United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued September 26, 2014 Decided May 1, 2015
Amended July 21, 2015

No. 13-1093

DELAWARE DEPARTMENT OF NATURAL RESOURCES AND ENVIRONMENTAL CONTROL,
PETITIONER

v.

ENVIRONMENTAL PROTECTION AGENCY,
RESPONDENT

ELECTRIC POWER SUPPLY ASSOCIATION, ET AL.,
INTERVENORS

Consolidated with 13-1102, 13-1104

On Petitions for Review of A Final Rule Promulgated by the United States Environmental Protection Agency

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David W. DeBruin argued the cause for petitioners PSEG Power LLC, et al. With him on the briefs were *Matthew E. Price*, *Elizabeth C. Bullock*, *Shanna M. Cleveland*, and *Caitlin S. Peale*.

Valerie Satterfield Edge, Deputy Attorney General, Office of the Attorney General for the State of Delaware, argued the

cause and filed the briefs for petitioner Delaware Department of Natural Resources and Environmental Control.

Ashley C. Parrish, *Karen Schoen*, *David G. Tewksbury*, and *Stephanie S. Lim* were on the brief for intervenor Electric Power Supply Association in support of petitioners.

Austin D. Saylor, Attorney, U.S. Department of Justice, argued the cause for respondent. With him on the brief were *Robert G. Dreher*, Acting Assistant Attorney General, U.S. Department of Justice, and *Michael Horowitz*, Attorney, U.S. Environmental Protection Agency.

William L. Wehrum Jr. argued the cause for intervenors-respondent. With him on the brief were *Lisa G. Dowden*, *Melissa E. Birchard*, *Leslie Ritts*, and *David M. Friedland. Aaron M. Flynn* entered an appearance.

Before: GARLAND, *Chief Judge*, WILLIAMS and RANDOLPH, *Senior Circuit Judges*.

Opinion for the Court filed by *Senior Circuit Judge* RANDOLPH.

RANDOLPH, *Senior Circuit Judge*: The State of Delaware, industry and environmental organizations, and an industry intervenor challenge a final rule of the Environmental Protection Agency governing the use of certain kinds of power generators. *See* National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines, 78 Fed. Reg. 6,674 (Jan. 20, 2013). A group of trade associations and corporations intervened in support of EPA. The generators are known as Reciprocating Internal Combustion Engines. We refer to them here interchangeably as "backup

generators" or "emergency engines." They typically run on diesel fuel and expel numerous pollutants. *See* National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 69 Fed Reg. 33,474, 33,499 (June 15, 2004).

Delaware raises three issues in its petition for judicial review. First, it argues that EPA acted arbitrarily and capriciously when it modified the National Emissions Standards for Hazardous Air Pollutants for the backup generators pursuant to Section 112 of the Clean Air Act. 42 U.S.C. § 7412. Second, it argues that, while modifying the National Emissions Standards, EPA improperly revised the definition of the same kind of generators in the New Source Performance Standards, violating Section 111 of the Act. *See* 42 U.S.C. § 7411. And, third, it argues that EPA unlawfully modified the National Emissions Standards to exempt from emissions controls certain non-emergency generators located in low-density areas.

All petitioners and the intervenor raise the first issue. Delaware alone raises the other two. Because we hold that Delaware lacks standing to challenge the exemption from emissions controls for backup generators in low-density areas, we need not address the third issue. For the reasons that follow, we hold that EPA acted arbitrarily and capriciously when it modified the National Emissions Standards and the Performance Standards to allow backup generators to operate without emissions controls for up to 100 hours per year as part of an emergency demand-response program.

I.

Congress enacted the Clean Air Act "to protect and enhance the quality of the Nation's air resources." 42 U.S.C. § 7401(b)(1). The Act governs the emissions of hazardous air

pollutants that present "a threat of adverse human health effects . . . or adverse environmental effects." *Id.* § 7412(b)(2).

Section 112 requires EPA to promulgate national emissions standards for both "major sources" and "area sources" of hazardous air pollutants. *See id.* § 7412(d)(1). A "major source" is "any stationary source" that emits "10 tons per year or more of any hazardous air pollutant or 25 tons per year or more of any combination of hazardous air pollutants." *Id.* § 7412(a)(1). An "area source" is "any stationary source . . . that is not a major source," *id.* § 7412(a)(2), which is to say, any stationary source that emits less than ten tons per year of any hazardous air pollutant or less than twenty-five tons per year of any combination of hazardous air pollutants. When promulgating such standards, EPA must consider "the known or anticipated adverse effects of such pollutants on public health and the environment." *Id.* § 7412(e)(2)(A).

Under Section 112, EPA "first sets emission floors for each pollutant and source category and then determines whether stricter standards, known as 'beyond-the-floor' limits, are achievable in light of the factors listed in section 7412(d)(2)." *Cement Kiln Recycling Coal. v. EPA*, 255 F.3d 855, 858 (D.C. Cir. 2001) (per curiam). Notably, these factors include the "consideration [of] the cost of achieving such emission reduction, and any non-air quality health and environmental impacts and energy requirements." 42 U.S.C. § 7412(d)(2).

Section 111 directs EPA to set emissions standards for new and newly modified sources. *Id.* § 7411(d). A modified source is one that has undergone "any physical change in, or change in the method of operation[,] . . . 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). Under Section 111, EPA must set standards for

emissions that "reflect[] the degree of emission limitation achievable through the application of the best system of emission reduction." *Id.* § 7411(a)(1).

In rulemakings over the past decade, EPA has established National Emissions Standards and Performance Standards for pollutants emitted by backup generators.[1] Such pollutants include "[f]ormaldehyde, acrolein, methanol, and acetaldehyde." 69 Fed Reg. at 33,475. "[T]hese pollutants have been associated with several health-related concerns, including cancer, respiratory problems, and premature death." Emission Standards for Stationary Diesel Engines, 73 Fed. Reg. 4,136, 4,138 (Jan. 24, 2008).

Backup generators have traditionally been used in emergency situations "to produce power for critical networks or equipment . . . when electric power from the local utility is interrupted." 69 Fed. Reg. at 33,512. For years, they were not subject to the same level of regulation as larger generators. *See id.* at 33,477.

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[1] *See generally* National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. 51,570 (Aug. 20, 2010), National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 75 Fed. Reg. 9,648 (Mar. 3, 2010), Standards of Performance for Stationary Spark Ignition Internal Combustion Engines and National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines, 73 Fed. Reg. 3,568 (Jan. 18, 2008), Standards of Performance for Stationary Compression Ignition Internal Combustion Engines, 71 Fed. Reg. 39,154 (July 11, 2006), National Emission Standards for Hazardous Air Pollutants for Stationary Reciprocating Internal Combustion Engines, 69 Fed. Reg. 33,474 (June 15, 2004).

That began to change in 2004, when EPA promulgated a rule allowing backup generators to operate without emissions controls for unlimited periods "in emergency situations and for routine testing and maintenance." *Id.* at 33,512. It also allowed them to operate without emissions controls for "an additional 50 hours per year in non-emergency situations." *Id.* Four years later, EPA became "concerned that if stationary emergency engines are allowed to operate in non-emergency situations[,] they may be inappropriately used for peaking power"—that is, to supply power to an energy grid during periods of high demand—and, accordingly, EPA specified "that the 50 hours allowed for non-emergency situations cannot be used to generate income for a facility to supply power to an electric grid or otherwise supply power as part of a financial arrangement with another entity." 73 Fed. Reg. at 3,583.

In two separate rules in 2010, EPA promulgated standards for hazardous air pollutant emissions from backup generators. The regulations allowed backup generators to operate without emissions controls for fifteen hours each year as part of "demand response programs" during "emergency conditions that could lead to a potential electrical blackout." 75 Fed. Reg. 9,648, 9,667, 9,677 (Mar. 3, 2010) (rule for compression ignition engines); *see also* 75 Fed. Reg. 51,570, 51,591 (Aug. 20, 2010) (rule for spark ignition engines) (collectively, the "2010 Rule"). Demand response programs, which we discuss more below, are programs through which customers reduce their consumption of electric energy from the grid in response to high prices or other incentives. *See* 18 C.F.R. § 35.28(b)(4).

"Soon after the 2010 rule was final, the EPA received petitions for reconsideration of the 15-hour limitation for emergency demand response . . .." 78 Fed. Reg. at 6,679. On June 7, 2012, as a result of these petitions, EPA proposed amendments for National Emissions Standards for stationary

backup generators and amendments to the Performance Standards for stationary internal combustion engines. *See* 40 C.F.R. Ch. I, Subch. C., Pt. 63, Subpt. ZZZZ (National Emission Standards); 40 C.F.R. Ch. I, Subch. C., Pt. 60, Subpt. IIII & JJJJ (Performance Standards).

EPA's final rule, issued on January 30, 2013, radically revised the fifteen-hour limit. The rule's preamble described its purpose as addressing the "use of existing engines for emergency demand response and system reliability" and noted that using such generators "as part of emergency demand response programs can help prevent grid failure or blackouts." 78 Fed. Reg. at 6,679. Under the new rule, backup generators are permitted to operate exempt from emissions controls for "emergency demand response" for up to 100 hours each year, in addition to actual emergency situations and maintenance. *Id.* at 6,679-80, 6,704-05; *see also id.* at 6,681, 6,695-97 (modifying Performance Standards for consistency). The rule limits emergency demand response operation to two circumstances: first, when a "Reliability Coordinator" (such as an independent electric grid operator) "has declared an Energy Emergency Alert Level 2," or, second, when "there is a deviation of voltage or frequency of [five] percent or greater below standard voltage or frequency." *Id.* at 6,705.[2]

Petitioners filed a timely petition for review on April 1, 2013. *See* 42 U.S.C. § 7607(b)(1); FED. R. APP. P. 15.

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[2] The 2013 Rule explains that, during a Level 2 alert, "there is insufficient energy supply and a true potential for electrical blackouts." 78 Fed. Reg. at 6,679. There is disagreement in the record whether the term "emergency demand response" is a misnomer. We do not resolve that issue here and understand "emergency" in this context to mean the circumstances during which the 2013 Rule allows backup generators to operate for up to 100 hours.

II.

Before turning to the merits of the case, we address the threshold issue of standing. *See Steel Co. v. Citizens for a Better Env't*, 523 U.S. 83, 101 (1998).

To establish standing under Article III of the Constitution, a petitioner "bears the burden of averring facts in its opening brief" that "demonstrate it has suffered a concrete and particularized injury that is imminent and not conjectural, that was caused by the challenged action, and that is likely to be redressed by a favorable judicial decision." *Texas v. EPA*, 726 F.3d 180, 198 (D.C. Cir. 2013) (citing *Sierra Club v. EPA*, 292 F.3d 895, 899-901 (D.C. Cir. 2002) and *Lujan v. Defenders of Wildlife*, 504 U.S. 555, 560-61 (1992)). When considering standing, we assume the validity of the petitioner's merits argument. *See Del. Dep't of Natural Res. & Envtl. Control v. FERC*, 558 F.3d 575, 578 (D.C. Cir. 2009).

Petitioner Conservation Law Foundation, "a private, nonprofit membership organization dedicated to the protection of public health and New England's environment," asserts that its "members live, work, and recreate in areas affected by emissions from diesel generators, particularly densely populated urban areas." Pet'r FirstEnergy, et al. Br. at 16. For an association to have standing, "it must demonstrate that at least one member would have standing under Article III to sue in his or her own right, that the interests it seeks to protect are germane to its purposes, and that neither the claim asserted nor the relief requested requires that an individual member participate in the lawsuit." *NRDC v. EPA*, 489 F.3d 1364 (D.C. Cir. 2007) (citing *Hunt v. Wash. State Apple Adver. Comm'n*, 432 U.S. 333, 342-43 (1977)). Here, the Foundation claims that "the challenged rule will increase emissions of harmful air pollutants from [backup generators], threatening the health and welfare of CLF's

members." Pet'r FirstEnergy, et al. Br. at 16 (citing Exs. A-C). The Foundation provided declarations from two of its members to that specific effect. Since these members assert harm traceable to the rise in backup generator emissions that would be redressable by government action, their interests in health are germane to the Foundation's purposes, and individual participation in the lawsuit is not required, the Foundation has standing. *See Sierra Club v. EPA*, 699 F.3d 530, 533 (D.C. Cir. 2012).

Petitioners FirstEnergy Solutions Corp., Calpine Corp., and PSEG Power LLC (collectively, the "Generator Petitioners") claim to have standing based on the alleged distorting impact the 2013 Rule has on organized capacity markets in which the Generator Petitioners compete. Intervenor Electric Power Supply Association asserts standing for the same reason. We need not address this argument, since the Generator Petitioners have submitted a joint brief with the Foundation, and the Association raises the same claims as raised in the joint brief. Because "constitutional and prudential standing can be shown for at least one plaintiff, we need not consider the standing of the other plaintiffs to raise that claim." *Mountain States Legal Found. v. Glickman*, 92 F.3d 1228, 1232 (D.C. Cir. 1996).[3]

Delaware asks us to vacate three portions of the 2013 Rule: the modified National Emissions Standards that allow for 100 hours of demand response, the similarly revised Performance Standards, and the exemption from emissions controls of certain non-emergency generators located in remote areas.

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[3] EPA concedes that the Foundation "does appear to have standing" and that the Electric Power Supply Association asserts the same issue raised in the Foundation's joint brief. Resp't Br. at 1 n.1.

EPA challenges Delaware's standing to bring any of these claims. It argues Delaware did not satisfy its burden of identifying "actual or imminent and concrete and particularized injury stemming from" EPA actions. Resp't Br. at 2-3 (internal quotation marks omitted). Indeed, Delaware's argument in favor of standing in its opening brief is thin. In a single paragraph, Delaware asserts that its standing is "self evident," Pet'r Del. Br. at 11 (citing *Sierra Club*, 292 F.3d at 900), arguing its "air quality is impacted by emissions from the engines covered by the [Performance Standards] and [National Emissions Standards] that originate upwind." *Id.* The added pollution will, so Delaware argues, negatively impact Delaware's ability to attain the National Ambient Air Quality Standards ("NAAQS") that Delaware has to maintain pursuant to the Clean Air Act. *Id.* In its opening brief, Delaware offers no specific evidence that the winds carry pollutants from backup generators into the state, or in what quantity, or with what frequency, or that backup generators in the remote-area subcategory are located near enough to Delaware to pose a threat to the state's air quality. Its brief also points to no specific place in the record, which extends for thousands of pages, where that information could be found. Its only additional authority is *Massachusetts v. EPA*, 549 U.S. 497, 516-25 (2007) (holding state petitioners had standing to challenge EPA order denying a petition for rulemaking to regulate greenhouse gas emissions from motor vehicles).

Typically the petitioner "bears the burden of averring facts in its opening brief" that establish standing. *Texas v. EPA*, 726 F.3d at 198; *see also* D.C. CIR. R. 28(a)(7) ("When the . . . petitioner's standing is not apparent from the administrative record, the brief must include arguments and evidence establishing the claim of standing."). Taken by themselves, the bare assertions in the opening brief may be insufficient to establish standing.

But our case law allows us the discretion to look beyond the opening brief and consider material submitted later if the petitioner "reasonably believed [its] standing [wa]s self-evident." *Am. Library Ass'n v. FCC*, 401 F.3d 489, 492 (D.C. Cir. 2005); *see also Ctr. for Sustainable Econ. v. Jewell*, 779 F.3d 588, 598-99 (D.C. Cir. 2015); *Ams. for Safe Access v. Drug Enforcement Admin.*, 706 F.3d 438, 444 (D.C. Cir. 2013).

We choose to exercise that discretion here for three reasons. First, Delaware is part of PJM Interconnection, LLC—the regional transmission organization that operates the power grid for over 60 million customers in the mid-Atlantic region and the Midwest. *See* J.A. 1,790. As we will discuss below, part of EPA's motivation for this rule was to allow the use of emergency engines for demand response in the PJM region, and EPA explicitly sought to accommodate what it believed to be a PJM-specific sixty-hour availability requirement for emergency engines. *See* 78 Fed. Reg. at 6,679; National Emission Standards for Hazardous Air Pollutants for Reciprocating Internal Combustion Engines; New Source Performance Standards for Stationary Internal Combustion Engines, 77 Fed. Reg. 33,812, 33,817 (proposed June 7, 2012). There is evidence in the administrative record that backup generators represent nearly fifteen percent of demand response in the PJM region and that demand response use is growing therein. *See* J.A. 2,114. Second, the congressionally created Northeast Ozone Transport Region includes Delaware and other states in the mid-Atlantic and northeast regions, *see* 42 U.S.C. § 7511c, and we have previously noted that ozone pollution from these states contributes to pollution in each other. *See Virginia v. EPA*, 108 F.3d 1397, 1401 (D.C. Cir. 1997); *see also Appalachian Power Co. v. EPA*, 249 F.3d 1032, 1036-37 (D.C. Cir. 2001) (per curiam) (describing EPA finding that stationary source emissions in upwind states contributed to ozone nonattainment in other states and "trigger[ed] direct federal regulation of

stationary sources"). Third, parts of Delaware are in nonattainment, and its experts aver that most of the emissions that negatively impact its ability to attain the NAAQS come from out of state. *See* Addendum to Pet'r Del. Reply Br. at 4; *see also* EPA, *Current Nonattainment Counties for All Criteria Pollutants*, http://www.epa.gov/airquality/greenbook/ancl.html (last visited Apr. 22, 2015) (listing counties in nonattainment).

In light of these factors, it was reasonable for Delaware to believe that its standing was self-evident. Accordingly, we look beyond the opening brief to the reply brief to establish standing. *See Ams. for Safe Access*, 706 F.3d at 444; *Am. Library Ass'n*, 401 F.3d at 495-96; *see also Communities Against Runway Expansion, Inc. v. FAA*, 355 F.3d 678, 685 (D.C. Cir. 2004) (looking to supplemental declarations submitted with reply brief to establish injury and, thus, standing).

Delaware's reply brief and its accompanying addendum provide an explanation of the injuries that gave rise to Delaware's reasonable belief that its standing was self-evident. It cites a letter in the record sent by Ali Mirzakhalili, Director of Delaware's Department of Natural Resources and Environmental Control's Division of Air Quality, to EPA in August 2012, *see* J.A. 2,107-08, and provides in an addendum two affidavits, one from Mirzakhalili and another from Marty Prettyman, a Delaware environmental scientist, *see* Addendum to Pet'r Del. Reply Br. at 1-17, 20-29.

In his letter, Mirzakhalili argues that the EPA rule would have an "adverse" impact on air quality and that "[i]t is of vital importance not to increase emissions of oxides of nitrogen (NO_x), especially on high electricity demand days." J.A. 2,107. He also argues a lower ambient air quality standard is "looming" that "will require additional NO_x emission reductions," and EPA's proposed rule "increases rather than decreases NO_x

emissions that contribute to the formation of ozone." J.A. 2,107-08. In his affidavit, Mirzakhalili states that emissions from emergency demand response programs significantly impact ozone pollution in Delaware, Addendum to Pet'r Del. Reply Br. at 10, that at least 90 percent of the pollutants contributing to Delaware's failure to attain the NAAQS "come from pollutants transported from other states," *id.* at 3, that such pollution incurs medical costs that are borne by the state, *id.* at 4-5, and that stronger emissions controls on backup generators in other states would benefit Delaware, *id.* at 11-12. Prettyman charts the rising number of demand response incidents in the PJM regional power grid, *id.* at 23, and states that the remote area exemption for certain engines poses an environmental hazard, *id.* at 24-25, though it is unclear if such engines are within or proximate to Delaware.

This evidence suffices to establish that Delaware has suffered a concrete and imminent injury stemming from the portions of the 2013 Rule allowing backup generators to operate without emissions controls for up to 100 hours per year as part of an emergency demand-response program. *See Appalachian Power*, 249 F.3d at 1066-67; *see also Massachusetts v. EPA*, 549 U.S. at 521. Thus, Delaware's challenges to the modified National Emissions Standards and the related Performance Standards are properly before us.

But a petitioner "must demonstrate standing for each claim he seeks to press," *DaimlerChrysler Corp. v. Cuno*, 547 U.S. 332, 352 (2006), and Delaware's challenge to the exemption from emissions controls of certain non-emergency generators located in remote areas is another matter.

In both its opening brief and its reply brief, Delaware offers no evidence that backup generators in the remote-area subcategory are located near enough to Delaware to pose a

threat to the state's air quality. To the contrary, the Mirzakhalili letter cited in Delaware's reply brief states that "[m]ost of these installations are in remote, unpopulated areas." J.A. 2,122. The only examples the letter offers of these remote locations are references to the Powder River Basin of Wyoming and "fields" of generators "visibly evident across Wyoming and Colorado, and . . . throughout Nebraska and California." J.A. 2,122-23. Nothing in Delaware's briefs or supplemental affidavits mentions a location in or near Delaware or even upwind of the state. Considered alongside Delaware's credible claims of injury from backup generators in upwind and contiguous states, its assertions regarding remote-area engines are strikingly weak. Accordingly, Delaware has failed to meet its burden of showing that it has standing to challenge the 2013 Rule's subcategorization of existing stationary spark ignition engines located at area sources in sparsely populated areas. *See Ass'n of Flight Attendants-CWA, AFL-CIO v. U.S. Dep't of Transp.*, 564 F.3d 462, 467 (D.C. Cir. 2009) (considering but rejecting standing arguments made in reply brief and accompanying submissions).

Accordingly, we address only EPA's modification of the National Emissions Standards and the Performance Standards to allow backup generators to operate without emissions controls for up to 100 hours per year as part of an emergency demand-response program, *see* 40 C.F.R. §§ 60.4211(f)(2), 60.4243(d)(2), 63.6640(f)(2), and we do not address the remote-area exemption, *see* 40 C.F.R. § 63.6675.

III.

We "may reverse" a final EPA rule if we find the agency's action "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law." 42 U.S.C. § 7607(d)(9)(A). This language from the Clean Air Act differs from that of the

Administrative Procedure Act. Section 706 of the APA states that the "reviewing court shall" "hold unlawful and set aside agency action" the court finds to be "arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law," 5 U.S.C. § 706(2)(A). But "the standard we apply is essentially the same under either Act," the CAA or the APA. *Ethyl Corp. v. EPA*, 51 F.3d 1053, 1064 (D.C. Cir. 1995); *see also West Virginia v. EPA*, 362 F.3d 861, 867-68 (D.C. Cir. 2004).

To prevail, an "agency must 'examine the relevant data and articulate a satisfactory explanation for its action including a rational connection between the facts found and the choice made.'" *Nat'l Shooting Sports Found., Inc. v. Jones*, 716 F.3d 200, 214 (D.C. Cir. 2013) (quoting *Motor Vehicle Mfrs. Ass'n v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 43 (1983) (quotation marks omitted)). "To be regarded as rational, an agency must also consider significant alternatives to the course it ultimately chooses." *Allied Local & Reg'l Mfrs. Caucus v. EPA*, 215 F.3d 61, 80 (D.C. Cir. 2000). We will reverse when agency action is "based on speculation," *Jones*, 716 F.3d at 214, or when the agency did not "engage the arguments raised before it," *NorAm Gas Transmission Co. v. FERC*, 148 F.3d 1158, 1165 (D.C. Cir. 1998) (quoting *K N Energy, Inc. v. FERC*, 968 F.2d 1295, 1303 (D.C. Cir. 1992)).

IV.

To understand this case and petitioners' claims, we must discuss energy markets and capacity markets and their relationship to demand response.

Under the Federal Power Act, the Federal Energy Regulatory Commission ("FERC") has jurisdiction over the "transmission of electric energy in interstate commerce," 16 U.S.C. § 824(b)(1), and is responsible for maintaining the

reliability of the electric grid, *see id.* § 824*o*(b)(1). FERC has certified the North American Electric Reliability Corporation ("NERC") as the nation's "electric reliability organization," and NERC has developed enforceable standards to ensure electric grid reliability. *See Alcoa, Inc. v. FERC*, 564 F.3d 1342, 1344-45 (D.C. Cir. 2009). FERC regulates electricity grid managers known as Independent System Operators ("ISOs") or Regional Transmission Organizations ("RTOs") (collectively, "System Operators"), who are responsible for ensuring electric reliability within their regions of responsibility. *See Braintree Elec. Light Dep't v. FERC*, 550 F.3d 6, 8-9 (D.C. Cir. 2008) (describing history of RTOs).[4]

These System Operators are usually involved in both the energy and capacity markets. Energy "is the amount of electricity generators actually provide to the grid and is available to be used at any moment. Organized wholesale electricity markets buy and supply electricity instantaneously." Kennedy Maize, *Texas and the Capacity Market Debate*, Power Mag., Feb. 1, 2014.[5]

Capacity is different. "'Capacity' is not electricity itself but the ability to produce it when necessary. It amounts to a kind of call option that electricity transmitters purchase from

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[4] *See also* Michael H. Brown & Richard P. Sedano, Electricity Transmission: A Primer 53 (2004) (describing responsibilities of grid operators).

[5] *See also* Brown & Sedano, Electricity Transmission at 67 (defining the "wholesale power market" as "[t]he purchase and sale of electricity from generators to resellers . . . along with the ancillary services needed to maintain reliability and power quality at the transmission level"); J.A. 2,399 ("[A]ctual system load (real-time customer demand) is met via the energy and other daily markets.") (Analysis Group Report).

parties—generally, generators—who can either produce more or consume less when required." *Conn. Dep't of Pub. Util. Control v. FERC*, 569 F.3d 477, 479 (D.C. Cir. 2009); *see also Me. Pub. Util. Comm'n v. FERC*, 520 F.3d 464, 467 (D.C. Cir. 2008) (per curiam), *rev'd in part sub nom. NRG Power Mktg., LLC v. Me. Pub. Util. Comm'n*, 558 U.S. 165 (2010). These sales may occur years in advance of when the capacity is actually needed; power generators are thus able to plan and build facilities to meet future demand. *See Md. Pub. Serv. Comm'n v. FERC*, 632 F.3d 1283, 1284-85 (D.C. Cir. 2011) (per curiam).

ISOs and RTOs typically require local utilities delivering electricity to users (known as "load-serving entities," or LSEs) to purchase a certain amount of capacity to ensure reliability during periods of high demand. *See, e.g.*, *Elec. Consumers Res. Council v. FERC*, 407 F.3d 1232, 1234 (D.C. Cir. 2005). "The goal is for [utilities] to purchase sufficient capacity to easily meet expected peaks in electricity demand on their transmission systems." *Conn. Dep't of Pub. Util. Control*, 569 F.3d at 479.

"Payments for capacity provide a revenue stream to maintain and keep current resources operating and to develop new resources. Investors need sufficient long-term price signals to encourage the maintenance and development of generation, transmission and demand-side resources." PJM, *Reliability Pricing Model, Demand Response and Energy Efficiency* 1 (2009); *see also PJM Interconnection, LLC*, 128 FERC ¶ 61157 P 24 (Aug. 14, 2009) ("Since energy and ancillary services revenues in an export area are not sufficient by themselves to support new entry, capacity payments are needed to provide the proper incentives for new efficient entry in that area and to retain existing efficient generators over the long term.").

Capacity markets vary across the country, but "the primary goal of each of these markets is the same: ensure resource

adequacy at just and reasonable rates through a market-based mechanism that is not unduly discriminatory or preferential as to the procurement of resources." FERC Staff, AD13-7-000, Centralized Capacity Market Design Elements 2 (2013); *see also N.E. Power Generators Ass'n v. FERC*, 707 F.3d 364, 367 (D.C. Cir. 2013). In some markets, System Operators administer auctions whereby LSEs procure capacity. *See Centralized Capacity Market Design* at 1-2.

We recently explained how the process works in New York. There, "[c]apacity suppliers bid a quantity of capacity into the auction, and the total amount of capacity bid creates a supply curve, which intersects with a predetermined demand curve." *TC Ravenswood, LLC v. FERC*, 741 F.3d 112, 114 (D.C. Cir. 2013). Supply and demand meet to set a price, which LSEs pay to purchase capacity. *Id.* "In theory, this market design encourages desirable investment by signaling the need for more generation and by enabling power generators to recoup their costs in the capacity market." *Id.*

Capacity auctions do "not differentiate among capacity resources based on any type of resource specific reliability criteria." J.A. 2,397 (Analysis Group Report). The capacity markets select resources almost exclusively on the basis of price—they do not place a value on "fuel type, technology type, or resource flexibility." *Id.*; *see also TC Ravenswood*, 741 F.3d at 114; *Conn. Dep't of Pub. Util. Control*, 569 F.3d at 479-80.

Capacity can be supplied by power plants, but it can also be supplied by demand-response resources. Traditionally, "demand response" simply referred to "a reduction in the consumption of electric energy by customers." *See* 18 C.F.R. § 35.28(b)(4).[6]

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[6] *See also* FERC Staff, National Action Plan on Demand Response, Docket No. AD09-10, at 3 (2010), *available at*

For example, a consumer may temporarily shut off air conditioning on a hot day.

Industry and environmental petitioners are concerned with what they consider a new phenomenon in demand response, whereby some consumers substitute the supply of capacity from traditional sources with backup generators. Consumers draw energy from the generators and not from the grid, "which reduces electricity consumption from the grid as measured at the customer's meter," according to a report in the administrative record. J.A. 2,142. By doing so, they "displace[] electricity that otherwise would be provided by the grid." J.A. 2,391 (Analysis Group Report). So-called "demand response 'aggregators' have adopted the practice of grouping backup generators together to form 'virtual power plants' of considerable size," according to comments presented to EPA by intervenor Electric Power Supply Association. J.A. 2,223-24.[7]

The performance obligations for these demand response providers and traditional generators differ; traditional generators have a "must-offer requirement" in accordance with which they

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http://www.ferc.gov/legal/staff-reports/06-17-10-demand-response.pdf (FERC uses "'demand response' to refer to the ability of customers to respond to either a reliability trigger or a price trigger from their utility system operator, load-serving entity, regional transmission organization/independent system operator (RTO/ISO), or other demand response provider by lowering their power consumption.").

[7] Respondent-Intervenor EnerNOC, Inc.—a corporation that specializes in demand response and partly relies on the use of backup generators subject to the 2013 Rule—claims on its website that it is "rapidly building the world's largest virtual power plant." EnerNOC, *Our Impact*, http://www.enernoc.com/about/our-impact (last visited Apr. 22, 2015).

provide energy into the grid whenever "called upon," but "demand response capacity resources," like backup generators, "are not subject to the must-offer requirements," absent system emergencies. *Centralized Capacity Market Design* at 19.

Petitioners and the supporting intervenor argue that demand response in capacity markets based on backup generators is growing with negative effects on reliability and the environment. They argue there are four reasons why. First, because backup generators do not have to conform to emissions controls like regular power plants, their electricity costs less to produce and they can charge less and underbid conventional power suppliers in capacity markets. Second, as backup generators displace traditional power plants in capacity markets, demand for traditional power generation drops, and—because traditional power generators rely on capacity markets to "recoup their costs," *TC Ravenswood*, 741 F.3d at 114—they under-invest in power plants that produce electricity for the energy markets. This reduction in supply undermines the reliability of the power grid. Third, as the power supply decreases and the grid becomes less stable, the number of power emergencies increases. And, fourth, as emergencies increase, the actual use of "dirty" backup generators correspondingly increases, causing greater pollution. In short, petitioners and the intervenor argue that instead of protecting the nation's air resources and improving grid reliability as EPA claims, the 2013 Rule has the opposite effect.

V.

During the notice and comment period, petitioners presented their concerns about the 2013 Rule's impact on the efficiency and reliability of the energy grid. They contend that EPA should have, but did not, respond properly to their well-

founded concerns. *See Allied Local & Reg'l Mfrs. Caucus*, 215 F.3d at 80.

Petitioners are correct. EPA's action was arbitrary and capricious on that ground alone. In addition, EPA appears to have relied on faulty evidence when justifying the exemption increase from fifteen hours to 100 hours. EPA also did not consider the alternative of limiting the exception to parts of the country not served by organized capacity markets. We should further note that EPA did not obtain the views of FERC or NERC on the reliability considerations upon which EPA based the exemption.

1. Efficiency and Reliability

Several commenters explained how EPA's final rule threatens the efficiency and reliability of the energy markets by creating incentives for backup generators to enter the capacity markets and force out more efficient, traditional power generators.

For instance, at a hearing for public comments on the proposed rule in July 2012, Christina E. Simeone of the non-profit PennFuture Energy Center testified that the 2013 Rule would "create distortions in energy markets by making demand response from uncontrolled [backup] units artificially cheap." J.A. 1,697. She pointed to evidence showing that demand response programs were growing in the region overseen by PJM Interconnection. By making backup generators "artificially cheap, EPA is creating a rush to these resources," and, thus, harming reliability by diverting investment from power generation resources "needed to secure the grid." J.A. 1,699.

At the same hearing, Shannon Maher Banaga of Petitioner PSEG Power, LLC testified that demand response resources

were not needed to ensure reliability. J.A. 1,703. Backup generators are "economic resource[s]" that "comp[]ete[] directly with other forms of capacity, most particularly generation," she said. J.A. 1,705. As backup generators play a larger role in capacity markets, "the number of so-called 'emergencies' is going to go up." J.A. 1,706.

In August 2012, Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor ("IMM") for PJM, submitted comments to EPA objecting strongly to the reliability rationale of the proposed rule. "Some have asserted that an exemption for [backup] generators participating in demand side response [ ] programs provides benefits to the organized wholesale electricity markets," it wrote. J.A. 2,338. "Those arguments have no merit. On the contrary, providing the exemption will have negative consequences for efficiency and reliability." *Id.* It argued the 100-hour exemption "conflicts with and would undermine the development of the demand side of these markets" and is totally unnecessary to support reliability. *Id.* According to IMM, given the interplay between the capacity and energy markets, the exemption would distort both. *See* J.A. 2,340-41.

Petitioner Calpine Corporation submitted a letter to EPA in August 2012 echoing these concerns. The proposed rule "would incentivize the procurement of diesel-fired [behind-the-meter] generators masquerading as 'demand response' in electricity capacity markets and thereby displace clean generating resources . . .." J.A. 2,355. Backup generators are not necessary for reliability in organized competitive markets, since "the market will simply procure other resources instead of [a behind-the-meter generator] that has not had to internalize the costs of emissions controls." *Id.* Indeed, the increased reliance on demand-response resources available in capacity markets "may actually impair system reliability" since the traditional power

generators they displace "operate more reliably" than the demand-response resources. J.A. 2,356. "Simply put, the Proposed Rule's exemption is nothing less than a subsidy for dirty generating sources." *Id.*

Nor were these concerns merely hypothetical. An August 2012 report submitted to EPA by Northeast States for Coordinated Air Use Management, a non-profit association of air quality agencies in the northeast, explained that "demand response programs appear to be shifting a portion of overall electricity demand from traditional generating resources that supply the grid to more dispersed, unregulated diesel generators." J.A. 2,142; *cf.* J.A. 1,711, 1,757 (comments showing an increase in demand-response resources offered into auction from 2009 to 2010).

EPA offered wan responses to these comments. EPA construed the concerns as arguments that the 2013 Rule "will encourage the use of backup generators in lieu of cleaner alternatives of energy" but "there is no guarantee that this would be the case." J.A. 2,579. EPA seems to have missed the forest for the trees: the overriding concern of these comments was the perverse effect the 100-hour exemption would have on the reliability and efficiency of the capacity and energy markets, not the specific clean energy alternatives that could supply the grid instead of backup generators. EPA essentially said that it was not its job to worry about those concerns: "The issues related [to] management of energy markets and competition between various forms of electric generation are far afield from EPA's responsibilities for setting standards under the CAA." J.A. 2,582; *see also* J.A. 2,592 ("Decisions about what units to allow to be bid into the capacity market and relied on for reliability are not under the EPA's purview and should be left to the entities

that are responsible for maintaining the reliability of the electric grid.").[8]

But EPA cannot get away so easily from its obligations under the APA to respond to "relevant and significant" comments. *Cement Kiln Recycling Coal. v. EPA*, 493 F.3d 207, 225 (D.C. Cir. 2007) (quoting *Grand Canyon Air Tour Coal. v. FAA*, 154 F.3d 455, 468 (D.C. Cir. 1998)). Naturally, an agency need not "discuss every item of fact or opinion included in the submissions made to it." *Pub. Citizen, Inc. v. FAA*, 988 F.2d 186, 197 (D.C. Cir. 1993) (quoting *Auto. Parts & Accessories Ass'n v. Boyd*, 407 F.2d 330, 338 (D.C. Cir. 1968)). But an agency must respond sufficiently to "enable us to see what major issues of policy were ventilated . . . and why the agency reacted to them as it did." *Id.* (quoting *Auto. Parts*, 407 F.2d at 335) (ellipsis in original).

EPA did not even do that much. It refused to engage with the commenters' dynamic markets argument. At points, its later statements contradicted earlier responses; while the final rule placed reliability at the center of its reasoning, *see* 78 Fed. Reg. at 6,679, EPA's response to comments insisted it was not "justifying its regulation primarily on the reliability needs of the bulk power system." J.A. 2,592; *cf. Farmers Union Cent. Exch., Inc. v. FERC*, 734 F.2d 1486, 1520 (D.C. Cir. 1984) ("Such self-contradictory, wandering logic does not constitute an adequate explanation" of agency action). EPA seeks to excuse its inadequate responses by passing the entire issue off onto a different agency. Administrative law does not permit such a

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[8] EPA also responded to these comments by noting that areas of the country not served by organized capacity markets do rely on backup generators to protect the reliability of the grid. *See, e.g.*, J.A. 2,580. We find this response equally inadequate for the reasons explained in Part V.3.

dodge. *See Gen. Chem. Corp. v. United States*, 817 F.2d 844, 846 (D.C. Cir. 1987) (per curiam) (finding agency action arbitrary and capricious where agency analysis was "inadequately explained").

During oral argument, EPA's attorney told the court that EPA "heard" the commenters' concerns about the 2013 Rule. But merely hearing is not good enough—EPA must respond to serious objections. *See Allied Local & Reg'l Mfrs. Caucus*, 215 F.3d at 80. By failing to do so here, its rulemaking was arbitrary and capricious. *See State Farm*, 463 U.S. at 43-44.

2. Backup Generator Aggregation

EPA's 100-hour exemption in the 2013 Rule was arbitrary and capricious for still another reason: EPA failed to respond to comments suggesting that the 100-hour limit was based on faulty evidence.

In support of its claim that the fifteen-hour cap was inadequate, EPA specifically relied on comments from a prior rulemaking, *see* J.A. 1,548 (PJM Comment from Feb. 14, 2011), indicating that resources were required to be available for a minimum of sixty hours per year to participate in PJM's "Emergency Load Response Program." *See* 78 Fed. Reg. at 6,679.

But, as PJM explained to EPA in comments written in August 2012 in response to this rule, the sixty-hour minimum does not apply to individual engines. J.A. 1791. Rather, these engines may be aggregated together to meet the sixty-hour availability requirement. *Id.* PJM explained that in 2012 "the environmental limitations on individual [backup] units . . . are not necessarily dispositive of the ability of demand response resources to participate in PJM's markets or to maintain bulk

power system reliability." *Id.*; *see also* J.A. 2346-47 (IMM Comments); J.A. 2,104-05 (CLF Comments).

EPA seems to have either intentionally discounted PJM's later explanation of its requirement or simply confused the later comment for the earlier one. Another commenter brought the possible confusion to EPA's attention, but EPA did not specifically respond, saying it considered demand-resource needs "in all areas of the country, not just PJM." J.A. 2,596. And yet, EPA significantly grounded the 2013 Rule in a PJM requirement that does not exist for individual engines.

In light of PJM's 2012 comments, EPA failed to give an adequate reason for relying on the PJM availability requirement. *See* 78 Fed. Reg. at 6,679. EPA's action was thus arbitrary and capricious on this ground, as well. *See State Farm*, 463 U.S. at 43; *see also Nat'l Gypsum Co. v. EPA*, 968 F.2d 40, 41 (D.C. Cir. 1992) (vacating and remanding where EPA offered inadequate scientific evidence and failed to offer substantial evidence for decision).

3. Alternative Option

Petitioners argue that backup generator-based demand response resources "simply provide a reliability service that could and would be equally met by alternative resources"—traditional energy generators that comply with emissions controls—especially in organized capacity markets. Pet'r FirstEnergy, et al. Br. at 22 (citing Analysis Group Report).

EPA counters that petitioners "ignore[] that resources other than emergency engines are typically unavailable for emergency demand response purposes in those areas of the nation not served by organized capacity markets." Resp't Br. at 39-40.

EPA argues that by setting a nationwide annual limit of 100 hours, it "took into account the fact that emergency engines help to ensure reliable electric service not just in areas with organized capacity markets, but also in many rural communities and small municipal systems." *Id.* at 45.

This statement does not explain why EPA failed to limit the 100-hour exemption to areas of the country not served by organized markets. At least one commenter, the Electric Power Generation Association, proposed such an alternative. *See* J.A. 1,780-83. Tens of millions of Americans live in states served by organized markets.[9] Yes, EPA received comments that exempting backup generators from emissions controls would aid reliability "for small, rural municipalities," J.A. 2,556; *see also* J.A. 1,931-32, J.A. 1,944, but it did not adequately explain why it adopted a nationwide rule when such an allegedly overbroad action has the potential to distort organized markets. EPA asserts that it "was perfectly reasonable" for it "to promulgate a rule of nationwide applicability, rather than establish different limits on emergency demand response operation based on the specific (and not necessarily permanent) market conditions in a particular location." Resp't Br. at 48.

For support, EPA cites *National Telephone Co-Op Association v. FCC*, 563 F.3d 536 (D.C. Cir. 2009), in which we held that the Federal Communications Commission's explanation of its rejection of an alternative policy option "was reasonable and reasonably explained." *Id.* at 542; *see also* Resp't Br. at 48. But that case is instructive for exactly what is lacking in EPA's actions in the instant case. There, petitioner argued that the FCC could have created a "partial or blanket exemption" from an order requiring the portability of telephone

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[9] *See* FERC, Docket No. MO4-2-000, State of the Markets Report 5-6 (2004).

numbers for "small wireline carriers." *Id.* The FCC rejected the proposal after carefully articulating its reasons, noting the proposal "would harm consumers in small and rural areas across the country by preventing them from being able to port [or transfer their numbers] on a permanent basis" and discourage further competition that could help customers. *See id.*; *In re* Telephone Number Requirements for IP-Enabled Services Providers, 22 F.C.C.R. 19531, 19611 ¶16 2007 WL 3306343 (2007). In short, the FCC identified a specific harm of the alternative proposal.

Here, the only rationale provided for a national rule was a vague desire for uniformity.[10] While EPA emphasized in the administrative proceeding the benefits to rural areas of the rule, *see, e.g.*, J.A. 2,596, it did not address why a more limited rule would not achieve the same outcome without posing risks to organized energy markets.

We do not "broadly require an agency to consider all policy alternatives in reaching [a] decision." *State Farm*, 463 U.S. at 51. But "[a]t the very least this alternative way of achieving" EPA's objective, namely by limiting the 100-hour exemption to address the reliability needs of rural locations, "should have been addressed and adequate reasons given for its abandonment." *Id.* at 48. Because EPA too cavalierly sidestepped its responsibility to address reasonable alternatives, its action was not rational and must, therefore, be set aside. *See Allied Local*, 215 F.3d at 80; *see also Allentown Mack Sales & Serv., Inc. v. NLRB*, 522 U.S. 359, 374 (1998).

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[10] We note that a concern for uniformity did not prevent EPA from establishing a subcategory of stationary engines located in sparsely populated areas. *See* 40 C.F.R. § 63.6675. Clearly, a desire for nationwide uniformity is not always dispositive.

4. FERC Input

An undercurrent coursing through this case has been that, while EPA justifies the 2013 Rule on the basis of supporting "system reliability," 78 Fed. Reg. at 6,679; *see also* Resp't Br. at 29, grid reliability is not a subject of the Clean Air Act and is not the province of EPA. There is no indication that either FERC, the federal entity responsible for the reliability of the electric grid, 16 U.S.C. § 824*o*(b)(1), or NERC, FERC's designated electric reliability organization, *see Alcoa*, 564 F.3d at 1345, was involved in this rulemaking or submitted their views to EPA.

During the comment period, when a commenter suggested EPA "work with FERC . . . to ensure grid reliability does not depend on stationary [backup generators]," J.A. 2,594, EPA responded that the rulemaking's purpose was to address emissions from the emergency engines "and to minimize such pollutants within the Agency's authority under the CAA. It is not within the scope of this rulemaking to determine which resources are used for grid reliability, nor is it the responsibility of the EPA to decide which type of power is used to address emergency situations." J.A. 2,595. Such responsibility was "within the hands of the power authorities and not" EPA. *Id.* In the preamble to the 2013 Rule, EPA similarly stated that concerns about the impact of demand response in capacity markets "are comments more appropriately directed towards the FERC." 78 Fed. Reg. at 6,685.

But EPA cannot have it both ways—it cannot simultaneously rely on reliability concerns and then brush off comments about those concerns as beyond its purview. EPA's response to comments suggests that its 100-hour rule, to the extent that it impacts system reliability, is not "the product of agency expertise." *State Farm*, 463 U.S. at 43.

When asked at oral argument where EPA rooted its authority to regulate engines on the basis of grid reliability, EPA's attorney cited 42 U.S.C. § 7412(d), which instructs EPA to "consider[]" the cost of achieving emission reductions. *Id.* § 7412(d)(2). "Costs" can mean many different things, including the cost associated with increased risk, but it is unclear from the record how EPA weighed those costs here, when it suggested that system reliability was the responsibility of other specialized agencies but then did not seek input from them. On remand, we encourage EPA to solicit input from FERC, as necessary. *Cf. Williams Natural Gas Co. v. FERC*, 872 F.2d 438, 450-51 (D.C. Cir. 1989) (suggesting agency, on remand, solicit new comments to obtain needed information).

VI.

We reverse the challenged rules that contain the 100-hour exemption for operation of emergency engines for purposes of emergency demand response under the National Emissions Standards, 40 C.F.R. § 63.6640(f)(2)(ii)-(iii), and the Performance Standards, 40 C.F.R. §§ 60.4211(f)(2)(ii)-(iii), 60.4243(d)(2)(ii)-(iii). We remand them to EPA for further action. *See* 42 U.S.C. § 7607(d)(9); *West Virginia*, 362 F.3d at 867. The rest of the 2013 Rule remains in effect.

If vacating these portions of the 2013 Rule will cause administrative or other difficulties, "EPA (or any of the parties to this proceeding) may file a motion to delay issuance of the mandate to request either that the current standards remain in place or that EPA be allowed reasonable time to develop interim standards." *Cement Kiln Recycling Coal.*, 255 F.3d at 872; *see also Columbia Falls Aluminum Co. v. EPA*, 139 F.3d 914, 924 (D.C. Cir. 1998) ("If EPA wishes to promulgate an interim treatment standard, the Agency may file a motion in this court to delay issuance of this mandate in order to allow it a reasonable time to develop such a standard.").

So ordered.