

United States Court of Appeals  
FOR THE DISTRICT OF COLUMBIA CIRCUIT

---

Argued September 28, 2022

Decided March 3, 2023

No. 21-1146

MIDWEST OZONE GROUP,  
PETITIONER

v.

ENVIRONMENTAL PROTECTION AGENCY AND MICHAEL S.  
REGAN, ADMINISTRATOR, UNITED STATES ENVIRONMENTAL  
PROTECTION AGENCY,  
RESPONDENTS

APPALACHIAN MOUNTAIN CLUB, ET AL.,  
INTERVENORS

---

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

---

*David M. Flannery* argued the cause for petitioner. With him on the briefs were *Kathy G. Beckett* and *Edward L. Kropp*.

*Chloe H. Kolman*, Attorney, U.S. Department of Justice, argued the cause for respondents. With her on the brief were *Todd Kim*, Assistant Attorney General, and *Daniel P. Schramm*, Attorney, U.S. Environmental Protection Agency.

*Sean M. Helle, Kathleen Riley, Ann Brewster Weeks, Hayden Hashimoto, Zachary Fabish, and Graham McCahan* were on the brief for respondent-intervenors.

*Letitia James, Attorney General, Office of the Attorney General for the State of New York, Barbara D. Underwood, Solicitor General, Steven C. Wu, Deputy Solicitor General, Judith Vale, Assistant Deputy Solicitor General, Morgan A. Costello and Claiborne E. Walthall, Assistant Attorneys General of Counsel, Kathleen Jennings, Attorney General, Office of the Attorney General for the State of Delaware, Christian Douglas Wright, Director of Impact Litigation, Valerie Satterfield Edge, Deputy Attorney General, Matthew J. Platkin, Attorney General, Office of the Attorney General for the State of New Jersey, Maura Healy, Attorney General, Office of the Attorney General for the Commonwealth of Massachusetts, David S. Frankel, Special Assistant Attorney General, and Christopher G. King, Senior Counsel, New York City Law Department,* were on the brief for *amici curiae* in support of respondents.

Before: WILKINS, RAO and CHILDS, *Circuit Judges*.

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

CHILDS, *Circuit Judge*: Petitioner Midwest Ozone Group (MOG), an association of companies, trade organizations, and individual entities maintaining a collective interest in air quality, petitions for review of the Environmental Protection Agency's (EPA) final action, 86 Fed. Reg. 23,054 (Apr. 30, 2021), entitled the Revised Cross-State Air Pollution Update Rule (Revised Rule) for the 2008 Ozone National Ambient Air Quality Standards (NAAQS), which EPA promulgated in response to this Court's remand in *Wisconsin v. EPA*, 938 F.3d 303 (D.C. Cir. 2019). In the Revised Rule, EPA addresses its

failure to balance emissions obligations in accordance with 2008 ozone NAAQS and its prescribed date of attainment. *Id.* at 315. In this appeal, MOG contends that the Revised Rule is arbitrary and capricious, and that EPA failed to conduct a legally and technically appropriate assessment as required by the Good Neighbor Provision of the Clean Air Act (CAA). 42 U.S.C. § 7410(a)(2)(D)(i). We disagree. Instead, we hold that the Revised Rule is an appropriate exercise of EPA’s statutory authority under the “Good Neighbor Provision,” and deny the petition on the merits.

## I.

The CAA, codified at 42 U.S.C. §§ 7401–7671q, authorizes EPA to adopt NAAQS to regulate air pollutants, such as ozone.<sup>1</sup> *Id.* § 7409(a), (b). Wind carries air pollution from state to state, thereby disregarding state boundaries. Upwind is the direction the wind is coming from and downwind is the direction toward which the wind is blowing. Emissions from upwind States can impact downwind states’ attainment of the NAAQS. To address this problem, the CAA contains the Good Neighbor Provision which requires each

---

<sup>1</sup> This Court is familiar with ozone’s status as a pollutant and recognizes its harmful effects. *See Clean Wis. v. EPA*, 964 F.3d 1145, 1154 (D.C. Cir. 2020). The Court has also exhaustively summarized the regulatory framework governing EPA’s conduct in addition to providing the background for statutory provisions and the agency proceedings relevant to this case. *See id.* *See also Sierra Club v. EPA*, 21 F.4th 815 (D.C. Cir. 2021); *Maryland v. EPA*, 958 F.3d 1185 (D.C. Cir. 2020); *New York v. EPA*, 781 F. App’x 4 (D.C. Cir. 2019); *EME Homer City Generation, LP v. EPA*, 795 F.3d 118 (D.C. Cir. 2015). We draw on those decisions and incorporate them herein by reference.

upwind state to prevent its air pollutant emissions from contributing significantly to nonattainment in any other downwind state. *See* 42 U.S.C. § 7410(a)(2)(D)(i).

In *Wisconsin v. EPA*, we held that EPA, in implementing the predecessor of the Revised Rule, the Cross-State Air Pollution Rule Update for the 2008 Ozone NAAQS (CSAPR Update), 81 Fed. Reg. 74,504 (Oct. 26, 2016), acted unlawfully and violated its statutory authority under the Good Neighbor Provision. We remanded the CSAPR Update because it improperly allowed upwind states to continue polluting beyond statutory deadlines which were still applicable to downwind states. *Wisconsin*, 938 F.3d at 309, 336.

EPA devised the Revised Rule using the four-step method for evaluating Good Neighbor Provision obligations. *See Maryland v. EPA*, 958 F.3d 1185, 1188 (D.C. Cir. 2020).

At the first step, EPA “performed air quality modeling coupled with ambient measurements in an interpolation technique to project ozone concentrations at air quality monitoring sites in 2021.” 86 Fed. Reg. at 23,057. Linear interpolation is a mathematical method of using the equation of a line to find a new data point, based on an existing set of data points. EPA observed that “in this case the known data are the 2016 measured-based and 2023 modeling-based ozone concentrations.” *Id.* at 23,058. EPA acknowledged evaluating “2021 projected ozone concentrations at individual monitoring sites[, referred to as nonattainment and/or maintenance receptors,] and consider[ing] current ozone monitoring data at these sites to identify receptors that [we]re anticipated to have problems attaining or maintaining the 2008 ozone NAAQS.” *Id.*

At step two, EPA “used an air quality modeling-based

technique to quantify the contributions in 2021 from upwind states to ozone concentrations at individual monitoring sites.” *Id.* Once the contributions were quantified, EPA “then evaluated these contributions relative to a screening threshold of 1 percent of the NAAQS (*i.e.*, 0.75 [parts per billion]) for those monitoring sites identified as nonattainment and/or maintenance receptors in step [one].” *Id.* “States with contributions that equal[ed] or exceed[ed] 1 [%] of the NAAQS were identified as warranting further analysis for significant contribution to nonattainment or interference with maintenance.” *Id.* “States with contributions below 1 [%] of the NAAQS were considered to not significantly contribute to nonattainment or interfere with maintenance of the NAAQS in downwind states.” *Id.* As a result of its air quality and contribution analysis for the analytic year 2021, EPA concluded that Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, Virginia, and West Virginia had ozone contributions that equaled or surpassed the 2008 NAAQS thereby warranting further analysis for significant contribution to nonattainment or interference with maintenance. *Id.* For the nine remaining states of Alabama, Arkansas, Iowa, Kansas, Mississippi, Missouri, Oklahoma, Texas, and Wisconsin, EPA found that they were not linked to 2021 downwind air quality problems. *Id.* at 23,057.

At step three, EPA applied a multifactor test which evaluated “cost, available emission reductions, and downwind air quality impacts to determine the amount of linked upwind states’ emissions that ‘significantly’ contribute to downwind nonattainment or maintenance receptors.” *Id.* at 23,058. EPA applied the multifactor test to both electricity generating units and non-electricity generating source categories and “assessed potential emission reductions in all years for which there [wa]s a potential remaining interstate ozone transport problem (*i.e.*,

through 2025), in order to ensure a full remedy in accordance with the *Wisconsin* decision.” *Id.*

Finally, at step four of the four-step framework, EPA specified enforceable measures in Federal Implementation Plans (FIP) for Illinois, Indiana, Kentucky, Louisiana, Maryland, Michigan, New Jersey, New York, Ohio, Pennsylvania, Virginia, and West Virginia to accomplish required emission reductions in these states. *Id.* at 23,059.

EPA proposed the Revised Rule on October 30, 2020. 85 Fed. Reg. 68,964. EPA published the Revised Rule on April 30, 2021, with an effective date of June 29, 2021. 86 Fed. Reg. 23,054.

## II.

MOG challenges EPA on three of the four steps of the Good Neighbor Provision evaluation method. MOG asserts that “EPA deviated from its past practice of performing state-of-the-science photochemical air quality modeling<sup>2</sup> for the analytical year of 2021 . . . in favor of using a linear interpolation technique to predict air quality concentrations at monitors in 2021,” at the first step of the four-step framework. Pet’r’s Br. 7. MOG asserts that “EPA’s linear interpolation methodology resulted in a significantly higher estimate of 2021 ozone design values than was appropriate,” *id.* at 25, and “was executed even though the Courts have gone to great lengths to uphold EPA non-linear modeling in connection with prior

---

<sup>2</sup> “Photochemical modeling is the central element of the air quality modeling process and is used to simulate and predict pollutant concentrations.” *Tex. Comm’n on Env’tal Quality*, [https://www.tceq.texas.gov/airquality/airmod/overview/am\\_pm.html](https://www.tceq.texas.gov/airquality/airmod/overview/am_pm.html) (last visited Oct. 14, 2022).

Good Neighbor Provision rules.” *Id.* at 18–19 (citing, *e.g.*, *Wisconsin*, 938 F.3d at 310–11). MOG labels EPA’s action “a mathematical and analytical shortcut” that should not have been used “to determine mandatory state obligations.” *Id.* at 10, 11. As a result, EPA’s actions are “arbitrary and capricious” because “the assumptions and the methodology used [we]re inconsistent with prior modeling upheld by this Court.” *Id.* at 11. MOG argues that EPA should have used photochemical modeling to assess the analytic year of 2021, but instead chose to use “modeling [that] did not include legal emission reduction requirements in effect for downwind sources and failed to consider the impact of exceptional events on the impacted monitors.” *Id.* at 12.

As additional criticism of EPA’s approach, MOG cites to *New Jersey v. Wheeler*, 475 F. Supp. 3d 308 (S.D.N.Y. 2020). There, the court ordered EPA, in the context of FIPs for upwind states Illinois, Indiana, Michigan, Ohio, Pennsylvania, Virginia, and West Virginia, “to promulgate a complete-remedy rulemaking addressing . . . EPA’s outstanding statutory obligations by March 15, 2021.” *Id.* at 313. MOG asserts that to meet the *Wheeler* court’s deadline, EPA used existing modeling data rather than conduct new modeling, shortened notice and/or comment periods, refused to extend said periods, and would not allow a redefinition of nonattainment and maintenance receptors.

MOG further argues that EPA’s adoption of the Revised Rule is arbitrary because (1) eleven of the twelve states identified were considered significant pollution contributors based on flawed data, (2) EPA’s modeling failed to consider official regulatory programs and/or other emission reduction requirements applicable to sources in downwind states that could contribute to improving ambient air quality, and (3) EPA failed to account for the impact of exceptional events such as

wildfires on the ozone design values of the air quality monitors. Finally, MOG contends that at step three of the four-step framework, EPA arbitrarily “determined control requirements for the units subject to th[e] Rule” when the Court in *Wisconsin v. EPA* did not require EPA to perform this task and did so using data from “states not affected by the Rule,” which “resulted in EPA assessing units that exhibit different characteristics . . . .” *Id.* at 47–48, 54.

In response to MOG’s arguments, EPA admits that it adjusted its traditional step one methodology to finish the Revised Rule before the July 20, 2021 serious attainment date for downwind states, as required by the Court in *Wisconsin v. EPA*. EPA contends that it used linear interpolation methodology “to determine how much of the ozone improvement between the 2016 base year and the 2023 projected year could be expected to occur by 2021,” but the 2021 air quality values were derived from a full set of air quality modeling emission inventories for 2023. Resp.’s Br. 8–9 (citing 86 Fed. Reg. at 23,078–80). Moreover, EPA contends that it conducted additional testing and those outcomes showed that MOG’s preferred approach would not have led to a different regulatory result. In this regard, EPA asserts that despite its revised methodology, MOG has not demonstrated that its preferred photochemical air quality modeling methodology would have changed which states were affected by the Revised Rule.

### III.

This Court has jurisdiction to review EPA’s Revised Rule pursuant to 42 U.S.C. § 7607(b)(1). Because “we apply the same standard of review under the [CAA] as we do under the Administrative Procedure Act,” *Allied Loc. & Reg’l Mfrs. Caucus v. EPA*, 215 F.3d 61, 68 (D.C. Cir. 2000), this Court



will uphold EPA’s action unless it is “arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law . . . .” *Id.* § 7607(d)(9)(A). Our review is narrow; if an action is not contrary to law, “agency action simply [must] be ‘reasonable and reasonably explained.’” *Cmtys. for a Better Env’t v. EPA*, 748 F.3d 333, 335 (D.C. Cir. 2014) (citation omitted). Generally, a reviewing court “must affirm . . . EPA’s rules if the agency has considered the relevant factors and articulated a ‘rational connection between the facts found and the choice made.’” *Allied Loc. & Reg’l Mfrs. Caucus v. EPA*, 215 F.3d 61, 68 (D.C. Cir. 2000) (quoting *Motor Vehicle Mfrs. Ass’n v. State Farm Mut. Auto. Ins.*, 463 U.S. 29, 43 (1983)).

Under this standard, “[a]gency determinations based upon highly complex and technical matters are ‘entitled to great deference,’” *Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1051–52 (D.C. Cir. 2001) (citation omitted), because “many agency actions having the force of law require expertise the courts lack and involve policy choices more appropriately overseen by a politically accountable branch of the government.” Edwards, Harry T., *Post Publication Update for Federal Standards of Review*, 119 (2022); *see also Huls Am. Inc. v. Browner*, 83 F.3d 445, 452 (D.C. Cir. 1996) (“[W]e will give an extreme degree of deference to the agency when ‘it is evaluating scientific data within its technical expertise.’”) (citation omitted); *Maryland*, 958 F.3d at 1196 (“[A reviewing court] must give an extreme degree of deference to . . . EPA’s evaluation of scientific data within its technical expertise, especially where . . . EPA’s administration of the complicated provisions of the [CAA is under review.]”) (citations and quotation marks omitted).

Statistical analysis has been described as “perhaps the prime example of an area of technical wilderness into which judicial expeditions are best limited to ascertaining the lay of

the land.” *Appalachian Power Co. v. EPA*, 135 F.3d 791, 802 (D.C. Cir. 1998). “Although computer models are ‘a useful and often essential tool for performing the Herculean labors Congress imposed on EPA in the [CAA],’ their scientific nature does not easily lend itself to judicial review.” *Id.* (internal citation omitted). Thus, “[a reviewing court] do[es] not look at the decision as would a scientist, but only to ensure that EPA adheres to certain minimal standards of rationality.” *Cmtys. for a Better Env’t*, 748 F.3d at 336 (citation and quotation marks omitted). The reviewing court also “will not take it upon [itself], as nonstatisticians, to perform [its] own statistical analysis—a job more properly left to the agency to which it was delegated.” *Appalachian Power Co.*, 135 F.3d at 802. “[I]t is only when the model bears no rational relationship to the characteristics of the data to which it is applied that [the reviewing court] will hold that the use of the model was arbitrary and capricious.” *Id.* (citations omitted).

#### IV.

We have considered MOG’s arguments as to the arbitrariness and capriciousness of the Revised Rule and observe that the Court has never required EPA to use a particular modeling method to generate its data or adhere to past practice, but rather that EPA “consider[s] all of the relevant factors, and demonstrate[s] a reasonable connection between the facts on the record and its decision.” *Id.* (quoting *Ethyl Corp. v. EPA*, 51 F.3d 1053, 1064 (D.C. Cir. 1995)). Thus, when an agency has not otherwise acted contrary to law, we will conclude that its choice of model is arbitrary and capricious if “the model is so oversimplified that the agency’s conclusions from it are unreasonable.” *Appalachian Power*, 249 F.3d at 1052 (quoting *Small Refiner Lead Phase-Down Task Force v. EPA*, 705 F.2d 506, 535 (D.C. Cir. 1983)).

Based on the record before us, EPA appears to have chosen analytical techniques rationally connected to the Revised Rule and appropriately explained its use of the linear interpolation and subsequent methods for establishing the Revised Rule. In addition, EPA's methodology did also incorporate photochemical modeling, MOG's preferred technique, as the "foundation for its projections" and "merely layered an additional mathematical function, linear interpolation" over the original projected data to generate 2021 ozone concentrations. Resp.'s Br. at 19. EPA then performed further data analysis by checking its 2021 interpolated projection against both a sensitivity analysis<sup>3</sup> and engineering analytics approach.<sup>4</sup> These tools produced consistent results and MOG has not proven that different states would have been regulated differently under any other method, including a purely photochemical modeling approach.

Against the backdrop of MOG's complaints and our directive in *Wisconsin*, EPA also was cognizant of the CAA's statutory directive that emissions reductions should be done "as expeditiously as practicable." 42 U.S.C. § 7511(a)(1). We therefore conclude that EPA reasonably believed it should address upwind states' significant contributions before the next downwind attainment deadline, which was the serious attainment deadline of July 20, 2021. *See, e.g.*, 86 Fed. Reg. at 23,072. Given the limited amount of time EPA had to complete the rulemaking for the Revised Rule, we discern that EPA

---

<sup>3</sup> Using the North American Emissions Modeling Platform, EPA sensitivity analysis projected 2021 emissions numbers based on a comprehensive assessment of emissions expected. *See, e.g.*, 86 Fed. Reg. at 23,075.

<sup>4</sup> This analytical approach estimated 2021 power plant emissions based on historical emissions and known fleet changes.

reasonably chose to use existing air quality modeling and contribution information to derive an appropriately reliable projection of air quality conditions and contributions in 2021. In reaching this determination, the Court does not disregard MOG's technical data presentation depicting higher ozone NO<sub>x</sub> emissions resulting from use of the linear interpolation methodology, as opposed to photochemical modeling. However, in the context of the deferential standard afforded EPA, MOG has not established that EPA's linear interpolation method is oversimplified or that the agency has produced unreasonable results. *See id.* at 23,080–81. *See also Appalachian Power Co.*, 135 F.3d at 802 (“[S]o long as EPA ‘acted within its delegated statutory authority, . . . we will not interfere with its conclusion.” (quoting *Ethyl Corp.*, 51 F.3d at 1064)).

#### V.

For the reasons stated above, MOG fails to demonstrate that EPA's promulgation of the Revised Rule was arbitrary, capricious, or promulgated in violation of its statutory authority under the Good Neighbor Provision. Accordingly, we deny MOG's petition.

*So ordered.*