode Island, *Gregory S. Schultz*, Special Assistant Attorney General, *William H. Sorrell*, Attorney General, Office of the Attorney General for the State of Vermont, *Thea J. Schwartz*, Assistant Attorney General, *Christopher King*, Assistant Corporation Counsel, Corporation Counsel for the City Of New York, *Ann B. Weeks*, *Helen D. Silver*, *David Doniger*, *Meleah Geertsma*, *Morgan Butler*, *Frank W. Rambo*, *Joseph Mendelson III*, *Craig Holt Segall*, and *Joanne Spalding*.

Deborah Sivas, *Douglas A. Ruley*, *Edward Lloyd*, and *Susan J. Kraham* were on the brief for *amici curiae* America's Great Waters Coalition, et al. in support of respondent. *James K. Thornton* entered an appearance.

No. 10-1073

COALITION FOR RESPONSIBLE REGULATION, INC., ET AL.,
PETITIONERS

v.

ENVIRONMENTAL PROTECTION AGENCY,
RESPONDENT

AMERICAN FROZEN FOOD INSTITUTE, ET AL.,
INTERVENORS

Consolidated with 10-1083, 10-1099, 10-1109, 10-1110,
10-1114, 10-1118, 10-1119, 10-1120, 10-1122, 10-1123,
10-1124, 10-1125, 10-1126, 10-1127, 10-1128, 10-1129,
10-1131, 10-1132, 10-1145, 10-1147, 10-1148, 10-1199,
10-1200, 10-1201, 10-1202, 10-1203, 10-1206, 10-1207,
10-1208, 10-1210, 10-1211, 10-1212, 10-1213, 10-1216,
10-1218, 10-1219, 10-1220, 10-1221, 10-1222

On Petitions for Review of Final Agency Action
of the Environmental Protection Agency

Jonathan F. Mitchell, Solicitor General, Office of the Attorney General for the State of Texas, argued the cause for State Petitioners and Supporting Intervenor. With him on the briefs were *Gregg Abbott*, Attorney General, *Bill Cobb*, Deputy Attorney General, *J. Reed Clay, Jr.*, Special Assistant and Senior Counsel to the Attorney General, *Michael P. Murphy* and

James P. Sullivan, Assistant Solicitors General, *Luther Strange*, Attorney General, Office of the Attorney General for the State of Alabama, *Herman Robinson*, *Donald Trahan*, *Kathy M. Wright*, *Gary C. Rikard*, *John Bruning*, Attorney General, Office of the Attorney General for the State of Nebraska, *Katherine J. Spohn*, Special Counsel, *Wayne Stenehjem*, Attorney General, Office of the Attorney General for the State of North Dakota, *Margaret Olson*, Assistant Attorney General, *Alan Wilson*, Attorney General, Office of the Attorney General for the State of South Carolina, *J. Emory Smith, Jr.*, Assistant Deputy Attorney General, *Marty Jackley*, Attorney General, Office of the Attorney General for the State of South Dakota, *Roxanne Giedd*, Chief, and *Kenneth T. Cuccinelli, II*, Attorney General, Office of the Attorney General for the Commonwealth of Virginia. *Mark W. DeLaquil*, *Earle D. Getchell, Jr.*, Assistant Attorney General, Office of the Attorney General for the Commonwealth of Virginia, *Andrew M. Grossman*, *David B. Rivkin, Jr.*, and *Robert D. Tambling*, Assistant Attorney General, Office of the Attorney General for the State of Alabama, entered appearances.

F. William Brownell and *Peter Keisler* argued the causes for Non-State Petitioners and Supporting Intervenors. With them on the briefs were *Norman W. Fichthorn*, *Henry V. Nickel*, *Allison D. Wood*, *Charles H. Knauss*, *Shannon S. Broome*, *Timothy K. Webster*, *Roger R. Martella*, *Eric Groten*, *Patrick R. Day*, *John A. Bryson*, *Matthew G. Paulson*, *John P. Elwood*, *Paul D. Phillips*, *James A. Holtkamp*, *Shannon L. Goessling*, *Harry W. MacDougald*, *William H. Lewis, Jr.*, *Ronald J. Tenpas*, *Gordon R. Alphonso*, *Edward A. Kazmarek*, *Chet M. Thompson*, *Neal J. Cabral*, *Scott C. Oostdyk*, *Richard P. Hutchison*, *John J. McMackin, Jr.*, *Robin S. Conrad*, *Sheldon Gilbert*, *Michael W. Steinberg*, *Levi McAllister*, *Jeffrey A. Rosen*, *Robert R. Gasaway*, *Jeffrey Bossert Clark*, *William H. Burgess*, *Ashley C. Parrish*, *Cynthia A.M. Stroman*, *Ellen Steen*,

Leslie Sue Ritts, Peter Glaser, Mark E. Nagle, Terry J. Satterlee, Thomas J. Grever, Margaret Claiborne Campbell, Bryon W. Kirkpatrick, Quentin Riegel, Elizabeth Gaudio, Elizabeth Henry Warner, Harry Moy Ng, Michele Marie Schoeppe, Thomas J. Ward, and Peter H. Wyckoff. Mark A. Behrens, Paul D. Clement, Matthew Dukes, Virginia L. Hudson, and David B. Salmons entered appearances.

Jonathan S. Massey was on the brief for *amicus curiae* Municipal Gas Commission of Missouri.

John G. Horne, II, Samuel B. Boxerman and Leslie A. Hulse were on the brief for *amici curiae* the Commonwealth of Kentucky and the American Chemistry Council in support of petitioners. *Angus Macbeth* entered an appearance.

Amanda Shafer Berman and Perry M Rosen, Attorneys, U.S. Department of Justice, argued the causes for respondents. With them on the briefs were *Howard Hoffman, Elliott Zenick, Brian Doster, and David Orlin*, Counsel, U.S. Environmental Protection Agency. *Thomas A. Lorenzen and Kim N. Smaczniak*, Attorneys, U.S. Department of Justice, and *John D. Gunter, II* and *Michele L. Walter*, Counsel, U.S. Environmental Protection Agency, entered appearances.

Sean H. Donahue and Michael J. Myers argued the causes for State and Environmental Intervenors in support of respondents. With them on the briefs were *Vickie L. Patton, Pamela A. Campos, Megan Ceronky, Petere Zalzal, Eric T. Schneiderman*, Attorney General, Office of the Attorney General for the State of New York, *Barbara D. Underwood*, Solicitor General, *Morgan A. Costello*, Assistant Attorney General, *Monica Wagner, Howard I. Fox, David S. Baron, Lisa Madigan*, Attorney General, Office of the Attorney General for the State of Illinois, *Gerald T. Karr*, Assistant Attorney General, *Joanne*

Spalding, Nathan Matthews, Craig Holt Segall, Kamala D. Harris, Attorney General, Office of the Attorney General for the State of California, Kathleen A. Kenealy, Senior Assistant Attorney General, Susan Durbin, Raissa Lerner, Marc N. Melnick, and Nicholas Stern, Deputy Attorneys General, Martha Coakley, Attorney General, Office of the Attorney General for the Commonwealth of Massachusetts, William L. Pardee and Carol Iancu, Assistant Attorneys General, David Doniger, Meleah Geertsma, William J. Schneider, Attorney General, Office of the Attorney General for the State of Maine, Gerald D. Ried, Assistant Attorney General, Ann B. Weeks, Helen D. Silver, Thomas J. Miller, Attorney General, Office of the Attorney General for the State of Iowa, David R. Sheridan, Assistant Attorney General, Douglas F. Gansler, Attorney General, Office of the Attorney General for the State of Maryland, Mary Ravel, Deputy Attorney General, Michael A. Delaney, Attorney General, Office of the Attorney General for the State of New Hampshire, K. Allen Brooks, Senior Assistant Attorney General, Barbara Baird, William B. Wong, Peter F. Kilmartin, Attorney General, Office of the Attorney General for the State of Rhode Island, Gregory S. Schultz, Special Assistant Attorney General, Frank Rambo, Morgan Butler, Gary K. King, Attorney General, Office of the Attorney General for the State of New Mexico, Stephen Farris, Assistant Attorney General, John Kroger, Attorney General, Office of the Attorney General for the State of Oregon, Paul Logan, Assistant Attorney-in-Charge, Roy Cooper, Attorney General, Office of the Attorney General for the State of North Carolina, and J. Allen Jernigan and Marc Bernstein, Special Deputy Attorneys General. Kenneth P. Alex and Gavin G. McCabe, Deputy Assistant Attorneys General, Office of the Attorney General for the State of California, entered appearances.

No. 10-1092

COALITION FOR RESPONSIBLE REGULATION, INC., ET AL.,
PETITIONERS

v.

ENVIRONMENTAL PROTECTION AGENCY,
RESPONDENT

LANGBOARD, INC. - MDF, ET AL.,
INTERVENORS

Consolidated with 10-1094, 10-1134, 10-1143, 10-1144,
10-1152, 10-1156, 10-1158, 10-1159, 10-1160, 10-1161,
10-1162, 10-1163, 10-1164, 10-1166, 10-1182

On Petitions for Review of Final Actions
of the Environmental Protection Agency

Peter Glaser argued the cause for petitioners. With him on the briefs were John P. Elwood, Eric Groten, Patrick R. Day, John A. Bryson, Shannon L. Goessling, Harry W. MacDougald, Paul D. Phillips, James A. Holtkamp, Edward A. Kazmarek, Chet M. Thompson, Sam Kazman, Hans Bader, Gordon R. Alphonso, Richard P. Hutchison, Neal J. Cabral, Scott C. Oostdyk, Ronald J. Tenpas, Michael W. Steinberg, Levi McAllister, John J. McMackin Jr., Robin S. Conrad, Rachel L. Brand, Sheldon Gilbert, F. William Brownell, Norman W. Fichthorn, Henry V. Nickel, Allison D. Wood, Ashley C. Parrish, Cynthia A.M. Stroman, Mark E. Nagle, Michael Higgins, Ellen

Steen, Timothy K. Webster, Roger R. Martella, Matthew G. Paulson, Charles H. Knauss, Shannon S. Broome, Quentin Riegel, Elizabeth Gaudio, Thomas J. Ward, Harry Moy Ng, and Michele Marie Schoeppe.

Greg Abbott, Attorney General, Office of the Attorney General for the State of Texas, Bill Cobb, Deputy Attorney General for Civil Litigation, Jonathan F. Mitchell, Solicitor General, J. Reed Clay Jr., Special Assistant and Senior Counsel to the Attorney General, Michael P. Murphy, Assistant Solicitor General, Luther Strange, Attorney General, Office of the Attorney General for the State of Alabama, Samuel S. Olenz, Attorney General, Office of the Attorney General for the State of Georgia, John E. Hennelly, Senior Assistant Attorney General, Gary C. Rikard, Jon C. Bruning, Attorney General, Office of the Attorney General for the State of Nebraska, Katherine J. Spohn, Special Counsel to the Attorney General, Wayne K. Stenehjem, Attorney General, Office of the Attorney General for the State of North Dakota, Margaret Olson, Assistant Attorney General, Alan Wilson, Attorney General, Office of the Attorney General for the State of South Carolina, J. Emory Smith, Jr., Assistant Deputy Attorney General, Marty Jackley, Attorney General, Office of the Attorney General for the State of North Dakota, Roxanne Giedd, Chief, Civil Litigation Division, and Kenneth T. Cuccinelli, II, Attorney General, Office of the Attorney General for the Commonwealth of Virginia, were on the briefs for State Petitioners and Supporting Intervenor. Paul D. Clement, James W. Coleman, Wayne J. D'Angelo, Mark W. DeLaquil, E. Duncan Getchell Jr., Solicitor General, Office of the Attorney General for the Commonwealth of Virginia, Andrew M. Grossman, Virginia L. Hudson, David B. Rivkin Jr., and Robert D. Tambling, Assistant Attorney General, Office of the Attorney General for the State of Alabama, entered appearances.

Samuel B. Boxerman and *Leslie A. Hulse* were on the brief for *amicus curiae* American Chemistry Council in support of petitioners. *Angus Macbeth* entered an appearance.

Eric G. Hostetler, Attorney, U.S. Department of Justice, argued the cause for respondents. With him on the brief were *John Hannon* and *Steven Silverman*, Attorneys, U.S. Environmental Protection Agency.

Raymond B. Ludwiszewski argued the cause for intervenors Association of Global Automakers, et al. With him on the brief were *Kathleen M. Sullivan*, *Sanford I. Weisburst*, and *William B. Adams*.

Gavin G. McCabe, Deputy Attorney General, Office of the Attorney General for the State of California, argued the cause for intervenor State of California. On the brief were *Kamala D. Harris*, Attorney General, *Kathleen A. Kenealy*, Senior Assistant Attorney General, *Marc N. Melnick* and *Nicholas Stern*, Deputy Attorneys General, *Sean H. Donahue*, *Howard I. Fox*, *David S. Baron*, *Pamela Campos*, *Megan Ceronsky*, *Vickie L. Patton*, *Peter Zalzal*, *Joseph R. Biden, III*, Attorney General, Office of the Attorney General for the State of Delaware, *Valerie M. Satterfield*, Deputy Attorney General, *Thomas J. Miller*, Attorney General, Office of the Attorney General for the State of Iowa, *David R. Sheridan*, Assistant Attorney General, *Douglas F. Gansler*, Attorney General, Office of the Attorney General for the State of Maryland, *Roberta R. James*, Assistant Attorney General, *Lisa Madigan*, Attorney General, Office of the Attorney General for the State of Illinois, *Gerald T. Karr*, Assistant Attorney General, *William T. Schneider*, Attorney General, Office of the Attorney General for the State of Maine, *Gerald D. Reid*, Assistant Attorney General, *Martha Coakley*, Attorney General, Office of the Attorney General for the

Commonwealth of Massachusetts, *Carol Iancu*, *Tracy Triplett*, and *William L. Pardee*, Assistant Attorneys General, *Gary K. King*, Attorney General, Office of the Attorney General for the State of New Mexico, *Stephen R. Farris*, Assistant Attorney General, *John Kroger*, Attorney General, Office of the Attorney General for the State of Oregon, *Paul Logan*, Assistant Attorney-in-Charge, *William H. Sorrell*, Attorney General, Office of the Attorney General for the State of Vermont, *Thea J. Schwartz*, Assistant Attorney General, *Eric T. Schneiderman*, Attorney General, Office of the Attorney General for the State of New York, *Michael J. Myers* and *Yueh-Ru Chu*, Assistant Attorneys General, *Peter F. Kilmartin*, Attorney General, Office of the Attorney General for the State of Rhode Island, *Gregory S. Schultz*, Special Assistant Attorney General, *Robert M. McKenna*, Attorney General, Office of the Attorney General for the State of Washington, *Leslie R. Seffern*, Assistant Attorney General, *Christopher King*, Assistant Corporation Counsel, Corporation Counsel for the City of New York, *Joanne Spalding*, *Craig Holt Segall*, *David Doniger* and *Meleah Geertsma*. *Judith A. Stahl Moore*, Assistant Attorney General, Office of the Attorney General for the State of New Mexico, and *John D. Walke* entered appearances.

Richard E. Ayres, *Jessica L. Olson*, and *Kristin L. Hines* were on the brief for *amicus curiae* Honeywell International, Inc. in support of respondents.

Richard L. Revesz, *Michael A. Livermore*, and *Jennifer S. Rosenberg* were on the brief for *amicus curiae* Institute for Policy Integrity at New York University School of Law in support of respondents.

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No. 10-1167

AMERICAN CHEMISTRY COUNCIL,
PETITIONER

v.

ENVIRONMENTAL PROTECTION AGENCY AND LISA PEREZ
JACKSON, ADMINISTRATOR, U.S. ENVIRONMENTAL
PROTECTION AGENCY,
RESPONDENTS

CHAMBER OF COMMERCE OF THE UNITED STATES OF
AMERICA, ET AL.,
INTERVENORS

Consolidated with 10-1168, 10-1169, 10-1170, 10-1173,
10-1174, 10-1175, 10-1176, 10-1177, 10-1178, 10-1179,
10-1180

On Petitions for Review of a Final Action
of the Environmental Protection Agency

Timothy K. Webster, Roger R. Martella, Jr., James W. Coleman, William H. Lewis, Jr., Ronald J. Tenpas, Charles H. Knauss, Shannon S. Broome, Bryan M. Killian, and Matthew G. Paulson were on the briefs for petitioners. Peter D. Keisler, Leslie A. Hulse, and Quentin Riegel entered appearances.

Amanda Shafer Berman and *Perry M. Rosen*, Attorneys, U.S. Department of Justice, and *Elliott Zenick* and *Howard J. Hoffman*, Counsel, U.S. Environmental Protection Agency, were on the brief for respondents. *Jon M. Lipshultz*, Senior Counsel, U.S. Department of Justice, entered and appearance.

Ann Brewster Weeks, *Sean H. Donahue*, *Vickie Patton*, *Peter Zalzal*, *Joanne Spalding*, *Craig Segall*, *David Doniger*, and *Meleah Geertsma* were on the brief of intervenors in support of respondents. *David S. Baron*, *Pamela A. Campos*, *Colin C. O'Brien*, and *John D. Walke* entered appearances.

Vera P. Pardee, *Brendan R. Cummings*, and *Kevin P. Bundy* were on the brief for *amicus curiae* Center for Biological Diversity in support of respondents.

Before: SENTELLE, *Chief Judge*; ROGERS and TATEL, *Circuit Judges*.

Opinion for the Court filed PER CURIAM.

PER CURIAM: Following the Supreme Court's decision in *Massachusetts v. EPA*, 549 U.S. 497 (2007)—which clarified that greenhouse gases are an “air pollutant” subject to regulation under the Clean Air Act (CAA)—the Environmental Protection Agency promulgated a series of greenhouse gas-related rules. First, EPA issued an Endangerment Finding, in which it determined that greenhouse gases may “reasonably be anticipated to endanger public health or welfare.” See 42 U.S.C. § 7521(a)(1). Next, it issued the Tailpipe Rule, which set emission standards for cars and light trucks. Finally, EPA determined that the CAA requires major stationary sources of greenhouse gases to obtain construction and operating permits. But because immediate regulation of all such sources would result in overwhelming permitting burdens on permitting

authorities and sources, EPA issued the Timing and Tailoring Rules, in which it determined that only the largest stationary sources would initially be subject to permitting requirements.

Petitioners, various states and industry groups, challenge all these rules, arguing that they are based on improper constructions of the CAA and are otherwise arbitrary and capricious. But for the reasons set forth below, we conclude: 1) the Endangerment Finding and Tailpipe Rule are neither arbitrary nor capricious; 2) EPA's interpretation of the governing CAA provisions is unambiguously correct; and 3) no petitioner has standing to challenge the Timing and Tailoring Rules. We thus dismiss for lack of jurisdiction all petitions for review of the Timing and Tailoring Rules, and deny the remainder of the petitions.

I.

We begin with a brief primer on greenhouse gases. As their name suggests, when released into the atmosphere, these gases act “like the ceiling of a greenhouse, trapping solar energy and retarding the escape of reflected heat.” *Massachusetts v. EPA*, 549 U.S. at 505. A wide variety of modern human activities result in greenhouse gas emissions; cars, power plants, and industrial sites all release significant amounts of these heat-trapping gases. In recent decades “[a] well-documented rise in global temperatures has coincided with a significant increase in the concentration of [greenhouse gases] in the atmosphere.” *Id.* at 504-05. Many scientists believe that mankind's greenhouse gas emissions are driving this climate change. These scientists predict that global climate change will cause a host of deleterious consequences, including drought, increasingly severe weather events, and rising sea levels.

The genesis of this litigation came in 2007, when the

Supreme Court held in *Massachusetts v. EPA* that greenhouse gases “unambiguous[ly]” may be regulated as an “air pollutant” under the Clean Air Act (“CAA”). *Id.* at 529. Squarely rejecting the contention—then advanced by EPA—that “greenhouse gases cannot be ‘air pollutants’ within the meaning of the Act,” *id.* at 513, the Court held that the CAA’s definition of “air pollutant” “embraces *all* airborne compounds of whatever stripe.” *Id.* at 529 (emphasis added). Moreover, because the CAA requires EPA to establish motor-vehicle emission standards for “*any* air pollutant . . . which may reasonably be anticipated to endanger public health or welfare,” 42 U.S.C. § 7521(a)(1) (emphasis added), the Court held that EPA had a “statutory obligation” to regulate harmful greenhouse gases. *Id.* at 534. “Under the clear terms of the Clean Air Act,” the Court concluded, “EPA can avoid taking further action only if it determines that greenhouse gases do not contribute to climate change or if it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do.” *Id.* at 533. The Court thus directed EPA to determine “whether sufficient information exists to make an endangerment finding” for greenhouse gases. *Id.* at 534.

Massachusetts v. EPA spurred a cascading series of greenhouse gas-related rules and regulations. First, in direct response to the Supreme Court’s directive, EPA issued an Endangerment Finding for greenhouse gases. *Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act* (“Endangerment Finding”), 74 Fed. Reg. 66,496 (Dec. 15, 2009). The Endangerment Finding defined as a single “air pollutant” an “aggregate group of six long-lived and directly-emitted greenhouse gases” that are “well mixed” together in the atmosphere and cause global climate change: carbon dioxide, methane, nitrous oxide, hydroflouorocarbons, perflouorocarbons, and sulfur hexafluoride. *Id.* at 66,536-37. Following “common practice,” EPA measured

the impact of these gases on a “carbon dioxide equivalent basis,” (CO₂e) which is based on the gases’ “warming effect relative to carbon dioxide . . . over a specified timeframe.” *Id.* at 66,519. (Using the carbon dioxide equivalent equation, for example, a mixture of X amount of nitrous oxide and Y amount of sulfur hexafluoride is expressed as Z amount of CO₂e). After compiling and considering a considerable body of scientific evidence, EPA concluded that motor-vehicle emissions of these six well-mixed gases “contribute to the total greenhouse gas air pollution, and thus to the climate change problem, which is reasonably anticipated to endanger public health and welfare.” *Id.* at 66,499.

Next, and pursuant to the CAA’s requirement that EPA establish motor-vehicle emission standards for “any air pollutant . . . which may reasonably be anticipated to endanger public health or welfare,” 42 U.S.C. § 7521(a)(1), the agency promulgated its Tailpipe Rule for greenhouse gases. *Light-Duty Vehicle Greenhouse Gas Emission Standards and Corporate Average Fuel Economy Standards; Final Rule* (“Tailpipe Rule”), 75 Fed. Reg. 25,324 (May 7, 2010). Effective January 2, 2011, the Tailpipe Rule set greenhouse gas emission standards for cars and light trucks as part of a joint rulemaking with fuel economy standards issued by the National Highway Traffic Safety Administration (NHTSA). *Id.* at 25,326.

Under EPA’s longstanding interpretation of the CAA, the Tailpipe Rule automatically triggered regulation of stationary greenhouse gas emitters under two separate sections of the Act. The first, the Prevention of Significant Deterioration of Air Quality (PSD) program, requires state-issued construction permits for certain types of stationary sources—for example, iron and steel mill plants—if they have the potential to emit over 100 tons per year (tpy) of “any air pollutant.” *See* 42 U.S.C. § 7475; 7479(1). All other stationary sources are subject to PSD

permitting if they have the potential to emit over 250 tpy of “any air pollutant.” *Id.* § 7479(1). The second provision, Title V, requires state-issued operating permits for stationary sources that have the potential to emit at least 100 tpy of “any air pollutant.” *Id.* § 7602(j). EPA has long interpreted the phrase “any air pollutant” in both these provisions to mean any air pollutant that is regulated under the CAA. *See Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Approval and Promulgation of Implementation Plans* (“1980 Implementation Plan Requirements”), 45 Fed. Reg. 52,676, 52,711 (Aug. 7, 1980) (PSD program); *Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule* (“Tailoring Rule”), 75 Fed. Reg. 31,514, 31,553-54 (June 3, 2010) (discussing history of Title V regulation and applicability). And once the Tailpipe Rule set motor-vehicle emission standards for greenhouse gases, they became a regulated pollutant under the Act, requiring PSD and Title V greenhouse permitting.

Acting pursuant to this longstanding interpretation of the PSD and Title V programs, EPA issued two rules phasing in stationary source greenhouse gas regulation. First, in the Timing Rule, EPA concluded that an air pollutant becomes “subject to regulation” under the Clean Air Act—and thus subject to PSD and Title V permitting—only once a regulation requiring control of that pollutant takes effect. *Reconsideration of Interpretation of Regulations That Determine Pollutants Covered by Clean Air Act Permitting Programs* (“Timing Rule”), 75 Fed. Reg. 17,004 (Apr. 2, 2010). Therefore, EPA concluded, major stationary emitters of greenhouse gases would be subject to PSD and Title V permitting regulations on January 2, 2011—the date on which the Tailpipe Rule became effective, and thus, the date when greenhouse gases first became regulated under the CAA. *Id.* at 17,019.

Next, EPA promulgated the Tailoring Rule. In the Tailoring Rule, EPA noted that greenhouse gases are emitted in far greater volumes than other pollutants. Indeed, millions of industrial, residential, and commercial sources exceed the 100/250 tpy statutory emissions threshold for CO₂e. Tailoring Rule, 75 Fed. Reg. at 31,534-36. Immediately adding these sources to the PSD and Title V programs would, EPA predicted, result in tremendous costs to industry and state permitting authorities. *See id.* As a result, EPA announced that it was “relieving overwhelming permitting burdens that would, in the absence of this rule, fall on permitting authorities and sources.” *Id.* at 31,516. Departing from the CAA’s 100/250 tpy emissions threshold, the Tailoring Rule provided that only the largest sources—those exceeding 75,000 or 100,000 tpy CO₂e, depending on the program and project—would initially be subject to greenhouse gas permitting. *Id.* at 31,523. (The Tailoring Rule further provided that regulated sources must also emit greenhouse gases at levels that exceed the 100/250 tpy emissions threshold on a *mass* basis. That is, they must emit over 100/250 tpy of actual pollutants, in addition to exceeding the 75,000/100,000 tpy carbon dioxide equivalent. *Id.* at 31,523.)

A number of groups—including states and regulated industries—filed petitions for review of EPA’s greenhouse gas regulations, contending that the agency misconstrued the CAA and otherwise acted arbitrarily and capriciously. This appeal consolidates the petitions for review of the four aforementioned rules: the Endangerment Finding, the Tailpipe Rule, the Timing Rule, and the Tailoring Rule.

“The Clean Air Act empowers us to reverse the Administrator’s action in rulemaking if it is ‘arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with the law.’” *Med. Waste Inst. & Energy Recovery*

Council v. EPA, 645 F.3d 420, 424 (D.C. Cir. 2011) (quoting 42 U.S.C. § 7607(d)(9)(A)). Questions of statutory interpretation are governed by the familiar *Chevron* two-step: “First . . . if the intent of Congress is clear, that is the end of the matter; for the court, as well as the agency, must give effect to the unambiguously expressed intent of Congress.” *Chevron, U.S.A. Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837, 842-43 (1984). But “if the statute is silent or ambiguous with respect to the specific issue, the question for the court is whether the agency’s answer is based on a permissible construction of the statute.” *Id.* at 843.

This opinion proceeds in several steps. Part II explains why the Endangerment Finding was neither arbitrary nor capricious, while Part III does the same for the Tailpipe Rule. Turning to stationary source regulation, Part IV examines whether any petitioners may timely challenge EPA’s longstanding interpretation of the PSD statute. Because we conclude that they may, Part V addresses the merits of their statutory arguments, and explains why EPA’s interpretation of the CAA was compelled by the statute. Next, Part VI explains why petitioners lack standing to challenge the Timing and Tailoring Rules themselves. Finally, Part VII disposes of several arguments that have nothing to do with the rules under review, and thus are not properly before us.

II.

We turn first to State and Industry Petitioners’ challenges to the Endangerment Finding, the first of the series of rules EPA issued after the Supreme Court remanded *Massachusetts v. EPA*. In the decision ordering the remand, the Supreme Court held that EPA had failed in its statutory obligations when it “offered no reasoned explanation for its refusal to decide whether greenhouse gases cause or contribute to climate change.”

Massachusetts v. EPA, 549 U.S. at 534. On remand, EPA compiled a substantial scientific record, which is before us in the present review, and determined that “greenhouse gases in the atmosphere may reasonably be anticipated both to endanger public health and to endanger public welfare.” Endangerment Finding, 74 Fed. Reg. at 66,497. EPA went on to find that motor-vehicle emissions of greenhouse gases “contribute to the total greenhouse gas air pollution, and thus to the climate change problem, which is reasonably anticipated to endanger public health and welfare.” *Id.* at 66,499.

State and Industry Petitioners challenge several aspects of EPA’s decision, including (1) EPA’s interpretation of CAA § 202(a)(1), which sets out the endangerment-finding standard; (2) the adequacy of the scientific record supporting the Endangerment Finding; (3) EPA’s decision not to “quantify” the risk of endangerment to public health or welfare created by climate change; (4) EPA’s choice to define the “air pollutant” at issue as an aggregate of six greenhouse gases; (5) EPA’s failure to consult its Science Advisory Board before issuing the Endangerment Finding; and (6) EPA’s denial of all petitions for reconsideration of the Endangerment Finding. We ultimately conclude that the Endangerment Finding is consistent with *Massachusetts v. EPA* and the text and structure of the CAA, and is adequately supported by the administrative record.

A.

Industry Petitioners contend that EPA improperly interpreted CAA § 202(a)(1) as restricting the Endangerment Finding to a science-based judgment devoid of considerations of policy concerns and regulatory consequences. They assert that CAA § 202(a)(1) requires EPA to consider, *e.g.*, the benefits of activities that require greenhouse gas emissions, the effectiveness of emissions regulation triggered by the

Endangerment Finding, and the potential for societal adaptation to or mitigation of climate change. They maintain that eschewing those considerations also made the Endangerment Finding arbitrary and capricious.

These contentions are foreclosed by the language of the statute and the Supreme Court’s decision in *Massachusetts v. EPA*. Section 202(a) of the CAA states in relevant part that EPA’s Administrator

shall by regulation prescribe (and from time to time revise) in accordance with the provisions of this section, standards applicable to the emission of any air pollutant from any class or classes of new motor vehicles or new motor vehicle engines, which in his judgment cause, or contribute to, air pollution which may reasonably be anticipated to endanger public health or welfare.

42 U.S.C. § 7521(a)(1). This language requires that the endangerment evaluation “relate to whether an air pollutant ‘cause[s], or contribute[s] to, air pollution which may reasonably be anticipated to endanger public health or welfare.’” *Massachusetts v. EPA*, 549 U.S. at 532–33. At bottom, § 202(a)(1) requires EPA to answer only two questions: whether particular “air pollution”—here, greenhouse gases—“may reasonably be anticipated to endanger public health or welfare,” and whether motor-vehicle emissions “cause, or contribute to” that endangerment.

These questions require a “scientific judgment” about the potential risks greenhouse gas emissions pose to public health or welfare—not policy discussions. *Massachusetts v. EPA*, 549 U.S. at 534. In *Massachusetts v. EPA*, the Supreme Court rebuffed an attempt by EPA itself to inject considerations of

policy into its decision. At the time, EPA had “offered a laundry list of reasons not to regulate” greenhouse gases, including

that a number of voluntary Executive Branch programs already provide an effective response to the threat of global warming, that regulating greenhouse gases might impair the President’s ability to negotiate with “key developing nations” to reduce emissions, and that curtailing motor-vehicle emissions would reflect “an inefficient, piecemeal approach to address the climate change issue.”

Id. at 533 (citations omitted). The Court noted that “these policy judgments . . . have nothing to do with whether greenhouse gas emissions contribute to climate change. Still less do they amount to a reasoned justification for declining to form a scientific judgment.” *Id.* at 533–34. In the Court’s view, EPA’s policy-based explanations contained “no reasoned explanation for [EPA’s] refusal to decide” the key part of the endangerment inquiry: “whether greenhouse gases cause or contribute to climate change.” *Id.* at 534.

As in *Massachusetts v. EPA*, a “laundry list of reasons not to regulate” simply has “nothing to do with whether greenhouse gas emissions contribute to climate change.” *Id.* at 533–34. The additional exercises State and Industry Petitioners would have EPA undertake—*e.g.*, performing a cost-benefit analysis for greenhouse gases, gauging the effectiveness of whatever emission standards EPA would enact to limit greenhouse gases, and predicting society’s adaptive response to the dangers or harms caused by climate change—do not inform the “scientific judgment” that § 202(a)(1) requires of EPA. Instead of focusing on the question whether greenhouse gas emissions may reasonably be anticipated to endanger public health or welfare, the factors State and Industry Petitioners put forth only address

what might happen were EPA to answer that question in the affirmative. As EPA stated in the Endangerment Finding, such inquiries “muddle the rather straightforward scientific judgment about whether there may be endangerment by throwing the potential impact of responding to the danger into the initial question.” 74 Fed. Reg. at 66,515. To be sure, the subsection following § 202(a)(1), § 202(a)(2), requires that EPA address limited questions about the cost of compliance with new emission standards and the availability of technology for meeting those standards, *see infra* Part III, but these judgments are not part of the § 202(a)(1) endangerment inquiry. The Supreme Court made clear in *Massachusetts v. EPA* that it was not addressing the question “whether policy concerns can inform EPA’s actions in the event that it makes such a finding,” 549 U.S. at 534–35, but that policy concerns were not part of the calculus for the determination of the endangerment finding in the first instance. The Supreme Court emphasized that it was holding “that EPA must ground its reasons for action or inaction in the statute.” *Id.* at 535. The statute speaks in terms of endangerment, not in terms of policy, and EPA has complied with the statute.

State and Industry Petitioners insist that because statutes should be interpreted to avoid absurd results, EPA should have considered at least the “absurd” consequences that would follow from an endangerment finding for greenhouse gases. Specifically: having made an endangerment finding, EPA will proceed to promulgate emission standards under § 202(a)(1). Issuing those standards triggers regulation—under EPA’s PSD and Title V programs—of stationary sources that emit greenhouse gases at levels above longstanding statutory thresholds. Because greenhouse gases are emitted in much higher volumes than other air pollutants, hundreds of thousands of small stationary sources would exceed those thresholds. This would subject those sources to PSD and Title V permitting

requirements despite what Petitioners claim was Congress's clear intent that the requirements apply only to large industrial sources. Petitioners assert that even EPA believed such overbroad regulation to be an absurd result, which it attempted to rectify by adopting the Tailoring Rule to raise the statutory thresholds, *see infra* Part VI.

However “absurd” Petitioners consider this consequence, though, it is still irrelevant to the endangerment inquiry. That EPA adjusted the statutory thresholds to accommodate regulation of greenhouse gases emitted by stationary sources may indicate that the CAA is a regulatory scheme less-than-perfectly tailored to dealing with greenhouse gases. But the Supreme Court has already held that EPA indeed wields the authority to regulate greenhouse gases under the CAA. *See Massachusetts v. EPA*. The plain language of § 202(a)(1) of that Act does not leave room for EPA to consider as part of the endangerment inquiry the stationary-source regulation triggered by an endangerment finding, even if the degree of regulation triggered might at a later stage be characterized as “absurd.”

B.

State and Industry Petitioners next challenge the adequacy of the scientific record underlying the Endangerment Finding, objecting to both the type of evidence upon which EPA relied and EPA's decision to make an Endangerment Finding in light of what Industry Petitioners view as significant scientific uncertainty. Neither objection has merit.

1.

As an initial matter, State and Industry Petitioners question EPA's reliance on “major assessments” addressing greenhouse gases and climate change issued by the Intergovernmental Panel

on Climate Change (IPCC), the U.S. Global Climate Research Program (USGCRP), and the National Research Council (NRC). Endangerment Finding, 74 Fed. Reg. at 66,510–11. These peer-reviewed assessments synthesized thousands of individual studies on various aspects of greenhouse gases and climate change and drew “overarching conclusions” about the state of the science in this field. *Id.* at 66,511. The assessments provide data and information on, *inter alia*, “the amount of greenhouse gases being emitted by human activities”; their continued accumulation in the atmosphere; the resulting observed changes to Earth’s energy balance, temperature and climate at global and regional levels, and other “climate-sensitive sectors and systems of the human and natural environment”; the extent to which these changes “can be attributed to human-induced buildup of atmospheric greenhouse gases”; “future projected climate change”; and “projected risks and impacts to human health, society and the environment.” *Id.* at 66,510–11.

State and Industry Petitioners assert that EPA improperly “delegated” its judgment to the IPCC, USGCRP, and NRC by relying on these assessments of climate-change science. *See U.S. Telecom Ass’n v. FCC*, 359 F.3d 554, 566 (D.C. Cir. 2004). This argument is little more than a semantic trick. EPA did not delegate, explicitly or otherwise, any decision-making to any of those entities. EPA simply did here what it and other decision-makers often must do to make a science-based judgment: it sought out and reviewed existing scientific evidence to determine whether a particular finding was warranted. It makes no difference that much of the scientific evidence in large part consisted of “syntheses” of individual studies and research. Even individual studies and research papers often synthesize past work in an area and then build upon it. This is how science works. EPA is not required to re-prove the existence of the atom every time it approaches a scientific question.

Moreover, it appears from the record that EPA used the assessment reports not as substitutes for its own judgment but as evidence upon which it relied to make that judgment. EPA evaluated the processes used to develop the various assessment reports, reviewed their contents, and considered the depth of the scientific consensus the reports represented. Based on these evaluations, EPA determined the assessments represented the best source material to use in deciding whether greenhouse gas emissions may be reasonably anticipated to endanger public health or welfare. Endangerment Finding, 74 Fed. Reg. at 66,510–11. It then reviewed those reports along with comments relevant to the scientific considerations involved to determine whether the evidence warranted an endangerment finding for greenhouse gases as it was required to do under the Supreme Court’s mandate in *Massachusetts v. EPA*.

2.

Industry Petitioners also assert that the scientific evidence does not adequately support the Endangerment Finding. As we have stated before in reviewing the science-based decisions of agencies such as EPA, “[a]lthough we perform a searching and careful inquiry into the facts underlying the agency’s decisions, we will presume the validity of agency action as long as a rational basis for it is presented.” *Am. Farm Bureau Fed’n v. EPA*, 559 F.3d 512, 519 (D.C. Cir. 2009) (internal quotation marks omitted). In so doing, “we give an extreme degree of deference to the agency when it is evaluating scientific data within its technical expertise.” *Id.* (internal quotation marks omitted).

The body of scientific evidence marshaled by EPA in support of the Endangerment Finding is substantial. EPA’s scientific evidence of record included support for the proposition

that greenhouse gases trap heat on earth that would otherwise dissipate into space; that this “greenhouse effect” warms the climate; that human activity is contributing to increased atmospheric levels of greenhouse gases; and that the climate system is warming.

Based on this scientific record, EPA made the linchpin finding: in its judgment, the “root cause” of the recently observed climate change is “very likely” the observed increase in anthropogenic greenhouse gas emissions. Endangerment Finding, 74 Fed. Reg. at 66,518. EPA found support for this finding in three lines of evidence. First, it drew upon our “basic physical understanding” of the impacts of various natural and manmade changes on the climate system. For instance, EPA relied on evidence that the past half-century of warming has occurred at a time when natural forces such as solar and volcanic activity likely would have produced cooling. Endangerment Finding, Response to Comments (RTC) Vol. 3, at 20. Other evidence supports EPA’s conclusion that the observed warming pattern—warming of the bottommost layer of the atmosphere and cooling immediately above it—is consistent with greenhouse-gas causation. *Id.*

EPA further relied upon evidence of historical estimates of past climate change, supporting EPA’s conclusion that global temperatures over the last half-century are unusual. Endangerment Finding, 74 Fed. Reg. at 66,518. Scientific studies upon which EPA relied place high confidence in the assertion that global mean surface temperatures over the last few decades are higher than at any time in the last four centuries. Technical Support Document for the Endangerment Finding (TSD), at 31. These studies also show, albeit with significant uncertainty, that temperatures at many individual locations were higher over the last twenty-five years than during any period of comparable length since 900 A.D. *Id.*

For its third line of evidence that anthropogenic emissions of greenhouse gases spurred the perceived warming trend, EPA turned to computer-based climate-model simulations. Scientists have used global climate models built on basic principles of physics and scientific knowledge about the climate to try to simulate the recent climate change. These models have only been able to replicate the observed warming by including anthropogenic emissions of greenhouse gases in the simulations. Endangerment Finding, 74 Fed. Reg. at 66,523.

To recap, EPA had before it substantial record evidence that anthropogenic emissions of greenhouse gases “very likely” caused warming of the climate over the last several decades. EPA further had evidence of current and future effects of this warming on public health and welfare. Relying again upon substantial scientific evidence, EPA determined that anthropogenically induced climate change threatens both public health and public welfare. It found that extreme weather events, changes in air quality, increases in food- and water-borne pathogens, and increases in temperatures are likely to have adverse health effects. *Id.* at 66,497–98. The record also supports EPA’s conclusion that climate change endangers human welfare by creating risk to food production and agriculture, forestry, energy, infrastructure, ecosystems, and wildlife. Substantial evidence further supported EPA’s conclusion that the warming resulting from the greenhouse gas emissions could be expected to create risks to water resources and in general to coastal areas as a result of expected increase in sea level. *Id.* at 66,498. Finally, EPA determined from substantial evidence that motor-vehicle emissions of greenhouse gases contribute to climate change and thus to the endangerment of public health and welfare.

Industry Petitioners do not find fault with much of the substantial record EPA amassed in support of the Endangerment

Finding. Rather, they contend that the record evidences too much uncertainty to support that judgment. But the existence of some uncertainty does not, without more, warrant invalidation of an endangerment finding. If a statute is “precautionary in nature” and “designed to protect the public health,” and the relevant evidence is “difficult to come by, uncertain, or conflicting because it is on the frontiers of scientific knowledge,” EPA need not provide “rigorous step-by-step proof of cause and effect” to support an endangerment finding. *Ethyl Corp. v. EPA*, 541 F.2d 1, 28 (D.C. Cir. 1976). As we have stated before, “Awaiting certainty will often allow for only reactive, not preventive, regulation.” *Id.* at 25.

Congress did not restrict EPA to remedial regulation when it enacted CAA § 202(a). That section mandates that EPA promulgate new emission standards if it determines that the air pollution at issue “may reasonably be anticipated to endanger public health or welfare.” 42 U.S.C. § 7521(a)(1). This language requires a precautionary, forward-looking scientific judgment about the risks of a particular air pollutant, consistent with the CAA’s “precautionary and preventive orientation.” *Lead Indus. Ass’n, Inc. v. EPA*, 647 F.2d 1130, 1155 (D.C. Cir. 1980). Requiring that EPA find “certain” endangerment of public health or welfare before regulating greenhouse gases would effectively prevent EPA from doing the job Congress gave it in § 202(a)—utilizing emission standards to prevent reasonably anticipated endangerment from maturing into concrete harm. *Cf. id.* (“[R]equiring EPA to wait until it can conclusively demonstrate that a particular effect is adverse to health before it acts is inconsistent with both the [CAA]’s precautionary and preventive orientation and the nature of the Administrator’s statutory responsibilities. Congress provided that the Administrator is to use his judgment in setting air quality standards precisely to permit him to act in the face of uncertainty.”).

In *Massachusetts v. EPA* the Supreme Court confirmed that EPA may make an endangerment finding despite lingering scientific uncertainty. Indeed, the Court held that the existence of “some residual uncertainty” did not excuse EPA’s decision to decline to regulate greenhouse gases. *Massachusetts v. EPA*, 549 U.S. at 534. To avoid regulating emissions of greenhouse gases, EPA would need to show “scientific uncertainty . . . so profound that it precludes EPA from making a reasoned judgment as to whether greenhouse gases contribute to global warming.” *Id.* Clearly, then, EPA may issue an endangerment finding even while the scientific record still contains at least “some residual uncertainty.” Industry Petitioners have shown no more than that.

In the end, Petitioners are asking us to re-weigh the scientific evidence before EPA and reach our own conclusion. This is not our role. As with other reviews of administrative proceedings, we do not determine the convincing force of evidence, nor the conclusion it should support, but only whether the conclusion reached by EPA is supported by substantial evidence when considered on the record as a whole. *See, e.g., New York v. EPA*, 413 F.3d 3, 30 (D.C. Cir. 2005). When EPA evaluates scientific evidence in its bailiwick, we ask only that it take the scientific record into account “in a rational manner.” *Am. Petroleum Inst. v. Costle*, 665 F.2d 1176, 1187 (D.C. Cir. 1981). Industry Petitioners have not shown that EPA failed to do so here.

C.

State Petitioners, here led by Texas, contend that the Endangerment Finding is arbitrary and capricious because EPA did not “define,” “measure,” or “quantify” either the atmospheric concentration at which greenhouse gases endanger public health or welfare, the rate or type of climate change that it anticipates will endanger public health or welfare, or the risks

or impacts of climate change. According to Texas, without defining these thresholds and distinguishing “safe” climate change from climate change that endangers, EPA’s Endangerment Finding is just a “subjective conviction.”

It is true that EPA did not provide a quantitative threshold at which greenhouse gases or climate change will endanger or cause certain impacts to public health or welfare. The text of CAA § 202(a)(1) does not require that EPA set a precise numerical value as part of an endangerment finding. Quite the opposite; the § 202(a)(1) inquiry necessarily entails a case-by-case, sliding-scale approach to endangerment because “[d]anger . . . is not set by a fixed probability of harm, but rather is composed of reciprocal elements of risk and harm, or probability and severity.” *Ethyl*, 541 F.2d at 18. EPA need not establish a minimum threshold of risk or harm before determining whether an air pollutant endangers. It may base an endangerment finding on “a lesser risk of greater harm . . . or a greater risk of lesser harm” or any combination in between. *Id.*

Ethyl is instructive. There, EPA made an endangerment finding for airborne lead. During its endangerment inquiry, EPA initially tried to do what Texas asks of it here: find a specific concentration of the air pollutant below which it would be considered “safe” and above which it would endanger public health. *Id.* at 56. However, EPA abandoned that approach because it failed to account for “the wide variability of dietary lead intake” and lacked predictive value. EPA substituted a “more qualitative” approach, which relied on “predictions based on uncertain data” along with clinical studies. *Id.* at 56–57. This court upheld the endangerment finding that used that qualitative approach despite the lack of a specific endangerment “threshold.”

In its essence, Texas’s call for quantification of the

endangerment is no more than a specialized version of Industry Petitioners' claim that the scientific record contains too much uncertainty to find endangerment. EPA relied on a substantial record of empirical data and scientific evidence, making many specific and often quantitative findings regarding the impacts of greenhouse gases on climate change and the effects of climate change on public health and welfare. Its failure to distill this ocean of evidence into a specific number at which greenhouse gases cause "dangerous" climate change is a function of the precautionary thrust of the CAA and the multivariate and sometimes uncertain nature of climate science, not a sign of arbitrary or capricious decision-making.

D.

EPA defined both the "air pollution" and the "air pollutant" that are the subject of the Endangerment Finding as an aggregate of six greenhouse gases, which EPA called "well mixed greenhouse gases": carbon dioxide (CO₂), methane (CH₄), nitrous oxide (N₂O), hydrofluorocarbons (HFCs), perfluorocarbons (PFCs), and sulfur hexafluoride (SF₆). Industry Petitioners argue that EPA's decision to include PFCs and SF₆ in this group of greenhouse gases was arbitrary and capricious primarily because motor vehicles generally do not emit these two gases.

No petitioner for review of the Endangerment Finding has established standing to make this argument. Industry Petitioners concede that EPA's decision to regulate PFCs and SF₆ along with the other four greenhouse gases does not injure any motor-vehicle-related petitioner. Nor has any non-motor-vehicle-related petitioner shown an injury-in-fact resulting from EPA's inclusion of these two gases in the six-gas amalgam of "well-mixed greenhouse gases." At oral argument, Industry Petitioners asserted for the first time that certain utility

companies—members of associations that petitioned for review of the Endangerment Finding—own utility transformers that emit SF₆. However, they never demonstrated or even definitively asserted that any of these companies would not be subject to regulation or permitting requirements but for EPA’s decision to include SF₆ as part of the “well-mixed greenhouse gases” that are the subject of the Endangerment Finding. *See Sierra Club v. EPA*, 292 F.3d 895, 898–900 (D.C. Cir. 2002) (requiring that a petitioner seeking review of agency action demonstrate standing by affidavit or other evidence if standing is not “self-evident” from the administrative record). Absent a petitioner with standing to challenge EPA’s inclusion of PFCs and SF₆ in the “air pollution” at issue, this court lacks jurisdiction to address the merits of Industry Petitioners’ contention.

E.

EPA did not submit the Endangerment Finding for review by its Science Advisory Board (SAB). Industry Petitioners claim that EPA’s failure to do so violates its mandate to “make available” to the SAB “any proposed criteria document, standard, limitation, or regulation under the Clean Air Act” at the time it provides the same “to any other Federal agency for formal review and comment.” 42 U.S.C. § 4365(c)(1); *see Am. Petroleum Inst.*, 665 F.2d at 1188.

To begin with, it is not clear that EPA provided the Endangerment Finding “to any other Federal agency for formal review and comment,” which triggers this duty to submit a regulation to the SAB. EPA only submitted a draft of the Endangerment Finding to the Office of Information and Regulatory Affairs pursuant to Executive Order 12,866. EPA contends that this was merely an *informal* review process, not “formal review and comment”—at least when compared with a

statutory review-and-comment requirement in which other agencies are given the opportunity to provide written comments about the impacts of a proposed regulation on the reviewing agency's universe of responsibility. *See, e.g.*, 49 U.S.C. § 32902(j). Industry Petitioners failed to respond to this contention.

In any event, even if EPA violated its mandate by failing to submit the Endangerment Finding to the SAB, Industry Petitioners have not shown that this error was “of such central relevance to the rule that there is a substantial likelihood that the rule would have been significantly changed if such errors had not been made.” 42 U.S.C. § 7607(d)(8); *see Am. Petroleum Inst.*, 665 F.2d at 1188–89 (applying this standard to EPA's failure to submit an ozone standard to the SAB).

F.

Lastly, State Petitioners maintain that EPA erred by denying all ten petitions for reconsideration of the Endangerment Finding. Those petitions asserted that internal e-mails and documents released from the University of East Anglia's Climate Research Unit (CRU)—a contributor to one of the global temperature records and to the IPCC's assessment report—undermined the scientific evidence supporting the Endangerment Finding by calling into question whether the IPCC scientists adhered to “best science practices.” *EPA's Denial of the Petitions To Reconsider the Endangerment and Cause or Contribute Findings for Greenhouse Gases Under Section 202(a) of the Clean Air Act* (“Reconsideration Denial”), 75 Fed. Reg. 49,556, 49,556–57 (Aug. 13, 2010). The petitions pointed to factual mistakes in the IPCC's assessment report

resulting from the use of non-peer-reviewed studies and several scientific studies postdating the Endangerment Finding as evidence that the Endangerment Finding was flawed. *Id.*

On August 13, 2010, EPA issued a denial of the petitions for reconsideration accompanied by a 360-page response to petitions (RTP). *Id.* at 49,556. It determined that the petitions did not provide substantial support for the argument that the Endangerment Finding should be revised. According to EPA, the petitioners' claims based on the CRU documents were exaggerated, contradicted by other evidence, and not a material or reliable basis for questioning the credibility of the body of science at issue; two of the factual inaccuracies alleged in the petitions were in fact mistakes, but both were "tangential and minor" and did not change the key IPCC conclusions; and the new scientific studies raised by some petitions were either already considered by EPA, misinterpreted or misrepresented by petitioners, or put forth without acknowledging other new studies. *Id.* at 49,557–58.

1.

EPA is required to convene a proceeding for reconsideration of a rule if a party raising an objection to the rule

can demonstrate to the Administrator that it was impracticable to raise such objection within such time or if the grounds for such objection arose after the period for public comment (but within the time specified for judicial review) and if such objection is of central relevance to the outcome of the rule.

42 U.S.C. § 7607(d)(7)(B). For the purpose of determining whether to commence reconsideration of a rule, EPA considers

an objection to be of “central relevance to the outcome” of that rule “if it provides substantial support for the argument that the regulation should be revised.” Reconsideration Denial, 75 Fed. Reg. at 49,561.

State Petitioners have not provided substantial support for their argument that the Endangerment Finding should be revised. State Petitioners point out that some studies the IPCC referenced in its assessment were not peer-reviewed, but they ignore the fact that (1) the IPCC assessment relied on around 18,000 studies that were peer-reviewed, and (2) the IPCC’s report development procedures expressly permitted the inclusion in the assessment of some non-peer-reviewed studies (“gray” literature).

Moreover, as EPA determined, the limited inaccurate information developed from the gray literature does not appear sufficient to undermine the substantial overall evidentiary support for the Endangerment Finding. State Petitioners have not, as they assert, uncovered a “pattern” of flawed science. Only two of the errors they point out seem to be errors at all, and EPA relied on neither in making the Endangerment Finding. First, as State Petitioners assert, the IPCC misstated the percentage of the Netherlands that is below sea level, a statistic that was used for background information. However, the IPCC corrected the error, and EPA concluded that the error was “minor and had no impact,” and the Endangerment Finding did not refer to the statistic in any way. *Id.* at 49,576–77. Second, the IPCC acknowledged misstating the rate at which Himalayan glaciers are receding. EPA also did not rely on that projection in the Endangerment Finding. *Id.* at 49,577.

State Petitioners also contend that a new study contradicts EPA’s reliance on a projection of more violent storms in the future as a result of climate change, but the study they cite only

concerns past trends, not projected future storms. The record shows that EPA considered the new studies on storm trends and concluded that the studies were consistent with the Endangerment Finding. In sum, State Petitioners have failed to show that these isolated “errors” provide substantial support for their argument to overturn the Endangerment Finding.

2.

State Petitioners’ further argument that EPA erred in denying reconsideration fails as well. These Petitioners claim EPA erred by failing to provide notice and comment before denying the petitions for reconsideration because EPA’s inclusion of a 360-page RTP amounted to a revision of the Endangerment Finding, and revision of a rule requires notice and comment. The RTP, however, appears to be exactly what EPA called it—a response to the petitions for reconsideration, not a revision of the Endangerment Finding itself. EPA certainly may deny petitions for reconsideration of a rule and provide an explanation for that denial, including by providing support for that decision, without triggering a new round of notice and comment for the rule.

III.

State and Industry Petitioners contend that in promulgating the Tailpipe Rule, EPA relied on an improper interpretation of CAA § 202(a)(1), and was arbitrary and capricious in failing to justify and consider the cost impacts of its conclusion that the Rule triggers stationary-source regulation under the PSD and Title V provisions. They do not challenge the substantive standards of the Rule and focus principally on EPA’s failure to consider the cost of stationary-source permitting requirements triggered by the Rule. Positing an absurd-consequences scenario, Petitioners maintain that if EPA had considered these

costs it “would have been forced” to exclude carbon dioxide from the scope of the emission standards, to decline to issue greenhouse gas emission standards at all, or “to interpret the statute so as not to automatically trigger stationary source regulation.” Industry Tailpipe Br. 17; *see also* Industry Tailpipe Reply Br. 8–9. Both the plain text of Section 202(a) and precedent refute Petitioners’ contentions.

A.

Section 202(a)(1) 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). By employing the verb “shall,” Congress vested a non-discretionary duty in EPA. *See Sierra Club v. Jackson*, 648 F.3d 848, 856 (D.C. Cir. 2011). The plain text of Section 202(a)(1) thus refutes Industry Petitioners’ contention that EPA had discretion to defer issuance of motor-vehicle emission standards on the basis of stationary-source costs. Neither the adjacent text nor the statutory context otherwise condition this clear “language of command,” *id.* (citation omitted). Having made the Endangerment Finding pursuant to CAA § 202(a), 42 U.S.C. § 7521(a), EPA lacked discretion to defer promulgation of the Tailpipe Rule on the basis of its trigger of stationary-source permitting requirements under the PSD program and Title V.

The Supreme Court’s decision in *Massachusetts v. EPA*

compels this interpretation of Section 202(a)(1). “If EPA makes a finding of endangerment, the Clean Air Act requires the [a]gency to regulate emissions of the deleterious pollutant from new motor vehicles.” 549 U.S. at 533. “Under the clear terms of the Clean Air Act, EPA can avoid taking further action *only if* it determines that greenhouse gases do not contribute to climate change *or if* it provides some reasonable explanation as to why it cannot or will not exercise its discretion to determine whether they do.” *Id.* (emphasis added). In the Endangerment Finding, EPA determined that motor-vehicle emissions contribute to greenhouse gas emissions that, in turn, endanger the public health and welfare; the agency therefore was in no position to “avoid taking further action,” *id.*, by deferring promulgation of the Tailpipe Rule. Given the non-discretionary duty in Section 202(a)(1) and the limited flexibility available under Section 202(a)(2), which this court has held relates only to the motor-vehicle industry, *see infra* Part III.C, EPA had no statutory basis on which it could “ground [any] reasons for” further inaction, *Massachusetts v. EPA*, 549 U.S. at 535.

The plain text of Section 202(a)(1) also negates Industry Petitioners’ contention that EPA had discretion to defer the Tailpipe Rule on the basis of NHTSA’s authority to regulate fuel economy. The Supreme Court dismissed a near-identical argument in *Massachusetts v. EPA*, rejecting the suggestion that EPA could decline to regulate carbon-dioxide emissions because the Department of Transportation (DOT) had independent authority to set fuel-efficiency standards. *Id.* at 531–32. “[T]hat DOT sets mileage standards in no way licenses EPA to shirk its environmental responsibilities,” because EPA’s duty to promulgate emission standards derives from “a statutory obligation wholly independent of DOT’s mandate to promote energy efficiency.” *Id.* at 532. Just as EPA lacks authority to refuse to regulate on the grounds of NHTSA’s regulatory authority, EPA cannot defer regulation on that basis. A

comparison of the relevant statutes bolsters this conclusion. *Compare* 49 U.S.C. § 32902(f) (“When deciding maximum feasible average fuel economy . . . , the Secretary of Transportation shall consider . . . the effect of other motor vehicle standards of the Government on fuel economy”), *with* 42 U.S.C. § 7521(a) (including no such direction). Nor, applying the same reasoning, was EPA required to treat NHTSA’s proposed regulations as establishing the baseline for the Tailpipe Rule. Furthermore, the Tailpipe Rule provides benefits above and beyond those resulting from NHTSA’s fuel-economy standards. *See, e.g.*, Tailpipe Rule, 75 Fed. Reg. at 25,490 (Table III.F.1-2), 25,636 (Table IV.G.1-4). Petitioners’ related contentions regarding the PSD permitting triggers are addressed in Part V.

B.

Turning to the APA, Industry Petitioners contend, relying on *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 525 (D.C. Cir. 1983), and *Ethyl Corp. v. EPA*, 541 F.2d 1 (D.C. Cir. 1976), that EPA failed both to justify the Tailpipe Rule in terms of the risk identified in the Endangerment Finding and to show that the proposed standards “would meaningfully mitigate the alleged endangerment,” Industry Tailpipe Br. 35. Instead, they maintain that EPA “separated these two integral steps,” *id.* at 11, and “concluded that it had no obligation to show . . . ‘the resulting emissions control strategy or strategies will have some significant degree of harm reduction or effectiveness in addressing the endangerment,’” *id.* at 11–12 (quoting Endangerment Finding, 74 Fed. Reg. at 66,508). These contentions fail.

Petitioners’ reliance on *Small Refiner*, 705 F.2d at 525, is misplaced; the court there laid out guidelines for assessing

EPA’s discretion to set numerical standards and Petitioners do not challenge the substance of the emission standards. In *Ethyl*, 541 F.2d at 7, the court assessed the scope of EPA’s authority, under CAA § 211(c)(1), 42 U.S.C. § 1857f-6c(c)(1) (1970) (*currently codified as amended at* 42 U.S.C. § 7545(c)(1)), to regulate lead particulate in motor-vehicle emissions. The court rejected the argument that the regulations had to “be premised upon factual proof of actual harm,” *Ethyl*, 541 F.2d at 12, and instead deferred to EPA’s reasonable interpretation that regulations could be based on a “significant risk of harm,” *id.* at 13. Nothing in *Ethyl* implied that EPA’s authority to regulate was conditioned on evidence of a particular level of mitigation; only a showing of significant *contribution* was required. EPA made such a determination in the Endangerment Finding, concluding that vehicle emissions are a significant contributor to domestic greenhouse gas emissions. *See, e.g.*, Endangerment Finding, 74 Fed. Reg. at 66,499. Further, in the preamble to the Tailpipe Rule itself, EPA found that the emission standards would result in meaningful mitigation of greenhouse gas emissions. For example, EPA estimated that the Rule would result in a reduction of about 960 million metric tons of CO₂e emissions over the lifetime of the model year 2012–2016 vehicles affected by the new standards. *See* Tailpipe Rule, 75 Fed. Reg. at 25,488–90. Other precedent is likewise unhelpful to Petitioners: in *Chemical Manufacturers Association v. EPA*, 217 F.3d 861, 866 (D.C. Cir. 2000), “nothing in the record” indicated that the challenged regulatory program would “directly or indirectly, further the Clean Air Act’s environmental goals,” whereas here the record is fulsome, *see supra* Part II.

C.

Petitioners also invoke Section 202(a)(2) as support for their contention that EPA must consider stationary-source costs in the Tailpipe Rule. Section 202(a)(2) provides:

Any regulation prescribed under paragraph (1) of this subsection . . . 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). State Petitioners maintain the reference to compliance costs encompasses those experienced by stationary sources under the PSD program, while Industry Petitioners maintain stationary-source costs are a relevant factor in EPA's Section 202(a)(1) rulemaking. This court, however, has held that the Section 202(a)(2) reference to compliance costs encompasses only the cost to the motor-vehicle industry to come into compliance with the new emission standards, and does not mandate consideration of costs to other entities not directly subject to the proposed standards. *See Motor & Equip. Mfrs. Ass'n, Inc. v. EPA*, 627 F.2d 1095, 1118 (D.C. Cir. 1979).

D.

Petitioners' remaining challenges to the Tailpipe Rule fail as well. In Part II, the court rejects the contention that the Tailpipe Rule fails due to flaws in the underlying Endangerment Finding. The record also refutes Industry Petitioners' suggestion that EPA "employed a shell game to avoid," Industry Tailpipe Reply Br. 9 (capitalization removed), responding to comments regarding stationary-source costs. Industry Tailpipe Br. 19–20; *see also* Industry Tailpipe Reply Br. 14–15. EPA adequately responded to "significant comments," 42 U.S.C. § 7607(d)(6)(B). *See, e.g.*, Tailpipe Rule, 75 Fed. Reg. at 25,401–02; Tailpipe Rule, Response to Comments at 7-65 to 7-69. And, assuming other statutory mandates provide a basis for judicial review, *see* Industry Tailpipe Br. 21–22 (listing mandates); *see, e.g.*, *Small Refiner*, 705 F.2d at 537–39, the

record shows EPA's compliance, *see* Tailpipe Rule, 75 Fed. Reg. at 25,539–42, and that EPA was not arbitrary and capricious by not considering stationary-source costs in its analyses. *See, e.g., Michigan v. EPA*, 213 F.3d 663, 689 (D.C. Cir. 2000); *Mid-Tex Elec. Coop., Inc. v. FERC*, 773 F.2d 327, 341–42 (D.C. Cir. 1985). EPA's economic impact assessment conducted pursuant to CAA § 317, 42 U.S.C. § 7617, does not provide grounds for granting the petitions because Petitioners' contentions that EPA, "[i]n defiance of these requirements, . . . refused to estimate or even consider the costs of the [Tailpipe Rule] for stationary sources," Industry Tailpipe Br. 22, are no more than another attempt to avoid the plain text of Section 202(a). *See also* 42 U.S.C. § 7617(e).

IV.

We turn next to the stationary source regulations. As noted *supra* in Part I, EPA's interpretation of the CAA requires PSD and Title V permits for stationary sources whose potential emissions exceed statutory thresholds for *any* regulated pollutant—including greenhouse gases. Industry Petitioners now challenge EPA's longstanding interpretation of the scope of the permitting requirements for construction and modification of major emitting facilities under CAA Sections 165(a) and 169(1), 42 U.S.C. §§ 7475(a) & 7479(1) ("the PSD permitting triggers"). EPA maintains that this challenge is untimely because its interpretation of the PSD permitting triggers was set forth in its 1978, 1980, and 2002 Rules.

In 1978, EPA defined "major stationary source" as a source that emits major amounts of "any air pollutant regulated under the [CAA]." *Part 51—Requirements for Preparation, Adoption, and Submittal of Implementation Plans; Prevention of Significant Air Quality Deterioration* ("1978 Implementation Plan Requirements"), 43 Fed. Reg. 26,380, 26,382 (June 19,

1978). Industry petitioners' challenge to the 1978 Rule in *Alabama Power Co. v. Costle*, 636 F.2d 323 (D.C. Cir. 1980) reflected their understanding that EPA would apply the PSD permitting program to both pollutants regulated pursuant to National Ambient Air Quality Standards (NAAQS) and other regulated pollutants. *See* Br. for Industry Pet'rs on Regulation of Pollutants other than Sulfur Dioxide and Particulates, No. 78-1006 (and consolidated cases) (Dec. 19, 1978) at 10, 12. In the 1980 Rule, EPA highlighted that to be subject to PSD review, a "source need only emit *any* pollutant in major amounts (i.e., the amounts specified in [CAA § 169(1)]) and be located in an area designated attainment or unclassifiable for that or any other pollutant." 1980 Implementation Plan Requirements, 45 Fed. Reg. at 52,711 (emphasis in original). EPA explained that "*any* pollutant" meant "both criteria pollutants, for which national ambient air quality standards have been promulgated, and non-criteria pollutants subject to regulation under the Act." *Id.* The same explanation of EPA's interpretation appeared in the 2002 Rule. *Prevention of Significant Deterioration and Nonattainment New Source Review*, 67 Fed. Reg. 80,186, 80,239-40, 80,264 (Dec. 31, 2002).

CAA Section 307(b)(1) provides that a petition for review of any promulgated nationally applicable regulations:

"shall be filed within sixty days from the date notice of such promulgation . . . appears in the Federal Register, except that if such petition is based solely on grounds arising after such sixtieth day, then any petition for review . . . shall be filed within sixty days after such grounds arise."

42 U.S.C. § 7607(b)(1). The exception encompasses the occurrence of an event that ripens a claim. *See Chamber of Commerce v. EPA*, 642 F.3d 192, 208 n.14 (D.C. Cir. 2011);

Am. Rd. & Transp. Builders Ass'n v. EPA, 588 F.3d 1109, 1113 (D.C. Cir. 2009). EPA acknowledges this precedent, but maintains that the “new grounds” exception is narrow and inapplicable because Industry Petitioners’ challenge to EPA’s interpretation of the PSD permitting triggers is based on legal arguments that were available during the normal judicial review periods for the 1978, 1980, and 2002 Rules, and the “new ground” on which they now rely is a factual development, namely the regulation of greenhouse gases by the Tailpipe Rule. This is correct so far as it goes, but fails to demonstrate that Industry Petitioners’ challenge is untimely.

Industry Petitioners point out that two petitioners—the National Association of Home Builders (NAHB) and National Oilseed Processors Association (NOPA) – have newly ripened claims as a result of the Tailpipe Rule, which had the effect of expanding the PSD program to never-regulated sources:

- NAHB’s members construct single family homes, apartment buildings, and commercial buildings. According to the Vice President of Legal Affairs, prior to the Tailpipe Rule, no member of NAHB was a major source of any regulated pollutant, and thus no member was ever required to obtain a PSD permit. Decl. of Thomas J. Ward, Vice President of Legal Affairs for NAHB, ¶ 6 (May 10, 2011). Since the Tailpipe Rule rendered greenhouse gases a regulated pollutant, it is now certain that NAHB members that engage in construction projects that emit greenhouse gases in major amounts will have to obtain PSD permits sometime in the future. *Id.* at ¶¶ 7, 8. Indeed, EPA estimated that 6,397 multifamily buildings and 515 single family homes would trigger PSD review annually absent the Tailoring Rule. See *Prevention of Significant Deterioration and Title V Greenhouse Gas Tailoring Rule; Proposed Rule* (“Proposed Tailoring Rule”), 74 Fed. Reg.

55,292, 55,338 (Oct. 27, 2009).

- NOPA’s members are large companies that monthly produce millions of tons of vegetable meals and over a billion pounds of oils from oilseeds, such as soybeans. *See, e.g.*, NOPA, January 2012 Statistical Report (Feb. 14, 2012) *available at* www.nopa.org; NOPA, February 2012 Statistical Report (Mar. 14, 2012), *available at* www.nopa.org. According to the Executive Vice President of Regulatory Affairs, NOPA members operate facilities that are major sources of criteria pollutants and, for this reason, are subject to PSD review. Decl. of David C. Ailor, Executive Vice President of Regulatory Affairs of NOPA, ¶ 8 (May 10, 2011). Prior to promulgation of the Tailpipe Rule, no member’s facility had triggered PSD review by virtue of emissions of a non-criteria pollutant. *Id.* Now that greenhouse gases are a regulated non-criteria pollutant, many NOPA members will have to obtain PSD permits as result of their facilities’ emissions of a non-criteria pollutant. *Id.* at ¶¶ 9,10. For some NOPA members this time is not far off because renovations to their facilities will result in greenhouse gas emissions above the significance thresholds set by the Tailoring Rule, 75 Fed. Reg. at 31,567. *Id.* at ¶ 9.

Industry Petitioners thus maintain that because NAHB and NOPA filed their petitions on July 6, 2010, within 60 days of the promulgation of the Tailpipe Rule in the Federal Register on May 7, 2010, their challenges are timely.

“Ripeness, while often spoken of as a justiciability doctrine distinct from standing, in fact shares the constitutional requirement of standing that an injury in fact be certainly impending.” *Nat’l Treasury Emp. Union v. United States*, 101 F.3d 1423, 1427 (D.C. Cir. 1996). During an initial review

period, although purely legal claims may be justiciable and, thus, prudentially ripe, a party without an immediate or threatened injury lacks a constitutionally ripe claim. *See Baltimore Gas & Elec. Co. v. ICC*, 672 F.2d 146, 149 (D.C. Cir. 1982). EPA's position would conflate the constitutional and prudential considerations. Constitutional ripeness exists where a challenge "involve[s], at least in part, the existence of a live 'Case or Controversy.'" *Duke Power Co. v. Carolina Envtl. Study Group*, 438 U.S. 59, 81 (1978). Prudential considerations embodied in the ripeness doctrine relate to "the fitness of the issues for judicial decision and the hardship to the parties of withholding court consideration." *Abbott Labs. v. Gardner*, 387 U.S. 136, 149 (1967); *see Duke Power*, 438 U.S. at 81. Standing to challenge agency action exists where a petitioner can demonstrate an "injury in fact" that is fairly traceable to the challenged action and is likely to be redressed by a favorable judicial decision. *Reytblatt v. NRC*, 105 F.3d 715, 721 (D.C. Cir. 1997) (citing *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560–61 (1992)).

Had NAHB and NOPA challenged EPA's interpretation of the PSD permitting triggers in 1978, 1980, or 2002, as EPA suggests, the court would have lacked jurisdiction under Article III of the Constitution because their alleged injuries were only speculative. *See, e.g., Occidental Permian Ltd. v. FERC*, 673 F.3d 1024, 1026 (D.C. Cir. 2012); *Baltimore Gas & Elec. Co.*, 672 F.2d at 149. At that time, NAHB and NOPA could have shown only the possibility that their members would be injured if EPA were someday to determine that greenhouse gases were a pollutant that endangers human health and welfare and to adopt a rule regulating the greenhouse gas emissions of stationary sources. EPA does not challenge the assertions in the NAHB and NOPA declarations, which establish no such rule was promulgated prior to the Tailpipe Rule.

The NAHB and NOPA challenges ceased to be speculative when EPA promulgated the Tailpipe Rule regulating greenhouse gases and their challenges ripened because of the “substantial probability” of injury to them. *See Baltimore Gas & Elec. Co.*, 672 F.2d at 149. Although, as EPA notes, other Industry Petitioners’ challenges to EPA’s interpretation of the PSD permitting triggers ripened decades earlier, this court has assured petitioners with unripe claims that “they will not be foreclosed from judicial review when the appropriate time comes,” *Grand Canyon Air Tour Coalition v. FAA*, 154 F.3d 455, 473 (D.C. Cir. 1998), and that they “need not fear preclusion by reason of the 60-day stipulation [barring judicial review],” *Baltimore Gas & Elec. Co.*, 672 F.2d at 149–50. EPA expresses concern that allowing NAHB and NOPA to litigate their newly ripened claims will have far-reaching implications for finality of agency actions, but “the ripeness doctrine reflects a judgment that the disadvantages of a premature review that may prove too abstract or unnecessary ordinarily outweigh the additional costs of – even repetitive – . . . litigation.” *Ohio Forestry Ass’n, Inc. v. Sierra Club*, 523 U.S. 726, 735 (1998). Some limitations inhere in doctrines such as *stare decisis* or the law-of-the-circuit doctrine, *see LaShawn A. v. Barry*, 87 F.3d 1389, 1395 (D.C. Cir. 1996) (en banc).

Because petitioners NAHB and NOPA’s challenges to EPA’s PSD permitting triggers are newly ripened upon promulgation of the Tailpipe Rule and they filed petitions for review within sixty days thereof, their challenge to EPA’s interpretation of the PSD permitting triggers is timely.

V.

Having established that Industry Petitioners’ challenges to the PSD permitting triggers are both timely and ripe, we turn to the merits of their claims.

A.

CAA Title I, Part C—entitled “Prevention of Significant Deterioration of Air Quality” (PSD)—largely focuses on the maintenance of national ambient air quality standards (NAAQS). Under the PSD program, EPA designates specific pollutants as “NAAQS pollutants” and sets national ambient air quality standards for those pollutants—requiring, for example, that the concentration of a given NAAQS pollutant may not exceed more than a certain number of parts per billion in the ambient air. *See generally* 42 U.S.C. § 7407. Thus far, EPA has designated six NAAQS pollutants: carbon monoxide, lead, nitrogen dioxide, ozone, particle pollution, and sulfur dioxide. None of these NAAQS pollutants is one of the six well-mixed greenhouse gases defined as an “air pollutant” in the Endangerment Finding. *See* Environmental Protection Agency, National Ambient Air Quality Standards, *available at* <http://www.epa.gov/air/criteria.html> (last visited May 3, 2012); Endangerment Finding, 74 Fed. Reg. 66,536-37.

Acting upon information submitted by states, EPA then determines whether each region of the country is in “attainment” or “nonattainment” with the promulgated air quality standard for each NAAQS pollutant, or, alternatively, whether a region is “unclassifiable” for that pollutant. 42 U.S.C. § 7407(d)(1)(A). An area in attainment for a NAAQS pollutant is “any area . . . that meets the . . . ambient air quality standard for the pollutant.” *Id.* § 7407(d)(1)(A)(ii). By contrast, an area in nonattainment for a NAAQS pollutant is “any area that does not meet (or that contributes to ambient air quality in a nearby area that does not meet) the national . . . ambient air quality standard for the pollutant.” *Id.* § 7407(d)(1)(A)(i). Finally, an unclassifiable area is any area that “cannot be classified on the basis of available information as meeting or not meeting the . . . ambient air quality standard for the pollutant.” *Id.* § 7407(d)(1)(A)(iii).

The PSD program applies to those areas of the United States designated as in “attainment” or “unclassifiable” for any NAAQS pollutant, *see id.* § 7471, and requires permits for major emitting facilities embarking on construction or modification projects in those regions. *Id.* § 7475(a). A separate part of Title I of the CAA, Part D, governs the construction and modification of sources in nonattainment regions. *See id.* §§ 7501, 7502. It bears emphasis that attainment classifications are pollutant-specific: depending on the levels of each NAAQS pollutant in an area, a region can be designated as in attainment for NAAQS pollutant A, but in nonattainment for NAAQS pollutant B. If a major emitting facility in such a region wishes to undertake a construction or modification project, both Part C and Part D’s substantive requirements apply—that is, the source must obtain a general PSD permit and must also abide by Part D’s more stringent, pollutant-specific requirements for any NAAQS pollutants for which the area is in nonattainment. *See* 1980 Implementation Plan Requirements, 45 Fed. Reg. at 52,711-12 (“where a source emits in major amounts a pollutant for which the area in which the source would locate is designated nonattainment, Part D NSR rather than Part C PSD review should apply *to those pollutants.*”) (emphasis added).

The key substantive provision in the PSD program is CAA Section 165(a), which establishes permitting requirements for “major emitting facilities” located in attainment or unclassifiable regions. In relevant part, section 165(a) provides that “[n]o major emitting facility . . . may be constructed in any area to which this part applies unless” the facility obtains a PSD permit. 42 U.S.C. § 7475(a). To obtain a PSD permit, a covered source must, among other things, install the “best available control technology [BACT] for each pollutant subject to regulation under [the CAA]”—regardless of whether that pollutant is a NAAQS pollutant. *Id.* § 7475(a)(4). Since the Tailpipe Rule became effective, EPA has regulated automotive greenhouse gas

emissions under Title II of the Act. Thus, greenhouse gases are now a “pollutant subject to regulation under” the Act, and, as required by the statute itself, any “major emitting facility” covered by the PSD program must install BACT for greenhouse gases. *See id.*

The dispute in this case centers largely on the scope of the PSD program—specifically, which stationary sources count as “major emitting facilities” subject to regulation. CAA Section 169(1) defines “major emitting facility,” for the purposes of the PSD program, as a stationary source “which emit[s], or [has] the potential to emit” either 100 tons per year (tpy) or 250 tpy of “any air pollutant.” 42 U.S.C. § 7479(1) (emphasis added). As discussed *supra* in Part I, whether the 100 or 250 tpy threshold applies depends on the type of source. Certain listed categories of sources—for example, iron and steel mill plants—qualify as “major emitting facilities” if they have the potential to emit over 100 tons per year of “any air pollutant.” *Id.* All other stationary sources are “major emitting facilities” if they have the potential to emit over 250 tons per year of “any air pollutant.” *Id.*

As mentioned above, since 1978 EPA has interpreted the phrase “any air pollutant” in the definition of “major emitting facility” as “any air pollutant regulated under the CAA.” *See* 1978 Implementation Plan Requirements, 43 Fed. Reg. at 26,388, 26,403; *supra* Part IV. Thus, because the PSD program covers “major emitting facilities” in “any area to which this part applies,” 42 U.S.C. § 7475, EPA requires PSD permits for stationary sources that 1) are located in an area designated as attainment or unclassifiable for any NAAQS pollutant, and 2) emit 100/250 tpy of any regulated air pollutant, regardless of whether that pollutant is itself a NAAQS pollutant. *See* 1980 Implementation Plan Requirements, 45 Fed. Reg. at 52,710-11. Consequently, once the Tailpipe Rule took effect and made

greenhouse gases a regulated pollutant under Title II of the Act, the PSD program automatically applied to facilities emitting over 100/250 tpy of greenhouse gases. But because immediate regulation of greenhouse gas-emitting sources exceeding the 100/250 tpy benchmark would result in “overwhelming permitting burdens that would . . . fall on permitting authorities and sources,” Tailoring Rule, 75 Fed. Reg. at 31,516, EPA’s Tailoring Rule provided that, for now, sources are subject to PSD permitting requirements only if they have the potential to emit over 100,000 tpy of greenhouse gases (for a construction project) or 75,000 tpy (for a modification project). *Id.* at 31,523; *see also infra*, Part VI.

According to EPA, its longstanding interpretation of the phrase “any air pollutant”—“any air pollutant regulated under the CAA”—is compelled by the statute. *See id.* at 31,517. Disputing this point, Industry Petitioners argue that the phrase is capable of a far more circumscribed meaning and that EPA could have—and should have—avoided extending the PSD permitting program to major greenhouse gas emitters. For the reasons discussed below, we agree with EPA that its longstanding interpretation of the PSD permitting trigger is statutorily compelled. Thus, as EPA argues, it “must give effect to the unambiguously expressed intent of Congress,” *Chevron*, 467 U.S. at 843, which here requires PSD coverage for major emitters of any regulated air pollutant.

We begin our analysis, as we must, with the statute’s plain language. *See Chevron*, 467 U.S. at 842 (“First, always, is the question whether Congress has directly spoken to the precise question at issue.”). CAA Section 169(1) requires PSD permits for stationary sources emitting major amounts of “any air pollutant.” 42 U.S.C. § 7479(1) (emphasis added). On its face, “the word ‘any’ has an expansive meaning, that is, ‘one or some indiscriminately of whatever kind,’ ” *United States v. Gonzales*,

520 U.S. 1, 5 (1997) (quoting WEBSTER'S THIRD NEW INTERNATIONAL DICTIONARY 97 (1976)). Greenhouse gases are indisputably an "air pollutant." See *Massachusetts v. EPA*, 549 U.S. at 528–29. Congress's use of the broad, indiscriminate modifier "any" thus strongly suggests that the phrase "any air pollutant" encompasses greenhouse gases.

This plain-language reading of the statute is buttressed by the Supreme Court's decision in *Massachusetts v. EPA*. There the Court determined that CAA's overarching definition of "air pollutant" in Section 302(g)—which applies to all provisions of the Act, including the PSD program—unambiguously includes greenhouse gases. Noting that "[t]he Clean Air Act's sweeping definition of 'air pollutant' includes 'any air pollution agent or combination of such agents . . . which is emitted into or otherwise enters the ambient air,'" the Court held that "the definition embraces *all* airborne compounds of whatever stripe, *and underscores that intent through repeated use of the word 'any.'*" *Id.* at 529 (quoting 42 U.S.C. § 7602(g)) (second and third emphases added). Crucially for purposes of the issue before us, the Court concluded that "[t]he statute is unambiguous." *Id.*

Thus, we are faced with a statutory term—"air pollutant"—that the Supreme Court has determined unambiguously encompasses greenhouse gases. This phrase is preceded by the expansive term "any," a word the Court held "underscores" Congress's intent to include "all" air pollutants "of whatever stripe." See *id.* Absent some compelling reason to think otherwise, " 'any' . . . means any," *Ford v. Mabus*, 629 F.3d 198, 206 (D.C. Cir. 2010), and Petitioners have given us no reason to construe that word narrowly here. To the contrary: given both the statute's plain language and the Supreme Court's decision in *Massachusetts v. EPA*, we have little trouble concluding that the phrase "any air pollutant" includes *all*

regulated air pollutants, including greenhouse gases.

In reaching this conclusion, we recognize that EPA's definition of "any air pollutant" slightly narrows the literal statutory definition, which nowhere requires that "any air pollutant" be a *regulated* pollutant. *See* 42 U.S.C. § 7479(1). But this does not make the statutory language ambiguous. Indeed, "any regulated air pollutant" is the only logical reading of the statute. The CAA's universal definition of "air pollutant"—the one at issue in *Massachusetts v. EPA*—provides that the term includes "any physical, chemical, biological [or] radioactive . . . substance or matter which is emitted into or otherwise enters the ambient air." *Id.* § 7602(g). Of course, nothing in the CAA requires regulation of a substance simply because it qualifies as an "air pollutant" under this broad definition. As discussed *supra* in Parts II and III, for example, the Act requires EPA to prescribe motor vehicle "standards applicable to the emission of any air pollutant" only if that pollutant "cause[s], or contribute[s] to, air pollution which may reasonably be anticipated to endanger public health or welfare." *Id.* § 7521(a)(1). But if "any air pollutant" in the definition of "major emitting facility" was read to encompass both regulated and nonregulated air pollutants, sources could qualify as major emitting facilities—and thus be subjected to PSD permitting requirements—if they emitted 100/250 tpy of a "physical, chemical, [or] biological" substance EPA had determined was harmless. It is absurd to think that Congress intended to subject stationary sources to the PSD permitting requirements due to emissions of substances that do not "endanger public health or welfare." *Id.* § 7521(a)(1). Thus, "any regulated air pollutant" is, in this context, the only plausible reading of "any air pollutant."

We find further support for this definition throughout the CAA. First, as previously mentioned, the PSD program provides that all major emitting facilities must install BACT for

“each pollutant subject to regulation under [the CAA].” *Id.* § 7475(a)(4). “Each pollutant subject to regulation under” the Act is, of course, synonymous with “any air pollutant regulated under the Act.” Thus, EPA’s interpretation of “any air pollutant” in the definition of “major emitting facilities” harmonizes the PSD program’s scope (i.e., which pollutants trigger PSD coverage) with its substantive requirements (i.e., which pollutants must be controlled to obtain a permit). In other words, because a covered source must control greenhouse gas emissions, it makes sense that major emissions of greenhouse gases would subject that source to the PSD program.

Second, a PSD permittee is required to establish that it

will not cause, or contribute to, air pollution in excess of any (A) maximum allowable increase or maximum allowable concentration for any pollutant in any area to which this part applies more than one time per year, (B) national ambient air quality standard in any air quality control region, or (C) any other applicable emission standard or standard of performance under [the CAA].

Id. § 7475(a)(3). Subsections (A) and (B) prohibit a permitted source from contributing to a concentration of NAAQS pollutants that exceeds EPA’s standards. By contrast, subsection (C) has an entirely different focus: it prohibits a permitted source from causing or contributing to air pollution in excess of *any* CAA emission standard. Thus, as EPA notes, “what this provision establishes is that while the PSD program was certainly directed towards NAAQS-criteria pollutants, it also was directed at maintaining air quality for other pollutants regulated under other provisions.” EPA Timing & Tailoring Br. 101. EPA’s determination that “any air pollutant” means “any air pollutant regulated under the Act”—encompassing the greenhouse gases regulated under Title II—is entirely consistent

with this focus.

Finally, Congress made perfectly clear that the PSD program was meant to protect against precisely the types of harms caused by greenhouse gases. The PSD provision contains a section entitled “Congressional declaration of purpose,” which provides, in relevant part, that “[t]he purposes of this part are . . . to protect public health and welfare from any actual or potential adverse effect which in the Administrator’s judgment may reasonably be anticipated to occur from air pollution.” 42 U.S.C. § 7470(1). The CAA further provides that “[a]ll language referring to effects on welfare includes, but is not limited to, effects on . . . weather . . . and climate.” *Id.* § 7602(h). As previously noted, EPA in the Endangerment Finding “marshaled . . . substantial . . . scientific evidence . . . for the proposition that greenhouse gases trap heat on earth that would otherwise dissipate into space [and] that this ‘greenhouse effect’ warms the climate.” Part II, *supra* at 28–29. It further concluded that this “anthropogenically induced climate change” was likely to threaten the public welfare through, among other things, “extreme weather events.” *Id.* at 15–16. Thus, one express purpose of the program is to protect against the harms caused by greenhouse gases.

In sum, we are faced with a statutory term—“any air pollutant”—that the Supreme Court has determined is “expansive,” and “unambiguous[ly]” includes greenhouse gases. *Massachusetts v. EPA*, 549 U.S. at 529. Moreover, the PSD program requires covered sources to install control technology for “each pollutant” regulated under the CAA, 42 U.S.C. § 7475(a)(4), and to establish that they “will not cause, or contribute to, air pollution in excess of *any* . . . emission standard . . . under [the CAA].” *Id.* § 7475(a)(3) (emphasis added). These provisions demonstrate that the PSD program was intended to control pollutants regulated under every section of

the Act. Finally, Congress’s “Declaration of Purpose” expressly states that the PSD program was meant, in part, to protect against adverse effects on “weather” and “climate”—precisely the types of harm caused by greenhouse gases. *See id.* § 7470(1). Given all this, we have little trouble concluding that “any air pollutant” in the definition of “major emitting facility” unambiguously means “any air pollutant regulated under the CAA.”

B.

Industry Petitioners offer three alternative interpretations of the PSD permitting triggers, none of which cast doubt on the unambiguous nature of the statute.

As a preliminary matter, we note that none of Petitioners’ alternative interpretations applies to Title V. To the contrary, all of the proposed alternative interpretations are based on the structure of—and purported Congressional intent behind—the PSD program. Indeed, Industry Petitioners never argue that their proposed alternative interpretations are relevant to Title V. Petitioners have thus forfeited any challenges to EPA’s greenhouse gas-inclusive interpretation of Title V. *See, e.g., Nat’l Steel & Shipbuilding Co. v. NLRB*, 156 F.3d 1268, 1273 (D.C. Cir. 1998) (petitioners forfeit an argument by failing to raise it in their opening brief).

Industry Petitioners’ first alternative is simple enough. Because the PSD program focuses on “the air people breathe in certain geographically defined . . . areas,” Coalition for Responsible Reg. Timing & Tailoring Br. 38, Industry Petitioners contend that the term “pollutant” in the PSD statute encompasses only air pollutants that, unlike greenhouse gases,

“pollute locally.” *Id.* at 35. Industry Petitioners would thus apply a greenhouse gas-exclusive interpretation of “pollutant” throughout the statute’s PSD provision. Under this reading, a source would qualify as a “major emitting facility” only if it emits 100/250 tpy of “any air pollutant” except greenhouse gases. *See* 42 U.S.C. § 7479(1). Moreover, sources that *are* subject to PSD permitting requirements would be required to install BACT for “each pollutant subject to regulation under [the CAA]”—except greenhouse gases. *Id.* § 7475(a)(4).

We can easily dispose of Industry Petitioners’ argument that the PSD program’s “concerns with local emissions,” Coalition for Responsible Reg. Timing & Tailoring Br. 36, somehow limit the BACT provision. The statutory text provides, without qualification, that covered sources must install the “best available control technology for *each pollutant subject to regulation* under [the CAA].” 42 U.S.C. § 7475(a)(4) (emphasis added). Because greenhouse gases are indisputably a pollutant subject to regulation under the Act, it is crystal clear that PSD permittees must install BACT for greenhouse gases. “When the words of a statute are unambiguous . . . judicial inquiry is complete.” *Connecticut Nat’l Bank v. Germain*, 503 U.S. 249, 254 (1992) (internal quotation marks omitted).

Equally without merit is Industry Petitioners’ argument that the PSD program’s regional focus requires a greenhouse gas-exclusive interpretation of “any air pollutant” in the definition of “major emitting facility.” In support of this contention, Industry Petitioners note that CAA Section 161 provides that states’ implementation plans for the PSD program “shall contain emission limitations and such other measures as may be necessary . . . to prevent *significant deterioration of air quality in each region*.” 42 U.S.C. § 7471 (emphasis added). The term “air quality,” Industry Petitioners contend, implies a focus on “the air people breathe,” and the term “in each region” suggests

that Congress was concerned about local, not global, effects. *See* Coalition for Responsible Reg. Timing & Tailoring Br. 36. Moreover, Industry Petitioners note that when Congress enacted the PSD program in 1977, it did so “against the backdrop of a known universe of CAA-regulated pollutants.” *Id.* All these pollutants, Industry Petitioners argue, “were regulated because they could cause elevated ground-level concentrations in ambient air people breathe.” *Id.* And as Industry Petitioners point out, EPA itself has concluded that greenhouse gases are problematic for reasons other than local health and environmental concerns. In EPA’s Advance Notice of Proposed Rulemaking for the regulations at issue here, for example, the agency noted that “[a] significant difference between the major [greenhouse gases] and most air pollutants regulated under the CAA is that [greenhouse gases] have much longer atmospheric lifetimes [and] . . . can remain in the atmosphere for decades to centuries.” *Regulating Greenhouse Gas Emissions Under the Clean Air Act* (“Greenhouse Gas Advance Notice”), 73 Fed. Reg. 44,354, 44,400–01 (July 30, 2008). Moreover, “unlike traditional air pollutants,” greenhouse gases “become well mixed throughout the global atmosphere so that the long-term distribution of [greenhouse gas] concentrations is not dependant on local emission sources.” *Id.* Thus, Industry Petitioners conclude, greenhouse gases are problematic for reasons entirely distinct from the local concerns that provided the basis for the PSD program. Given this, the phrase “any air pollutant” cannot be applied to greenhouse gases in the context of the regionally-focused PSD program.

As an initial matter, we note that the Supreme Court rejected a very similar argument in *Massachusetts v. EPA*. There, EPA attempted to distinguish between greenhouse gases and other air pollution agents “because greenhouse gases permeate the world’s atmosphere rather than a limited area near the earth’s surface.” *Massachusetts v. EPA*, 549 U.S. at 529

n.26. The Court held that this was “a plainly unreasonable reading of a sweeping statutory provision designed to capture ‘any physical, chemical . . . substance or matter which is emitted into or otherwise enters the ambient air,’” *id.* (quoting 42 U.S.C. § 7602(g)), thus rejecting the dissent’s view that “EPA’s exclusion of greenhouse gases . . . is entitled to deference.” *Id.* As the Court noted, the purported distinction between greenhouse gases and “traditional” air pollutants “finds no support in the text of the statute, which uses the phrase ‘the ambient air’ without distinguishing between atmospheric layers.” *Id.* *Massachusetts v. EPA* thus forecloses Industry Petitioners’ argument that because greenhouse gases do not “cause elevated ground-level concentrations in ambient air people breathe,” Coalition for Responsible Reg. Timing & Tailoring Br. 36, EPA should have adopted a greenhouse gas-exclusive interpretation of “any air pollutant.”

We also have little trouble disposing of Industry Petitioners’ argument that the PSD program is specifically focused solely on localized air pollution. True, as Industry Petitioners note, one part of the PSD program requires states to “prevent significant deterioration of air quality in each region.” 42 U.S.C. § 7471 (emphasis added). But while localized air quality is obviously one concern of the PSD program, a comprehensive reading of the statute shows it was also meant to address a much broader range of harms. As an initial matter, the PSD provision’s “Congressional declaration of purpose” section expansively provides that the program is intended “to protect public health and welfare from *any* actual or potential adverse effect . . . *from air pollution.*” *Id.* § 7470(1) (emphasis added). Nothing in this section limits the PSD program to adverse effects on local air quality; to the contrary, the word “any” here gives this clause an “expansive meaning” which we see “no reason to contravene.” *New York*, 443 F.3d at 885 (internal quotation marks omitted). Indeed, the CAA expressly provides that effects on “welfare”

means “effects on . . . weather . . . and climate.” 42 U.S.C. § 7602(h). It seems quite clear to us, then, that the PSD program was intended to protect against precisely the types of harms caused by greenhouse gases. This broad understanding of the PSD program’s scope is buttressed by the fact that the program requires covered sources to control “each pollutant subject to regulation under [the CAA],” and further requires sources to comply with “any . . . emission standard” under the CAA. *Id.* §§ 7475(a)(3); (a)(4) (emphasis added). These substantive requirements amount to further evidence that Congress wanted the PSD program to cover all regulated pollutants, regardless of the type of harm those pollutants cause.

In light of the PSD program’s broad scope of regulation and the express purposes of the program, we conclude—consistent with the Supreme Court in *Massachusetts v. EPA*—that Industry Petitioners’ greenhouse gas-exclusive interpretation of “pollutant” is “a plainly unreasonable reading” of the statute. *Massachusetts v. EPA*, 549 U.S. at 529 n.26.

2.

For their second alternative interpretation, Industry Petitioners argue that the PSD program’s definition of “major emitting facility” establishes a “pollutant-specific situs requirement.” Am. Chemistry Council Br. 33. Under this reading of the statute, a stationary source is subject to PSD permitting requirements only if “(1) a source has major emissions of a NAAQS criteria pollutant and (2) the source is located in an area attaining *that pollutant’s*” air quality standard. Coalition for Responsible Reg. Timing & Tailoring Br. 23. Thus, for example, a source would be subject to the PSD permitting requirements if it 1) emits over 100/250 tpy of sulfur dioxide (a NAAQS criteria pollutant), and 2) is located in an area that is in “attainment,” or is “unclassifiable,” for sulfur

dioxide. But under this approach, a stationary source could never be subject to the PSD program solely because of its greenhouse gas emissions. After all, Industry Petitioners observe, EPA declined to make greenhouse gases a NAAQS criteria pollutant. Instead, EPA regulated greenhouse gases only under Title II of the Act, dealing with motor vehicle emissions. Because “no major source of [greenhouse gases] can be located in an area attaining the nonexistent [air quality standard] for [greenhouse gases],” *id.* at 24, Industry Petitioners point out that their reading of the statute would bring no new stationary sources under the PSD program’s ambit—alleviating any “absurd results” caused by excessive permitting requirements, *id.* at 25.

Industry Petitioners emphasize that, unlike their first proposed alternative, nothing in this approach would “wholly exempt [greenhouse gases] from PSD.” Coalition for Responsible Reg. Timing & Tailoring Reply Br. 20. Although a pollutant-specific situs requirement would limit the *number* of sources subject to the PSD program, nothing in this proposed reading of the statute would alter the substantive requirements for PSD permits, including the requirement that all regulated sources install BACT “for each pollutant subject to regulation under [the CAA].” 42 U.S.C. § 7475(a)(4). So, for example, under this interpretation, a hypothetical stationary source emitting more than 100/250 tpy of sulfur dioxide and located in an area designated as “in attainment” for sulfur dioxide, must still install BACT for “each pollutant subject to regulation” under the Act, including greenhouse gases. Their key point, though, is that sources emitting only major amounts of greenhouse gases—but not major amounts of a NAAQS criteria pollutant—would escape PSD permitting requirements.

Industry Petitioners’ argument in support of this interpretation proceeds in several steps. First, they argue that the

term “any air pollutant,” though “capacious and flexible by itself,” “is a chameleon term” when placed in certain contexts. Am. Chemistry Council Br. 38. Indeed, Industry Petitioners note that EPA has already narrowed the literal meaning of the term “any air pollutant” here. After all, and as discussed *supra*, although the statutory term “air pollutant” includes “any physical [or] chemical . . . substance or matter,” 42 U.S.C. § 7602(g), EPA has long maintained that the term “any air pollutant” in the definition of “major emitting facility” encompasses only air pollutants regulated under the Act. Moreover, Industry Petitioners point out that when interpreting CAA Part C, Subpart 2, entitled “Visibility Protection,” EPA determined that the term “any pollutant” in the definition of “major stationary source” meant “any visibility-impairing pollutant.” *See* Coalition for Responsible Reg. Timing & Tailoring Br. 34 (emphasis added). The statute’s definition of “major stationary source” in the visibility-protection subpart is quite similar to the definition of “major emitting facility” in the PSD subpart: for the purposes of the visibility program, a “major stationary source” is defined as a “stationary source[] with the potential to emit 250 tons or more of any pollutant.” 42 U.S.C. § 7491(g)(7); *compare* 42 U.S.C. § 7479(1) (“major emitting facility” for the purposes of the PSD program is a source which “emit[s], or [has] the potential to emit,” either 100 or 250 tons per year “of any air pollutant”). These narrowed interpretations, Industry Petitioners argue, prove that the seemingly capacious term “any air pollutant” is, notwithstanding that the Supreme Court called this term “expansive” and “sweeping,” *Massachusetts v. EPA*, 549 U.S. at 529 nn.25–26, capable of a far more circumscribed meaning.

According to Industry Petitioners, EPA should have adopted that more circumscribed meaning by interpreting “any air pollutant” as establishing a pollutant-specific situs requirement. As Industry Petitioners point out, the PSD program requires

permits for “major emitting facilit[ies] . . . in any area to which this part applies,” 42 U.S.C. § 7479(1), and defines “major emitting facilities” as stationary sources emitting 100/250 tpy of “any air pollutant.” *Id.* § 7475(a). In this context, Industry Petitioners contend, the phrases “any air pollutant” and “in any area to which this part applies” must be read in concert. And, Industry Petitioners argue, these phrases “*together* mean” that a source is subject to PSD permitting requirements only if it emits major amounts of “any [NAAQS] air pollutant whose NAAQS an area is attaining.” Am. Chemistry Council Br. 33.

In support of this supposedly holistic interpretation of the statute, Industry Petitioners cite CAA § 163(b), a different section of the PSD provision in which the phrase “any air pollutant” and “any area to which this part applies” are used in conjunction with one another. Unlike § 165(a), which sets permitting requirements for sources covered by the PSD program, § 163 provides guidelines for *areas* designated as “in attainment” under the program. Specifically, § 163(b) limits the “maximum allowable increase in concentrations of” airborne NAAQS pollutants that may occur in an attainment area before that area’s “attainment” status is jeopardized. *See* 42 U.S.C. § 7473(b)(1). Subsections (1) through (3) of § 163(b)—not directly relevant here—set limits on the maximum allowable increases for two specific NAAQS pollutants, sulfur dioxide and particulate matter. Subsection (4) is a catchall provision, which limits the maximum allowable increases for all other NAAQS pollutants. It is in subsection (4) that Industry Petitioners find what they believe is their payoff: the terms “any air pollutant” and “any area to which this part applies” in conjunction with one another. Section 163(b)(4) provides:

The maximum allowable concentration of *any air pollutant in any area to which this part applies* shall not exceed a concentration for such pollutant for each period of exposure

equal to—

(A) the concentration permitted under the national secondary ambient air quality standard, or

(B) the concentration permitted under the national primary ambient air quality standard,

whichever concentration is lowest for such pollutant for such period of exposure.

42 U.S.C. § 7473(b)(4) (emphasis added). As Industry Petitioners correctly point out, in this context the phrase “any air pollutant” must mean “any NAAQS pollutant,” and “in any area to which this part applies” must mean “any area that is in attainment for that NAAQS pollutant.” After all, the statute states that the “maximum allowable concentration of any air pollutant . . . shall not exceed” either the primary or secondary national ambient air quality standards. But, as Industry Petitioners observe, national ambient air standards exist only for NAAQS pollutants, so even if “any air pollutant” in CAA § 163(b)(4) was read to include non-NAAQS pollutants, the phrase, in context, would have no practical effect for those pollutants. Moreover, “any area to which this part applies” must mean “any area that is in attainment for that NAAQS pollutant,” because if an area was in nonattainment for a particular pollutant, Part D—rather than the PSD program—would govern emissions limits for that specific pollutant. *See id.* § 7501(2) (“[t]he term ‘nonattainment area’ means, for any air pollutant, an area which is designated ‘nonattainment’ with respect to that pollutant”); § 7502(c) (setting out required “Nonattainment plan provisions”). Finally, Industry Petitioners correctly note that a pollutant-specific reading of the phrase “air pollutant” must also apply to CAA § 165(a)(3)(A), which prohibits PSD permittees from “caus[ing], or contribut[ing] to, air pollution in excess of any . . . maximum allowable concentration for *any air pollutant in any area to which this part applies* more than one time per year.” *Id.* § 7475(a)(3)(A) (emphasis added). This clause, as

Industry Petitioners point out, piggybacks off the NAAQS pollutant-specific definition of “maximum allowable concentration” in § 163(b)(4), prophylactically restricting PSD permittees from endangering an area’s attainment status. *See* Am. Chemistry Council Br. 32 (describing the interplay between the two provisions as “Section 163(b)(4) (and Section 165(a)(3)(A), which implements it) . . .”).

Based on all of this, Industry Petitioners conclude that because the phrase “any air pollutant in any area to which this part applies” in § 163(b)(4) means “any NAAQS pollutant in any area in attainment for that NAAQS pollutant,” an identical reading must apply to the definition of “major emitting facility.” As a result, a stationary source may be subject to the PSD program only if it emits 100/250 tpy of any NAAQS pollutant and is located in an area designated as in attainment for that NAAQS pollutant. We are unpersuaded.

Although we agree that the term “any air pollutant” is, in some contexts, capable of narrower interpretations, we see nothing in the definition of “major emitting facility” that would allow EPA to adopt a NAAQS pollutant-specific reading of that phrase. The contrast with the visibility program is instructive. There, EPA determined that “any pollutant” in the definition of “major stationary source” meant “any visibility-impairing pollutant.” *See* 40 C.F.R. pt. 51, App. Y, § II.A. But as EPA notes, the entire visibility program, codified in CAA Part C, Subpart 2, deals with visibility-impairing pollutants, as reflected in that subpart’s title: “Visibility Protection.” *See* 42 U.S.C. prec. § 7491. From this, “it naturally follows that EPA’s regulations under that section should address ‘visibility-impairing pollutants.’ ” EPA Timing & Tailoring Br. 99 n.19. No similar guidance can be garnered from Part C, Subpart 1, which contains the phrase “any air pollutant” at issue here. Dealing with far more than NAAQS pollutants, Part C, Subpart

1 requires, for example, covered sources to install BACT for “each pollutant subject to regulation under [the CAA].” 42 U.S.C. § 7475(a)(4). Indeed, Subpart 1 is simply—and expansively—entitled “Clean Air.” *Id.* prec. § 7470. Moreover, Congress designed the PSD program broadly to protect against “adverse effect[s]” on “public health and welfare,” *Id.* § 7470(1), including effects on global problems like weather and climate. *Id.* § 7602(h).

Furthermore, the phrases “any air pollutant” and “in any area to which this part applies” are used differently in Section 163(b)(4) and in the PSD program’s definition of “major emitting facility.” The presumption that “[a] term appearing in several places in a statutory text is generally read the same way each time it appears,” *Ratzlaf v. United States*, 510 U.S. 135, 143 (1994), “readily yields whenever there is such variation in the connection in which the words are used as reasonably to warrant the conclusion that they were employed in different parts of the act with different intent,” *Atl. Cleans & Dryers, Inc. v. United States*, 286 U.S. 427, 433 (1933). Here, the focus and structure of § 163(b)(4) is entirely distinct from the PSD permitting trigger. Section 163(b)(4) provides that “[t]he maximum allowable concentration of any air pollutant in any area to which this part applies shall not exceed a [particular] concentration.” 42 U.S.C. § 7473(b)(4). By contrast, § 165(a) provides that “[n]o major emitting facility . . . may be constructed in any area to which this part applies” unless certain conditions are met, *id.* § 7475(a), and § 169(1) defines “major emitting facility” as any stationary source that emits or has the potential to emit threshold amounts of “any air pollutant,” *id.* § 7479(1). The differences between these two provisions are manifest. In § 163(b)(4), the phrases “any air pollutant” and “in any area to which this part applies” appear next to one another, and it is the concentration of the pollutant in an area that matters. In the PSD permitting trigger, the phrases appear in

different subsections and it is the location of the facility that matters. Section 163(b)(4) thus does nothing to undermine the unambiguous meaning of “any air pollutant” in the definition of “major emitting facility.”

Industry Petitioners’ pollutant-specific reading of “any air pollutant” is further undermined by contrasting Part C of the Act (the PSD program) with Part D (which regulates areas in nonattainment). Unlike Part C, Part D is expressly pollutant-specific, providing that “[t]he term ‘nonattainment area’ means, for any air pollutant, an area which is designated ‘nonattainment’ *with respect to that pollutant.*” *Id.* § 7501(2) (emphasis added). Congress thus clearly knew how to promulgate a narrow, pollutant-specific definition of “any air pollutant.” That it did so in Part D but not in Part C strongly suggests that the phrase “any air pollutant” in Part C was meant to be construed broadly. *Keene Corp. v. United States*, 508 U.S. 200, 208 (1993) (“[W]here Congress includes particular language in one section of a statute but omits it in another . . . , it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion.”) (quoting *Russello v. United States*, 464 U.S. 16, 23 (1983)).

A final point: Industry Petitioners observe that every area in the country has always been in attainment for at least one NAAQS criteria pollutant. *See Tailoring Rule*, 75 Fed. Reg. at 31,561. Thus, pursuant to EPA’s pollutant-indifferent reading of § 165(a), under which a major emitting facility must abide by PSD requirements so long as it is located in an attainment area for *any* NAAQS pollutant, every facility in the United States has always been in an “area to which this part applies.” Consequently, Industry Petitioners argue, “[i]f EPA’s interpretation were right, Congress simply could have left out the phrase ‘in any area to which this part applies’” in the PSD permitting trigger. Am. Chemistry Council Br. 36. But

“Congress does not enact ‘stillborn’ laws,” *id.* (quoting *Sosa v. Alvarez-Machain*, 542 U.S. 692, 714 (2004)), and interpretations that render statutory language superfluous are disfavored. Am. Chemistry Council Reply Br. 19. The fact that the PSD program has applied nationwide since its inception, Industry Petitioners conclude, thus militates against EPA’s pollutant-indifferent approach.

This argument fails at its premise, for Industry Petitioners confuse a lack of practical import with a lack of meaning. To say that the phrase “in any area to which this part applies” is currently without practical import is quite different than showing that the phrase means nothing. Indeed, under different circumstances, the phrase would have a significant effect. If, hypothetically, one area of the country was designated as “nonattainment” for every NAAQS pollutant, the phrase “in any area to which this part applies” would limit PSD coverage, as covered sources in that area would be subject only to Part D requirements. In fact, Environmental Intervenors point out that when Congress drafted the PSD permitting triggers “the prospect that some areas could be in nonattainment for all NAAQS was not far-fetched.” Sierra Club Historic Reg. Br. 23. “In the years leading up to 1977, EPA air quality data identified a number of areas that failed to meet all five of the then-current [air quality standards] for which EPA had gathered data.” *Id.* Accordingly, “in any area to which this part applies” is a meaningful phrase under EPA’s pollutant-indifferent interpretation of the PSD permitting triggers: it provides that sources need not obtain PSD permits if they are located in areas designated “nonattainment” for all six NAAQS pollutants.

In short, although we agree with Industry Petitioners that phrases like “any air pollutant” are, in certain contexts, capable of a more limited meaning, they have failed to identify any reasons that the phrase should be read narrowly here. Nor do we

know of one. We thus conclude that EPA's 34-year-old interpretation of the PSD permitting triggers is statutorily compelled: a source must obtain a permit if it emits major amounts of any regulated pollutant and is located in an area that is in attainment or unclassifiable for any NAAQS pollutant.

3.

We can quickly dispose of Industry Petitioners' third alternative interpretation, namely, that in order to regulate new pollutants through the PSD program, EPA was required to go through the process prescribed by CAA § 166. Section 166 provides specific steps that EPA must take when designating new "pollutants for which national ambient air quality standards" apply. 42 U.S.C. § 7476(a). Here, Industry Petitioners argue, EPA unlawfully failed to follow the steps laid out in Section 166, including a required study of the pollutant and a one-year delay before the effective date of regulations, before adding greenhouse gases "to the PSD [c]onstellation." Coalition for Responsible Reg. Timing & Tailoring Br. 41.

This argument fails on its face. By its terms, § 166 applies only to new "pollutants *for which national ambient air quality standards*" apply, 42 U.S.C. § 7476(a) (emphasis added), i.e., NAAQS criteria pollutants for which regions may be classified as in "attainment," "non-attainment," or "unclassifiable." And EPA never classified greenhouse gases as a NAAQS criteria pollutant. Instead, it simply determined that under § 165, major emitters of greenhouse gases are subject to the PSD program and all covered sources must install BACT for greenhouse gases. Contrary to Industry Petitioners' arguments, then, § 166 has no bearing on this addition of greenhouse gases into "the PSD [c]onstellation." Coalition for Responsible Reg. Timing & Tailoring Br. 41. Indeed, we rejected a nearly identical argument in *Alabama Power*, holding that there is "no implied or apparent

conflict between sections 165 and 166; nor . . . must the requirements of section 165 be ‘subsumed’ with those of section 166.” *Alabama Power*, 636 F.2d at 406. Stating what should have been obvious from the text of the statute, we concluded: “[S]ection 166 has a different focus from section 165.” *Id.*

Thus, because EPA has never classified greenhouse gases as a NAAQS criteria pollutant, the § 166 requirements are entirely inapplicable here. This section of the CAA has absolutely no bearing on our conclusion that EPA’s interpretation of the PSD permitting trigger is compelled by the statute itself.

VI.

Having concluded that the CAA requires PSD and Title V permits for major emitters of greenhouse gases, we turn to Petitioners’ challenges to the Tailoring and Timing Rules themselves.

As an initial matter, we note that Petitioners fail to make any real arguments against the Timing Rule. To be sure, at one point State Petitioners contend that the Timing Rule constitutes an attempt “to extend the PSD and Title V permitting requirements to greenhouse-gas emissions,” State Pet’rs’ Timing & Tailoring Br. 67. This is plainly incorrect. As discussed in the previous section, greenhouse gases are regulated under PSD and Title V pursuant to automatic operation of the CAA. All the Timing Rule did was delay the applicability of these programs, providing that major emitters of greenhouse gases would be subject to PSD and Title V permitting requirements only once the Tailpipe Rule actually took effect on January 2, 2011. *See* Timing Rule, 75 Fed. Reg. at 17,017-19. Despite this, Petitioners confusingly urge us to vacate “[t]he Tailoring *and* Timing Rules,” *e.g.* State Pet’rs’ Timing & Tailoring Br. 24

(emphasis added), although it is unclear what practical effect vacature of the Timing Rule would have. Nonetheless, given this phrasing of their argument, and given our conclusion that Petitioners lack Article III standing to challenge *both* rules, we shall, where appropriate, discuss the Timing Rule in conjunction with the Tailoring Rule.

In the Tailoring Rule, EPA announced that it was “relieving overwhelming permitting burdens that would, in the absence of this rule, fall on permitting authorities and sources.” Tailoring Rule, 75 Fed. Reg. at 31,516. Although the PSD statute requires permits for sources with the potential to emit 100/250 tpy of “any air pollutant,” 42 U.S.C. § 7479(1), EPA noted that immediate application of that threshold to greenhouse gas-emitting sources would cause permit applications to jump from 280 per year to over 81,000 per year. Tailoring Rule, 75 Fed. Reg. at 31,554. Many of these applications would come from commercial and residential sources, which would “each incur, on average, almost \$60,000 in PSD permitting expenses.” *Id.* at 31,556. Similarly, if the Title V 100 tpy threshold applied immediately to greenhouse gases, sources needing operating permits would jump from 14,700 per year to 6.1 million per year. *Id.* at 31,562. “The great majority of these sources would be small commercial and residential sources” which “would incur, on average, expenses of \$23,175.” *Id.* And were permitting authorities required to hire the 230,000 full-time employees necessary to address these permit applications, “authorities would face over \$21 billion in additional permitting costs each year due to [greenhouse gases], compared to the current program cost of \$62 million each year.” *Id.* at 31,563.

Thus, instead of immediately requiring permits for all sources exceeding the 100/250 tpy emissions threshold, EPA decided to “phas[e] in the applicability of these programs to [greenhouse gas] sources, starting with the largest [greenhouse

gas] emitters.” *Id.* at 31,514. The Tailoring Rule established the first two steps in this phased-in process. During Step One, only sources that were “subject to PSD requirements for their conventional pollutants anyway” (i.e., those sources that exceeded the statutory emissions threshold for non-greenhouse gas pollutants) were required to install BACT for their greenhouse gas emissions. *Id.* at 31,567. Step Two, which took effect on July 1, 2011, also requires PSD permits for sources with the potential to emit over 100,000 tpy CO₂e after a proposed construction project, or 75,000 tpy CO₂e after a proposed modification project. *Id.* at 31,523. Step Two further requires Title V permits for sources which have the potential to emit over 100,000 tpy CO₂e. *Id.* at 31,516. EPA has since proposed—but has yet to finalize—a “Step Three,” which would maintain the current thresholds while the agency evaluates the possibility of regulating smaller sources. *See* EPA’s 28(j) Letter 1-2, February 27, 2012.

In the Tailoring Rule, EPA justified its phased-in approach on three interrelated grounds, each of which rests on a distinct doctrine of administrative law. First, EPA concluded “the costs to sources and administrative burdens . . . that would result from [immediate] application of the PSD and title V programs . . . at the statutory levels . . . should be considered ‘absurd results,’” which Congress never intended. *Id.* at 31,517; *see Am. Water Works Ass’n v. EPA*, 40 F.3d 1266, 1271 (D.C. Cir. 1994) (“[W]here a literal reading of a statutory term would lead to absurd results, the term simply has no meaning . . . and is the proper subject of construction by EPA and the courts.”). Thus, under the “absurd results” doctrine, EPA concluded that the PSD and Title V programs “should not [immediately] be read to apply to all [greenhouse gas] sources at or above the 100/250 tpy threshold.” Tailoring Rule, 75 Fed. Reg. at 31,554. Second, emphasizing that immediate regulation at the 100/250 tpy threshold would cause tremendous administrative burden, EPA

justified its deviation from this threshold on the basis of the “administrative necessity” doctrine. *Id.* at 31,576; *see Envtl. Def. Fund, Inc. v. EPA*, 636 F.2d 1267, 1283 (D.C. Cir. 1980) (“[A]n agency may depart from the requirements of a regulatory statute . . . to cope with the administrative impossibility of applying the commands of the substantive statute.”). Finally, asserting that there exists a judicial doctrine that allows agencies to implement regulatory programs in a piecemeal fashion, EPA stated that the Tailoring Rule was justified pursuant to this “one-step-at-a-time” doctrine. Tailoring Rule, 75 Fed. Reg. at 31,578; *see Massachusetts v. EPA*, 549 U.S. at 524 (“Agencies, like legislatures, do not generally resolve massive problems in one fell regulatory swoop.”).

Petitioners—particularly State Petitioners—argue that none of these doctrines permit EPA to “depart unilaterally from the [CAA’s] permitting thresholds and replace them with numbers of its own choosing.” State Pet’rs’ Timing & Tailoring Br. 29. Admitting the “lamentable policy consequences of adhering to the unambiguous numerical thresholds in the Clean Air Act,” State Petitioners rather colorfully argue that EPA’s attempts to alleviate those burdens “establish only that EPA is acting as a benevolent dictator rather than a tyrant.” *Id.* at 26. And because EPA exceeded the boundaries of its lawful authority, Petitioners urge us to vacate the Tailoring Rule.

Before we may address the merits of these claims, however, we must determine whether we have jurisdiction. “No principle,” the Supreme Court has repeatedly explained, “is more fundamental to the judiciary’s proper role in our system of government than the constitutional limitation of federal-court jurisdiction to actual cases or controversies.” *Raines v. Byrd*, 521 U.S. 811, 818 (1997) (internal quotation marks omitted). The doctrine of standing “is an essential and unchanging part of the case-or-controversy requirement.” *Lujan v. Defenders of*

Wildlife, 504 U.S. 555, 560 (1992). To establish standing, a petitioner must have suffered an “injury in fact” that is 1) “concrete and particularized . . . [and] actual or imminent, not conjectural or hypothetical,” 2) was caused by the conduct complained of, and 3) is “likely, as opposed to merely speculative [to] be redressed by a favorable decision.” *Id.* at 560–61 (internal quotation marks and citations omitted).

Petitioners fall far short of these “irreducible constitutional . . . elements” of standing, *id.* at 560. Simply put, Petitioners have failed to establish that the Timing and Tailoring Rules caused them “injury in fact,” much less injury that could be redressed by the Rules’ vacatur. Industry Petitioners contend that they are injured because they are subject to regulation of greenhouse gases, Coalition for Responsible Reg. Timing & Tailoring Br. 14. State Petitioners claim injury because they own some regulated sources and because they now carry a heavier administrative burden. State Pet’rs’ Timing & Tailoring Br. 22–23. But as discussed above, *see supra* Part V, the CAA mandates PSD and Title V coverage for major emitters of greenhouse gases. Thus, Industry Petitioners were regulated and State Petitioners required to issue permits not because of anything EPA did in the Timing and Tailoring Rules, but by automatic operation of the statute. Given this, neither the Timing nor Tailoring Rules caused the injury Petitioners allege: having to comply with PSD and Title V for greenhouse gases.

Indeed, the Timing and Tailoring Rules actually mitigate Petitioners’ purported injuries. Without the Timing Rule, Petitioners may well have been subject to PSD and Title V for greenhouse gases before January 2, 2011. Without the Tailoring Rule, an even greater number of industry and state-owned sources would be subject to PSD and Title V, and state authorities would be overwhelmed with millions of additional permit applications. Thus, Petitioners have failed to “show that,

absent the government's allegedly unlawful actions, there is a substantial probability that they would not be injured and that, if the court affords the relief requested, the injury will be removed." *Chamber of Commerce v. EPA*, 642 F.3d 192, 201 (D.C. Cir. 2011) (quotations and alterations omitted). Far from it. If anything, vacature of the Tailoring Rule would significantly exacerbate Petitioners' injuries.

Attempting to remedy this obvious jurisdictional defect, State Petitioners present two alternative theories, neither of which comes close to meeting the "irreducible constitutional . . . elements" of standing. *Lujan*, 504 U.S. at 560. First, State Petitioners counterintuitively suggest that they actually want EPA to immediately "appl[y] the 100/250 tpy permitting thresholds to greenhouse-gas emissions." State Pet'rs' Timing & Tailoring Reply Br. 15. Admitting that vacature of the Tailoring Rule would result in astronomical costs and unleash chaos on permitting authorities, State Petitioners predict that Congress will be forced to enact "corrective legislation" to relieve the overwhelming permitting burdens on permitting authorities and sources, thus mitigating their purported injuries. *Id.*

This theory fails. To establish standing, plaintiffs must demonstrate that it is "likely, as opposed to merely speculative, that the injury will be redressed by a favorable decision," *Lujan*, 504 U.S. at 561 (internal quotation marks omitted), but here, State Petitioners simply hypothesize that Congress will enact "corrective legislation." State Pet'rs' Timing & Tailoring Reply Br. 15. We have serious doubts as to whether, for standing purposes, it is ever "likely" that Congress will enact legislation at all. After all, a proposed bill must make it through committees in both the House of Representatives and the Senate and garner a majority of votes in both chambers—overcoming, perhaps, a filibuster in the Senate. If passed, the bill must then be signed

into law by the President, or go back to Congress so that it may attempt to override his veto. As a generation of schoolchildren knows, “by that time, it’s very unlikely that [a bill will] become a law. It’s not easy to become a law.” Schoolhouse Rock, *I’m Just a Bill*, at 2:41, available at <http://video.google.com/videoplay?docid=7266360872513258185#> (last visited June 1, 2012).

And even if the astronomical costs associated with a 100/250 tpy permitting threshold make *some* Congressional action likely, State Petitioners are still unable to show that it is “likely, as opposed to merely speculative,” *Lujan*, 504 U.S. at 561, that Congress will redress their injury. State Petitioners apparently assume that if the 100/250 tpy permitting threshold was immediately applied to greenhouse gases, Congress would exempt those pollutants from the PSD and Title V programs entirely. But this is just one of many forms “corrective legislation” could take. For example, were we to vacate the Tailoring Rule, Congress could decide to readopt its key provisions in the PSD and Title V statutes. Or it could set PSD and Title V permitting thresholds at 25,000 tpy for greenhouse gases—higher than the 100/250 tpy threshold, but lower (and thus more costly to Petitioners) than the thresholds promulgated in the Tailoring Rule. Or it could do something else entirely. All of this is guesswork, which is precisely the point: State Petitioners’ faith that Congress will alleviate their injury is inherently speculative.

State Petitioners’ second alternative theory of standing fares no better. In their reply brief, they contend that even if vacating the Timing or Tailoring Rules would indeed exacerbate their costs and administrative burdens (the purported injuries they claimed in their opening brief), “then State Petitioners can establish Article III standing under *Massachusetts* by asserting injuries caused by EPA’s failure to regulate sooner.” State

Pet'rs' Timing & Tailoring Reply Br. 5. Essentially, State Petitioners' reply brief contends that, contrary to the position taken in the opening brief, they want more regulation, not less, and that they wanted regulation sooner rather than later. And because the Commonwealth of Massachusetts had standing to seek regulation of greenhouse gases in *Massachusetts v. EPA*, State Petitioners argue that they now have standing to seek more regulation of greenhouse gases as well.

This argument is completely without merit. As an initial matter, we are aware of no authority which permits a party to assert an entirely new injury (and thus, an entirely new theory of standing) in its reply brief. Quite to the contrary, we have held that, where standing is not self-evident, “[i]n its *opening* brief, the petitioner should . . . include . . . a concise recitation of the basis upon which it claims standing.” *Sierra Club v. EPA*, 292 F.3d 895, 901 (D.C. Cir. 2002) (emphasis added); *see also* D.C. Cir. R. 28(a)(7) (“[i]n cases involving direct review in this court of administrative actions, the brief of the appellant or petitioner must set forth the basis for the claim of standing.”); *American Library Ass’n v. FCC*, 401 F.3d 489, 493–94 (D.C. Cir. 2005) (discussing limitations on this principle). After all, “it is often the case . . . that some of the relevant facts are known only to the petitioner, to the exclusion of both the respondent and the court.” *Sierra Club*, 292 F.3d at 901. If “the petitioner does not submit evidence of those facts with its opening brief,” the respondent is “left to flail at the unknown in an attempt to prove the negative.” *Id.* This principle is particularly important here, for State Petitioners’ asserted fear of global warming stands in stark contrast to the position they took throughout this litigation. In an earlier brief, for example, they characterized the Endangerment Finding as “a subjective conviction” State Pet’rs’ Endangerment Br. 19, “supported by highly uncertain climate forecasts,” *id.* at 18, and “offer[ing] no criteria for determining a harmful, as opposed to a safe, climate,” *id.* at 17. Given this,

EPA could not possibly have anticipated that State Petitioners, abruptly donning what they themselves call “an environmentalist hat,” State Pet’rs’ Timing & Tailoring Reply Br. 4, would assert that global warming causes them concrete and particularized harm.

In any event, State Petitioners fail to cite any record evidence to suggest that they are adversely affected by global climate change. This is in stark contrast to the evidence put forward in *Massachusetts v. EPA*, where the Commonwealth submitted unchallenged affidavits and declarations showing that 1) rising sea tides due to global warming had “already begun to swallow Massachusetts’ coastal land,” and 2) “[t]he severity of that injury will only increase over the course of the next century.” *Massachusetts v. EPA*, 549 U.S. at 522–23. These specific, factual submissions were key to the standing analysis in *Massachusetts v. EPA*: the Court held that “petitioners’ submissions as they pertain to *Massachusetts* have satisfied the most demanding standards of the adversarial process.” *Id.* at 521 (emphasis added). It is true, as State Petitioners emphasize, that the Supreme Court held that states are “entitled to special solicitude in our standing analysis.” *Id.* at 522. But nothing in the Court’s opinion remotely suggests that states are somehow exempt from the burden of establishing a concrete and particularized injury in fact. State Petitioners, like Industry Petitioners, failed to do so here. We shall thus dismiss all challenges to the Timing and Tailoring Rules for lack of jurisdiction.

VII.

Following promulgation of the Timing and Tailoring Rules, EPA issued a series of rules ordering states to revise their PSD State Implementation Plans (SIPs) to accommodate greenhouse gas regulation. *See Action to Ensure Authority to Issue Permits*

Under the Prevention of Significant Deterioration Program to Sources of Greenhouse Gas Emissions: Finding of Substantial Inadequacy and SIP Call, 75 Fed. Reg. 53,892 (Sept. 2, 2010), 75 Fed. Reg. 77,698 (Dec. 13, 2010); *Action to Ensure Authority to Issue Permits Under the Prevention of Significant Deterioration Program to Sources of Greenhouse Gas Emissions: Finding of Failure to Submit State Implementation Plan Revisions Required for Greenhouse Gases*, 75 Fed. Reg. 81,874 (Dec. 29, 2010). Industry Petitioners present several challenges to these SIP-related rules. But our review in this case is limited to four EPA decisions: the Endangerment Finding, the Tailpipe Rule, and the Timing and Tailoring Rules. We thus lack jurisdiction over the SIP-related rules. Moreover, challenges to these rules are currently pending in at least two separate cases before this court. See *Utility Air Regulatory Group v. EPA*, No. 11-1037 (consolidating various challenges); *Texas v. EPA*, No. 10-1425 (challenge brought by Texas). We decline Industry Petitioners' invitation to rule on the merits of cases which are properly before different panels.

VIII.

For the foregoing reasons, we dismiss all petitions for review of the Timing and Tailoring Rules, and deny the remainder of the petitions.

So ordered.