United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued January 25, 2005 Decided June 24, 2005

No. 02-1387

STATE OF NEW YORK, ET AL.,
PETITIONERS

v.

U.S. ENVIRONMENTAL PROTECTION AGENCY,
RESPONDENT

NSR MANUFACTURERS ROUNDTABLE, ET AL.,
INTERVENORS

Consolidated with Nos.
03-1016, 03-1033, 03-1036, 03-1040, 03-1041, 03-1044, 03-1045, 03-1046, 03-1047, 03-1048, 03-1049, 03-1050, 03-1051, 03-1052, 03-1054, 03-1055, 03-1056, 03-1057, 03-1104, 03-1130, 03-1131, 03-1135, 03-1175, 03-1176, 03-1177, 03-1178, 03-1437, 03-1448, 03-1457

On Petitions for Review of Final Action of the
U.S. Environmental Protection Agency

F. William Brownell argued the cause for Industry Petitioners. With him on the briefs were *Henry V. Nickel*, *Makram B. Jaber*, *David S. Harlow*, *William H. Lewis, Jr.*, *Leslie Sue Ritts*, and *Lorane F. Hebert*. *David F. Zoll* entered an appearance.

Michael J. Myers and *J. Jared Snyder*, Assistant Attorneys General, Attorney General's Office of the State of New York, argued the cause for Government Petitioners. With them on the briefs were *Eliot Spitzer*, Attorney General, *Peter Lehner*, Assistant Attorney General, *Bill Lockyer*, Attorney General, Attorney General's Office of the State of California, *Matthew J. Goldman*, Deputy Attorney General, *Richard Blumenthal*, Attorney General, Attorney General's Office of the State of Connecticut, *Kimberly Massicotte* and *Matthew Levine*, Assistant Attorneys General, *M. Jane Brady*, Attorney General, Attorney General's Office of the State of Delaware, *Valerie S. Csizmadia*, Deputy Attorney General, *Lisa Madigan*, Attorney General, Attorney General's Office of the State of Illinois, *Thomas Davis*, Assistant Attorney General, *G. Steven Rowe*, Attorney General, Attorney General's Office of the State of Maine, *Gerald D. Reid*, Assistant Attorney General, *J. Joseph Curran, Jr.*, Attorney General, Attorney General's Office of the State of Maryland, *Kathy M. Kinsey*, Assistant Attorney General, *Thomas F. Reilly*, Attorney General, Attorney General's Office of the Commonwealth of Massachusetts, *James R. Milkey* and *William L. Pardee*, Assistant Attorneys General, *Kelly A. Ayotte*, Attorney General, Attorney General's Office of the State of New Hampshire, *Maureen D. Smith*, Senior Assistant Attorney General, *Peter C. Harvey*, Attorney General, Attorney General's Office of the State of New Jersey, *Kevin Auerbacher*, *Jean Reilly*, and *Ruth Carter*, Deputy Attorneys General, *Robert A. Reiley*, Assistant Counsel, Attorney General's Office of the Commonwealth of Pennsylvania, *Patrick C. Lynch*, Attorney General, Attorney General's Office of the

State of Rhode Island, *Tricia K. Jedele*, Special Assistant Attorney General, *William H. Sorrell*, Attorney General, Attorney General's Office of the State of Vermont, *Erick Titrud* and *Kevin O. Leske*, Assistant Attorneys General, *Peggy A. Lautenschlager*, Attorney General, Attorney General's Office of the State of Wisconsin, *Thomas L. Dosch*, Assistant Attorney General, *Robert J. Spagnoletti*, Attorney General, Attorney General's Office of the District of Columbia, *Edward E. Schwab*, Deputy Attorney General, *Donna M. Murasky*, Senior Litigation Counsel, *Stephen Shane Stark*, *William M. Dillon*, *Kathrine Currie Pittard*, *Robert N. Kwong*, *David Schott*, *Steven M. Basha*, *Leslyn Syren*, *Phillip M. Jay*, *Barbara Baird*, *Daniel C. Esty*, *Christopher P. McCormack*, *Christopher G. King*, and *Andrew Schwartz*, Counsel. *Kevin P. Maloney*, *John V. Dorsey*, *Sheldon Whitehouse*, *Lisa S. Gelb*, and *Michael H. Heneghan*, Counsel, entered appearances.

Howard I. Fox argued the cause for Environmental Petitioners. With him on the briefs were *Keri N. Powell*, *Ann B. Weeks*, *Jonathan F. Lewis*, *James R. May*, *Kenneth T. Kristl*, *John D. Walke*, and *David G. McIntosh*. *David G. Hawkins* and *James M. Stuhltrager* entered appearances.

John F. Shepherd argued the cause for petitioner Newmont Mining Corporation. With him on the briefs were *Denise W. Kennedy* and *Robert T. Connery*.

Hope M. Babcock and *William D. Evans*, Senior Assistant County Attorney, were on the brief of *amici curiae* American Thoracic Society, et al., in support of Environmental Petitioners.

Lois Godfrey Wye, *Norman L. Rave, Jr.*, and *Angeline Purdy*, Attorneys, U.S. Department of Justice, argued the cause for respondent. With them on the brief were *John C. Cruden*, Deputy Assistant Attorney General, and *Monica Derbes Gibson*,

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David Driesen and *Christopher H. Schroeder* were on the brief of *amici curiae* Clean Air Trust and Senators Hillary Rodham Clinton, et al.

Leslie Sue Ritts, *Lorane F. Hebert*, *William H. Lewis, Jr.*, *Michael W. Steinberg*, *Henry V. Nickel*, *F. William Brownell*, *Makram B. Jaber*, *David S. Harlow*, *Russell S. Frye*, *John L. Wittenborn*, *Martha Elizabeth Cox*, and *Robert A. Messina* were on the brief of Industry Intervenors. *Michael A. McCord*, *Michael B. Barr*, *Charles H. Knauss*, and *Douglas S. Burdin* entered appearances.

Keri N. Powell argued the cause for Environmental Intervenors. With her on the brief were *Howard I. Fox*, *John D. Walke*, *David G. McIntosh*, *Ann B. Weeks*, and *Jonathan F. Lewis*.

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General, *Lawrence E. Long*, Attorney General, Attorney General's Office of the State of South Dakota, *Roxanne Giedd*, Deputy Attorney General, *Mark L. Shurtleff*, Attorney General, Attorney General's Office of the State of Utah, and *Fred Nelson*, Assistant Attorney General, were on the brief of Group I State Intervenors in support of respondent.

Peter C. Harvey, Attorney General, Attorney General's Office of the State of New Jersey, *Kevin P. Auerbacher*, *Jean P. Reilly*, and *Ruth E. Carter*, Deputy Attorneys General, *Richard Blumenthal*, Attorney General, Attorney General's Office of the State of Connecticut, *Kimberly Massicotte* and *Matthew Levine*, Assistant Attorneys General, *Bill Lockyer*, Attorney General, Attorney General's Office of the State of California, *Matthew J. Goldman*, Deputy Attorney General, *M. Jane Brady*, Attorney General, Attorney General's Office of the State of Delaware, *Valerie S. Csizmadia*, Deputy Attorney General, *Lisa Madigan*, Attorney General, Attorney General's Office of the State of Illinois, *Thomas Davis*, Chief, *J. Joseph Curran, Jr.*, Attorney General, Attorney General's Office of the State of Maryland, *Kathy M. Kinsey*, Assistant Attorney General, *G. Steven Rowe*, Attorney General, Attorney General's Office of the State of Maine, *Gerald D. Reid*, Assistant Attorney General, *Thomas F. Reilly*, Attorney General, Attorney General's Office of the Commonwealth of Massachusetts, *James R. Milkey*, *William L. Pardee*, and *Frederick D. Augenstern*, Assistant Attorneys General, *Robert J. Spagnoletti*, Attorney General, Attorney General's Office for the District of Columbia, *Edward E. Schwab*, Deputy Attorney General, *Donna M. Murasky*, Senior Litigation Counsel, *Peggy A. Lautenschlager*, Attorney General, Attorney General's Office of the State of Wisconsin, *Thomas L. Dosch*, Assistant Attorney General, *William H. Sorrell*, Attorney General, Attorney General's Office of the State of Vermont, *Erick Titrud* and *Kevin O. Leske*, Assistant Attorneys General, *Eliot Spitzer*, Attorney General, Attorney General's Office of the

State of New York, *Peter Lehner*, *J. Jared Snyder*, and *Michael J. Myers*, Assistant Attorneys General, *Robert A. Reiley*, Assistant Counsel, Attorney General's Office of the Commonwealth of Pennsylvania, *Kelly A. Ayotte*, Attorney General, Attorney General's Office of the State of New Hampshire, *Maureen D. Smith*, Senior Assistant Attorney General, *Patrick C. Lynch*, Attorney General, Attorney General's Office of the State of Rhode Island, *Tricia K. Jedele*, Special Assistant Attorney General, *Stephen Shane Stark*, *William M. Dillon*, *Kathrine Currie Pittard*, *David Schott*, *Steven M. Basha*, *Leslyn Syren*, *Robert N. Kwong*, *Barbara Baird*, and *Phillip M. Jay*, were on the brief of Group II State and Local Government Intervenors in support of respondent.

Charlie Crist, Attorney General, Attorney General's Office of the State of Florida, and *Jonathan A. Glogau*, Assistant Attorney General, were on the brief of *amicus curiae* State of Florida supporting respondent.

C. Boyden Gray and *Neil J. King* were on the brief of *amicus curiae* Senator James M. Inhofe.

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Before: ROGERS and TATEL, *Circuit Judges*, and WILLIAMS, *Senior Circuit Judge*.

Opinion for the Court filed *PER CURIAM*.*

Concurring opinion filed by *Senior Circuit Judge* WILLIAMS.

PER CURIAM: In 1977, Congress amended the Clean Air Act ("CAA" or "the Act") to strengthen the safeguards that protect the nation's air quality. Among other things, these amendments directed that major stationary sources undertaking modifications must obtain preconstruction permits, as must major new sources, through a process known as "New Source Review" ("NSR"). According to a preexisting definition referenced in the 1977 amendments, a source undertakes a modification when "any physical change . . . or change in the method of operation . . . which increases the amount of any air pollutant emitted by such source" occurs. 42 U.S.C. § 7411(a)(4) (2000). The Environmental Protection Agency ("EPA") has interpreted this rather terse definition in numerous rules, including ones issued in 1980, 1992, and most recently in 2002.

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* Judge Rogers wrote Parts III, V-VII, and IX. Judge Tatel wrote Parts I and IV. Senior Judge Williams wrote Parts II and VIII.

Industry, government, and environmental petitioners now challenge this 2002 rule, which departs sharply from prior rules in several significant respects. Roughly speaking, industry petitioners argue that the 2002 rule interprets "modification" too broadly, while government and environmental petitioners argue that the rule's interpretation is too narrow. Industry petitioners have also revived previously stayed challenges to EPA's earlier rules.

Today, we reject challenges to substantial portions of the 2002 rule. Specifically, we find the following elements permissible interpretations of the CAA and not otherwise arbitrary and capricious: the use of past emissions and projected future actual emissions, rather than potential emissions, in measuring emissions increases; the use of a ten-year lookback period in selecting the two-year baseline period for measuring past actual emissions; the use of a five-year lookback period in certain circumstances; the abandonment of a provision authorizing states to use source-specific allowable emissions in measuring baseline emissions; the exclusion of increases due to unrelated demand growth from the measurement of projected future actual emissions; and the Plantwide Applicability Limitations ("PAL") program. We also find meritless certain procedural challenges related to lack of notice.

We conclude, however, that two aspects of the 2002 rule rest on impermissible interpretations of the Act and a third is arbitrary and capricious. Specifically, EPA erred in promulgating the Clean Unit applicability test, which measures emissions increases by looking to whether "emissions limitations" have changed. Congress directed the agency to measure emissions increases in terms of changes in actual emissions. EPA also erred in exempting from NSR certain Pollution Control Projects ("PCPs") that decrease emissions of some pollutants but cause collateral increases of others. The

statute authorizes no such exception. EPA acted arbitrarily and capriciously in determining that sources making changes need not keep records of their emissions if they see no reasonable possibility that these changes constitute modifications for NSR purposes. The agency failed to provide a reasoned explanation for how, absent such records, it can ensure compliance with NSR.

Finally, industry challenges to passages in the preambles of the 2002 and 1992 rules, as well as government challenges to the implementation of the 2002 rule, are unripe for review.

I. Background

The 1977 CAA amendments define "modification" by reference to a statutory provision added in 1970. Seeking to understand what the 1977 Congress meant by modification—the central issue in this case—we thus begin with the 1970 CAA amendments and their implementing regulations.

Congress passed the 1970 amendments "to protect and enhance the quality of the Nation's air resources so as to promote the public health and welfare and the productive capacity of its population." 42 U.S.C. § 7401(b). The amendments set out a two-step process for achieving this goal: EPA first develops "National Ambient Air Quality Standards" ("NAAQS") for various pollutants, and states then create and implement plans, known as "State Implementation Plans" ("SIPs"), to ensure their air meets these standards. *See id*. §§ 7409-7410.

The amendments also required new or modified sources to conform to emissions limits, known as "New Source Performance Standards" ("NSPS"), set by EPA. *See id.* § 7411. Because "[t]he Act contemplated" that these criteria would be

"more stringent than those needed to meet . . . NAAQS," *Alabama Power Co. v. Costle*, 636 F.2d 323, 346 (D.C. Cir. 1979), the meaning of "modified sources" took on particular significance: if an existing source made a "modification," it needed to conform its change to NSPS, whereas an unmodified source only needed to meet whatever lesser requirements (if any) the SIP imposed for attaining NAAQS. Congress provided the following definition for "modification":

> any physical change in, or change in the method of operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.

42 U.S.C. § 7411(a)(4). This definition requires *both* a change—whether physical or operational—*and* a resulting increase in emissions of a pollutant.

EPA's 1975 NSPS regulation, like its earlier 1971 regulation, elaborated upon this statutory definition, doing so in provisions whose meaning the parties debate today. One part of the 1975 regulation provided that "'[m]odification' means any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility." 40 Fed. Reg. 58,416, 58,418 (Dec. 16, 1975); *see also* 36 Fed. Reg. 24,876, 24,877 (Dec. 23, 1971). Using somewhat different terms, another part of the 1975 regulation stated that "any physical or operational change to an existing facility which results in an increase in the emission rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification within the meaning . . . of the Act," with "[e]mission rate . . . expressed as kg/hr of any pollutant discharged into the atmosphere." 40 Fed. Reg. at 58,419. Yet

neither the 1975 regulation nor its preamble explained why EPA found it necessary to offer these two separate glosses on "modification."

Adding to the confusion, EPA put forth yet another definition of "modification" in a 1974 regulation implementing what became known as the regulatory "Prevention of Significant Deterioration" ("PSD") program. Seeking to prevent backsliding in regions whose air quality met NAAQS, this program required new sources and sources undertaking modifications to obtain preconstruction permits. *See Alabama Power*, 636 F.2d at 346-49 (describing the regulatory PSD program). The regulation defined "modification" in a manner that closely tracked—but didn't precisely mirror—the NSPS regulatory definition, stating that "[t]he phrases 'modification' or 'modified source' mean any physical change in, or change in the method of operation of, a stationary source which increases the emission rate of any pollutant for which a national standard has been promulgated." 39 Fed. Reg. 42,510, 42,514 (Dec. 5, 1974). The regulation's preamble further provided that the term "modified source" was meant "to be consistent with the definition used in [NSPS]." *Id.* at 42,513.

Both the NSPS and PSD regulations listed certain exceptions to what constitutes a "modification," though once again the precise content of the regulations varied. The 1974 PSD and the 1971 NSPS regulations provided that:

> (1) Routine maintenance, repair, and replacement shall not be considered a physical change, and (2) The following shall not be considered a change in the method of operation: (i) An increase in the production rate, if such increase does not exceed the operating design capacity of the source; (ii) An increase in the hours of operation; (iii) Use of an alternative fuel or raw material [under certain conditions].

Id. at 42,514; *accord* 36 Fed. Reg. at 24,877. The 1975 NSPS regulation not only phrased its exceptions differently, but also added a few additional ones:

> The following shall not, by themselves, be considered modifications under this part: (1) Maintenance, repair, and replacement which the Administrator determines to be routine . . . ; (2) An increase in production rate of an existing facility, if that increase can be accomplished without a capital expenditure on the stationary source containing that facility; (3) an increase in the hours of operation; (4) Use of an alternative fuel or raw material [under certain conditions] . . . ; (5) The addition or use of any system whose primary function is the reduction of air pollutants . . . ; (6) The relocation or change in ownership of an existing facility.

40 Fed. Reg. at 58,419-20.

In its various permutations, this regulatory framework had not been long in place when, in 1977, Congress amended the CAA yet again. These amendments drew upon, expanded, and superceded the regulatory PSD program. In particular, the amendments strengthened the Act by (1) expressly creating a preconstruction review process for new or modified major sources located in "nonattainment" areas (i.e., areas which failed to meet NAAQS), *see generally* 42 U.S.C. §§ 7501-7515; and (2) expressly providing a parallel preconstruction review process in PSD areas (i.e., areas which met NAAQS or where there was insufficient information to evaluate whether NAAQS were met), *see generally id.* §§ 7470-7492. The parties refer to the first as "Nonattainment New Source Review" ("NNSR"), to the second as "Prevention of Significant Deterioration" ("PSD"), and to both collectively as "New Source Review" ("NSR"). We shall

do the same.

Under the amendments, sources seeking NNSR permits must meet stricter requirements than sources seeking PSD permits. Most notably, for NNSR permits, sources must achieve the "lowest achievable emission rate" ("LAER") for new or modified units, whereas sources seeking PSD permits need only use the less demanding "best available control technology" ("BACT"). At a minimum, LAER and BACT are as restrictive as NSPS. *Id.* § 7479(3) ("In no event shall application of [BACT] result in emissions of any pollutants which will exceed the emissions allowed by any applicable standard established pursuant to" NSPS); *accord id.* § 7501(3) (for LAER). In certain circumstances, however, BACT and LAER can be more stringent than NSPS. *See id.* § 7479. Moreover, to obtain NNSR permits, sources must arrange for emissions reductions at other sources such that the modifications produce no increase in overall regional emissions. *Id.* § 7503. Sources must also demonstrate that any other sources owned by the same company comply with CAA requirements. *Id.* To obtain PSD permits, sources must undergo ambient air quality analyses to show that they will neither violate NAAQS increments nor adversely affect air quality in national parks or other areas that EPA has designated as needing particularly high-quality air. *Id.* § 7475.

Congress meant NSR to apply to both new *and modified* sources. Due to a technical defect, however, Congress initially achieved this goal only in the NNSR portion of the amendments, which defined modification by reference to the NSPS definition: "The terms 'modifications' and 'modified' mean the same as the term 'modification' as used in section 7411(a)(4) of this title." *Id.* § 7501(4). By contrast, the PSD portion of the amendments applied initially to new sources only. Congress corrected this in a technical amendment passed several months later, which applied the PSD program to sources that were to undergo

modifications "as defined in section 7411(a) of this title." Pub. L. No. 95-190, § 14(a)(54), 91 Stat. 1393, 1402 (1977) (codified at 42 U.S.C. § 7479(2)(C)). As the legislative history explains, this "technical and conforming" amendment "[i]mplements conference agreement to cover 'modification' . . . [in] conform[ance with] usage in other parts of the Act." 123 CONG. REC. 36,250, 36,253 (Nov. 1, 1977).

In sum, the 1977 amendments carved out a significant difference between existing sources on the one hand and new or modified sources on the other. The former faced no NSR obligations—in the common phrase, they were "grandfathered" —while the latter were subject to strict standards. Limiting NSR to new or modified sources was one method of accomplishing the amendments' goal of "a proper balance between environmental controls and economic growth," *id.* at 27,076 (Aug. 4, 1977) (statement of Rep. Waxman) (quoted in *Chevron U.S.A., Inc. v. Natural Res. Def. Council*, 467 U.S. 837, 852 n.25 (1984)).

EPA promulgated an NSR regulation in 1978. (Although at this time and later ones, EPA issued multiple sets of regulations—those applying to PSD in states without approved SIPs, those applying to NNSR in states without approved SIPs, those applying to PSD in states with approved SIPs, and those applying to NNSR in states with approved SIPs—these sets are sufficiently similar that for simplicity we typically reference the first of these as a shorthand for them all.) The 1978 regulation defined a major "modification" as a "physical change, change in the method of operation of, or addition to a stationary source which increases the potential emission rate of any air pollutant regulated under the act." 43 Fed. Reg. 26,380, 26,403-04 (June 19, 1978). The phrase "potential emission rate," though new to EPA regulations relating to "modification," went unchallenged during ensuing litigation over other aspects of the 1978

regulation. That litigation culminated in this circuit's *Alabama Power Co. v. Costle* decision, issued initially as a brief opinion, 606 F.2d 1068 (D.C. Cir. 1979), that was superceded six months later by a much longer one, 636 F.2d 323.

In the period between the two *Alabama Power* opinions, EPA proposed a new NSR regulation. The proposed definition of modification continued focusing on potential emissions rates rather than actual emissions. 44 Fed. Reg. 51,924, 51,952 (Sept. 5, 1979). After the issuance of the revised *Alabama Power* opinion, however, EPA changed its definition of modification. The final 1980 rule defined the term as follows: "'[m]ajor modification' means any physical change in or change in the method of operation of a major stationary source that would result in a *significant net emissions increase* of any pollutant subject to regulation under the Act." 45 Fed. Reg. 52,676, 52,735 (Aug. 7, 1980) (emphasis added). The regulation defined "[n]et emissions increase" as "any increase in actual emissions from a particular physical change or change in method of operation" that occurred after taking into account, through a process known as "netting," "any other increases and decreases in actual emissions at the source that are contemporaneous with the particular change and are otherwise creditable." *Id.* at 52,736. The regulation then defined "actual emissions" as follows:

> (ii) In general, actual emissions as of a particular date shall equal the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which proceeds the particular date and which is representative of normal source operation. The Administrator shall allow the use of a different time period upon a determination that it is more representative of normal source operation. Actual emissions shall be calculated using the unit's actual

operating hours, production rates, and types of materials processed, stored, or combusted during the selected time period.

(iii) The Administrator may presume that source-specific allowable emissions for the unit are equivalent to the actual emissions of the unit.

(iv) For any emissions unit which has not begun normal operations on the particular date, actual emissions shall equal the potential to emit of the unit on that date.

Id. at 52,737. In contrast to the proposed regulation's approach, this regulation emphasized "actual emissions." Justifying the shift, EPA explained in the regulation's preamble that while the initial *Alabama Power* decision had used the phrase "potential to emit," the later opinion used language that, "like the [statutory] definition, suggest[ed] changes in actual emissions," and that EPA had followed suit. *Id.* at 52,700. Finally, the 1980 regulation provided that "[a] physical change or change in the method of operation shall not include . . . an increase in the hours of operation or in the production rate." *Id.* at 52,735-36.

Several parties petitioned this court for review of the 1980 rule, but we stayed that challenge because of ongoing settlement discussions with EPA. Ultimately, EPA and the parties entered into an agreement providing that the agency would undertake a new rulemaking and that if the new rule failed to meet certain conditions, the parties could revive their stayed petitions.

In the proceedings before us today, industry petitioners and EPA dispute what the 1980 rule meant. Both agree that for a source to undertake a modification, it must first make a physical or operational change other than an increase in the hours of operation. They disagree over how to measure an "increase" in emitted pollutants once a change has occurred. According to industry petitioners, the 1980 regulation provided that an

emissions "increase" occurs only if the maximum hourly emissions rate goes up as a result of the physical or operational change. According to EPA, however, an increase occurs under the 1980 regulations if, after netting, a source's past annual emissions (typically measured by averaging out the two "baseline" years prior to the change) are less than future annual emissions (measured by calculating the source's potential to emit after the change). EPA proffered this interpretation, which quickly became known as the "actual-to-potential" test, in proceedings leading up to *Puerto Rican Cement Co. v. EPA*, 889 F.2d 292 (1st Cir. 1989), and *Wisconsin Electric Power Co. v. Reilly*, 893 F.2d 901 (7th Cir. 1990) ("*WEPCo*"). EPA also referred to this interpretation in its preambles to later rules, *see* 57 Fed. Reg. 32,314, 32,328 (July 21, 1992); 67 Fed. Reg. 80,186, 80,199 (Dec. 31, 2002).

Puerto Rican Cement's facts illustrate the practical difference between industry's and EPA's interpretations. In that case, a factory sought to make a physical change: it would replace old cement kilns that operated 60% of the time with a new kiln that would emit fewer pollutants per hour. "If operated to achieve about the same level of production [as the old ones], the new kiln will pollute far less than the older kilns; but, if the Company operates the new kiln at significantly higher production levels, it will emit more pollutants than did the older kilns." 889 F.2d at 293. Under the actual-to-potential test, the company "increased" its emissions after the change, making it subject to NSR: operated at full potential, the new kiln would emit more pollutants than the old kilns had emitted when actually in operation. Under the interpretation urged by industry petitioners, however, the company had not undergone an "increase" in emissions—and thus would not trigger NSR—since the new kiln would have a lower hourly emissions rate than the old ones. Siding with EPA, the First Circuit agreed

that the company had to obtain an NSR permit to make the intended change. *Id.* at 296-99.

WEPCo, which is important because of EPA's response to it, addressed whether EPA could apply the actual-to-potential test to utility plants undergoing extensive renovations. The petitioner argued that given the particular nature of the utility market, it was unfair to compare a utility's past actual emissions with its future potential emissions. Instead, the petitioner argued —and the Seventh Circuit agreed—that EPA should measure future emissions by projecting future actual emissions rather than by assuming, as it had done under the actual-to-potential test, that the source would operate at full capacity in the future. 893 F.2d at 916-18.

The Seventh Circuit decided *WEPCo* shortly before Congress enacted the 1990 amendments to the CAA. In those amendments, Congress added several programs—distinct from NSR—aimed at further securing good air quality through regulating existing sources. *See generally* Pub. L. No. 101-549, 104 Stat. 2399 (1990) (creating, among other things, programs aimed at reducing acid rain and at decreasing regional haze). Though it also made some changes related to NSR, Congress ultimately neither addressed the issues raised in *WEPCo*, *see* H.R. CONF. REP. NO. 101-952, at 344-45 (1990), nor revisited its statutory definition of modification, instead leaving it up to EPA to respond to that decision.

EPA dealt with *WEPCo* by issuing a 1992 rule that changed the test utilities used for measuring emissions increases. 57 Fed. Reg. 32,314. Under the new test, known as the "actual-to-projected-actual test," utilities would determine whether they had post-change increases in emissions—and thus whether they needed NSR permits—by comparing actual emissions before the change to their projections of actual post-change emissions. *See*

id. at 32,323-26. In measuring projected emissions, EPA permitted utilities to exclude increases stemming from unrelated demand growth, reasoning that such increases would in no way be caused by physical or operational changes. *See id.* at 32,326-28. The parties call this the "demand growth exclusion." Applying the actual-to-projected-actual test and the demand growth exclusion to utilities only, EPA left the actual-to-potential test in place for other sources.

Various petitioners challenged the 1992 rule, but once again we stayed the proceedings as EPA began a new rulemaking process. This new process went slowly. EPA issued a proposed rule in 1996, 61 Fed. Reg. 38,250 (July 23, 1996), followed by a 1998 Notice of Availability ("NOA") requesting additional comment on several issues, 63 Fed. Reg. 39,857 (July 24, 1998), followed in turn by a four-year hiatus. In the meantime, EPA began investigating numerous sources for noncompliance with the existing NSR program. It ended up bringing complaints against thirty-two utilities in ten states.

In 2002, EPA issued a new final rule to "reduce burden, maximize operating flexibility, improve environmental quality, provide additional certainty, and promote administrative efficiency." 67 Fed. Reg. at 80,189. This rule departed from the prior rules in several significant respects relevant to this litigation. First, it adopted the actual-to-projected-actual test for all existing sources, *id.* at 80,275 (codified at 40 C.F.R. § 52.21(a)(2)(iv)(c) (2004)), though leaving sources the option to continue using the actual-to-potential test if they preferred, *id.* at 80,277 (codified at 40 C.F.R. § 52.21(b)(41)(ii)(d)). Second, it altered the method for measuring past actual emissions. Under the 1980 rule, sources determined past actual emissions by averaging their annual emissions during the two years immediately prior to the change, though they could use either different, more representative periods or source-specific

allowable emissions levels, if they could convince the permitting authorities. In contrast, under the 2002 rule, sources other than electric utilities determine past actual emissions by averaging annual emissions of *any* two consecutive years during the ten years prior to the change. *Id.* at 80,278 (codified at 40 C.F.R. § 52.21(b)(48)(ii)). EPA determined that this change eliminated the need for case-specific alternatives. *See id.* at 80,200. Adopting a statement from the 1992 rule's preamble, the 2002 rule also set a five-year lookback period for electric utilities. *Id.* at 80,278 (codified at 40 C.F.R. § 52.21(b)(48)(i)); *see also* 57 Fed. Reg. at 32,323. Third, the 2002 rule expanded the 1992 rule's demand growth exclusion, making it applicable to all sources, not just utilities. *See* 67 Fed. Reg. at 80,277 (codified at 40 C.F.R. § 52.21(b)(41)(ii)(c)). Fourth, the rule provided that sources that saw no reasonable possibility that post-change emissions would prove higher than past actual emissions need keep no records of actual post-change emissions. *See id.* at 80,279 (codified at 40 C.F.R. § 52.21(r)(6)). Fifth, the rule set forth three specific situations in which sources, without undergoing NSR, could make changes that might otherwise constitute modifications: the Plantwide Applicability Limitations ("PAL") program, the Clean Unit option, and the Pollution Control Project ("PCP") exemption. The PAL program permits sources that opt in to make whatever changes they wish during the next ten years without triggering NSR, provided that each year these sources remain below a certain level of emissions. *See id.* at 80,284-89 (codified at 40 C.F.R. § 52.21(aa)). Under the Clean Unit option, sources that install technology "comparable to" BACT (if in PSD regions) or LAER (if in NNSR regions) may make whatever changes they want over the next ten years without triggering NSR, provided that these changes do not cause them to exceed the "emissions limitations" set by their comparable technology. *See id.* at 80,279-83 (codified at 40 C.F.R. § 52.21(x)-(y)). The PCP exemption shields from NSR those sources that install

technology that, though substantially reducing emissions of some pollutants, has the effect of causing increases in emissions of other pollutants. *See id.* at 80,275-77, 80,283-84 (codified at 40 C.F.R. §§ 52.21(b)(2)(iii)(h), 52.21(b)(32), 52.21(z)). EPA denied petitions for reconsideration on all matters of significance. 68 Fed. Reg. 63,021 (Nov. 7, 2003).

Numerous petitioners now challenge the 2002 rule. Industry petitioners object to the actual-to-projected-actual test, arguing that the CAA requires EPA to compare past potential emissions with future potential emissions (i.e., use a "potential-to-potential" test). They also challenge the readings of the 1980 rule contained in the preambles of the 1992 and 2002 rules, arguing that these preambles impermissibly interpret the 1980 rule as using an actual-to-potential test rather than a potential-to-potential test. One petitioner, Newmont Mining Corporation ("Newmont"), argues that the 2002 rule is arbitrary and capricious because sources may no longer use either source-specific allowable emissions or a "more representative period" for their two-year baseline that occurred more than ten years before the proposed modification. Between them, government and environmental petitioners challenge virtually all aspects of the 2002 rule, including the use of a ten-year lookback period for selecting the two-year baseline, the use of this ten-year lookback period in the netting context, the use of a five-year lookback period for electric utilities, the demand growth exclusion, the recordkeeping standards, and the PAL, Clean Unit, and PCP provisions. They also raise several procedural challenges involving lack of notice. Environmental petitioners additionally challenge the 1992 rule's five-year lookback period in the NSPS context. Government petitioners argue that EPA's presumption that all states must incorporate the 2002 rule's elements into their SIPs violates several statutory provisions. Finally, several intervenors and amici have joined the fray, attacking or defending various aspects of EPA's rules. We

consolidated these petitions and now consider them, first addressing industry petitioners' contentions and then turning to the arguments of government and environmental petitioners.

In considering these challenges, we apply a highly deferential standard of review. We may set aside a regulation only if it exceeds EPA's "statutory jurisdiction, authority, or limitations" or is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 42 U.S.C. § 7607(d)(9).

As to EPA's interpretation of the CAA, we proceed under *Chevron*'s familiar two-step process. *See* 467 U.S. at 842-43. In the first step ("*Chevron* Step 1"), we determine whether, based on the Act's language, legislative history, structure, and purpose, "Congress has directly spoken to the precise question at issue." *Id.* at 842. If so, EPA must obey. But if Congress's intent is ambiguous, we proceed to the second step ("*Chevron* Step 2") and consider "whether the agency's [interpretation] is based on a permissible construction of the statute." *Id.* at 843. If so, we will give that interpretation "controlling weight unless [it is] arbitrary, capricious, or manifestly contrary to the statute." *Id.* at 844.

Aside from statutory interpretation, we evaluate EPA's actions based on traditional administrative law principles. *See Ethyl Corp. v. EPA*, 51 F.3d 1053, 1064 (D.C. Cir. 1995) (noting that the CAA's review provisions are identical to those in the Administrative Procedure Act). "Where, as here, the issue before us requires a high level of technical expertise, we must defer to the informed discretion of the responsible federal agencies." *Transmission Access Policy Study Group v. FERC*, 225 F.3d 667, 714 (D.C. Cir. 2000) (internal quotation marks and citation omitted). After a "searching and careful inquiry" into the facts, *Am. Trucking Ass'n v. EPA*, 283 F.3d 355, 362

(D.C. Cir. 2002), we will find EPA's actions arbitrary and capricious if the agency has failed to "examine the relevant data and articulate a satisfactory explanation for its action, including a rational connection between the facts found and the choice made," *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (internal quotation marks and citation omitted), or has reached a conclusion unsupported by substantial evidence, *Ass'n of Data Processing Serv. Orgs., Inc. v. Bd. of Governors of the Fed. Reserve Sys.*, 745 F.2d 677, 683-84 (D.C. Cir. 1984). The standard of review "does not," however, "permit us to substitute our policy judgment for that of the Agency." *Bluewater Network v. EPA*, 370 F.3d 1, 11 (D.C. Cir. 2004).

II. Industry Challenges

Various firms and industry associations advance three main challenges. First, industry petitioners attack the 2002 rule's definition of "modification" for NSR purposes on the ground that it unlawfully differs from its definition for NSPS purposes. While the NSPS regulatory definition of modification allegedly focuses on the hourly rate of emissions, the NSR definition focuses on net emissions increases measured in tons per year. *Compare* 40 C.F.R. § 60.14 (NSPS), *with id.* § 52.21(b)(2)(ii) (NSR). Industry claims that this divergence is unlawful because Congress intended to adopt for NSR purposes the NSPS regulatory definition in existence at the time of the 1977 amendments. (Industry petitioners also challenge the 1980 rule's definition of modification in the NSR context to the extent that it differs from the NSPS definition.) We are not convinced.

Second, industry petitioners argue that statements in the preamble to the 2002 rule constitute an unlawful interpretation of the 1980 rule. Because of multiple uncertainties about the existence or likely application of any such interpretation, let

alone any burden to petitioners from delay of adjudication, we find the issue unripe.

Third, the previous rules allowed states to use source-specific emissions limitations as proxies for actual emissions. 45 Fed. Reg. at 52,737 (previously codified at 40 C.F.R. § 52.21(b)(21) (1981)). Petitioner Newmont challenges the elimination of this provision in the 2002 rule, arguing that EPA's decision lacks adequate reasoning and violates the statute. We find neither argument convincing.

A.

Modification. Industry rests its claim that modification must have the same regulatory meaning for NSR as prevailed for NSPS in 1977 on the fact that Congress, by a cross-reference, used the same language in both statutory contexts. Thus, the NNSR portion of the Act provided:

> The terms "modifications" and "modified" mean the same as the term "modification" as used in section 7411(a)(4) of this title.

42 U.S.C. § 7501(4). Similarly, the PSD portion of the statute provides that "construction" includes "the modification (as defined in section 7411(a) of this title) of any source or facility." *Id*. § 7479(2)(C). So far as appears, then, these incorporations by reference are the equivalent of Congress's having simply repeated in the NSR context the definitional language used before in the NSPS context.

We have (naturally) required indications in the statutory language or history to infer that Congress intended to incorporate into a statute a preexisting regulatory definition. *See Continental Air Lines, Inc. v. Dep't of Transp.*, 843 F.2d 1444, 1454 (D.C. Cir. 1988). Industry suggests there is "abundant

indication" of such intent, pointing to Congress's having said that modification (in the NNSR portion of the statute) has the meaning of the same word "*as used in*" the NSPS portion of the statute. It also cites a conference committee report that explains agreement to cover modification as well as construction in Part C of the Act (PSD) (a point apparently originally excluded unintentionally) by saying that construction is being defined "to conform to *usage* in other parts of the Act." *See* 123 CONG. REC. 32,253 (Nov. 1, 1977) (emphasis added). But the phrases "usage" and "used in" refer not to regulatory usage, but only to usage in the statute itself. They tell us no more than if Congress had used a little more ink and repeated the NSPS definitions verbatim. Elsewhere in the Act, moreover, Congress did incorporate regulatory provisions expressly by reference. *See, e.g.*, Pub. L. No. 95-95, § 129(a)(1), 91 Stat. 685, 745 (1977) ("the interpretative regulation of the Administrator of the Environmental Protection Agency published in 41 Federal Register 55524 . . . shall apply . . . .") (incorporating EPA's offset ruling); 42 U.S.C. § 7502 note. Congress's failure to use such an express incorporation of prior regulations for "modification" cuts against the proposed inference.

Industry petitioners also invoke *Bragdon v. Abbott*, 524 U.S. 624, 632 (1998), for the proposition that when Congress repeats a well-established term, it implies that Congress intended the term to be construed in accordance with preexisting regulatory interpretations. But that proposition does industry little good here, as the regulatory definitions in the NSPS and PSD programs already differed at the time of the 1977 amendments. *See* Part I, *supra*, at 10-12 (comparing regulatory definitions of NSPS and PSD programs).

In fact, the NSPS regulations adopted in 1975 and in force at the time of the 1977 CAA amendments themselves used two different (and possibly inconsistent) definitions of modification.

Section 60.2(h) defined modification to include "any physical change in, or change in the method of operation of, an existing facility which increases the amount of any air pollutant (to which a standard applies) emitted into the atmosphere by that facility." 40 Fed. Reg. at 58,418 (previously codified at 40 C.F.R. § 60.2(h) (1976)). But 40 C.F.R. § 60.14(a) provided that "any physical or operational change to an existing facility which results in an increase in the emissions rate to the atmosphere of any pollutant to which a standard applies shall be considered a modification," and § 60.14(b) specified that the emissions rate should be expressed in "kg/hr of any pollutant discharged into the atmosphere." 40 Fed. Reg. at 58,419; *see also* Part I, *supra*, at 10. Industry's briefs, curiously, mention only § 60.14, never § 60.2(h). Given the two quite differently worded regulatory definitions of "modification" *within* the NSPS program at the time of the 1977 amendments, it would take a rather pointed indication from Congress to support the idea that it expressly adopted one of them for NSR. No such indication exists. We express no opinion as to whether Congress intended to require that EPA use identical regulatory definitions of modification across the NSPS and NSR programs. *Cf. United States v. Duke Energy Corp.*, No. 04-1763, slip op. at 11-19 (4th Cir. June 15, 2005). That argument was not made by industry petitioners in their opening brief and is therefore waived. *See Verizon Tel. Cos. v. FCC*, 292 F.3d 903, 911-12 (D.C. Cir. 2002). As industry makes no attack at all on the reasonableness of EPA's definition of modification for NSR (apart from its divergence from one of the 1975 NSPS definitions), we reject this portion of industry's challenge to the 1980 and the 2002 rules.

B.

Interpretation of 1980 Rule in 2002 Preamble. Industry petitioners also challenge an allegedly new interpretation of the 1980 rule contained in the preamble to the 2002 rule. Specifically, industry objects to the following sentence in the preamble:

> Prior to today, the regulations applied an actual-to-future-actual applicability test for EUSGUs [Electric Utility Steam Generation Units] and *an actual-to-potential applicability test for all other emissions units.*

67 Fed. Reg. at 80,199 (emphasis added). Industry petitioners' claim is that by uttering the above sentence, EPA attempted to interpret the 1980 rule retroactively to require a "universal actual-to-potential test." Such an interpretation would be, industry claims, substantively inconsistent with the 1980 rule and the Act, and in violation of various procedural requirements for amendments of agency rules. Industry petitioners raise a similar objection to the 1992 rule's preamble. Br. for Industry Pet'rs at 29 n.46, 32 n.52.

These claims are unripe. Ripeness depends on (1) the fitness of the issue for judicial review, and (2) the hardship to the parties of withholding a judicial decision. *See Abbott Labs. v. Gardner*, 387 U.S. 136, 148 (1967). Fitness is highly questionable here, as the disputed sentence appears to be—as EPA claims—no more than a short-hand reference to the 1980 rule, not a formal interpretation. If industry's fears should prove well-grounded, review could proceed more intelligibly on a clearer record. *See Am. Iron & Steel Inst. v. EPA*, 115 F.3d 979, 990 (D.C. Cir. 1997); *State Farm Mut. Auto. Ins. Co. v. Dole*, 802 F.2d 474, 479 (D.C. Cir. 1986).

Nor has industry shown that delay of review will inflict any

hardship. The usual form of hardship is to put a regulated firm to a choice between submission and violation, each with its attendant nonrecoverable costs. But the new (2002) rule has been applicable for three years now. For *planning* purposes the 1980 rule appears moot. If there are still pending applications of the 1980 rule in which EPA attempts to employ the disputed sentence (which seems improbable in light of its express disclaimer), judicial proceedings addressed to the application could solve the problem of any affected firm.

C.

Source-Specific Allowable Emissions. The previous rules allowed state SIPs to provide for calculation of baseline emissions by using a unit's "source-specific allowable emissions" as the unit's actual emissions. *See* 45 Fed. Reg. at 52,737 (previously codified at 40 C.F.R. § 52.21(b)(21) (1981)). Petitioner Newmont challenges the elimination of this provision in the 2002 rule, arguing that EPA's decision lacks adequate reasoning and violates the statute.

EPA's reasoning was simple enough—that the baseline is intended to be an indicator of emissions associated with utilization "actually achieved." *See* EPA, TECHNICAL SUPPORT DOCUMENT FOR THE PREVENTION OF SIGNIFICANT DETERIORATION AND NONATTAINMENT AREA NEW SOURCE REVIEW REGULATIONS I-3-11 (2002) ("TSD"). Otherwise changes increasing emissions beyond historic levels would avoid NSR. *Id.*; *see also id.* I-5-9, II-3-9. Newmont makes the counterargument that EPA's decision imposes a foolhardy "use it or lose it" regime in which sources are encouraged to continue emitting at high levels to avoid losing the "right" to emit. A closer approximation is that the rule imposes a "use it for twenty-four months in ten years or lose it" regime, in which "lose it" entails an obligation to comply with review procedures for modifications at the source. In any event, such choices are

for EPA to make so long as the agency engages in reasoned decision-making. *See Bluewater Network*, 370 F.3d at 11. Although EPA never expressly addressed this possibly perverse incentive, its resolute focus on the significance of changes in "actual" emissions suggests that it found the risk of firms' strategic use of emissions ceilings relatively minor when compared with the benefits of catching actual increases and subjecting them to NSR. *See Bowman Transp., Inc. v. Arkansas-Best Freight Sys., Inc.*, 419 U.S. 281, 285-86 (1974) ("we will uphold a decision of less than ideal clarity if the agency's path may reasonably be discerned"); *ACS of Anchorage Inc. v. FCC*, 290 F.3d 403, 408 (D.C. Cir. 2002).

Newmont's statutory claim is that eliminating the states' discretion to use source-specific allowable emissions as the emissions baseline violates the Act's principles of power sharing between the states and the federal government. Indeed the Act does have roles for both levels of government. *See Virginia v. EPA*, 108 F.3d 1397, 1408 (D.C. Cir. 1997). While states are responsible for writing SIPs, the Act gives EPA responsibility for developing basic rules for the NSR program, *see* 42 U.S.C. § 7503(a)(1), a responsibility that clearly includes choosing a methodology for calculating baseline emissions. We see no violation of Congress's assignment of duties.

III. Baseline Emissions

The NSR provisions of the CAA require "new and modified major stationary sources" of air pollution to obtain preconstruction permits and to install pollution control technology in order to protect and enhance air quality. 42 U.S.C. §§ 7475, 7502, 7503. An existing source triggers NSR when it makes a "modification," defined as:

> any physical change in, or change in the method of

> operation of, a stationary source which increases the amount of any air pollutant emitted by such source or which results in the emission of any air pollutant not previously emitted.

Id. § 7411(a)(4). To determine whether a change "increases" emissions, the source must first calculate its baseline level of "actual emissions." *See* 57 Fed. Reg. at 32,316. The 1980 rule defined "actual emissions" as "the average rate, in tons per year, at which the unit actually emitted the pollutant during a two-year period which precedes the [change] and which is representative of normal source operation." 45 Fed. Reg. at 52,737 (codified at 40 C.F.R. § 52.21(b)(21)(ii)). The 1980 rule also provided for "the use of a different time period upon a determination that it is more representative of normal source operation." *Id.* While EPA historically used the two-year period immediately preceding the change to calculate baseline actual emissions, "in some cases" it allowed use of "an earlier period." 67 Fed. Reg. at 80,188.

The 2002 rule reinterprets the term "increases" by adopting a new method for calculating baseline actual emissions. *See id.* at 80,191. For sources other than electric utilities, "baseline actual emissions" are defined as "the average rate, in tons per year, at which the emissions unit actually emitted the pollutant during any consecutive 24-month period selected by the [source] within the 10-year period immediately preceding [the change]." *Id.* at 80,278 (codified at 40 C.F.R. § 52.21(b)(48)(ii)). A source must adjust its baseline downward to reflect any legally enforceable emissions limitations that have been imposed since the baseline period, *see id.* (codified at 40 C.F.R. § 52.21(b)(48)(ii)(c)), and it may not use a more "representative" baseline period outside the ten-year "lookback period," *see id.* at 80,195. A source may use a different baseline period for each regulated pollutant. *See id.* (codified at 40 C.F.R. §

52.21(b)(48)(ii)(d)). The 2002 rule also codifies the presumption established in the 1992 rule that for an electric utility, "any 2 consecutive years within the 5 years prior to the proposed change is representative of normal source operations." 57 Fed. Reg. at 32,323; *see* 67 Fed. Reg. at 80,278 (codified at 40 C.F.R. § 52.21(b)(48)(i)).

Government and environmental petitioners raise two sets of challenges to the ten-year lookback period. First, they contend that the ten-year lookback period reflects an impermissible interpretation of the statutory term "increases" because it allows sources to increase their emissions beyond their most recent levels without triggering NSR. Second, they contend that EPA's selection of a ten-year lookback period is arbitrary and capricious because it contravenes the statutory purpose of protecting and enhancing air quality. For the following reasons, we conclude that petitioners' challenges to the ten-year lookback period fail to overcome the presumption of validity afforded to EPA regulations under the CAA. *See Int'l Fabricare Inst. v. EPA*, 972 F.2d 384, 389 (D.C. Cir. 1992).

A.

Statutory Interpretation. While the CAA defines a "modification" as any physical or operational change that "increases" emissions, it is silent on how to calculate such "increases" in emissions. 42 U.S.C. § 7411(a)(4). According to government petitioners, the lack of a statutory definition does not render the term "increases" ambiguous, but merely compels the court to give the term its "ordinary meaning." *See Engine Mfrs. Ass'n v. S. Coast Air Quality Mgmt. Dist.*, 124 S. Ct. 1756, 1761 (2004); *Bluewater Network*, 370 F.3d at 13; *Am. Fed'n of Gov't Employees v. Glickman*, 215 F.3d 7, 10 (D.C. Cir. 2000). Relying on two "real world" analogies, government petitioners contend that the ordinary meaning of "increases" requires the baseline to be calculated from a period immediately preceding

the change. They maintain, for example, that in determining whether a high-pressure weather system "increases" the local temperature, the relevant baseline is the temperature immediately preceding the arrival of the weather system, not the temperature five or ten years ago. Similarly, in determining whether a new engine "increases" the value of a car, the relevant baseline is the value of the car immediately preceding the replacement of the engine, not the value of the car five or ten years ago when the engine was in perfect condition.

EPA maintains that its choice of the ten-year lookback period is entitled to deference under *Chevron* Step 2 because it is based on a permissible construction of the ambiguous term "increases." 67 Fed. Reg. at 80,199. EPA disputes the validity of government petitioners' analogies, pointing out, for example, that if the weather system arrives in the evening, it is inappropriate to compare the nighttime temperature immediately following the arrival of the system to the daytime temperature immediately preceding the arrival of the system. The important point is that the period immediately preceding a change may not be analogous to the period following the change and thus may not yield a meaningful comparison for the purpose of determining whether the change "increases" emissions. Hence, government petitioners' reliance on the "ordinary meaning" of "increases" fails to address a practical reality. Indeed, during oral argument, counsel for government petitioners agreed that the provision in the 1980 rule for use of a "more representative" period not immediately preceding the change is consistent with the statutory language because some flexibility is needed to account for anomalous disruptions in operations. It follows that the statutory term "increases" does not plainly and unambiguously require the baseline period to immediately precede the change. Rather, the statute is silent or ambiguous on how to calculate baseline emissions, and the issue is whether the ten-year lookback period is based on a permissible interpretation

of the statute under *Chevron* Step 2.

Under *Chevron* Step 2, a court must defer to the agency's interpretation of the ambiguous statutory term if it "represents a reasonable accommodation of conflicting policies that were committed to the agency's care by the statute." *Chevron*, 467 U.S. at 845 (quoting *United States v. Shimer*, 367 U.S. 374, 383 (1961)). In particular, the agency's interpretation is entitled to deference when "the regulatory scheme is technical and complex, the agency considered the matter in a detailed and reasoned fashion, and the decision involves reconciling conflicting policies." *Id.* at 865.

There can be no doubt that EPA is entitled to balance environmental concerns with economic and administrative concerns, at least to a point. The Supreme Court recognized in *Chevron* that, in enacting the NSR program, "Congress sought to accommodate the conflict between the economic interest in permitting capital improvements to continue and the environmental interest in improving air quality," *id.* at 851, and delegated the responsibility of balancing those interests to EPA, *id.* at 865. Different interpretations of the term "increases" may have different environmental and economic consequences, and in administering the NSR program and filling in the gaps left by Congress, EPA has the authority to choose an interpretation that balances those consequences. *See id.* at 843. In so doing, the Supreme Court has instructed, EPA may "properly rely upon the incumbent administration's view of wise policy to inform its judgments." *Id.* at 865. Furthermore, as there is no question that the NSR program is technical and complex, *id.* at 848, EPA may properly rely on its extensive experience and expertise in administering the program. *Cf. Nuclear Energy Inst., Inc. v. EPA*, 373 F.3d 1251, 1296 (D.C. Cir. 2004) (per curiam). Based on what EPA describes in its brief as more than twenty years of experience with the NSR program under the 1980 rule and more

than "ten years of review, analysis, and communications with stakeholders," Br. for Resp't at 69, EPA responded to industry complaints that the 1980 rule was "too complex and burdensome" and adopted the ten-year lookback period as part of an effort to simplify and streamline the NSR program without sacrificing air quality. 61 Fed. Reg. at 38,252. Based on their own experience with the 1980 rule, state intervenors Alaska, Indiana, Kansas, Nebraska, North Dakota, South Carolina, South Dakota, Utah, and Virginia concur with EPA's conclusion that the NSR program has been "broken for many years and [is] long overdue to be fixed." Br. for State Intervenors at 17.

It is EPA's position that the ten-year lookback period is based on a permissible interpretation of the CAA because it "fulfills the statutory goal of balancing economic growth with the need to protect air quality." Br. for Resp't at 69. According to EPA, the ten-year lookback period promotes economic growth and administrative efficiency by affording sources the flexibility to respond rapidly to market changes, focusing limited regulatory resources on changes most likely to harm the environment, and eliminating conflicts over whether a proposed baseline period is "more representative of normal source operations." 67 Fed. Reg. at 80,191-92. At the same time, EPA believes that the ten-year lookback period protects air quality by eliminating the regulatory disincentive to make physical or operational changes that improve efficiency and reduce emissions rates. *Id.* at 80,192. We conclude that EPA supports these conclusions with "detailed and reasoned" analysis based on its experience and expertise. *Chevron*, 467 U.S. at 865.

In explaining the benefits of the ten-year lookback period, EPA appropriately refers to the problems experienced under the 1980 rule. EPA notes that under the 1980 rule, establishing a representative baseline period other than the two-year period immediately preceding the change was "complex and time-

consuming" and often involved "disputed judgment calls." 61 Fed. Reg. at 38,258. EPA further notes that under the 1980 rule, sources experiencing periods of low production faced the unwelcome choice of either "surrendering capacity" by capping emissions at unrepresentative low levels or incurring the time and expense of securing NSR permits "for even small, non-excluded changes to a portion of the plant." *Id.* According to industry comments on the ten-year lookback period, this dilemma discourages sources from making economically efficient and environmentally beneficial changes during periods of low production. *See* TSD at I-4-5, I-4-17. Similarly, as EPA points out in its brief, government petitioner New Jersey explained in comments on the ten-year lookback period that the 1980 rule "results in a baseline that decreases each time production decreases. In other words, if economic downturn temporarily slows production at a facility for a few years, the facility's baseline actually decreases and the facility loses operational flexibility. It also discourages facilities from voluntarily implementing pollution prevention measures." Letter from Catherine Cowan, Assistant Comm'r, N.J. Dep't of Envtl. Protection, to EPA (Dec. 4, 1996) (Docket A-90-37, Entry IV-D-172). EPA confirms that one "common complaint" about the 1980 rule is that sources have "limited ability to consider the operational fluctuations associated with normal business cycles when establishing baseline actual emissions unless [the] reviewing authority agrees that another period is 'more representative of normal source operation.'" 67 Fed. Reg. at 80,191-92.

In response to these concerns, EPA commissioned a study of the business cycles of nine major emitting industries, including charcoal production, carbon black manufacturing, Portland cement manufacturing, lime manufacturing, iron and steel manufacturing, primary copper smelting, primary aluminum production, primary zinc and lead smelting, and

secondary metal production. *See* EASTERN RESEARCH GROUP, INC., BUSINESS CYCLES IN MAJOR EMITTING SOURCE INDUSTRIES (1997) ("BUSINESS CYCLE STUDY"). The study examined industry output data from 1982 to 1994 and measured each industry's business cycle from peak to peak and from trough to trough. *Id.* at 1-2. Peak-to-peak cycles ranged from three to six years, and trough-to-trough cycles ranged from three to eight years. *Id.* at 16.

Government and environmental petitioners contend that the business cycle study does not support EPA's choice of a ten-year lookback period because none of the industries in the study had business cycles longer than eight years, and the study did not consider whether emissions vary with business cycles. However, petitioners ignore the study's conclusions that "business cycles differ markedly by industry" and that "a minimum of ten years of data is recommended to capture an entire industry cycle." *Id.* Moreover, while the study did not track emissions, it did track output, which generally correlates with emissions. *See* 67 Fed. Reg. at 80,201; *Puerto Rican Cement*, 889 F.2d at 297-98. Hence, the business cycle study supports EPA's conclusion that a ten-year lookback period "is a fair and representative time frame for encompassing a source's normal business cycle." 67 Fed. Reg. at 80,200. Based on "their experience over the years in implementing the NSR program," state intervenors agree that a ten-year lookback period is reasonable, Br. for State Intervenors at 10, and government and environmental petitioners provide no basis for the court to determine whether a particular time frame is reasonable under the CAA. Absent such an explanation, the court must defer to EPA's policy choice because it is supported by the business cycle study and not "manifestly contrary to the statute." *Chevron*, 467 U.S. at 844.

Environmental petitioners further contend that the ten-year

lookback period does not ensure a representative baseline because it allows sources with shorter business cycles to choose among two or three peaks, not just the most recent one. Similarly, petitioner Newmont contends that the ten-year lookback period does not ensure a representative baseline because it fails to capture the entire business cycle of the gold industry, which it claims is longer than ten years. Newmont contends in its brief that the gold industry has not completed a full business cycle since 1980 because the price of gold has not returned to $700 per ounce. At oral argument, counsel for Newmont admitted the implausibility of this contention. Business cycles are measured from peak to peak or from trough to trough based on comparative fluctuations in output; nothing requires the peaks to reach the same level of output, much less the same price. According to Newmont's graph of gold prices, the price of gold peaked at $500 per ounce in 1983 and 1988, and at $400 per ounce in 1990, 1994, and 2004. Thus, Newmont provides no basis for the court to conclude that the gold industry's business cycle is longer than ten years.

EPA recognizes that "business cycles differ markedly by industry," 67 Fed. Reg. at 80,200, as the business cycle study itself indicates, *see* BUSINESS CYCLE STUDY at 16. But in an effort to promote operational flexibility and administrative efficiency, EPA chose to apply a fixed ten-year lookback period to all sources in order to lend "clarity and certainty to the process" and to avoid the administrative burden of determining "representative" baselines on a case-by-case basis. 67 Fed. Reg. at 80,200; TSD at I-2-10. This policy choice, which reconciles conflicting interests in accuracy and efficiency, based on years of regulatory experience, is entitled to deference under *Chevron* Step 2, for petitioners fail to demonstrate that EPA's choice is impermissible under the CAA. *See Chevron*, 467 U.S. at 844, 864-66.

In addition to challenging EPA's business cycle study, environmental petitioners contend that the ten-year lookback period violates this court's interpretation of the CAA in *Alabama Power*, 636 F.2d 323. Under *Alabama Power* and the 1980 rule, a physical or operational change constitutes a "modification" subject to NSR only if it results in a *net* increase in emissions; thus, a source making a change that increases emissions from one unit can "net out" of NSR based on a "contemporaneous" change that decreases emissions from another unit. *See id.* at 401-02; 45 Fed. Reg. at 52,736 (codified at 40 C.F.R. § 52.21(b)(3)). The court stated in *Alabama Power* that EPA has "discretion, within reason, to define which changes are contemporaneous," 636 F.2d at 402, and the 1980 rule defines "contemporaneous" as within a five-year period, *see* 45 Fed. Reg. at 52,736 (codified at 40 C.F.R. § 52.21(b)(3)(ii)). The 2002 rule retains this definition of "contemporaneous" but allows a source to use a ten-year lookback period to calculate baseline emissions when determining whether an offsetting change decreases emissions. *See* 67 Fed. Reg. at 80,197. For example, to determine whether a change made in 2005 will trigger NSR, a source may use baseline emissions from 1995 and 1996 to calculate the emissions increase caused by the 2005 change; it may then choose an offsetting change made in 2000 and use baseline emissions from 1990 to 1991 to calculate the emissions decrease caused by the 2000 change in order to determine whether that decrease offsets the increase caused by the 2005 change.

Rather than challenge the five-year contemporaneity period as such, environmental petitioners contend that the ten-year lookback period combined with the five-year contemporaneity period allows a source to avoid NSR based on a fifteen-year-old decrease in emissions, thereby violating the contemporaneity requirement of *Alabama Power*. An emissions increase caused by a change made in 2005, for example, can be offset by an

emissions decrease that relies on a baseline from 1990. But as EPA points out, it is only the baseline of the emissions decrease that is fifteen years old, not the change that causes the decrease, which must still occur within five years of the change that causes the increase. *See* 67 Fed. Reg. at 80,197. *Alabama Power* requires only that "any offset *changes* claimed by industry must be substantially contemporaneous," not that the baselines must be substantially contemporaneous. 636 F.2d at 402 (emphasis added). Therefore, environmental petitioners fail to demonstrate that the ten-year lookback period violates the contemporaneity requirement of *Alabama Power*.

Environmental petitioners' remaining challenges to EPA's interpretation of the statutory term "increases" are unavailing. Their response to EPA's "causation argument" that an increase in emissions must exceed historical levels to be causally related to the change, Br. for Envtl. Pet'rs at 14-15, is irrelevant because EPA advances no such argument in support of the ten-year lookback period. Their contention that the ten-year lookback period "administratively excise[s] the statutory word 'any' by excluding *some* emissions-increasing changes" from NSR, *id.* at 13, is misplaced because the 2002 rule redefines the baseline such that "any" change that increases emissions beyond the redefined baseline still triggers NSR. Environmental petitioners' similar contention that the 1992 rule violates the statutory term "any" by excluding some emissions-increasing changes from NSPS fails for the same reason. Their challenge to EPA's provision for use of different baseline periods for different pollutants fails, for EPA explains that emissions of different pollutants depend on different factors and that a single source may produce different products subject to different business cycles.

In enacting the NSR program, Congress did not specify how to calculate "increases" in emissions, leaving EPA to fill in that

gap while balancing the economic and environmental goals of the statute. *See Chevron*, 467 U.S. at 843-44. Based on its experience with the NSR program and its examination of the relevant data, EPA determined that a ten-year lookback period would alleviate the problems experienced under the 1980 rule and advance the economic and environmental goals of the CAA. Because we conclude that petitioners fail to demonstrate that EPA's policy determination is impermissible, we defer to EPA's statutory interpretation under *Chevron* Step 2, and we turn to petitioners' challenges to the environmental impact of the ten-year lookback period.

B.

Environmental Impact. Government and environmental petitioners contend that EPA's choice of a ten-year lookback period is arbitrary and capricious because it allows sources to increase their emissions to historic levels without triggering NSR, thereby harming air quality and public health. Environmental petitioners similarly contend that the five-year lookback period for electric utilities is arbitrary and capricious but provide no evidence or analysis to support this contention. Government petitioners emphasize that NSR is a "critical tool" for attaining and maintaining CAA air quality standards, and that the 2002 rule "severely undermines this tool by requiring States to allow older, poorly-controlled sources to continue operating without pollution controls well into the future." Br. for Gov't Pet'rs at 13. In *Alabama Power*, the court recognized that the "statutory scheme intends to 'grandfather' existing industries; but the provisions concerning modifications indicate that this is not to constitute perpetual immunity from all standards under the PSD program. If these plants increase pollution, they will generally need a permit." *Alabama Power*, 636 F.2d at 400; *see also WEPCo*, 893 F.2d at 909-10.

Government petitioners maintain that the ten-year lookback

period frustrates the purpose of the modification provision by allowing sources to restore their emissions capacities to historic levels without obtaining NSR permits. Likewise, environmental petitioners contend that the ten-year lookback period unlawfully seeks "to preserve a unit's historical operating levels and associated emissions." Br. for Envtl. Pet'rs. at 12 (quoting TSD at I-2-2) (internal quotation marks omitted). They explain that as sources age, their operating capacities diminish "by roughly one percentage point for each year of age." *Id.* (quoting Memorandum from Bruce Biewald & David White, Synapse Energy Econ., Inc., to David Hawkins, Natural Res. Def. Council 12 (Aug. 12, 1998) (Docket A-90-37, Entry IV-D-303)). Therefore, they conclude, "physical or operational changes that restore an existing source to its original capacity significantly increase the amount of pollution emitted by that source as compared to its emissions level during the period immediately preceding the change." *Id.*

EPA acknowledges that fewer changes will trigger NSR under the 2002 rule than under the 1980 rule. 67 Fed. Reg. at 80,192. However, based on its experience and its Environmental Impact Analysis, *see* EPA, NEW SOURCE REVIEW (NSR) IMPROVEMENTS: SUPPLEMENTAL ANALYSIS OF THE ENVIRONMENTAL IMPACT OF THE 2002 FINAL NSR IMPROVEMENT RULES (2002) ("ENVIRONMENTAL IMPACT ANALYSIS"), EPA "believe[s] that the environment will not be adversely affected" by the ten-year lookback period "and in some respects will benefit" from it, 67 Fed. Reg. at 80,192. As noted, it is EPA's position that the ten-year lookback period eliminates the regulatory disincentive for sources to implement changes that improve operating efficiency and reduce emissions rates. *See id.* EPA further believes that the ten-year lookback period will not hinder states from achieving CAA air quality standards because NSR is not the primary mechanism for reducing emissions from existing sources. EPA explains in its

Report to the President:

> The NSR program is by no means the primary regulatory tool to address air pollution from existing sources. The Clean Air Act provides for several other public health-driven and visibility-related control efforts: for example, the National Ambient Air Quality Standards Program implemented through enforceable State Implementation Plans, the NO_x SIP Call, the Acid Rain Program, the Regional Haze Program, etc. Thus, while NSR was designed by Congress to focus particularly on sources that are newly constructed or that make major modifications, Congress provided numerous other tools for assuring that emissions from existing sources are adequately controlled.

EPA, NEW SOURCE REVIEW: REPORT TO THE PRESIDENT 3-4 (2002). According to EPA, "these programs have achieved, and will continue to achieve, tens of millions of tons per year of [emissions] reductions which are completely unaffected by the [2002] rule." ENVIRONMENTAL IMPACT ANALYSIS at 3. Moreover, industry intervenors point to several safeguards in the 2002 rule to protect air quality: First, the baseline must be adjusted downward to reflect any legally enforceable emissions limitations that have been imposed since the baseline period. *See* 67 Fed. Reg. at 80,278 (codified at 40 C.F.R. § 52.21(b)(48)(ii)(c)). Second, a source can use a particular baseline period only if it has enough information on record to calculate the average annual emissions during that period. *See id.* (codified at 40 C.F.R. § 52.21(b)(48)(ii)(e)). Third, the baseline cannot include emissions that exceeded any legally enforceable emissions limitations imposed during the baseline period. *See id.* (codified at 40 C.F.R. § 52.21(b)(48)(ii)(b)).

Furthermore, EPA rejects petitioners' evidence as flawed, and petitioners do not dispute EPA's critique. In challenging the

environmental impact of the 2002 rule, government petitioners cite affidavits alleging that the ten-year lookback period will allow certain sources—three paper mills in Maine, a paper mill in New Hampshire, two automobile manufacturers in New Jersey, and an oil refinery in Delaware—to increase their baselines. They also rely on a study by the Environmental Integrity Project concluding that the ten-year lookback period will allow 1,273 major sources to increase their emissions by nearly 1.4 million tons in twelve key states. *See* ENVTL. INTEGRITY PROJECT & COUNCIL OF STATE GOV'TS/E. REG'L CONFERENCE, REFORM OR ROLLBACK? HOW EPA'S CHANGES TO NEW SOURCE REVIEW AFFECT AIR POLLUTION IN 12 STATES 1-1 (2003) ("EIP REPORT"). In reconsidering the 2002 rule, EPA examined this study and found it to be flawed. *See* EPA, TECHNICAL SUPPORT DOCUMENT FOR THE PREVENTION OF SIGNIFICANT DETERIORATION (PSD) AND NONATTAINMENT AREA NEW SOURCE REVIEW (NSR): RECONSIDERATION (2003) 123-32 ("RECONSIDERATION TSD"). In particular, EPA rejected the study on four grounds: (1) it did not account for why emissions had decreased in the most recent two years; (2) it analyzed emissions on a source-wide basis instead of a unit-wide basis; (3) it ignored netting; and (4) it assumed rather than proved that sources would emit up to their historic baselines. *Id.* at 125-26. Government petitioners offered no response.

In addition, EPA's Environmental Impact Analysis responds to government petitioners' contention that the ten-year lookback period eliminates opportunities to reduce emissions by allowing sources to avoid NSR. It also responds to government petitioners' contention that adjusting the baseline downward to reflect any legally enforceable emissions limitations is irrelevant because, as EPA itself observes, "typical source operation frequently does result in actual emissions that are below allowable emission levels." Br. for Gov't Pet'rs at 23 (quoting TSD at I-6-8).

EPA concluded in its Environmental Impact Analysis that the "overall consequences" of the ten-year lookback period are "negligible" because it affects only "a very small number of facilities." ENVIRONMENTAL IMPACT ANALYSIS at 2. Based on data from recent NSR permits, EPA's 1999 Trends Report, and the National Emissions Inventory, EPA estimated that 90% of the environmental benefits of the NSR program come from new sources, modifications at electric utilities, modifications at sources where emissions have been highest in recent years, and modifications at sources where emissions have been relatively stable—none of which are affected by the ten-year lookback period. *Id.* app. F at 3-4. EPA estimated that of the remaining 10% of sources where emissions have been lower in recent years, 70% are subject to legally enforceable emissions limitations that must be incorporated into their baselines and thus cannot claim higher baselines under the ten-year lookback period. *See id.* app. F at 4-6. EPA further observed:

> Indeed, such sources could face lower baselines under the [2002] rule if controls are applied toward the end of the representative two-year period. This leaves only the case where emissions are lower as a result of decreased utilization due to decreased market demand, some kind of outage, or other circumstance. Even in this case, it is not clear that a different baseline would result, because the source is eligible, under [the 1980 rule], to request a more representative baseline than the previous two years. It is reasonable to assume that sources facing recent drops in utilization would be able to make credible cases to their permitting authorities that the recent levels were not representative of their normal operation.

Id. app. F at 7-8. Thus, regarding the remaining 3% of sources, EPA concluded that "baselines may or may not be higher under [the 2002 rule], depending upon how often case-by-case

baselines would be established under the [1980] rule's allowance for more representative periods." *Id.* app. F at 6. Although EPA recognized that it lacked sufficient data to determine whether the ten-year lookback period would result in an overall increase or decrease in emissions, it concluded that "in either case, the magnitude of the change is likely to be very small." *Id.* app. F at 7. According to EPA, "because the number of sources receiving different baselines represents a small fraction of the overall NSR permit universe," the ten-year lookback period "will not result in any significant change in benefits derived from the rule." *Id.* app. F at 8.

Still, as government petitioners point out, even "small" increases in emissions can harm public health. Government petitioners cite several studies demonstrating the relationship between increases in emissions of particulate matter and increases in mortality rates, especially among diabetics, asthmatics, and children. Similarly, the American Thoracic Society and other amici curiae point to studies indicating that emissions of particulate matter significantly increase mortality rates, especially among infants of poor families; increase lung cancer rates; aggravate asthma and other respiratory diseases; and impose significant social welfare costs. Again, relying on its Environmental Impact Analysis, EPA believes that the 2002 rule "will result in health and welfare benefits from reduced concentrations of pollutants." Br. for Resp't at 78 (quoting ENVIRONMENTAL IMPACT ANALYSIS at 2) (internal quotation marks omitted).

To the extent that EPA's predictive judgment is supported by substantial evidence in the record, it is entitled to deference, as "the applicable standard of review allows the EPA considerable latitude to exercise its expertise through reasoned projections." *Natural Res. Def. Council, Inc. v. EPA*, 655 F.2d 318, 336 (D.C. Cir. 1981); *cf. Time Warner Entertainment Co.*

v. *FCC*, 240 F.3d 1126, 1133 (D.C. Cir. 2001). EPA acknowledges that its Environmental Impact Analysis is based on incomplete data and thus cannot reasonably quantify the 2002 rule's impact on public health. ENVIRONMENTAL IMPACT ANALYSIS at 4. Indeed, a General Accounting Office ("GAO") Report to Congress stated that the economic and environmental impacts of the 2002 rule are "uncertain because of limited data and difficulty in determining how industrial companies will respond to the rule." GAO, CLEAN AIR ACT: EPA SHOULD USE AVAILABLE DATA TO MONITOR THE EFFECTS OF ITS REVISIONS TO THE NEW SOURCE REVIEW PROGRAM 24 (2003) ("GAO REPORT"). GAO noted, for example, that because EPA lacked comprehensive data, it relied on industry anecdotes in concluding that NSR discourages sources from making changes that improve operating efficiency. *Id.* at 4. GAO further pointed out that EPA's projection that these efficient changes will decrease actual emissions is based on the unverified assumption that sources will not increase their production levels after implementing the changes. *Id.* at 5. Nevertheless, GAO did not conclude that the 2002 rule lacked adequate evidentiary support. Rather, GAO recommended that EPA "monitor the emissions impacts of the rule" and "use the monitoring results to determine whether the rule has created adverse effects that the agency needs to address." *Id.* at 25. In light of our vacatur of the Clean Unit and PCP portions of the 2002 rule, *see infra* Parts VI-VII, on which EPA relied in concluding that "collectively, the five NSR [provisions in the 2002 rule] will improve air quality," ENVIRONMENTAL IMPACT ANALYSIS at 2, there is a heightened need for EPA to have sufficient data to confirm that the remaining portions of the 2002 rule do not result in increased emissions that harm air quality and public health. Indeed, EPA's "necessarily wide latitude to make policy based on predictive judgments deriving from its general expertise implies a correlative duty to ascertain whether they work—that is, whether they actually produce the benefits [EPA] originally

predicted they would." *Am. Family Ass'n v. FCC*, 365 F.3d 1156, 1166 (D.C. Cir. 2004) (quoting *Bechtel v. FCC*, 10 F.3d 875, 880 (D.C. Cir. 1993)) (internal quotation marks omitted).

For now, it suffices to conclude that EPA's predictive judgment is entitled to deference. Incomplete data does not necessarily render an agency decision arbitrary and capricious, for "[i]t is not infrequent that the available data do not settle a regulatory issue, and the agency must then exercise its judgment in moving from the facts and probabilities on the record to a policy conclusion." *Motor Vehicle Mfrs. Ass'n*, 463 U.S. at 52; *cf. Time Warner*, 240 F.3d at 1133. Nor does the fact that "the evidence in the record may also support other conclusions . . . prevent us from concluding that [the agency's] decisions were rational and supported by the record." *See Lead Indus. Ass'n v. EPA*, 647 F.2d 1130, 1160 (D.C. Cir. 1980). EPA explained the available evidence and offered a "rational connection between the facts found and the choice made." *Burlington Truck Lines, Inc. v. United States*, 371 U.S. 156, 168 (1962). Petitioners do not provide a basis for the court to conclude that EPA's choice of a ten-year lookback period is "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 42 U.S.C. § 7607(d)(9).

IV. Methodology and Enforceability

Shifting from the baseline to the other half of the actual-to-projected-actual emissions calculation, we consider government and environmental petitioners' challenges to two features of the 2002 rule's projected-actual-emissions methodology: the exclusion from the emissions projection of any emissions due to increased demand and the "reasonable possibility" trigger for the rule's recordkeeping and reporting requirements.

A.

Demand Growth Exclusion. Under the 2002 rule, in order to calculate whether a change will result in a significant emissions increase, sources other than utilities compare their baseline emissions (determined using the ten-year lookback period) to expected post-change emissions. The post-change emissions calculation excludes any emissions increases that "an existing unit could have accommodated during the consecutive 24-month period used to establish the baseline actual emissions . . . and that are also unrelated to the particular project, including any increased utilization due to product demand growth." 67 Fed. Reg. at 80,277 (codified at 40 C.F.R. § 52.21(b)(41)(ii)(c)). Under the previous rule, only utilities could take advantage of this demand growth exclusion. 57 Fed. Reg. at 32,337; *see also* 67 Fed. Reg. at 80,202-03.

Government and environmental petitioners assert that in adopting the 2002 rule, EPA failed to address the fact that its 1998 NOA expressed provisional dissatisfaction with the demand growth exclusion. Characterizing the exclusion as a "departure from longstanding practice," EPA "*tentatively* concluded" in the NOA that the demand growth exclusion was "not appropriate and should not be continued, both as a general matter and especially in view of recent developments in the electric power sector." 63 Fed. Reg. at 39,860 (emphasis added). Because demand growth may be a "proximate cause" of physical or operational changes that might trigger NSR, EPA "seriously question[ed] whether market demand should ever be viewed as a significant factor . . . since in a market economy, all changes in utilization—and hence, emissions—might be characterized as a response to market demand." *Id.*

Contrary to petitioners' assertions, EPA did acknowledge these previous concerns when it adopted the 2002 rule. In the rule's preamble, EPA explained that "[b]oth the statute and

implementing regulations indicate that there should be a causal link between the proposed change and any post-change increase in emissions." 67 Fed. Reg. at 80,203. To that end, the rule excludes demand growth, but only where it is "unrelated to the particular project." *Id.* at 80,277 (codified at 40 C.F.R. § 52.21(b)(41)(ii)(c)). Despite this tailored approach, government petitioners would have us bind EPA to its "tentative[]" 1998 conclusions. We know of no authority for this proposition, nor do petitioners cite any. To be sure, when a petitioner alleges inadequate notice and "the change between the proposed and final rule [is] an important one, we . . . ask whether the final rule is a logical outgrowth of the proposed one." *Transmission Access Policy Study Group*, 225 F.3d at 729. Yet here, petitioners argue not that they received inadequate notice regarding the demand growth exclusion, but rather that EPA arbitrarily and capriciously changed its position regarding the exclusion's benefits. Central to notice-and-comment rulemaking is the ability of an agency to craft a final rule based on the comments of interested parties. EPA did just that.

Denying the petition for reconsideration of this issue, EPA explained, "While we projected that it would be difficult to separate demand growth increases from other increases resulting from a project, numerous industry commenters indicated that there are situations where the distinction clearly can be made," including "skyrocketing demand because the product becomes a fad; mishaps at a factory, causing production increases at remaining supplier sources; decrease in raw material prices; opening of new markets; and improved economic conditions." RECONSIDERATION TSD at 18-19. Although petitioners urge us to ignore the comments on which EPA relied and to credit other comments that demand growth and a physical or operational change are inextricable, they give no reasons for weighting the latter more heavily than the former. In any event, "the question we must answer . . . is not whether record evidence supports

[petitioners'] version of events, but whether it supports [the agency's]." *Fla. Mun. Power Agency v. FERC*, 315 F.3d 362, 368 (D.C. Cir. 2003) (noting that petitioner pointed to "some contradictory evidence" in the record). Here, as we have explained, EPA's approach finds ample support in the record.

Next, environmental petitioners insist that the regulations create a per se exclusion for demand growth. Significantly, however, petitioners never challenge EPA's interpretation of the statutory definition of modification—"any physical change in, or change in the method of operation of, a stationary source *which increases* the amount of any air pollutant emitted by such source or *which results* in the emission of any air pollutant not previously emitted," 42 U.S.C. § 7411(a)(4) (emphasis added)—as requiring "a causal link between the proposed change and any post-change increase in emissions." *See* 67 Fed. Reg. at 80,203 (citing 40 C.F.R. § 52.21(b)(2)(i)). Instead, they say that the rule excludes "any increased utilization due to product demand growth," even if unrelated to the change.

Petitioners misread the 2002 rule. The implementing regulations plainly allow exclusion of emissions that could have been accommodated during the baseline period and "that are also unrelated to the particular project." 67 Fed. Reg. at 80,277 (codified at 40 C.F.R. § 52.21(b)(41)(ii)(c)). This latter category "includ[es] any increased utilization due to product demand growth." *See id.* Thus, the regulation establishes two criteria a source must meet before excluding emissions from its projection: "(1) [t]he unit could have achieved the necessary level of utilization during the consecutive 24-month period [the source] selected to establish the baseline actual emissions; and (2) the increase is not related to the physical or operational change(s) made to the unit." *Id*. at 80,203. As EPA further explained:

> [E]ven if the operation of an emissions unit to meet a particular level of demand could have been accomplished during the representative baseline period, but it can be shown that the increase is related to the changes made to the unit, then the emissions increases resulting from the increased operation must be attributed to the modification project, and cannot be subtracted from the projection of post-change actual emissions.

TSD at I-4-37.

Because EPA adequately explained its reasons for extending the demand growth exclusion to all industries so long as the growth is unrelated to the change, we will deny the petition for review of those provisions.

B.

Recordkeeping and Reporting Requirements. Sources making physical or operational changes under the 2002 rule need not keep records unless they meet three criteria. First, sources must choose to project post-change emissions, instead of using the actual-to-potential test. 67 Fed. Reg. at 80,279 (codified at 40 C.F.R. § 52.21(r)(6)). Second, under the actual-to-projected-actual test, sources must determine they will not trigger NSR by significantly increasing their emissions. *Id.* Third, sources must nonetheless believe that there is a "reasonable possibility that [the] project . . . may result in a significant emissions increase." *Id.* Sources satisfying all three criteria must record the following information about the change:

(a) A description of the project;
(b) Identification of the emissions unit(s) whose emissions of a regulated NSR pollutant could be affected by the project; and
(c) A description of the applicability test used to determine

> that the project is not a major modification for any regulated NSR pollutant, including the baseline actual emissions, the projected actual emissions, the amount of emissions excluded under [the demand growth exclusion] and an explanation for why such amount was excluded, and any netting calculations, if applicable.

Id. Additionally, sources meeting the three standards must, for each unit involved in the change, track post-change emissions and, depending on the nature of the change, retain the data for five or ten years. *See id.* (codified at 40 C.F.R. § 52.21(r)(6)(iii)). Significant increases as compared to the baseline must be reported to sources' reviewing authorities, *see id.* (codified at 40 C.F.R. § 52.21(r)(6)(v)), who presumably would require such sources to undergo NSR.

By contrast, sources believing no reasonable possibility of a significant emissions increase exists need keep no records at all—neither the data on which they based their projections nor records of actual emissions going forward. *See id.* (codified at 40 C.F.R. § 52.21(r)(6)). Government petitioners argue that by allowing sources to decide whether to keep records relating to a particular change, EPA has rendered the actual-to-projected-actual methodology unenforceable. How, they ask, will EPA ensure that sources are not escaping NSR if they are allowed to destroy the data crucial to that determination?

Insisting that no enforceability problem exists, EPA argues that the 2002 rule *increases* recordkeeping requirements for non-utilities. Although it is technically correct that non-utilities were subject to less stringent recordkeeping requirements pre-2002, EPA's position ignores the major differences between the current and former methods. Prior to 2002, sources other than utilities evaluated post-change emissions under the more

onerous actual-to-potential test, which presumed that sources would operate at their maximum post-change potential to emit. *See* 57 Fed. Reg. at 32,336. Given that assumption, sources' actual post-change emissions could not, by definition, exceed their potential-to-emit, making records of these actual emissions unnecessary for the purpose of ascertaining whether post-change emissions increased beyond expectations. Moreover, to avoid NSR, which is easily triggered under the actual-to-potential test, sources could opt to establish an enforceable emissions cap based on projected post-change actual emissions. TSD at I-4-7. Thus, under the pre-2002 regime, non-utilities either accepted the rigors of the actual-to-potential test, eliminating the need for recordkeeping, or subjected their actual emissions to monitoring by state permitting authorities. *See id.*

The flaw in EPA's position is further underscored by comparing the recordkeeping requirements of the pre-2002 actual-to-projected-actual emissions methodology—applicable only to utilities—to the current version. Previously, utilities whose projections included no significant emissions increase had to supply permitting authorities with a minimum of five years of data to verify the projections' accuracy. *See* 57 Fed. Reg. at 32,336. Under the 2002 rule, by contrast, so long as sources foresee no "reasonable possibility" that changes may cause significant emissions increases, they have no obligation to retain the data underlying their projections, let alone send that information to permitting authorities. *See* 67 Fed. Reg. at 80,279 (codified at 40 C.F.R. § 52.21(r)(6)).

Of course, one might wonder why sources with no "reasonable possibility" of significantly increased emissions should keep records at all. If EPA actually knew which sources had no "reasonable possibility" of triggering NSR, these sources would obviously have no need to keep records. The problem is that EPA has failed to explain how, absent recordkeeping, it will

be able to determine whether sources have accurately concluded that they have no "reasonable possibility" of significantly increased emissions. We recognize that less burdensome requirements may well be appropriate for sources with little likelihood of triggering NSR, but EPA needs to explain how its recordkeeping and reporting requirements allow it to identify such sources.

EPA argues that "[t]here will be many cases where there will be a reasonable possibility that a significant increase will occur, and the 2002 rule imposes new recordkeeping requirements in those circumstances." Br. for Resp't at 99. Although this is certainly true, and although it is also true that sources failing to "maintain records in that situation . . . will have violated the recordkeeping requirements of the NSR Rule," *id.*, EPA misses the point. As petitioners emphasize, the rule allows sources that take advantage of the "reasonable possibility" standard to avoid recordkeeping altogether, thus thwarting EPA's ability to enforce the NSR provisions.

According to EPA, "the existence of vigorous enforcement demonstrates that EPA is willing and able to enforce its rules and that facilities have an incentive to be accurate in how they determine whether NSR applies." *Id.* at 101. To be sure, the record reveals a willingness to act against NSR violators, *see* Carol M. Browner, Adm'r, Envtl. Protection Agency, Remarks Prepared for Delivery at Clean Air Enforcement Press Conference (Nov. 3, 1999), but EPA never explains how it can continue such enforcement efforts with respect to sources which, believing no reasonable possibility of a significant emissions increase exists, keep no data by which the agency could prove an NSR transgression. Acknowledging as much in its response to comments about the demand growth exclusion, EPA noted that it is "very important that the source retain a record of all information available to support its initial claim" to an exclusion

because "[t]his information may be required by the reviewing authority." TSD at I-5-44.

At oral argument, EPA counsel asserted that under the reasonable possibility standard, enforcement authorities could conduct inspections and request information. Although conceding that nothing in the record addressed how authorities could access data through these mechanisms once a source had failed to keep records, counsel maintained that the methodology is enforceable simply because such actions are "inherent" in EPA's enforcement authority. EPA certainly has such inherent enforcement authority, but even inherent authority depends on evidence.

EPA tells us that the reporting requirements of the CAA's Title V and state minor NSR programs will provide the information enforcement authorities need. But EPA fails to explain how emissions reported under Title V can be traced to a particular physical or operational change. Moreover, reliance on state programs to establish minimum recordkeeping and reporting standards means that states unwilling to impose stricter rules are free to retain the 2002 rule's approach—a prospect we find unacceptable given our concerns with EPA's explanation of the methodology's enforceability.

Finally, we agree with government petitioners that the intricacies of the actual-to-projected-actual methodology will aggravate the enforcement difficulties stemming from the absence of data. The methodology mandates that projections include fugitive emissions, malfunctions, and start-up costs, and exclude demand growth unrelated to the change. *See* 67 Fed. Reg. at 80,246. Each such determination requires sources to predict uncertain future events. By understating projections for emissions associated with malfunctions, for example, or overstating the demand growth exclusion, sources could

conclude that a significant emissions increase was not reasonably possible. Without paper trails, however, enforcement authorities have no means of discovering whether the exercise of such judgment was indeed "reasonable."

Because EPA has failed to explain how it can ensure NSR compliance without the relevant data, we will remand for it either to provide an acceptable explanation for its "reasonable possibility" standard or to devise an appropriately supported alternative.

V. Plantwide Applicability Limitations

To afford sources the flexibility to respond rapidly to market changes and to eliminate the administrative burdens of "netting out" of NSR under the 1980 rule, the 2002 rule establishes an alternative method for assessing "increases" in emissions. *See id.* at 80,206-07. Under this method, a change does not "increase" net emissions and thus does not trigger NSR as long as source-wide emissions remain below the Plantwide Applicability Limitation ("PAL") specified in the source's PAL permit. *See id.* at 80,207. The PAL is calculated by adding a "significant" margin to the baseline actual emissions from any two-year period within the ten-year period immediately preceding the permit application. *See id.* at 80,285 (codified at 40 C.F.R. § 52.21(aa)(6)). The PAL permit is effective for ten years, *see id.* at 80,286 (codified at 40 C.F.R. § 52.21(aa)(8)(i)), and may be renewed prior to the expiration of the initial ten-year term, *see id.* at 80,287 (codified at 40 C.F.R. § 52.21(aa)(10)). With the PAL option comes various monitoring and recordkeeping requirements. *See id.* at 80,287-89 (codified at 40 C.F.R. § 52.21(aa)(12)). The source must employ a "monitoring system that accurately determines plantwide emissions of the PAL pollutant," *id.* at 80,287 (codified at 40 C.F.R. § 52.21(aa)(12)(i)(a)), using one of four specified methods, *see id.*

at 80,287-88 (codified at 40 C.F.R. § 52.21(aa)(12)(i)(b), (ii)). The monitoring system must be approved by EPA, *see id.* at 80,287 (codified at 40 C.F.R. § 52.21(aa)(12)(i)(b)), and re-validated every five years, *see id.* at 80,288 (codified at 40 C.F.R. § 52.21(aa)(12)(ix)). The source must keep "all records necessary to determine compliance" with the PAL permit, "including a determination of each emission unit's 12-month rolling total emissions." *Id.* (codified at 40 C.F.R. § 52.21(aa)(13)(i)). In addition, the source must submit to EPA "semi-annual monitoring reports" and "prompt deviation reports." *Id.* (codified at 40 C.F.R. § 52.21(aa)(14)).

Government and environmental petitioners contend that, like the ten-year lookback period, the PAL provision is arbitrary and capricious because it allows sources to increase their emissions beyond their most recent levels without triggering NSR. These contentions fail for the same reasons that petitioners' challenges to the ten-year lookback period fail. *See supra* Part III. Environmental petitioners also challenge the validity of the ten-year PAL term and the environmental impact of PALs, but they fail to demonstrate that PALs are based on an impermissible statutory interpretation or are otherwise arbitrary and capricious.

The CAA is silent on how to calculate emissions increases, and both the Supreme Court in *Chevron* and this court in *Alabama Power* acknowledged that EPA has the authority to define "increases" in terms of source-wide emissions. *See Chevron*, 467 U.S. at 859-66; *Alabama Power*, 636 F.2d at 400-03. Indeed, environmental petitioners do not challenge EPA's authority to establish a PAL program. Instead, they contend that the ten-year PAL term violates the contemporaneity requirement of *Alabama Power* because it allows sources to "net out" of NSR based on decreases in emissions that occur outside the five-year contemporaneity period established in the 1980 rule. *See*

45 Fed. Reg. at 52,736 (codified at 40 C.F.R. § 52.21(b)(3)(ii)). EPA contends that PALs are not subject to the contemporaneity requirement because they measure source-wide emissions and do not rely on the netting of emissions from individual units. *See* 67 Fed. Reg. at 80,215. This distinction is artificial, however, because source-wide emissions are nothing but the net emissions from all of the individual units in the source. *See id.* at 80,216. Indeed, EPA agrees that "[o]ne way of viewing a PAL is to focus on the increases and decreases at individual emissions units that, taken together, result in the net emissions from [the] source as a whole. . . . Viewed from this perspective, the term of the PAL constitutes the 'contemporaneous' period." *Id.*

Still, EPA has "discretion, within reason, to define which changes are substantially contemporaneous." *Alabama Power*, 636 F.2d at 402. To promote administrative efficiency, EPA decided to align the PAL permit process with the Title V permit process for existing sources, which occurs every five years. *See* 67 Fed. Reg. at 80,219. However, recognizing that "setting a PAL can be a complex and time consuming process," *id.* at 80,216, EPA determined that five years would not provide "a sufficient period of regulatory certainty" to induce sources to expend the "initial commitment of substantial resources" necessary to establish a PAL, *id.* at 80,219. In establishing the PAL term, EPA sought to provide both "an appropriate time of regulatory certainty" and "a sufficient period of time for planning long-term capital improvements." *Id*. EPA initially chose a five-year contemporaneity period in the 1980 rule because "five years is frequently used as the time duration over which corporate expansion planning is conducted." 45 Fed. Reg. at 52,701. But as EPA explained in the preamble to the 2002 rule, its business cycle study concluded that a ten-year period was necessary "to ensure that the normal business cycle would be captured generally for any industry." 67 Fed. Reg. at

80,216. Thus, EPA chose a ten-year PAL term "in an effort to balance the need for regulatory certainty, the administrative burden, and a desire to align the PAL renewal with the title V permit renewal." *Id.* at 80,219. This policy choice is entitled to deference because it involves a balancing of the environmental, economic, and administrative goals of the CAA, *see Chevron*, 467 U.S. at 864-66, that environmental petitioners fail to demonstrate is impermissible under the CAA.

As part of its Environmental Impact Analysis, EPA examined six pilot projects implementing flexible permits similar to PALs. *See* ENVIRONMENTAL IMPACT ANALYSIS apps. A-B. The participants in these pilot projects reduced their emissions by 27% to 83% below their PAL levels. *Id.* app. B at 2. Based on these results, EPA concluded that PALs encourage sources to reduce their emissions voluntarily in order to "create enough headroom for future expansions" during the PAL term. 67 Fed. Reg. at 80,207; *see* ENVIRONMENTAL IMPACT ANALYSIS app. B at 1. EPA projected that "PALs will over time tend to shift growth in emissions to cleaner units, because the growth will have to be accommodated under the PAL cap." 67 Fed. Reg. at 80,207. EPA also found that PALs encourage sources to implement physical or operational changes that improve efficiency and reduce emission rates by reducing the "administrative friction" associated with making such changes. *Id.* (internal quotation marks omitted); *see* ENVIRONMENTAL IMPACT ANALYSIS app. A at 4-5. Observing that none of the participants in the pilot projects exceeded their emissions caps or violated their monitoring requirements, EPA concluded that "flexible permit provisions (for example, emissions caps) are enforceable as a practical matter" by using the types of monitoring systems required by the 2002 rule. 67 Fed. Reg. at 80,207; *see* ENVIRONMENTAL IMPACT ANALYSIS app. A at 15-18. EPA further noted that even if sources do not voluntarily reduce their emissions, PALs still benefit the environment by

accounting for "insignificant" emissions increases that currently escape NSR. *See* 67 Fed. Reg. at 80,206; ENVIRONMENTAL IMPACT ANALYSIS app. B at 4. Under the default method for calculating emissions increases, increases that do not reach a "significant" level do not trigger NSR, even if they are significant in the aggregate. *See* 40 C.F.R. §§ 52.21(a)(2)(iv)(a), 52.21(b)(23). The PAL provision of the 2002 rule ensures that such increases count toward source-wide emissions and can trigger NSR if they exceed the PAL level. *See* ENVIRONMENTAL IMPACT ANALYSIS app. B at 4. While EPA acknowledged that it could not quantify the "aggregate environmental impacts of these small emissions increases, or the benefit that would arise from capping them," it estimated that "such benefits would be potentially large." *Id.* at 4-5.

Environmental petitioners fail to refute EPA's assessment of the environmental benefits of PALs. They point out that the pilot projects relied on lookback periods and permit terms shorter than ten years, and they contend that under the 2002 rule, sources have no incentive to reduce their emissions because the ten-year lookback period allows them to set their PALs high enough to accommodate future increases without any initial decreases. They also contend that under the 2002 rule, both significant and insignificant emissions increases will escape NSR because sources can set their PALs far above recent actual emissions. However, as discussed in Part III, EPA expects the ten-year lookback period to affect only a small percentage of sources. *See supra* Part III (citing ENVIRONMENTAL IMPACT ANALYSIS app. F). Therefore, EPA assumes that most sources will set their PALs equal to recent baseline actual emissions. *See* ENVIRONMENTAL IMPACT ANALYSIS app. B at 1-2. Based on this assumption, EPA "conservatively" estimates that sources will reduce their emissions by 10% to 33% below their PAL levels. *Id.* app. B at 3. State intervenors maintain that their own experience implementing the NSR program confirms EPA's

conclusions.

Accordingly, the court must defer to EPA's assessment of the environmental benefits of PALs, which is based on the agency's expert evaluation of technical data from the pilot projects. *See Huls Am., Inc. v. Browner*, 83 F.3d 445, 452 (D.C. Cir. 1996). Therefore, we uphold the PAL provision of the 2002 rule, 67 Fed. Reg. at 80,284-89 (codified at 40 C.F.R. § 52.21(aa)), as a reasonable exercise of EPA's authority under the CAA.

VI. Clean Units

To maximize source flexibility and to encourage sources to install state-of-the-art pollution control technology, the 2002 rule establishes "an innovative approach to NSR applicability" that measures "increases" in terms of "Clean Unit" status instead of actual emissions. 67 Fed. Reg. at 80,222. Under this approach, a change does not "increase" emissions and thus does not trigger NSR as long as it does not alter the unit's Clean Unit status, even if the change increases the source's net actual emissions. *Id.* A unit automatically qualifies for Clean Unit status if it has installed "state-of-the-art" pollution control technology (LAER or BACT) as a result of major NSR within the last ten years. *See id.* at 80,279-80 (codified at 40 C.F.R. § 52.21(x)(3)). A unit that has not undergone major NSR can also qualify for Clean Unit status if it demonstrates that its pollution control technology is "comparable" to LAER or BACT and that its allowable emissions will not violate national ambient air quality standards or new source performance standards. *See id.* at 80,281-83 (codified at 40 C.F.R. § 52.21(y)). A unit retains its Clean Unit status for ten years, *see id.* at 80,280 (codified at 40 C.F.R. § 52.21(x)(5)), and may renew its Clean Unit status upon expiration, *see id.* (codified at 40 C.F.R. § 52.21(x)(3)), as long as it complies with the emissions

limitations and work practice requirements in its NSR permit, *see id.* at 80,281 (codified at 40 C.F.R. § 52.21(x)(7)).

Government and environmental petitioners contend that the Clean Unit provision contravenes the plain meaning of the CAA because it measures "increases" in terms of Clean Unit status instead of actual emissions. EPA's response is that, because the CAA "is silent on whether increases in emissions for purposes of determining whether a physical or operational change constitutes a modification must be measured in terms of actual emissions, potential emissions, or some other currency," *id.* at 80,228, its interpretation of the ambiguous term "increases" is entitled to deference under *Chevron* Step 2. Upon employing "traditional tools of statutory interpretation" under *Chevron* Step 1 to ascertain whether "Congress had an intention on the precise question at issue," *Chevron*, 467 U.S. at 843 n.9, we conclude that the CAA unambiguously defines "increases" in terms of actual emissions, *cf. supra* Part II.

It is a "cardinal principle of statutory construction that a statute ought, upon the whole, to be so construed that, if it can be prevented, no clause, sentence, or word shall be superfluous, void, or insignificant." *TRW Inc. v. Andrews*, 534 U.S. 19, 31 (2001) (quoting *Duncan v. Walker*, 533 U.S. 167, 174 (2001)) (internal quotation marks omitted). Moreover, "when Congress includes particular language in one section of a statute but omits it in another section of the same Act, it is generally presumed that Congress acts intentionally and purposely in the disparate inclusion or exclusion." *Barnhart v. Sigmon Coal Co.*, 534 U.S. 438, 452 (2002) (quoting *Russello v. United States*, 464 U.S. 16, 23 (1983)) (internal quotation marks omitted).

In the 1977 amendments to the CAA, Congress defined "major emitting facilit[ies]" as "stationary sources of air pollutants which *emit*, or have the *potential to emit*, one hundred

tons per year or more of any air pollutant." 42 U.S.C. § 7479(1) (emphasis added). The juxtaposition of the terms "emit" and "potential to emit" indicates that when Congress enacted the NSR program in 1977, it was conscious of the distinction between actual and potential emissions, using the term "emit" to refer to actual emissions and the term "potential to emit" to refer to potential emissions. Indeed, the court stated in *Alabama Power* that the use of the term "emit," as opposed to "potential to emit," is a "reference to some measure of actual emissions." 636 F.2d at 353.

Similarly, in the same section of the 1977 amendments to the CAA, Congress defined "best available control technology" as "an *emission limitation* based on the maximum degree of reduction of each pollutant . . . *emitted* from any major emitting facility." 42 U.S.C. § 7479(3) (emphasis added). Again, the juxtaposition of the terms "emission limitation" and "emitted" indicates that Congress was conscious of the distinction between actual and allowable emissions, using the term "emitted" to refer to actual emissions and the term "emission limitation" to refer to allowable emissions.

In the same section of the 1977 amendments to the CAA, Congress applied NSR to "the modification (as defined in section 7411(a) of this title) of any source or facility." 42 U.S.C. § 7479(2)(C). Section 7411(a) defines a "modification" as any physical or operational change that "increases the amount of any air pollutant *emitted* by [the] source." 42 U.S.C. § 7411(a)(4) (emphasis added). As noted, when Congress enacted the 1977 amendments to the CAA, it distinguished between actual, potential, and allowable emissions. If Congress had intended for "increases" in emissions to be measured in terms of potential or allowable emissions, it would have added a reference to "potential to emit" or "emission limitations." The absence of such a reference must be given effect. *See Barnhart*,

534 U.S. at 452; *TRW*, 534 U.S. at 33. Moreover, even if the word "emitted" does not by itself refer to actual emissions, the phrase "the *amount* of any air pollutant *emitted* by [the] source" plainly refers to actual emissions. 42 U.S.C. § 7411(a)(4) (emphasis added). EPA itself came to the same conclusion in the preamble to the 1980 rule. *See* 45 Fed. Reg. at 52,700.

Therefore, because the plain language of the CAA indicates that Congress intended to apply NSR to changes that increase actual emissions instead of potential or allowable emissions, we hold that EPA lacks authority to promulgate the Clean Unit provision, and we vacate that portion of the 2002 rule, 67 Fed. Reg. at 80,279-83 (codified at 40 C.F.R. § 52.21(x)), as contrary to the statute under *Chevron* Step 1.

VII. Pollution Control Projects

In an effort to remove a "regulatory disincentive that might otherwise prevent industry from undertaking pollution control and prevention measures," *id.* at 80,232, the 2002 rule exempts "environmentally beneficial" pollution control projects ("PCPs") from NSR by excluding them from the definition of "modification." *See id.* at 80,275-76, 80,283-84 (codified at 40 C.F.R. §§ 52.21(b)(2)(iii)(h), 52.21(b)(32), 52.21(z)). Under the 2002 rule, a PCP that reduces emissions of a "primary" pollutant but increases emissions of a "collateral" pollutant is not a physical or operational "change" subject to NSR if its net effect is "environmentally beneficial." *Id.* at 80,232-33. EPA adopted a similar exemption for PCPs undertaken by electric utilities in the 1992 rule. *See* 57 Fed. Reg. at 32,336-37 (codified as amended at 40 C.F.R. §§ 52.21(b)(2)(iii)(h), 52.21(b)(32)).

Environmental petitioners contend that these exemptions violate the language of the CAA because PCPs plainly are physical or operational "changes" that increase emissions of

collateral pollutants. EPA concedes that PCPs are "changes" in the literal sense but contends that "Congress did not intend that PCPs be considered the type of activity that should trigger NSR." 67 Fed. Reg. at 80,238 (quoting 57 Fed. Reg. at 32,319). Because EPA fails to present evidence of such congressional intent, the plain meaning of the statute is conclusive. *See United States v. Ron Pair Enters., Inc.*, 489 U.S. 235, 242 (1989); *Engine Mfrs. Ass'n v. EPA*, 88 F.3d 1075, 1088-89 (D.C. Cir. 1996).

EPA points to nothing in the legislative history to support its view of congressional intent other than the fact that when Congress created the NSR program in 1977, it incorporated the statutory definition of "modification" from the NSPS program, which EPA regulations at the time had interpreted as excluding certain PCPs. *See* 40 Fed. Reg. at 58,419 (codified at 40 C.F.R. § 60.14(e)(5)). But for reasons explained above, nothing indicates that Congress intended to incorporate preexisting NSPS regulations into the NSR program. *See supra* Part II.

EPA's only other support for the PCP exemption is its view that it would be "absurd" for Congress to discourage PCPs by subjecting them to NSR. But there is nothing inherently "absurd" about increasing the regulatory cost of projects that increase collateral emissions, and EPA does not demonstrate otherwise. Congress could reasonably conclude, for example, that tradeoffs between pollutants are difficult to measure, and thus any significant increase in emissions of any pollutant should be subject to NSR. In any event, a bare assertion of absurdity cannot overcome the plain meaning of a statute: "there must be evidence that Congress meant something other than what it literally said before a court can depart from plain meaning." *See Engine Mfrs. Ass'n*, 88 F.3d at 1088.

Environmental petitioners contend that the context and

legislative history of the statutory definition of "modification" support a plain reading of the term "change." Essentially, they maintain that if Congress intended to exempt "environmentally beneficial" PCPs from NSR, it would have done so explicitly, as it did for clean coal technology, *see* 42 U.S.C. § 7651n, and for PCPs in extreme nonattainment areas, *see id.* § 7511a(e)(2). One of the environmental petitioners argued during the comment period on the proposed rule that "[n]othing in the statute or its legislative history suggests an intent to authorize a blanket exclusion of pollution control projects," citing § 7511a(e)(2) as an example of how Congress expressly creates an exemption when it intends to do so. Statement of David G. Hawkins, Natural Res. Def. Council 12 (July 19, 1991). We note that both § 7511a(e)(2) and § 7651n were enacted in 1990, and "the views of a subsequent Congress form a hazardous basis for inferring the intent of an earlier one." *PDK Labs. Inc. v. U.S. Drug Enforcement Admin.*, 362 F.3d 786, 794 (D.C. Cir. 2004) (quoting *United States v. Price*, 361 U.S. 304, 313 (1960)) (internal quotation marks omitted). Nevertheless, the point remains that Congress did not expressly authorize EPA to create regulatory exemptions to NSR.

EPA's only response is that "[t]here is no reason to conclude that, solely by creating the clean coal exemption, Congress somehow precluded EPA from crafting a broader regulatory exemption from pollution control projects in general." Br. for Resp't at 120. Absent clear congressional delegation, however, EPA lacks authority to create an exemption from NSR by administrative rule. *See Sierra Club v. EPA*, 129 F.3d 137, 140 (D.C. Cir. 1997). Indeed, "this court has consistently struck down administrative narrowing of clear statutory mandates." *Id.*

Moreover, environmental petitioners point to legislative history suggesting that Congress rejected a broad PCP

exemption: in enacting the NSPS program Congress rejected one version of the statute that defined "modification" to exclude "pollution abatement facilities." S. REP. NO. 91-1196 (1970). Even assuming, as EPA contends, that this legislative history does not reflect a "permanent rejection" of a PCP exemption, Br. for Resp't at 120 n.67 (internal quotation marks omitted), EPA points to nothing in the legislative history indicating that Congress intended to authorize EPA to create such an exemption.

Therefore, we hold that EPA lacks authority to create PCP exemptions from NSR, and we vacate those parts of the 1992 and 2002 rules, 57 Fed. Reg. at 32,336-37; 67 Fed. Reg. at 80,275-76, 80,283-94 (codified at 40 C.F.R. §§ 52.21(b)(2)(iii)(h), 52.21(b)(32), 52.21(z)), as contrary to the statute.

VIII. State and Local Authority

Government petitioners (various states, municipalities, and pollution regulatory authorities) advance several additional challenges to the 2002 rule, two substantive and one procedural. Substantively, the governments allege that the 2002 rule violates section 116 of the Act, which preserves state authority to adopt alternative pollution standards or limitations, except that state standards may not be "less stringent" than EPA standards or limitations. *See* 42 U.S.C. § 7416. The governments assert that the 2002 rule unlawfully precludes states from adopting more stringent criteria. They also argue that the 2002 rule violates the anti-backsliding provision of the Act, which disables EPA from relaxing requirements in effect in nonattainment areas before November 15, 1990 (the date of the 1990 amendments' adoption). *See id.* § 7515. We find both claims unripe.

Finally, government petitioners urge that EPA failed to give

adequate notice that it might adopt a rule not giving states authority to pick and choose among the innovations from the prior rule, and that the rule adopted was not a "logical outgrowth" of the noticed proposals. We reject this challenge; EPA provided adequate notice in the initial proposal.

A.

Alternative NSR Standards. Section 116 of the Act, 42 U.S.C. § 7416, provides that states and localities may adopt provisions as part of a SIP that deviate from those required for SIPs by EPA, *unless* the state or local provision is "less stringent" than the EPA provision. *See also* 40 C.F.R. § 51.166(a)(7)(iv) (calling for EPA approval of deviant NSR SIPs that are "more stringent than or at least as stringent in all respects" as the corresponding EPA provision). EPA concluded that the elements of the 2002 rule would work better and be more environmentally beneficial if implemented together. 67 Fed. Reg. at 80,241. Government petitioners argue that because EPA adopted the elements of the 2002 rule as "minimum" requirements, EPA has precluded approval of more stringent SIPs.

Government petitioners' reading of the regulations is hardly chimerical. The preamble said that "[t]o be approvable under the SIP, State and local agency programs implementing part C (PSD permit program in § 51.166) or part D (nonattainment NSR permit program in § 51.165) *must include* today's changes as minimum program elements." *Id.* at 80,240 (emphasis added). But other portions of the preamble suggest a good deal of wiggle room. EPA later asserted that "even without the menu approach [which would have allowed selective rather than wholesale adoption], State and local jurisdictions have significant freedom to customize their NSR programs. Ever since our current NSR regulations were adopted in 1980, we have taken the position that States may meet the requirements of

part 51 with different but equivalent regulations." *Id.* at 80,241/2 (internal quotation marks omitted). It also explained that states simply adopting the EPA provisions could expect quick SIP approval, while a state not doing so would need to show that its alternative was "at least as stringent" as the federal requirement. *Id.* The text of 40 C.F.R. § 51.166(a)(7)(iv), quoted above, similarly indicates the permissibility of "more" or "equally" stringent provisions. Government petitioners insist that the choice offered is illusory, but until EPA has rejected a newly submitted SIP, we think the issue is unripe.

The seemingly contradictory statements in the preamble leave some uncertainty about how EPA will treat SIPs that differ from the substance of the 2002 rule, and thus suggest that the governments' issue is now unfit for review. *See Abbott Labs.*, 387 U.S. at 148. Apart from the ambiguity in the preamble itself, EPA counsel said at oral argument that EPA would consider SIPs that do not contain the five elements of the 2002 rule. *See* Oral Arg. Tr. at 169-72. As EPA pointed out in the rulemaking itself, no state SIP proposals were under review in the rulemaking. RECONSIDERATION TSD at 73. Unlike *Whitman v. American Trucking Ass'n*, 531 U.S. 457 (2001), review would take place before "EPA has concluded its consideration of the implementation issue," *id.* at 479.

The governments assert that delay in review inflicts hardship, *see Abbott Labs.*, 387 U.S. at 148, and note that in *American Trucking* the Court found the time and expense of preparing new SIPs an adequate hardship, 531 U.S. at 479. But if the elements of the 2002 rule *are* "less stringent" than the superseded ones, as the governments allege, then on their own reasoning existing SIPs would necessarily be "at least as stringent" as those required by the new rules. Indeed, as the governments offer no hypotheticals of *new* provisions that they might adopt, simple resubmission of an existing plan for EPA

approval would (if rejected) present their challenge in a plainly justiciable form, imposing neither the hardship of developing new plans nor sacrifice of any as-yet apparent state policy preference. Even if governments elect to develop new plans rather than submit existing plans, the fitness and hardship calculation differs from that in *American Trucking*, as the issue posed here is far less fit for review than the outright statutory issue presented there. Thus the hardship from deferring review seems small in relation to the risks of premature judicial entanglement in what may yet prove to be a hypothetical issue.

B.

Anti-backsliding. Section 193 of the Act, a so-called anti-backsliding provision, bars EPA from altering any control requirement in effect prior to November 15, 1990 in an area that is a nonattainment area for an air pollutant, unless the revision "insures equivalent or greater emission reductions of such air pollutant." *See* 42 U.S.C. § 7515. (We assume arguendo that section 193 applies to changes in the regulatory definition of "modification" for NSR purposes.) Government petitioners argue that because the new rules in some respects diminish the likelihood of NSR, they must flunk the "greater or equivalent emission reductions" test. *See* Br. for Gov't Pet'rs at 22. The record itself contains conflicting assertions. *Compare* EIP REPORT at 1-2 (projecting potential emissions increases in all twelve of twelve states studied), *with* ENVIRONMENTAL IMPACT ANALYSIS at 3 (noting difficulty of quantifying environmental benefits, but concluding that the new rule will not cause net environmental harm). The environmental effects of less sweeping NSR are ambiguous: more sweeping NSR will tend to assure improved emissions controls on qualifying "modifications," but may also deter change and thereby preserve firms' use of older, dirtier technologies. We are in no position to say which effects predominate here. This is particularly true since today's invalidation of portions of the new rule may affect

its overall environmental impact as compared to the old rule. *See* ENVIRONMENTAL IMPACT ANALYSIS at 3. Until an adequate factual record is developed, as might occur in the course of a state's quest for approval of a SIP meeting the old criteria or in some other context, the claim appears at best unripe.

C.

Notice re Menu of Alternatives. EPA in 1996 proposed a "menu of alternatives" approach by which governments would be allowed to choose any or all of the new program elements, but would not be required to adopt any. *See* 61 Fed. Reg. at 38,251; *see also* 67 Fed. Reg. at 80,241. In the final rule, however, EPA elected not to implement the menu approach, choosing instead to adopt the new elements as part of a mandatory package (subject to the exception for more stringent requirements). 67 Fed. Reg. at 80,241/1. Government petitioners urge that the ultimate choice was not a "logical outgrowth" of EPA's initial proposal, and was thus invalid for want of adequate notice. And, as EPA had without discussion rejected petitioners' request for reconsideration on the subject, petitioners argue that at a minimum we should remand the case for such reconsideration.

Given that the status quo ante did not involve a menu of options, there were two readily foreseeable outcomes that could result from the proposal. Either the menu of options approach would be adopted or it would not. "One logical outgrowth of a proposal is surely, as EPA says, to refrain from taking the proposed step." *Am. Iron & Steel Inst. v. EPA*, 886 F.2d 390, 400 (D.C. Cir. 1989).

The governments also say, quoting our decision in *Horsehead Resource Development Co. v. Browner*, 16 F.3d 1246, 1268 (D.C. Cir. 1994), that "the component parts [of the rule] were never collected together in such a fashion" as to

enable them to anticipate and adequately comment on the ultimate rule. But whereas in *Horsehead* the notice called for data in a way that gave little clue as to their ultimate use, *id*., petitioners point to no such mystification here. Indeed, EPA received extensive comments on all aspects of the rule, including whether to integrate the elements into a set of minimum NSR program requirements. *See* RECONSIDERATION TSD at 75. We find no inadequacy of notice.

IX. Conclusion

Accordingly, we deny the petitions of government, environmental, and industry petitioners except as follows: we vacate the provisions of the 2002 rule regarding the Clean Unit applicability test and Pollution Control Projects; we remand the recordkeeping provisions to EPA either to provide an acceptable explanation for its "reasonable possibility" standard or to devise an appropriately supported alternative; and we dismiss in part the petitions of government and industry petitioners as unripe.

WILLIAMS, *Senior Circuit Judge*, concurring: I join the opinion for the court. We remand the recordkeeping and reporting elements of the 2002 rule because of EPA's failure to explain its decisions on these elements. Maj. Op. at 51-56. As I understand the remand, the agency's obligation is to analyze the trade-off between compliance improvement and the burdens of data collection and reporting. In making its choice on some specific degree and type of collection and reporting, it must articulate a reasoned judgment as to why any proposed additional burden would not be justifiable in terms of the likely enhancement of compliance. It need not show that the system chosen will achieve perfect NSR compliance—a showing that I do not believe we could lawfully demand. Perfection is often too costly to be sensible.

On a broader note, this case illustrates some of the painful consequences of reliance on command-and-control regulation in a world where emission control is typically far more expensive, per unit of pollution, when accomplished by retrofitting old plants than by including state-of-the-art control technology in new ones. In the interests of reasonable thrift, such regulation inevitably imposes more demanding standards on the new. But that provides an incentive for firms to string out the life of old plants. Indefinite plant life is impossible without modifications, however, so the statute conditions modifications on the firm's use of technological improvements. This in turn replicates the original dilemma: a broad concept of modification extends both the scope of the mandate for improved technology and the incentive to keep the old. By contrast, emissions charges or marketable pollution entitlements provide incentives for firms to use—*at any and every plant*—all pollution control methods that cost less per unit than the emissions charge or the market price of an entitlement, as the case may be.