

United States Court of Appeals
FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued September 22, 2020

Decided January 29, 2021

No. 15-1465

SIERRA CLUB, ET AL.,
PETITIONERS

v.

ENVIRONMENTAL PROTECTION AGENCY AND ANDREW
WHEELER, ADMINISTRATOR, U.S. ENVIRONMENTAL
PROTECTION AGENCY,
RESPONDENTS

STATE OF TEXAS AND TEXAS COMMISSION ON
ENVIRONMENTAL QUALITY,
INTERVENORS

Consolidated with 19-1024

On Petitions for Review of Administrative Action
of the United States Environmental Protection Agency

Seth L. Johnson argued the cause and filed the briefs for
petitioners.

David O'Brien Frederick and *Amy Catherine Dinn* were
on the brief for *amicus curiae* Caring for Pasadena
Communities in support of petitioners.

Perry M. Rosen, Senior Attorney, United States Department of Justice, argued the cause for the respondents. With him on the brief were *Jeffrey Bossert Clark*, Assistant Attorney General, and *Jonathan D. Brightbill*, Principal Deputy Assistant Attorney General.

Ken Paxton, Attorney General, Office of the Attorney General for the State of Texas, *Jeffrey C. Mateer*, First Assistant Attorney General, *Priscilla M. Hubenak*, Chief, Environmental Protection Division, and *Linda B. Secord*, Assistant Attorney General, were on the brief for intervenor-respondents the State of Texas and the Texas Commission on Environmental Quality.

Bayron T. Gilchrist, *Barbara Baird*, and *Megan E. Lorenz Angarita* were on the brief for *amicus curiae* South Coast Air Quality Management District in support of respondents.

Aaron M. Flynn, *Lucinda Minton Langworthy*, *Daryl L. Joseffer*, *Michael B. Schon*, and *Peter Tolsdorf* were on the brief for *amicus curiae* American Chemistry Council, et al. in support of respondents.

Before: TATEL and KATSAS, *Circuit Judges*, and EDWARDS, *Senior Circuit Judge*.

Opinion for the Court filed by *Circuit Judge* TATEL.

TATEL, *Circuit Judge*: In these consolidated cases, we consider challenges to four provisions of the Environmental Protection Agency's 2015 and 2018 rules implementing the National Ambient Air Quality Standards for ozone. For the reasons set forth below, we vacate two provisions—the interprecursor trading program and the interpretation of the

Clean Air Act’s contingency measures requirements—because they contravene the statute’s unambiguous language. We vacate another provision—the implementation of the milestone compliance demonstration requirement—because it rests on an unreasonable interpretation of the statute. Lastly, we deny the petition for review with respect to the alternative baseline years provision.

I.

Under the Clean Air Act, the Environmental Protection Agency (EPA) must publish a list of air pollutants that “may reasonably be anticipated to endanger public health or welfare.” 42 U.S.C. § 7408(a)(1)(A). For each air pollutant, EPA must set primary and secondary National Ambient Air Quality Standards (NAAQS), specifying the levels of air quality “based on such criteria and allowing an adequate margin of safety” that are “requisite to protect the public health” for primary NAAQS, *id.* § 7409(b)(1), and specifying levels that are “requisite to protect the public welfare” for secondary NAAQS, *id.* § 7409(b)(2).

“Once EPA establishes NAAQS for a particular pollutant,” those NAAQS become “the centerpiece of a complex statutory regime aimed at reducing the pollutant’s atmospheric concentration.” *Natural Resources Defense Council v. EPA (NRDC I)*, 777 F.3d 456, 458 (D.C. Cir. 2014) (internal quotation marks omitted). After setting NAAQS, EPA establishes air quality control regions, 42 U.S.C. § 7407, and areas within those regions are designated as “nonattainment” when they do not meet the NAAQS for a specific pollutant, “attainment” when they do meet them, or “unclassifiable” when it cannot be determined “on the basis of available information” whether they meet the NAAQS, *id.* § 7407(d)(1)(A). States have “the primary responsibility for assuring air quality,” *id.* § 7407(a), and they must submit state

implementation plans (SIPs) that “provide[] for implementation, maintenance, and enforcement of” the NAAQS. *Id.* § 7410(a)(1).

This case concerns the implementation of the NAAQS for ozone, “an essential presence in the atmosphere’s stratospheric layer” that is “dangerous at ground level.” *South Coast Air Quality Management District v. EPA (South Coast I)*, 472 F.3d 882, 887 (D.C. Cir. 2006). Not directly emitted through human activity, ozone “forms when other atmospheric pollutants—ozone ‘precursors’—react in the presence of sunlight.” *American Trucking Associations, Inc. v. EPA*, 283 F.3d 355, 359 (D.C. Cir. 2002). These precursors include volatile organic compounds (VOCs) and oxides of nitrogen (NO_x). *South Coast I*, 472 F.3d at 887.

In 1990, Congress amended the Clean Air Act, finding that the statute had failed to produce the anticipated reductions of ozone and certain other pollutants. Accordingly, it “abandoned the discretion-filled approach of two decades prior in favor of more comprehensive regulation of six pollutants,” including ozone, “that Congress found to be particularly injurious to public health.” *South Coast I*, 472 F.3d at 887. Congress first redesignated the existing approach as Subpart 1, and that approach “continued to apply as a default matter to pollutants not specifically addressed in the amended portions of the Act.” *NRDC I*, 777 F.3d at 460. Congress then added Subpart 2, which focuses on ozone and its precursors. *See* 42 U.S.C. §§ 7511–7511f. Subpart 2 directs that each ozone nonattainment area shall be classified as “marginal,” “moderate,” “serious,” “severe,” or “extreme” based on how much the ozone level in that area exceeds the NAAQS. *Id.* §§ 7511(a)–(b). Nonattainment areas must achieve the primary NAAQS “as expeditiously as practicable,” *id.* § 7511(a)(1), although “[a]n area that exceeds the NAAQS by a greater

margin is given more time to meet the standard but is subjected to progressively more stringent emissions controls for ozone precursors,” chiefly, VOCs and NO_x. *South Coast Air Quality Management District v. EPA (South Coast II)*, 882 F.3d 1138, 1143 (D.C. Cir. 2018) (internal quotation marks omitted).

Setting the stage for this case, EPA promulgated a new NAAQS for ozone in 2008. National Ambient Air Quality Standards for Ozone, 73 Fed. Reg. 16,436 (Mar. 27, 2008). Seven years later, in 2015, it promulgated a rule implementing the 2008 NAAQS. Implementation of the 2008 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements (2015 Implementation Rule), 80 Fed. Reg. 12,264 (Mar. 6, 2015). Several petitioners in this case challenged various provisions of that 2015 Implementation Rule, and our court resolved all but one of those challenges in *South Coast Air Quality Management District v. EPA*, or *South Coast II*, 882 F.3d 1138. That remaining challenge related to a provision called the “interprecursor trading program.” While *South Coast II* was pending, EPA granted an administrative petition to reconsider that program, so the *South Coast II* panel severed the challenge, leaving it unresolved. Order, *South Coast Air Quality Management District v. EPA*, No. 15-1115 (D.C. Cir. Dec. 18, 2015).

Three years later, EPA included the interprecursor trading program in a rule implementing new ozone NAAQS that it had issued in 2015. *See* National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. 65,292 (Oct. 26, 2015); Implementation of the 2015 National Ambient Air Quality Standards for Ozone: Nonattainment Area State Implementation Plan Requirements (2018 Implementation Rule), 83 Fed. Reg. 62,998 (Dec. 6, 2018). That 2018 Implementation Rule is the focus of this case.

Petitioners Sierra Club, Conservation Law Foundation, Downwinders at Risk, Physicians for Social Responsibility – Los Angeles, and National Parks Conservation Association challenge four features of the 2018 Rule: (1) the interprecursor trading program, as well as provisions (2) allowing states to demonstrate compliance with the Act’s reasonable further progress milestone requirements through an implementation-based method, (3) allowing states to choose between two options for the reasonable further progress baseline year, and (4) allowing nonattainment areas to use already-implemented measures to satisfy the Act’s contingency measures requirements. Petitioners argue that these four provisions are “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law.” 42 U.S.C. § 7607(d)(9)(A). We have jurisdiction to consider their challenges under 42 U.S.C. § 7607(b)(1), “which gives this court exclusive jurisdiction over challenges to final EPA actions.” *Natural Resources Defense Council v. EPA*, 643 F.3d 311, 317 (D.C. Cir. 2011).

II.

Because Petitioners challenge all four provisions on the ground that they violate the Clean Air Act, we apply the familiar two-step framework of *Chevron, U.S.A., Inc. v. Natural Resources Defense Council, Inc.*, 467 U.S. 837 (1984). See *NRDC I*, 777 F.3d at 463 (“review[ing] EPA’s interpretation of the Clean Air Act pursuant to the two-step *Chevron* framework”). We first ask whether Congress has “directly spoken to the precise question at issue.” *Chevron*, 467 U.S. at 842. But if “the statute is silent or ambiguous with respect to the specific issue,” we defer to EPA’s interpretation of the Act as long as it is “based on a permissible construction of the statute.” *Id.* at 843.

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A.

We start with Petitioners' challenge to the interprecursor trading program for permitting offsets. Under the Act's Nonattainment New Source Review program, SIPs must require permits for the modification or construction of major stationary sources "to assure" that the relevant NAAQS "are achieved." 42 U.S.C. § 7410(a)(2)(C); *see South Coast II*, 882 F.3d at 1144. The goal is "to ensure that new or modified sources will not exacerbate the pollution problem in the nonattainment area." *South Coast II*, 882 F.3d at 1144. EPA may issue permits for a source if the agency determines that sufficient offsets, or emissions reductions, have been obtained from other sources in the area, "such that total allowable emissions from existing sources in the region, from new or modified sources which are not major emitting facilities, and from the proposed source will be sufficiently less than total emissions from existing sources" by the time construction or modification begins. 42 U.S.C. § 7503(a)(1)(A). Generally, sources can comply with offset requirements "for increased emissions of any air pollutant only by obtaining emission reductions of such air pollutant from the same source or other sources in the same nonattainment area." *Id.* § 7503(c)(1). These emissions reductions "shall assure that the total tonnage of increased emissions of the air pollutant from the new or modified source shall be offset by an equal or greater reduction . . . in the actual emissions of such air pollutant from the same or other sources in the area." *Id.*

Subpart 2 extends the permit requirements to ozone and its precursors. *See id.* § 7511a(a)(2)(C) (requiring permit program in SIPs for marginal areas); *id.* § 7511a(b) (moderate areas); *id.* § 7511a(c) (serious areas); *id.* § 7511a(d) (severe areas); *id.* § 7511a(e) (extreme areas). As for VOC offsets, Subpart 2 provides that "[f]or purposes of satisfying the emission offset requirements of this part, the ratio of total emission reductions

of volatile organic compounds to total increased emissions of such air pollutant shall be at least” various default ratios, depending on the level of nonattainment: 1.1 to 1 for marginal areas, *id.* § 7511a(a)(4), 1.15 to 1 for moderate areas, *id.* § 7511a(b)(5), 1.2 to 1 for serious areas, *id.* § 7511a(c)(10), 1.3 to 1 for severe areas, *id.* § 7511a(d)(2) (subject to exception), and 1.5 to 1 for extreme areas, *id.* § 7511a(e)(1) (subject to exception). Subpart 2 extends these provisions to NO_x, although it excludes certain circumstances, such as when EPA determines that, for specific sources, “net air quality benefits are greater in the absence of reductions of oxides of nitrogen from the sources concerned.” *Id.* § 7511a(f)(1).

The 2018 Implementation Rule interprets these provisions to allow interprecursor trading programs for offsets. Under these programs, which states may choose to establish, when ozone-related offsets are required for permits under the Act’s Nonattainment New Source Review program, the offset requirement can be satisfied by “trading” reductions in emissions of ozone *precursors*, i.e., VOCs and NO_x. 2018 Implementation Rule, 83 Fed. Reg. at 63,016–21. Put differently, the 2018 Rule interprets the statute as requiring offsets of *ozone* for these permits, and accordingly allows offsets—emissions reductions—of one ozone precursor (VOCs or NO_x) to stand in for the other (NO_x or VOCs, respectively) in most circumstances. *Id.* Because reductions in one precursor’s emissions are not always equivalent, in terms of their impact on ozone levels, to reductions in the other precursor’s emissions, the 2018 Implementation Rule requires that, to mediate between the two precursors, states would have to use (1) default ratios, (2) case-specific ratios, or (3) a combination of the two. *Id.* at 63,017. States may implement interprecursor trading ratios without EPA approval, but those ratios not in SIPs would be subject to public comment when used in individual permits. *Id.* at 63,017–18. These ratios, the

2018 Rule explains, must “provide an equivalent or greater ozone air quality benefit in the applicable ozone nonattainment area” than would exist absent interprecursor trading. *Id.* at 63,017.

An example in the 2018 Implementation Rule helps to clarify what this arrangement might look like in practice. *See id.* at 63,016 n.39. Suppose that a major source subject to Nonattainment New Source Review in a moderate area seeks to offset an increase in NO_x emissions of 200 tons per year with reductions in VOC emissions. *Id.* Under the 2018 Rule, that 200 tons per year increase is first subject to the moderate area offset ratio of 1.15 to 1 set by the Act, *see* 42 U.S.C. § 7511a(b)(5), and the result of that calculation is then subject to the relevant interprecursor trading ratio, which the Rule assumes is 5 here. 2018 Implementation Rule, 83 Fed. Reg. at 63,016 n.39. At the first step, 200 tons per year is multiplied by 1.15, yielding 230 tons per year. At the second step, those 230 tons per year are multiplied by 5, yielding 1,150 tons per year. So the increase in NO_x emissions of 200 tons per year could be offset by a reduction in VOC emissions of 1,150 tons per year.

Petitioners urge us to vacate the interprecursor trading program, arguing that (1) the Clean Air Act unambiguously prohibits interprecursor trading, (2) EPA has provided no rational basis for authorizing the program, and (3) interprecursor trading violates the Act’s anti-backsliding provision. Petitioners also contend that the program impermissibly allows required emissions reductions for one precursor to be offset with “banked allowances” of emissions reductions of the other precursor. Because we agree with Petitioners that the interprecursor trading program violates the statute’s plain text, we have no need to address their other arguments.

Recall that Subpart 2's offset provisions related to ozone and its precursors specify that "the ratio of total emission reductions of volatile organic compounds to total increased emissions of *such* air pollutant shall be" the various ratios previously laid out. 42 U.S.C. §§ 7511a(a)(4), (b)(5), (c)(10), (d)(2), (e)(1) (emphasis added). The statute generally extends these offset ratios to NO_x. *See* 42 U.S.C. § 7511a(f)(1).

As Petitioners argue, the phrase "such air pollutant" in these subsections unambiguously refers back to VOCs. In general, "the adjective 'such' means 'of the kind or degree already described or implied.'" *Culbertson v. Berryhill*, 139 S. Ct. 517, 522 (2019) (quoting H. Fowler & F. Fowler, *Concise Oxford Dictionary of Current English* 1289 (5th ed. 1964)). The closest potential "air pollutant" preceding the "such air pollutant" language is "volatile organic compounds," which appears in the very same sentence just five words earlier. *See* 42 U.S.C. §§ 7511a(a)(4), (b)(5), (c)(10), (d)(2), (e)(1). By contrast, the word "ozone," which EPA interprets "such air pollutant" to mean, last appears five subsections above the first precursor offset provision and 334 words before the phrase "such air pollutant." *See id.* § 7511a(1)(C). The phrase "such air pollutant" thus "quite obviously refers back to" volatile organic compounds, and the same reasoning applies to NO_x under the provision extending these offset requirements to NO_x. *Clean Air Council v. Pruitt*, 862 F.3d 1, 9 (D.C. Cir. 2017) (per curiam). In this context, then, the statute treats VOCs and NO_x as the relevant air pollutants. Had Congress intended to allow interprecursor trading for offsets, it would have used the phrase "ozone precursors" instead of "such air pollutant," as it does elsewhere in the contemporaneously enacted provisions of Subpart 2. *See, e.g.*, 42 U.S.C. §§ 7511d(e), 7511f. The plain language of the statute thus requires that increased VOC emissions be offset with

reductions in VOC emissions, and the same is true for NO_x emissions under most circumstances.

Seeking to avoid the definitional and grammatical consequences of “such,” EPA focuses on the statute’s general offset provision in Subpart 1, 42 U.S.C. § 7503(c)(1), and its definition of air pollutant, which “includes any precursors to the formation of any air pollutant, to the extent [EPA] has identified such precursor or precursors for the particular purpose for which the term ‘air pollutant’ is used,” *id.* § 7602(g). These provisions, EPA argues, give it broad discretion to define “air pollutant” for the purpose of offsets, and it has determined that it is ozone, not VOCs and NO_x, that is the “air pollutant” here. Consequently, “a source may satisfy *any* offset requirement . . . by obtaining commensurate reductions of the ‘air pollutant’ associated with the newly constructed or modified source, in this case ozone.” EPA Br. 16.

In addition to ignoring the word “such,” EPA’s argument runs afoul of the “‘basic principle of statutory construction that a specific statute . . . controls over a general provision . . . particularly when the two are interrelated and closely positioned.’” *Adirondack Medical Center v. Sebelius*, 740 F.3d 692, 698 (D.C. Cir. 2014) (alterations in original) (quoting *HCSC–Laundry v. United States*, 450 U.S. 1, 6 (1981)). It is true that section 7602(g) gives EPA general authority to define “air pollutant,” but section 7511a(a)(4) and its counterparts expressly recognize that VOCs and NO_x are precursors for the purpose of offsets, precluding EPA from determining otherwise. It is especially clear that whatever discretion section 7602(g) affords EPA cannot trump the precursor-specific provisions given that, as the Supreme Court has made clear, “[t]he principal distinction between Subpart 1 and Subpart 2 is that the latter eliminates regulatory discretion that the former

allowed.” *Whitman v. American Trucking Associations, Inc.*, 531 U.S. 457, 484 (2001).

Moreover, EPA’s interpretation of “such air pollutant” as referring to ozone conflicts with the plain text of the general offset provision and the ozone-specific offset provisions. Those provisions all relate to “emissions” of “such air pollutant,” *see id.* §§ 7503(c)(1), 7511a(a)(4), but, as EPA recognizes, “ozone is not emitted directly into air,” *Maryland v. EPA*, 958 F.3d 1185, 1190 (D.C. Cir. 2020); *see* National Ambient Air Quality Standards for Ozone, 80 Fed. Reg. at 65,299 (“Ozone is formed near the earth’s surface due to chemical interactions involving solar radiation and precursor pollutants including volatile organic compounds (VOCs) and NO_x.”). Given that there are no emissions of ozone in the same way that there are emissions of VOCs or NO_x, it makes no sense to read those provisions as referring to ozone. EPA’s interpretation also conflicts with the general offset provision’s tonnage requirements. Although that provision requires that the tonnage to be reduced be “greater or equal” to the increased tonnage of an air pollutant, *see* 42 U.S.C. § 7503(c)(1), if emissions reductions of VOCs and NO_x were traded, the increased tonnage of emissions of one air pollutant—either VOCs or NO_x—could be less than the tonnage of the reduced emissions of the same pollutant.

EPA attempts to distinguish section 7511a(a)(4) and its counterparts from other provisions of Subpart 2 that specifically refer to one or both precursors instead of using the phrase “such air pollutant.” According to EPA, Congress’s use of the phrase “such air pollutant” in section 7511a(a)(4) when it could have specified VOC emissions reductions demonstrates an intent to allow the agency to define what “such air pollutant” is. This argument overlooks the word “such” and ignores the differing contexts of section 7511a(a)(4) and the

provision that EPA relies on, section 7511a(b)(1)(A)(i). The latter addresses “volatile organic compound emission reductions” before addressing both “reductions in emissions of volatile organic compounds and oxides of nitrogen.” 42 U.S.C. § 7511a(b)(1)(A)(i). In that context, when both precursors are discussed together in the same section, use of the phrase “such air pollutant” at any point would only confuse the reader. It would, in other words, be unclear which precursor “such” referred to. But section 7511a(a)(4) and its counterparts risk no such confusion since the only possible air pollutant referenced in the same section is VOCs. *See* 42 U.S.C. §§ 7511(a)(4), (b)(5), (c)(10), (d)(2), (e)(1). Section 7511a(b)(1)(A)(i)’s language thus yields no insight as to the meaning of section 7511a(a)(4) and its parallel provisions.

Next, EPA relies on section 7511a(c)(2)(C), which it claims allows interprecursor trading in the context of the second progress requirement. *See* 42 U.S.C. § 7511a(c)(2)(C). That section provides that, for the relevant reasonable further progress demonstration, a SIP may contain “a demonstration to the satisfaction of [EPA] that the applicable implementation plan . . . provides for reductions of emissions of VOC[s] and oxides of nitrogen . . . that would result in a reduction in ozone concentrations at least equivalent to that which would result from the amount of VOC emission reductions required.” *Id.* According to EPA, this section indicates that Congress intended to permit interprecursor trading more broadly. The provision, however, proves just the opposite. “[W]e ‘generally presum[e] that Congress acts intentionally and purposely when it includes particular language in one section of a statute but omits it in another.’” *Intel Corp. Investment Policy Committee v. Sulyma*, 140 S. Ct. 768, 777 (2020) (second alteration in original) (quoting *BFP v. Resolution Trust Corp.*, 511 U.S. 531 (1994)). That Congress permitted limited interprecursor trading in the context of the second reasonable

further progress requirement in Subpart 2, but not in the general or precursor-specific offset provisions, demonstrates that it did not intend to allow such trading outside this narrow context. *See South Coast I*, 472 F.3d at 894 (finding that the lack of certain provisions in Subpart 2, when they had been included in Subpart 1, demonstrated that Congress did not intend them to apply to Subpart 2).

EPA's remaining argument, that its interpretation better aligns with section 7511a(f)(1)'s exception for when the precursor-specific offset provisions extend to NO_x, is "post hoc," as it appears nowhere in the 2018 Rule. *NRDC I*, 755 F.3d at 1020. Accordingly, we cannot sustain the interprecursor trading program on that basis. *See Motor Vehicle Manufacturers Ass'n of the United States, Inc. v. State Farm Mutual Automobile Insurance Co.*, 463 U.S. 29, 50 (1983) ("It is well-established that an agency's action must be upheld, if at all, on the basis articulated by the agency itself."). In any event, EPA's argument conflicts with the plain meaning of the directly controlling provisions, as we have explained above.

B.

Petitioners next challenge EPA's interpretation of the statutory provisions governing how states are to demonstrate that they have achieved reasonable further progress milestones. Specifically, SIPs for nonattainment areas must "require reasonable further progress," 42 U.S.C. § 7502(c)(2), defined as "such annual incremental reductions in emissions of the relevant air pollutant as are required by this part or may reasonably be required by [EPA] for the purpose of ensuring attainment of the applicable national ambient air quality standard by the applicable date," *id.* § 7501(1). And under Subpart 2, SIPs for ozone nonattainment areas classified as moderate or above must provide for reductions of VOC emissions by "at least 15 percent from baseline emissions." *Id.*

§ 7511a(b)(1)(A). “Baseline emissions” are defined as “the total amount of actual VOC or NO_x emissions from all anthropogenic sources in the area during the” baseline year, originally 1990, excluding certain emissions not at issue here. *Id.* § 7511a(b)(1)(B). For serious and above ozone nonattainment areas, reductions in VOC emissions must average at least three percent per year over each consecutive three-year period until attainment. *Id.* § 7511a(c)(2)(B). States are further required to submit “a comprehensive, accurate, current inventory of actual emissions from all sources” every three years. *Id.* §§ 7511a(a)(1), (3).

Beginning six years after the baseline year, and every three years thereafter, states must determine whether each serious or above ozone nonattainment area “has achieved a reduction in emissions during the preceding intervals equivalent to the total emission reductions required to be achieved by the end of such interval” by the reasonable further progress provisions. *Id.* § 7511a(g)(1). This reduction in emissions is called a “milestone.” *Id.* Within ninety days of achieving a milestone, each state in which the relevant nonattainment area is located must “submit to the Administrator a demonstration that the milestone has been met.” *Id.* § 7511a(g)(2). That demonstration “shall be submitted in such form and manner, and shall contain such information and analysis, as [EPA] shall require, by rule.” *Id.* Within ninety days of receiving the demonstration, EPA determines whether that demonstration is adequate. *Id.*

The 2018 Rule allows states to demonstrate milestone compliance in one of two ways: either with “actual emissions reductions, as demonstrated with periodic emissions inventory data,” or “[c]ompliance with control measures requirements in” the relevant reasonable further progress plan. 2018 Implementation Rule, 83 Fed. Reg. at 63,011. Petitioners

challenge the implementation-based method, which allows states to demonstrate that they have met a milestone by showing “percent implementation,” that is, that the area has implemented measures from the relevant plan projected to meet that milestone, rather than by presenting actual emissions data. *Id.* at 63,011–12. Petitioners argue that EPA’s interpretation is unlawful and unreasonable, and that the agency failed to respond adequately to comments raising concerns with its approach.

As for the former argument, it is true, as EPA points out, that the statute provides that the milestone compliance demonstration “shall be submitted in such form and manner, and shall contain such information and analysis, as the [EPA] shall require, by rule.” 42 U.S.C. § 7511a(g)(1). Given the discretion that this provision allows, Congress has not “unambiguously foreclosed the agency’s statutory interpretation.” *Catawba County, North Carolina v. EPA*, 571 F.3d 20, 35 (D.C. Cir. 2009). Since Congress has not spoken directly to this precise issue, our inquiry is governed by *Chevron* step two. We ask whether EPA, in interpreting this ambiguous provision, “has acted reasonably and thus has stayed within the bounds of its statutory authority.” *Maryland*, 958 F.3d at 1198 (quoting *Utility Air Regulatory Group v. EPA*, 573 U.S. 302, 315 (2014)).

Two closely related statutory provisions are particularly relevant here. First, the “baseline emissions” from which milestone compliance is to be measured are defined in terms of “actual VOC or NO_x emissions.” 42 U.S.C. § 7511a(b)(1)(B) (emphasis added). Second, the provisions for reasonable further progress make clear that “emissions reductions are creditable toward the” required “15 percent” reduction only “to the extent they have *actually* occurred.” *Id.* § 7511a(b)(1)(C) (emphasis added). The statute later references and incorporates

this subsection into the milestone requirements. *See id.* § 7511a(g)(1). Significantly for our purposes, both provisions are unquestionably quantitative and grounded in actual emissions data. The second requires a quantitatively measurable 15 percent reduction in actually occurring emissions, *id.* § 7511a(b)(1)(B), and the first indicates that the baseline from which milestone compliance is measured is actual emissions, *id.* § 7511a(b)(1)(C). Notwithstanding EPA’s focus on section 7511a(g)(1), sections 7511a(b)(1)(B) and (C) demonstrate that milestones can be achieved only through reductions in actual emissions, and that milestone compliance can be demonstrated only through some form of actual emissions data. *See National Treasury Employees Union v. Chertoff*, 452 F.3d 839, 861 (D.C. Cir. 2006) (explaining that an agency may not focus on one provision in such a way that it “elevate[s] one provision of the [Act] over” other provisions).

Highlighting the unreasonableness of EPA’s position, a 2004 Evaluation Report by the Office of the Inspector General details how emissions may outpace projections and how a SIP’s control measures may be less effective than anticipated. *Evaluation Report: EPA and States Not Making Sufficient Progress in Reducing Ozone Precursor Emissions in Some Major Metropolitan Areas*, Office of the Inspector General (Sept. 29, 2004), Joint Appendix (J.A.) 244–46. According to the Evaluation Report’s executive summary, review of data from the 1990s revealed that “States may have used inaccurate data, assumptions, and projections of emission growth, resulting in fewer reductions planned than appropriate.” *Id.* at ii, J.A. 246. For example, it points to the Atlanta metropolitan area, where the relevant ozone reduction plan “assumed a [population] growth rate that was about half of the population growth rate” that the area actually experienced during the relevant period. *See id.*, J.A. 246. Indeed, the Report devotes an entire section to explaining how emissions reductions were

“underestimated due to inaccurate growth projections and other factors.” *See id.* at 22–25, J.A. 249–52. The Report also explains how implementation plans may be less effective than anticipated, pointing out that Georgia’s program had projected that its VOC emissions reductions plan would be 100% effective but was ultimately only 81% effective. *Id.* at 20, J.A. 247. These problems, the Report finds, were compounded by “[l]imited EPA oversight of the development and implementation of emission control plans.” *Id.* at ii, J.A. 246. Such record evidence demonstrates that EPA’s implementation-based approach will fall far short of the actual emissions data that the statute contemplates.

EPA has failed to address these shortfalls. When Petitioners raised them during the rulemaking, EPA “encourage[d] air agencies to work with their EPA Regional office to develop a [milestone compliance demonstration] suitable for the specific facts and circumstances of the attainment plan,” which it claimed would “address[], as appropriate, the potential emissions growth.” Response to Comments on Implementation of the 2015 National Ambient Air Quality Standards for Ozone: State Implementation Plan Requirements, EPA (Oct. 31, 2018), J.A. 518. Yet, as Petitioners point out, EPA never explained how that suggestion would address the referenced shortfalls of the implementation-based approach. Nor has EPA suggested that the problems identified in the 2004 Evaluation Report are somehow inapplicable or outdated today. Given such problems, EPA has failed to show how its implementation-based approach can be squared with the quantitative statute. That failure is all the more glaring in light of the fact that the 1990 Amendments were “purposefully crafted to limit EPA discretion” and to ensure that actual emissions reductions were made. *South Coast I*, 472 F.3d at 887, 894–95; *see* H.R. Rep. No. 101-490, pt. 1, at 229 (1990) (“The objective is to achieve the standard as early

as possible with effective and enforceable measures and without gaming by the States, industry, and others.”).

According to EPA, it “makes sense” for baseline emissions to be actual emissions “because those emissions are historic, as a baseline should be.” EPA Br. 41. Consequently, it insists, the provision’s reference to actual emissions says nothing about “how States or EPA are to assess compliance with a milestone.” *Id.*; see 42 U.S.C. § 7511a(b)(1)(B). This argument falls flat. Given sections 7511a(b)(1)(B) and (C)’s focus on actual, quantitative reductions in emissions, “[t]he interpretation advanced by EPA cannot be squared with Congress’s desire to limit EPA discretion” or with the statutory structure. *South Coast I*, 472 F.3d at 894.

EPA argues that the flexibility afforded by the implementation-based approach is required by time schedules established in other regulations. Specifically, although the statute directs states to demonstrate milestone compliance within ninety days of that milestone being met, 42 U.S.C. § 7511a(g)(1), “EPA regulations allow States twelve months to report their inventory” due to “the complexities associated with generating and verifying the data.” EPA Br. 42. For this reason, EPA tells us, it would be difficult, if not impossible, for states to comply with the ninety-day deadline if actual emissions data were required. Perhaps so, but the *statute* requires quantitative and actual emissions data, and “EPA may not construe the statute in a way that completely nullifies textually applicable provisions meant to limit its discretion.” *Whitman*, 531 U.S. at 485. EPA’s arguments miss the mark for an additional reason, as they fail to explain how reductions from *actual* baseline emissions numbers can be measured, or how emissions reductions that *actually* occurred can be credited toward an area’s progress, without *actual* emissions data. See 42 U.S.C. §§ 7511a(b)(1)(B), (C).

EPA makes two final arguments: that actual emissions data is just as fallible as the modeling underlying the implementation-based method, and that its review, together with the contingency measures, will ensure that actual reductions occur. But EPA made neither of these arguments in the rulemaking, and as indicated above, “we cannot accept appellate counsel’s *post hoc* rationalizations for agency action.” *National Ass’n of Clean Water Agencies v. EPA*, 734 F.3d 1115, 1138 (D.C. Cir. 2013) (internal quotation marks omitted).

Given that the implementation-based approach is “[un]reasonable in light of the Act’s text, legislative history, and purpose,” we cannot defer to it. *Southern California Edison Co. v. FERC*, 116 F.3d 507, 511 (D.C. Cir. 1997). We thus have no need to reach Petitioners’ other arguments.

C.

Petitioners’ next challenge also relates to the 2018 Implementation Rule’s interpretation of the reasonable further progress requirements. Specifically, they challenge the provision allowing states to choose between two alternative baseline years.

As explained above, the Act measures reasonable further progress from a starting baseline year. *See South Coast II*, 882 F.3d at 1152. Although the statute establishes a baseline year of 1990, it does not define baseline years for any future NAAQS. 42 U.S.C. §§ 7511a(b)(1)(A)–(B); *see South Coast II*, 882 F.3d at 1152. The 2018 Rule defines the default baseline year as “the calendar year for the most recent triennial emissions inventory preceding the year of the area’s effective date of nonattainment designation.” 2018 Implementation Rule, 83 Fed. Reg. at 63,005. If an area were designated nonattainment in 2018, for example, the reasonable further

progress baseline year would be 2017, which “would be the year of the most recent triennial emissions inventory.” *Id.* The Rule also allows states to use an alternative reasonable further progress baseline year that “corresponds with the year of the effective date of an area’s designation.” *Id.*

In *South Coast II*, we considered a challenge to a similar provision in EPA’s 2015 Implementation Rule. That provision allowed states to select an alternative baseline year between 2008 and 2012 if they provided appropriate justification. *South Coast II*, 882 F.3d at 1152. We found that the 2015 Rule’s default year—2011, the year for the most recently available triennial emissions inventory preceding nonattainment designation—was reasonable because it was “tied to the three-year statutory cycle for emissions inventories.” *Id.* But because “EPA ha[d] failed to provide a statutory justification” when it came to the choice of an alternative baseline year, we vacated the alternative baseline year portion of the 2015 Rule. *Id.* at 1152–53.

Unlike in *South Coast II*, here EPA has “ground[ed] its reasons for” both baseline year alternatives “in the statute, rather than on reasoning divorced from the statutory text.” *Id.* at 1152 (internal quotation marks omitted). The default year definition in the 2018 Implementation Rule is the same one that we sustained in *South Coast II* as grounded in the statute. *See id.* at 1152–53. And the alternative year—“the year of the effective date of an area’s designation,” 2018 Implementation Rule, 83 Fed. Reg. at 63,005—is also rooted in the statute, as 1990 was the year when nonattainment designations first took effect, *see NRDC I*, 777 F.3d at 464. Either option, then, represents a reasonable interpretation of the ambiguous baseline year provision.

Although Petitioners concede as much, *see* Oral Arg. Rec. 15:10–15:30, 18:18–18:30, they nonetheless take issue with EPA allowing states to choose between the two years. They argue that this choice has no grounding in the statute. But it does. As we pointed out in *South Coast II*, the Act contains a gap with respect to the baseline year for future reasonable progress requirements. 882 F.3d at 1152. The original year was 1990, which happened to be both the year that began the triennial emissions inventory cycle and the year in which the designations took effect. *See* 42 U.S.C. §§ 7511a(b)(1)(A)–(B); *South Coast II*, 882 F.3d at 1152; *NRDC I*, 777 F.3d at 464. But now that an area may be designated in any year, and now that the three-year statutory cycle for emissions inventories is underway, not every post-1990 year will satisfy both conditions for a particular area. As the Rule itself points out, this is precisely what happened with the 2015 ozone NAAQS: “for future promulgations and revisions of NAAQS, the year of designations and the year of the most recent triennial emissions inventory may not coincide[,] and for the 2015 ozone NAAQS, they do not.” 2018 Implementation Rule, 83 Fed. Reg. at 63,005. Because no single year can serve as a perfect stand-in for 1990, EPA acted reasonably when it allowed states to choose between two baseline year options, each of which is “ground[ed] in the statute.” *NRDC I*, 777 F.3d at 468.

D.

Lastly, Petitioners dispute EPA’s approach to the contingency measure requirements. SIPs must include contingency measures, or “specific measures to be undertaken if the area fails to make reasonable further progress, or to attain the national primary ambient air quality standard by the [applicable] attainment date.” 42 U.S.C. § 7502(c)(9). These “measures shall be included in the plan revision as contingency measures to take effect in any such case without further action by the State or the Administrator.” *Id.* In addition, SIPs must

“provide for the implementation of specific measures to be undertaken if the area fails to meet any applicable milestone” under Subpart 2’s ozone provisions. *Id.* § 7511a(c)(9). Like the general measures, these “shall be included in the plan revision as contingency measures to take effect without further action by the State or the Administrator upon a failure by the State to meet the applicable milestone.” *Id.*

Petitioners challenge the 2018 Rule’s provision “allow[ing] approval of already implemented measures as contingency measures, so long as” those measures meet other relevant parameters and the state does not rely on them for reasonable further progress or attainment demonstrations. 2018 Implementation Rule, 83 Fed. Reg. at 63,026. The Rule explains that this policy applies only outside of the Ninth Circuit, which has “rejected” EPA’s interpretation “that allowed states to rely on control measures that are already in effect as a valid means to meet the contingency measure requirement.” *Id.*; see *Bahr v. EPA*, 836 F.3d 1218, 1235–36 (9th Cir. 2016). Instead, the Rule invokes a Fifth Circuit decision “upholding” EPA’s interpretation as applied to a particular SIP. 2018 Implementation Rule, 83 Fed. Reg. at 63,026; see *Louisiana Environmental Action Network v. EPA*, 382 F.3d 575, 582–84 (5th Cir. 2004).

We agree with Petitioners and the Ninth Circuit that Congress has “directly spoken to the precise question at issue”—that is, that previously implemented measures cannot qualify as contingency measures. *Chevron*, 467 U.S. at 842–43. The Act’s plain text expressly provides that valid contingency measures become operative only when the triggering conditions set forth in the statute occur, and not any earlier.

Using conditional and prospective language, both provisions require SIPs to include measures “to be undertaken if” certain conditions are not achieved, and both require that the measures be included as “contingency measures” “to take effect . . . upon” failure to meet the requirements. *See* 42 U.S.C. §§ 7502(c)(9), 7511a(c)(9). A measure “to be undertaken if” certain standards are not met is, by definition, a measure not yet implemented. *See State Farm Fire & Casualty Co. v. United States ex rel. Rigsby*, 137 S. Ct. 436, 443 (2016) (explaining that “if” and “unless” are “clear[] conditional words”); *Dodd v. United States*, 545 U.S. 353, 358 (2005) (explaining that the word “if” “impose[d] a condition on the applicability of [a] subsection” and citing the dictionary definition of the word, which was “in the event that” or “on condition that” (internal quotation marks omitted)). “[C]ontingency measures” that are “to take effect . . . upon” failure to satisfy standards are likewise not measures that have been implemented before such failure occurs. *See Contingent*, *The Merriam-Webster Collegiate Dictionary* 270 (11th ed. 2009) (including as a definition of the adjective “contingent” “dependent on or conditioned by something else”); *Delaware Department of Natural Resources & Environmental Control v. EPA*, 895 F.3d 90, 98 (D.C. Cir. 2018) (explaining that the word “upon” denotes “a conditional context” in relation to another provision of Subpart 2 of the Act). And measures that are already implemented are not measures “to take effect” or “to be undertaken” if the area fails to satisfy the applicable requirements. *See, e.g., Take effect*, *The Merriam-Webster Collegiate Dictionary* 1273 (defining “to take effect” as “to become operative”); *To undertake*, *The Merriam-Webster Collegiate Dictionary* 1365 (defining “to undertake” as “to take upon oneself; set about,” “to put oneself under obligation to perform,” “to accept as a charge or responsibility,” and “to guarantee” or “promise”). They are simply measures that have failed. *See Bahr*, 836 F.3d at 1235 (finding that the contingency

measures are “control measures that will be implemented in the future”).

EPA argues that “Congress was silent as to whether already-implemented measures could serve as contingency measures.” EPA Br. 53. As our court has explained, however, “[t]o suggest . . . that *Chevron* step two is implicated any time a statute does not expressly *negate* the existence of a claimed administrative power (*i.e.* when the statute is not written in ‘thou shalt not’ terms), is both flatly unfaithful to the principles of administrative law . . . and refuted by precedent.” *Railway Labor Executives’ Ass’n v. National Mediation Board*, 29 F.3d 655, 671 (D.C. Cir. 1994) (en banc). Nor, contrary to EPA’s argument, does it make any difference that four judges in other circuits—three in the Fifth and one in the Ninth—have found the statute ambiguous. *See, e.g., Adams Fruit Co. v. Barrett*, 494 U.S. 638 (1990) (finding a provision unambiguous on an issue about which circuits had disagreed). Although we are always interested in knowing how our sister circuits have approached the same question in other cases, it is *this* court that is interpreting the statute here, and *this* court has concluded that the statute is unambiguous. That ends the matter. *See Chevron*, 467 U.S. at 842–43. EPA “cannot rely on its gap-filling authority to supplement the Clean Air Act’s provisions when,” as here, “Congress has not left the agency a gap to fill.” *Natural Resources Defense Council v. EPA*, 749 F.3d 1055, 1064 (D.C. Cir. 2014).

III.

For the foregoing reasons, we grant in part and deny in part the petitions for review in these consolidated cases. Specifically, we vacate the provisions of the rule allowing (1) interprecursor trading, *see* 2018 Implementation Rule, 83 Fed. Reg. at 63,016–21; (2) use of the implementation-based option for milestone compliance demonstrations, *see id.* at 63,010–12;

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and (3) use of already implemented measures as contingency measures, *see id.* at 63,026–27. We deny the petition for review as to the provision allowing states to choose between two alternative baseline years.

So ordered.