United States Court of Appeals

FOR THE DISTRICT OF COLUMBIA CIRCUIT

Argued September 26, 2025 Decided July 31, 2026

No. 23-1282

ADVANCED ENERGY UNITED, ET AL.,
PETITIONERS

v.

FEDERAL ENERGY REGULATORY COMMISSION,
RESPONDENT

CONSUMERS ENERGY COMPANY, ET AL.,
INTERVENORS

Consolidated with 23-1284, 23-1289, 23-1297, 23-1299, 23-1305, 23-1310, 23-1312, 23-1313, 23-1320, 23-1327, 23-1330, 23-1346, 24-1093, 24-1106, 24-1112, 24-1136, 24-1137, 24-1139, 24-1140, 24-1141

On Petitions for Review of Orders
of the Federal Energy Regulatory Commission

John Lee Shepherd Jr. and *Elbert Lin* argued the causes for Transmission Provider Petitioners. With them on the briefs were *Catherine P. McCarthy*, *Joshua Kirstein*, *Paul A. Colbert*,

Blake Grow, *Sara Weinberg*, *Lisa B. Luftig*, *Christopher D. Supino*, *Ilia Levitine*, *Ted Murphy*, *Andrew W. Tunnell*, *Wendy N. Reed*, *Matthew J. Binette*, *Abraham F. Johns, III*, *Lyle D. Larson*, *Abigail C. Fox*, *Robert V. Eckenrod*, *Christopher R. Jones*, *Antonia M. Douglas*, *Adrienne Thompson*, *Wendy B. Warren*, *David S. Berman*, *Elizabeth P. Trinkle*, and *Priyanka Vashisht*. *Ryan J. Collins*, *Kevin M. Leroy*, *Jason Tompkins*, *Misha Tseytlin*, and *Susan J. LoFrumento*, entered appearances.

Melissa Alfano argued the causes for Association Petitioners. With her on the briefs were *Ben Norris*, *Gabriel Tabak*, *Jeremy McDiarmid*, *Nicholas M. Gladd*, and *Kelsey C. Catina.*

Robert H. Solomon, Solicitor, Federal Energy Regulatory Commission, argued the cause for respondent. With him on the brief were *David L. Morenoff*, Acting General Counsel, and *Susanna Y. Chu* and *J. Houston Shaner*, Attorneys.

Alexander L. Tom argued the cause for intervenors. With him on the brief were *Christine A. Powell*, *Ada Statler*, *Nick Lawton*, *Linnet Davis-Stermitz*, *John Moore*, *Caroline Reiser*, *Gregory E. Wannier*, *Justin Vickers*, *Adam Kurland*, *Ben Norris*, *Melissa Alfano*, *Gabriel Tabak*, and *Jeremy McDiarmid*. *Danielle Fidler* entered an appearance.

Before: MILLETT, WALKER, and CHILDS, *Circuit Judges*.

Opinion for the Court filed PER CURIAM.

PER CURIAM: The on-ramps to our nation's power grid are in the middle of a decades-long traffic jam. At the end of 2023, roughly 2,600 gigawatts of proposed generating and storage capacity were stuck in interconnection queues, waiting years

for the completion of the studies needed before they can connect to the transmission system. Solar, wind, and energy storage accounted for about 95 percent of that capacity.[1] That backlog represents more than twice the country's installed generation capacity, which stood at roughly 1,200 gigawatts in 2023.[2] The Federal Energy Regulatory Commission ("FERC") concluded that the existing process could not keep up with the "unprecedented" volume of interconnection requests and that the resulting delays were producing unjust and unreasonable conditions in wholesale markets.

Order 2023 is FERC's attempt to clear that traffic. Acting under its remedial authority, FERC directed every transmission provider under its jurisdiction to overhaul how it processes interconnection requests—moving from a serial, project-by-project model to clustered studies, requiring substantial deposits, imposing withdrawal fines, setting firm study deadlines, and backing those deadlines with automatic late fees.

Those reforms drew fire from several directions. Transmission providers and system operators argue that FERC exceeded its authority under the Federal Power Act, violated due process, and ran afoul of the Administrative Procedure Act by layering "strict-liability penalties" on top of already-revised tariffs. Clean-energy developers challenge the rule from the opposite flank, attacking what they see as an arbitrary safe harbor that shields transmission providers from penalties when

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[1] Joseph Rand et al., *Queued Up: 2024 Edition, Characteristics of Power Plants Seeking Transmission Interconnection As of the End of 2023*, Lawrence Berkeley Nat'l Lab'y, 14 (Apr. 2024), https://perma.cc/Y6KF-KX55.

[2] *Electricity explained*, U.S. Energy Info. Admin. (July 16, 2024), https://perma.cc/RFE7-LE2A.

their cost estimates prove wildly wrong. FERC and supporting intervenors defend the rule as a measured response to a systemic breakdown in the interconnection process.

These petitions ask whether FERC lawfully adopted that nationwide interconnection regime and whether FERC reasonably explained how the rule balances the interests of transmission providers, interconnection customers, and ultimate consumers.

We conclude that FERC acted within its authority and reasonably explained its order. Accordingly, we deny the petitions.

I. Background

A

Under the Federal Power Act, FERC regulates the transmission of electric energy in interstate commerce and wholesale sales of that energy. *See* 16 U.S.C. § 824(b)(1). The Act requires that "all rates and charges" for those services, and the rules and practices that affect them, remain "just and reasonable" and not unduly discriminatory or preferential. *Id.* §§ 824d(a), 824e(a). That mandate extends to the terms on which new generators connect to the transmission grid because interconnection procedures and costs directly affect wholesale rates and competition. *See Improvements to Generator Interconnection Procedures and Agreements*, Order Addressing Arguments Raised on Rehearing, Setting Aside Prior Order, in Part, and Granting Clarification, Order No. 2023-A, 186 FERC ¶ 61,199, at P 315 (2024) ("Order 2023-A") ("queue backlogs are causing unjust and unreasonable rates and . . . must, therefore, be remedied pursuant to our statutory mandate").

Before a new generating facility can inject power into the grid, the transmission provider must complete technical studies to determine whether the system can safely accommodate the new resource and what network upgrades would be needed. Those studies often involve not only the transmission owner whose facilities the project will connect to, but also neighboring "affected systems" that may be affected when the new resource comes online. *Improvements to Generator Interconnection Procedures and Agreements*, Order No. 2023, 184 FERC ¶ 61,054, at P 13 n.22 (2023) ("Order 2023"). Under FERC's standard interconnection procedures, the generator enters the queue, posts deposits, undergoes successive studies, and eventually receives an interconnection agreement that identifies any required upgrades and assigns their costs.

Over the last decade, that process has strained under the volume of new projects. FERC found that the combined capacity of projects sitting in interconnection queues across the country was nearly equal to the entire existing United States generation fleet. Order 2023 at P 30.[3] It noted, too, that more than seventy percent of the interconnection requests submitted between 2000 and 2017 were eventually withdrawn. *Id.* at P 49. FERC explained that late-stage withdrawals were increasing and could require transmission providers to redo studies, raising costs and further delaying projects behind them in the queue. *Id.*

FERC concluded that these backlogs, delays, and repeated restudies were hampering the timely development of new generation and "stifl[ing] competition" in wholesale markets,

[3] And now surpasses it. *See* notes 1 & 2, *supra*, and accompanying text.

producing unjust and unreasonable conditions under the Federal Power Act. Order 2023 at PP 37, 44. Order 2023 is FERC's response to those findings.

B

1

Federal Power Act—Section 205. The Federal Power Act sets out two major avenues through which FERC can regulate rates and related aspects of our energy grid: Sections 205 and 206. Section 205 governs utility-initiated changes to rates and practices. As relevant here, it provides:

> All rates and charges made, demanded, or received by any public utility for or in connection with the transmission or sale of electric energy subject to the jurisdiction of the Commission, and all rules and regulations affecting or pertaining to such rates or charges shall be just and reasonable, and any such rate or charge that is not just and reasonable is hereby declared to be unlawful.

16 U.S.C. § 824d(a). Under Section 205, a utility files proposed tariff changes, and FERC may reject them only if the utility fails to show they are just and reasonable.

Federal Power Act—Section 206. Section 206 gives FERC remedial authority to replace existing rates or practices that have become unlawful. It is the "related but distinct" tool that allows FERC to act on its own initiative or on complaint. *Emera Maine v. FERC*, 854 F.3d 9, 21 (D.C. Cir. 2017) (quoting *FirstEnergy Serv. Co. v. FERC*, 758 F.3d 346, 348 (D.C. Cir. 2014)). The statute provides, in relevant part:

> Whenever the Commission, after a hearing held upon its own motion or upon complaint, shall find that any rate, charge, or classification, demanded, observed, charged, or collected by any public utility for any transmission or sale subject to the jurisdiction of the Commission, or that any rule, regulation, practice, or contract affecting such rate, charge, or classification is unjust, unreasonable, unduly discriminatory or preferential, the Commission shall determine the just and reasonable rate, charge, classification, rule, regulation, practice, or contract to be thereafter observed and in force, and shall fix the same by order.

16 U.S.C. § 824e(a) (emphasis added). In a Section 206 proceeding, FERC bears the burden to show that existing rates or practices are unlawful and then to identify a replacement that is itself just and reasonable and not unduly discriminatory. *Emera Maine*, 854 F.3d at 21, 24–25.

Administrative Procedure Act. Judicial review is governed by 5 U.S.C. § 706. As relevant here, the reviewing court must "hold unlawful and set aside agency action, findings, and conclusions found to be . . . arbitrary, capricious, an abuse of discretion, or otherwise not in accordance with law" or "unsupported by substantial evidence." 5 U.S.C. § 706(2)(A), (E).

The parties agree that Order 2023 is subject to those standards.

2

Order 888: open-access transmission. Until the mid-1990s, vertically integrated utilities controlled generation, transmission, and distribution within their territories and could

use their transmission facilities to favor their own generation. *See NextEra Energy Res., LLC v. FERC*, 118 F.4th 361, 365 (D.C. Cir. 2024). In 1996, FERC issued Order 888, which required transmission owners to offer non-discriminatory open-access transmission service under a standard tariff and to "unbundl[e]" transmission from generation. *Id.* at 365–66. This court largely upheld that regime, and the Supreme Court confirmed FERC's authority to impose open-access requirements on interstate transmission. *See Transmission Access Pol'y Study Grp. v. FERC*, 225 F.3d 667, 681 (D.C. Cir. 2000), *aff'd sub nom. New York v. FERC*, 535 U.S. 1, 16–24 (2002).

Order 2000: regional transmission organizations. FERC then turned to who operates the power grid. In Order 2000, FERC encouraged utilities to place operational control of transmission facilities in regional transmission organizations and independent system operators—entities that manage the grid over multi-state regions and administer competitive markets. *Regional Transmission Organizations*, Order No. 2000, 65 Fed. Reg. 810, 811 (Jan. 6, 2000). FERC and this court understood that regional operators could reduce opportunities for discriminatory transmission practices and improve coordination across the network. *See id.*; *Pub. Util. Dist. No. 1 of Snohomish Cnty. v. FERC*, 272 F.3d 607, 611 (D.C. Cir. 2001).

Order 2003: standardized interconnection procedures. In 2003, FERC addressed how new generators connect to the grid. Order 2003 required all public utilities that own, control, or operate interstate transmission facilities to adopt standard Large Generator Interconnection Procedures and a standard Large Generator Interconnection Agreement for facilities larger than 20 megawatts. *See Standardization of Generator*

Interconnection Agreements & Procedures, Order No. 2003, 104 FERC ¶ 61,103, at PP 1–2 (2003) ("Order 2003").

Order 2003 adopted a serial "first-come, first-served" approach. Transmission providers studied each new request individually in the order received. Generators entered the queue with a modest refundable deposit and proceeded through successive feasibility, system-impact, and facilities studies. *See* Order 2003 at PP 34–38. Transmission providers were obligated only to use "reasonable efforts" to complete those studies within target timeframes. *Id.*, *pro forma* Large Generator Interconnection Procedures §§ 1, 6.3, 7.4, 8.3. They effectively set their own schedules under that flexible standard.

As markets evolved, FERC observed that the serial, reasonable-efforts model was contributing to delays and backlogs. In technical conferences and later rulemakings, FERC identified surges in new generation development, especially from smaller renewable projects, and noted that many interconnection requests were speculative entries that would eventually withdraw—often late in the process—forcing restudies and increasing uncertainty for projects deeper in the queue. *Interconnection Queuing Practices*, Order on Technical Conference, 122 FERC ¶ 61,252, at P 18 (2008); *Reform of Generator Interconnection Procedures and Agreements*, Order No. 845, 163 FERC ¶ 61,043, at P 24 & n.21 (2018).

FERC adopted incremental reforms, *see, e.g.*, Order 845, but it ultimately concluded that piecemeal adjustments did not solve the core problems with queue management, study timelines, and cost certainty. *See* Order 2023 at PP 17–19.

3

Advance notice and proposed rule. In July 2021, FERC issued an Advance Notice of Proposed Rulemaking that flagged potential reforms to transmission planning, cost allocation, and generator interconnection. *Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generator Interconnection*, Advance Notice of Proposed Rulemaking, 176 FERC ¶ 61,024 (2021). After receiving extensive comments, FERC split those topics into separate dockets and, in June 2022, issued a notice of proposed rulemaking focused on generator interconnection reforms. *Improvements to Generator Interconnection Procedures and Agreements*, Notice of Proposed Rulemaking, 179 FERC ¶ 61,194 (2022) ("NPRM").

Commenters—including transmission providers, system operators, state regulators, consumer advocates, and environmental groups—largely agreed that queue backlogs and cost uncertainty warranted significant changes to the existing interconnection regime. *See* Order 2023 at P 30.

Order 2023's core reforms. In July 2023, FERC issued Order 2023. Based on the rulemaking record, FERC found that its existing *pro forma* interconnection procedures and agreements were "insufficient" to ensure that customers can interconnect in a "reliable, efficient, transparent, and timely manner" and that, without reform, existing backlogs and delays would continue to hinder new generation and undermine just and reasonable rates. Order 2023 at PP 37, 44.

Acting under Section 206, FERC directed jurisdictional transmission providers—that is, those that are governed by FERC—to make a series of nationwide changes.

First, Order 2023 replaces the serial, first-come, first-served model with a "first-ready, first-served" cluster-study process. Transmission providers must study groups of interconnection requests together in defined cluster windows, rather than one by one, to improve efficiency and better allocate network upgrade costs. Order 2023 at PP 177–83.

Next, the rule requires interconnection customers to post substantial study deposits at the outset of the process, calibrated to project size and stage, to ensure that only commercially ready projects enter and stay in the queue. Order 2023 at PP 502–07.

The order then adopts a tiered schedule of withdrawal fines that increase as a project advances through the interconnection stages, while allowing limited opportunities for fine-free withdrawal when specified conditions are met. Order 2023 at PP 780–813.

With the cluster study process and deposit system in place, the order establishes firm deadlines for transmission providers to complete cluster studies. It includes a 150-day deadline for the main cluster study and eliminates the "reasonable efforts" standard. Order 2023 at PP 324–31, 962. If a transmission provider misses a study deadline, the rule requires it to pay late fees to interconnection customers, subject to certain limits. *Id.* at PP 962–1007. To protect against undue exposure to fees and account for unusual circumstances, Order 2023 caps annual late-fee amounts and creates an appeals process under which transmission providers can seek relief from late fees in specified situations. *Id.* at PP 981–89.

Finally, the order standardizes how affected-system transmission providers study and allocate costs for impacts on their systems, and adopts Energy Resource Interconnection

Service ("energy service") as the default standard for such studies. Order 2023 at PP 1110–80, 1276–93.

FERC received thirty-two timely rehearing and clarification requests challenging various aspects of these reforms. *See* Order 2023-A at P 5.

Order 2023-A. In March 2024, FERC issued Order 2023-A, addressing those rehearing arguments. As relevant here, FERC reaffirmed its findings that existing interconnection procedures and agreements had become unjust and unreasonable, declined to abandon the late-fee framework for study delays, and defended the chosen thresholds for fine-free withdrawal as part of a broader effort to balance cost certainty against the need to deter speculative queue entries. Order 2023-A at PP 35, 280–303, 413–15.

C

The petitions challenge three portions of the rule: (1) the fines on interconnection customers for withdrawing from the queue, (2) the firm deadlines for interconnection studies, backed by late fees on transmission providers, and (3) the requirement that all affected-system studies use Energy Service Modeling.

Challenges to the Thresholds for Withdrawal Fees

Clean Energy Petitioners challenge Order 2023's rule that allows an interconnection customer to withdraw without a fine between the final cluster study and the individual facilities study stages only if the customer's assigned network upgrade costs increase by 100 percent or more over earlier estimates.

They argue that allowing host-system cost estimates to double before a customer may withdraw without a fine is arbitrary and capricious and results in unjust and unreasonable rates. Specifically, they argue that the 100-percent threshold for fine-free withdrawal is unsupported by the record, inconsistent with FERC's own findings that cost uncertainty is a major barrier to project financing, and, as a result, at odds with FERC's obligation under Section 206 to ensure just and reasonable practices. They contend that the same problems undermine FERC's decision not to adopt any fine-free-withdrawal threshold for cost estimates from affected-system studies.

FERC defends the 100-percent threshold as a reasonable exercise of its ratemaking discretion: It says the threshold discourages speculative queue entries and late withdrawals while still providing an escape hatch in cases of severe cost shocks. FERC likewise defends its decision not to create a withdrawal threshold for affected-system studies as a judgment call needed to balance the interests of various customers in the queue.

Challenges to the Study-Delay Incentive Scheme

Transmission providers and system operators focus on the other side of the balance. They contend that Order 2023's financial incentive scheme for missed study deadlines exceeds FERC's remedial authority under Section 206, violates due process, and is arbitrary and capricious.

To start, they argue that Order 2023 effectively punishes them for delays without any finding that they caused those delays or acted unreasonably, and that the rule leaves key questions about cost recovery—especially for regional system operators that lack shareholders—unresolved.

FERC, in response, characterizes the late fees as part of its Section 206 remedy for unjust and unreasonable interconnection practices, not as punitive sanctions, and points to the late-fee caps and appeals process as safeguards that mitigate the risk of unfair liability.

Next, these petitioners argue that the scheme is arbitrary and capricious on a variety of grounds. They maintain, for instance, that FERC failed to grapple with evidence that delays often stem from factors outside the transmission providers' control, including interconnection customer behavior, third-party studies, and regional reliability requirements, and that FERC did not meaningfully respond to their rehearing arguments on that point.

FERC responds that the late fees, coupled with the appeals process, reflect a reasonable balance between encouraging timely performance and recognizing exceptional circumstances. FERC stated that it needed a uniform, enforceable mechanism to ensure timely completion of studies in light of nationwide backlogs and the failure of the "reasonable efforts" standard. Order 2023-A at PP 1–3.

Challenges to the Energy Service Modeling Requirements

Finally, a subgroup of transmission providers argues that FERC acted arbitrarily and capriciously in requiring energy service modeling for all affected-system studies. The transmission providers complain that the requirement prevents affected systems from fully assessing the scope of the customer's impact on their system if the host transmission system ultimately provides the customer a higher level of service, known as Network Resource Interconnection Service ("firm service").

FERC responds that it chose the energy service standard to promote consistency and transparency, reduce late queue withdrawals, and ensure that interconnection customers are not charged for a service they do not receive or for significant upgrades on a system they may never use.

All of the petitioners' arguments fail.

II. Standing

A

FERC argues that the Clean Energy Petitioners lack associational standing because they "have failed to demonstrate that any of their members have suffered 'imminent or concrete' harm as a result" of those orders. FERC Br. 88 (quoting *Indus. Energy Consumers of Am. v. FERC*, 125 F.4th 1156, 1161 (D.C. Cir. 2025)). FERC adds that the Clean Energy Petitioners' opening brief did not "identify members who have suffered the requisite harm." *Id.* at 86–87 (citing *Chamber of Com. v. EPA*, 642 F.3d 192, 199 (D.C. Cir. 2011)). And it faults them for failing to submit "member affidavits with their opening brief." *Id.* at 86 (citation modified). We consider whether the Clean Energy Petitioners have carried their burden on the record before us.

Standing is "a constitutional prerequisite to the exercise of our jurisdiction." *Healthy Gulf v. Dep't of the Interior*, 152 F.4th 180, 189 (D.C. Cir. 2025) (citing *Spokeo, Inc. v. Robins*, 578 U.S. 330, 338 (2016)). Once an organization establishes that one member has standing, it need go no further, because when the standing of additional members or organizations "makes no difference to the merits of the case," "the standing of one member of one of the organizations bringing suit

suffices." *Ctr. for Biological Diversity v. EPA*, 56 F.4th 55, 66 (D.C. Cir. 2022) (citation modified). An organization, under our standing doctrine, "can assert standing in one of two ways": "on its own behalf, as an organization," or "on behalf of its members, as associational standing." *Elec. Priv. Info. Ctr. v. Dep't of Com.*, 928 F.3d 95, 100 (D.C. Cir. 2019) (citation modified). The Clean Energy Petitioners invoke the latter. To establish associational standing, they must show that "(1) at least one of their members would have standing to sue in their own right, (2) the interests the members seek to protect are germane to their organizations' purposes, and (3) neither the claim asserted, nor the relief requested requires the members to participate individually in the lawsuit." *Healthy Gulf*, 152 F.4th at 189 (citation modified). The Clean Energy Petitioners satisfy each requirement.

1

Before an organization may invoke associational standing, it must first establish that at least one of its members would have Article III standing in its own right. *See Sierra Club v. FERC*, 827 F.3d 59, 65 (D.C. Cir. 2016). That showing requires an injury "fairly traceable" to the challenged action and "likely"—not "merely speculatively"—redressable "by a favorable decision." *See Friends of the Earth, Inc. v. Laidlaw Env't Servs. (TOC), Inc.*, 528 U.S. 167, 180–81 (2000) (citation modified). The association must make that showing with "substantial probability." *Sierra Club v. EPA*, 292 F.3d 895, 898–99 (D.C. Cir. 2002).

When the Clean Energy Petitioners filed their opening brief, Circuit Rule 28(a)(7) required evidence of standing only when standing was not "apparent" from the administrative record. D.C. Cir. R. 28(a)(7) (2024); *see SSM Litig. Grp. v.*

EPA, 150 F.4th 593, 596 (D.C. Cir. 2025) (applying the version of Rule 28(a)(7) in effect when the opening brief was filed).[4]

Here, the administrative record shows that these petitioners have standing. The Clean Energy Petitioners' corporate disclosure statements and administrative comments establish that their members participate in the interconnection queue as customers and so face the withdrawal fines imposed by the challenged orders. *See* J.A. 1021 (Pine Gate Renewables, a member of Solar Energy Industries Association ("SEIA") and American Clean Power Association that operates clean-energy generation projects, describing its continuing role as an interconnection customer); *id.* at 1489 (Order 2023 identifying solar projects as among the fastest-growing sources of energy generation); *see also* Clean Energy Petitioners Br., at iii (corporate disclosures stating that "SEIA represents the entire solar industry, including installers, project developers, manufacturers, contractors, financiers and non-profits"). And Pine Gate Renewables explained that the "voluntary withdrawal of an interconnection customer from the queue or an interconnection customer's removal from the queue . . . often trigger a restudy of the entire cluster regardless of the minimal effect of the change on most of the previous study results." J.A. 1027. "[T]here is ordinarily little question that a regulated individual or entity has standing to challenge an allegedly illegal statute or rule under which it is regulated." *Bonacci v. TSA*, 909 F.3d 1155, 1159 (D.C. Cir. 2018) (citation modified).

[4] In August 2025, the court revised Circuit Rule 28(a)(7) to require every petitioner to "include arguments and cite evidence establishing by a 'substantial probability' the claim of standing" in its opening brief. D.C. Cir. R. 28(a)(7).

What's more, while Clean Energy Petitioners did not submit a declaration with their opening brief, they did submit one with their reply brief, "in an abundance of caution." Decl. of Brett White, Senior Vice President of Regulatory and Government Affairs at Pine Gate Renewables (Attach. A to Clean Energy Petitioners Reply Br.). That timing poses no problem. Although it is disfavored, we have allowed "petitioners to support their standing in their reply brief [and] in affidavits submitted along with the reply brief." *Am. Libr. Ass'n v. FCC*, 401 F.3d 489, 494 (D.C. Cir. 2005).

White explains in his declaration how Order 2023 affects several Pine Gate Renewables projects. Pine Gate Renewables "has 3.5 GWs of solar and energy storage assets under contract, under construction, or in operation in the Southeast, the Electric Reliability Council of Texas . . . region, the PJM Interconnection, LLC . . . region, Oregon, and Rhode Island," representing "over seven billion dollars in completed transactions." White Decl. ¶ 8. White further declares that Pine Gate Renewables "is currently developing projects in several FERC-jurisdictional markets that will be subject to the requirements of Order 2023, including the rules governing cost increases and withdrawal fines at the facilities study and affected systems study phases of the interconnection process." *Id.* That is enough to show injury-in-fact because Pine Gate Renewables develops projects in markets governed by Order 2023, and those projects face the very withdrawal-fine rules challenged here, and their attendant financial consequences. *See Bonacci*, 909 F.3d at 1159.

With injury-in-fact established, we turn next to causation and redressability. Causation asks whether it is "substantially probable that the challenged acts of the defendant, not of some absent third party, will cause the particularized injury of the plaintiff." *Orangeburg v. FERC*, 862 F.3d 1071, 1080 (D.C.

Cir. 2017) (citation modified). Redressability requires an injury "capable of resolution and likely to be redressed by judicial decision." *W. Coal Traffic League v. Surface Transp. Bd.*, 998 F.3d 945, 950 (D.C. Cir. 2021) (citation modified). The Clean Energy Petitioners satisfy both requirements.

Their members face a substantial risk of injuries because FERC has subjected them to the withdrawal fines in Order 2023, and they challenge those fines as "arbitrary and capricious and unsupported by substantial evidence, in violation of the Administrative Procedure Act, 5 U.S.C. §§ 706(2)(A), (E), and [as] result[ing] in unjust and unreasonable rates to Petitioners' member companies." Clean Energy Petitioners Br. 14. That injury is fairly traceable to FERC because the challenged orders create the policy Pine Gate Renewables says will govern its projects. And Clean Energy Petitioners' injury is redressable by a favorable ruling. *Cf. Ctr. for Energy & Econ. Dev. v. EPA*, 398 F.3d 653, 657 (D.C. Cir. 2005) ("[T]he redressability requirement may be satisfied by vacating the challenged rule and giving the aggrieved party the opportunity to participate in a new rulemaking the results of which might be more favorable to it." (citation modified)).

The Clean Energy Petitioners therefore have shown that at least one of their members would have standing to sue, satisfying the first element of associational standing.

2

Likewise, the Clean Energy Petitioners have shown that the interests of their members are germane to their purpose, satisfying the second element of associational standing. That element ensures that "the association's litigators will themselves have a stake in the resolution of the dispute, and

thus be in a position to serve as the defendant's natural adversary." *United Food & Com. Workers Union Loc. 751 v. Brown Grp., Inc.*, 517 U.S. 544, 555–56 (1996); *see also Ctr. for Sustainable Econ. v. Jewell*, 779 F.3d 588, 597 (D.C. Cir. 2015) (similar).

Here, in its corporate disclosure, the American Clean Power Association (one of the Clean Energy Petitioners) maintains that the organization "represents over 100 member companies and has a mission to achieve 100% clean power and transportation electrification across the United States." Clean Energy Petitioners Br., at i. Additionally, the SEIA's "member companies develop, manufacture, finance and build solar projects both domestically and abroad." *Id.* at iii. This case sits comfortably within those missions. The Clean Energy Petitioners challenge interconnection rules that burden clean-energy development by exposing their members, in their view, to unlawful withdrawal fines. The connection between the suit and the organization's purpose is therefore not strained but direct. The interests these petitioners seek to protect are therefore "germane to [their] purpose." *Ctr. for Biological Diversity*, 56 F.4th at 66 (citation modified).

3

The Clean Energy Petitioners also satisfy the third element of associational standing. "Member participation is not required where a suit raises a pure question of law and neither the claims pursued, nor the relief sought require the consideration of the individual circumstances of any aggrieved member of the organization." *Healthy Gulf*, 152 F.4th at 191 (citation modified).

Here, the Clean Energy Petitioners' challenges against Order 2023 concern pure questions of law. *See Marshall Cnty.*

Health Care Auth. v. Shalala, 988 F.2d 1221, 1226 (D.C. Cir. 1993) ("[W]hen an agency action is challenged[] . . . [t]he entire case on review is a question of law, and only a question of law."). And purely legal challenges, like this one, do not "depend[] on individualized evidence from their members," or any individualized remedies. *Healthy Gulf*, 152 F.4th at 191.

For these reasons, the Clean Energy Petitioners satisfy all three elements of associational standing.

B

Staying with standing, we also consider whether the respondent-intervenors—the Clean Energy Advocates—have associational standing to advocate in support of Order 2023's study-delay fees. Neither set of petitioners argues against their standing. Article III, however, does not depend on party presentation since we must assure ourselves of our jurisdiction, "*sua sponte* if necessary." *Flytenow, Inc. v. FAA*, 808 F.3d 882, 888 (D.C. Cir. 2015). We therefore address the issue and hold that the Clean Energy Advocates have standing.

An intervenor has a "sufficient injury in fact where," for example, "[it] benefits from agency action, the action is then challenged in court, and an unfavorable decision would remove [its] benefits." *Crossroads Grassroots Pol'y Strategies v. FEC*, 788 F.3d 312, 317 (D.C. Cir. 2015). This rule even applies when the challenged agency action benefits the intervenor only "tangentially" or "indirectly." *Id.* at 318. What matters is the practical effect. In those circumstances, the only question is whether another party "seeks relief, which, if granted, would injure the prospective intervenor." *Id.* (citation modified).

The Clean Energy Advocates satisfy that standard. They say their members benefit from the challenged orders because

they address widespread interconnection queue delays. And those delays, in their view, cause higher energy bills and slow the integration of cheaper, cleaner energy, including wind, solar, and battery storage. On their telling, vacating the study-delay incentive scheme in Order 2023 would undo those improvements and likely increase electricity costs for their members.

The record bears out that point. The Environmental Defense Fund, one of the Clean Energy Advocates, has 318,225 members in forty-seven states where most or all customers are served by Regional Transmission Organizations or electric utilities subject to Order 2023. Those members use electricity in markets affected by the challenged orders. Vacating the rule's study-delay incentive scheme would likely expose them to higher electricity costs caused by renewed interconnection delays. *See Goodman v. Pub. Serv. Comm'n*, 467 F.2d 375, 378 (D.C. Cir. 1972) (holding that consumers have standing to challenge or defend agency action that affects the prices they pay for electricity). Thus, by showing that their members would benefit if the challenged orders remain in place, the Clean Energy Advocates have shown that at least one member would be injured if we set aside Order 2023. These same facts also establish causation and redressability. *See Healthy Gulf*, 152 F.4th at 191.[5]

[5] The Clean Energy Advocates advance a fallback argument. Because they intervened in support of FERC, the respondent here, they say they do not invoke our jurisdiction in their own right, and so need not establish standing for themselves. We need not resolve that question because the Clean Energy Advocates have Article III standing regardless. *See United States v. Waksberg*, 112 F.3d 1225, 1227 (D.C. Cir. 1997) (explaining that courts "should not decide a constitutional issue unless it is necessary to do so").

Turning to the second and third elements of associational standing, we hold that the Clean Energy Advocates satisfy them as well. Their members' interests are germane to the organizations' purposes—helping move the country toward a clean, affordable, and reliable electric grid. This suit fits that purpose. The Clean Energy Advocates seek to defend the study-delay incentive scheme because, in their view, it reduces interconnection delays and lowers the costs of bringing clean energy onto the electric grid. Nor is individual member participation required considering that the Clean Energy Advocates' challenges raise purely legal issues and seek common relief. *See Marshall Cnty. Health Care Auth.*, 988 F.2d at 1226. Given that point, they seek relief that does not "depend[] on individualized evidence from their members." *Healthy Gulf*, 152 F.4th at 191. For those reasons, the Clean Energy Advocates have satisfied the latter two elements of associational standing.[6]

*****

With Article III standing established, we turn to the merits.

III. Challenges to the Thresholds for Withdrawal Fees

The Clean Energy Petitioners argue that (1) the threshold for fine-free withdrawal from a host transmission system is arbitrary and capricious; (2) FERC arbitrarily declined to adopt a comparable threshold for withdrawals based on affected-systems upgrade costs; and (3) the fine-free withdrawal

[6] The Transmission Petitioners plainly have Article III standing. Order 2023 regulates them directly, compelling compliance filings, requiring a cluster-study interconnection process, and imposing new study deadlines backed by fines. *See Bonacci*, 909 F.3d at 1159; Transmission Petitioners Br. 18.

thresholds depart from precedent without adequate explanation. We address these arguments in turn.

A

We start with whether FERC reasonably set the threshold for avoiding withdrawal fines at the facilities-study stage. The Clean Energy Petitioners challenge the third and final exemption from those fines. That exemption provides that an interconnection customer will not incur withdrawal fines when, by the time it receives its individual facilities study, its estimated network-upgrade costs have increased by more than 100 percent from the last cluster study. The Clean Energy Petitioners say that threshold is too high—so high, in fact, that it frustrates Order 2023's stated goal of giving interconnection customers better cost certainty. They also contend, for much the same reason, that the 100-percent threshold is not "just and reasonable." Clean Energy Petitioners Br. 19. We disagree.

An agency must "give adequate reasons for its decisions." *Montrois v. United States*, 916 F.3d 1056, 1067 (D.C. Cir. 2019) (quoting *Encino Motorcars, LLC v. Navarro*, 579 U.S. 211, 221 (2016)). That requirement "is meant to ensure that agencies offer genuine justifications for important decisions, reasons that can be scrutinized by courts and the interested public." *Dep't of Com. v. New York*, 588 U.S. 752, 785 (2019). It is satisfied when the agency's explanation is "clear enough that its path may reasonably be discerned." *Montrois*, 916 F.3d at 1067. So while the agency sometimes need only offer a "brief statement," it must still "explain why it chose to do what it did." *Tourus Records, Inc. v. DEA*, 259 F.3d 731, 737 (D.C. Cir. 2001) (quoting Henry J. Friendly, *Chenery Revisited: Reflections on Reversal and Remand of Administrative Orders*, 1969 Duke L.J. 199, 222).

In determining whether an agency's final rule is arbitrary and capricious, "we may consider only the regulatory rationale actually offered by the agency during the development of the regulation." *Grand Canyon Air Tour Coal. v. FAA*, 154 F.3d 455, 469 (D.C. Cir. 1998). We do not "accept as evidence of reasoned decisionmaking a *post hoc* rationalization for agency action." *City of Kansas City v. Dep't of Hous. & Urb. Dev.*, 923 F.2d 188, 194 (D.C. Cir. 1991).

Considering those principles, we address whether FERC's decision to set the fine-free withdrawal threshold at a 100-percent cost increase was arbitrary and capricious. FERC found, and no party disputes, that withdrawal fines are "needed to remedy the issues regarding speculative interconnection requests," and the "harms to the function of the interconnection queue that occur when" nonviable projects withdraw. Order 2023 at P 781. FERC further explained that fines discourage speculative requests by "encourag[ing] interconnection customers to ensure that their proposed generating facilities are likely commercially viable when they" enter the queue. *Id.* That explanation is reasonable. A project that enters the queue without a realistic path to completion can consume study resources, distort cost estimates, and shift the resulting burdens to others.

FERC also found that withdrawals become more harmful the later they occur. Order 2023 at P 781. "[L]ate-stage withdrawals," after all, "cause the greatest disruption to interconnection queue processing via restudies and delays." *Id.* at P 790. And the problem is not only delay. A withdrawal "after the facilities study" can shift network-upgrade costs onto the customers that remain in the queue. *Id.* at P 808. In support of that position, FERC, "[b]y way of example," explained how one late withdrawal could reallocate $9 million in costs to other

interconnection customers, even after crediting those customers a proportional amount of the withdrawal fine. *Id.*

In response to those findings, FERC adopted a graduated structure. It set "the thresholds for [fine]-free withdrawal . . . higher at later stages of the interconnection study process," including the facilities-study stage, "given the greater harms of late-stage withdrawals and the importance of incentivizing earlier withdrawal of non-viable interconnection requests." Order 2023-A at P 232; *see also* Order 2023 at P 792. That structure followed FERC's straightforward premise that the later the withdrawal, the greater the disruption; and the greater the disruption, the stronger the incentive needed to avoid it.

The Clean Energy Petitioners do not dispute that premise. They acknowledge that a higher exemption threshold is appropriate at the facilities-study stage; they just would have set it at some lower percentage. *See* Order 2023-A at P 223 ("Clean Energy Associations submit that the Commission should lower this threshold to a 50% cost increase post-study for a [fine]-free withdrawal."). They make the same point by citing other project developers that preferred lower thresholds, including at the facilities study stage. Hence, these petitioners dispute not the rationale of a graduated fine structure but rather FERC's decision to draw the line at a 100-percent withdrawal threshold instead of some lower percentage.

FERC, however, did not pick the 100-percent withdrawal threshold out of thin air. In its Notice of Proposed Rulemaking, FERC supported its proposed thresholds by pointing to prior orders applying to individual transmission providers that had adopted the same 25-percent and 100-percent fine-free withdrawal thresholds. NPRM at P 139 n.209 (citing *PacifiCorp*, 171 FERC ¶ 61,112 (2020); *Pub. Serv. Co. of Colo.*, 169 FERC ¶ 61,182 (2019); *Tri-State Generation &*

Transmission Ass'n, 174 FERC ¶ 61,021 (2021)); *see also id.* at P 139 n.210 (citing *PacifiCorp*, 171 FERC ¶ 61,112, at P 112). Those real-world examples give FERC three concrete models of successful implementation of the 100-percent fine-free withdrawal threshold. And FERC did not stand alone considering that at least one commenter supported the 100-percent threshold. *See* Order 2023 at P 743 (citing *Comments of the National Rural Electric Coop. Association* at 30 (Oct. 13, 2022)).

The Clean Energy Petitioners counter that FERC's reliance on its precedent and the Notice of Proposed Rulemaking is merely the "post hoc salvage operations of counsel" that "cannot overcome the inadequacy of the Commission's explanation." Clean Energy Petitioners Reply Br. 9 (quoting *KeySpan-Ravenswood, LLC v. FERC*, 348 F.3d 1053, 1059 (D.C. Cir. 2003)). But they misread *KeySpan*.

In *KeySpan*, FERC's counsel defended its order with a rationale that FERC had never adopted. 348 F.3d at 1059. The order contained only a "cryptic statement" about consistency. *Id.* It did not explain that the twelve-month outage-rate measure was justified because the same twelve-month period governed another party's sales, thereby offsetting any price-cap effect. *Id.* That rationale first appeared in litigation. So we treated it for what it was: the "post hoc salvage operations of counsel." *Id.* But this case differs from that one.

FERC does not urge us to accept a new rationale invented by counsel after the fact. FERC cited the relevant precedent in the Notice of Proposed Rulemaking, received comments addressing the relevant thresholds, and then adopted the same basic approach in the final rule. Its reliance on that precedent therefore does not invoke new, independent reasons. It instead elaborates on reasoning already present in the record, providing

an "amplified articulation." *Concert Inv., LLC v. Small Bus. Admin.*, 100 F.4th 215, 220 (D.C. Cir. 2024). More, FERC's reliance on the relevant precedent occurred "during the development of the regulation," which we may consider. *Grand Canyon Air*, 154 F.3d at 469.

For those reasons, we hold that FERC's decision to set the fine-free withdrawal threshold at a 100-percent cost increase was not arbitrary and capricious.

B

The Clean Energy Petitioners also argue that FERC acted arbitrarily and capriciously in declining to set a fine-free withdrawal option related to non-jurisdictional affected-system studies. We reject that argument too.

Generally, "FERC enjoys broad discretion to invoke its expertise in balancing competing interests and drawing administrative lines." *Minisink Residents for Env't Pres. & Safety v. FERC*, 762 F.3d 97, 111 (D.C. Cir. 2014) (citation modified). That discretion matters here because FERC's job is not to maximize one interest at the expense of all others. It must "balance competing equities against the backdrop of the public interest." *Colum. Gas Transmission Corp. v. FERC*, 750 F.2d 105, 112 (D.C. Cir. 1984). Those equities often include "practical challenges" and "divergent interests." *New England Power Generators Ass'n v. FERC*, 881 F.3d 202, 210 (D.C. Cir. 2018). So when FERC draws a line in an area committed to its technical judgment, we do not ask whether we would have drawn the same one. *See FERC v. Elec. Power Supply Ass'n*, 577 U.S. 260, 292 (2016), *as revised* (Jan. 28, 2016) ("[W]e may not substitute our own judgment for that of the Commission."). And we defer to its "reasonable balancing of divergent considerations on a matter within [its] expertise."

Xcel Energy Servs. Inc. v. FERC, 41 F.4th 548, 562 (D.C. Cir. 2022) (citation modified).

To that end, FERC reasonably balanced the interests of the queue as a whole against the interests of the smaller group of customers awaiting affected-system studies. No party disputes that an interconnection customer may receive an affected-system study at different points in the interconnection process—anywhere from the cluster-study stage through execution of the generator interconnection agreement. Timing matters because network-upgrade costs identified in an affected-system study received before the individual facilities study stage count toward the 25-percent and 100-percent fine-free withdrawal thresholds. *See* Order 2023-A at P 503. The rule thus reduces the likelihood that an affected-system study will expose a customer to withdrawal fines.

FERC tried to increase the chance that the existing exemptions would capture affected-system upgrade costs. It adopted reforms to "ensure that the affected system study process moves along expediently, providing clarity, cost certainty, and increased transparency throughout the study process." Order 2023 at P 1110. Those reforms also reduced the risks that affected-system studies pose to interconnection customers more generally. For example, FERC standardized the methods used to conduct affected-system studies. And by requiring energy-service modeling for those studies, FERC found that "affected system network upgrade costs will likely be lower" for customers in the queue. *Id.* at P 1279.

FERC, however, could not guarantee the timing of every affected-system study. Some potentially affected neighboring transmission providers conduct those studies, and not all of them fall within FERC's jurisdiction. And even for affected systems within FERC's jurisdiction, FERC "recognize[d] that

an affected system impact may not be identified until a [cluster] restudy occurs." Order 2023 at P 1119. So some affected-system study reports may arrive after the facilities-study stage, even though "other interconnection customers in the same cluster who are not awaiting affected system studies" must already execute their own generator interconnection agreements. Order 2023-A at P 502. FERC further found that even the possibility of that scenario creates uncertainty for the remaining customers. *See id.* And that uncertainty, if left unchecked, could produce "cascading withdrawals and restudies." *Id.*

That was of course the tradeoff. A fine exemption for customers awaiting late affected-system studies "would give greater weight to [the] cost certainty of a few interconnection customers who are awaiting affected system study results than to the many interconnection customers who did not impact an affected system and had to finalize their" interconnection agreements. Order 2023 at P 502. FERC chose the broader interest of the interconnection queue. It found it "more important for *all* interconnection customers in a cluster to have greater certainty . . . than for one or [a] few interconnection customers in a cluster to have cost estimate certainty inclusive of affected system study results." *Id*. That is a decision about how to allocate risk in a congested queue. It is also the kind of decision FERC is best positioned to make. *See Vistra Corp. v. FERC*, 80 F.4th 302, 313 (D.C. Cir. 2023) ("As an expert in energy regulation, the Commission has the technical understanding necessary to carry out its congressionally delegated duties." (citation modified)).

Order 2023 also includes safeguards when the affected system falls within FERC's jurisdiction. Interconnection customers, for example, need not sign Large Generator Interconnection Agreements before receiving an affected-

system study. *See* Order 2023 at P 1123 (mandating that a host transmission provider "at the interconnection customer's request, delay the deadline" for executing the agreement until thirty days after receipt of the affected-system study). And at oral argument, FERC confirmed that many non-jurisdictional affected systems will voluntarily sign on to the same rules as this order "because they also get the advantages of nondiscriminatory open access transmission tariff[s]." Oral Arg. Tr. 138:20–22. As a result, most interconnection customers will be able to add affected-system upgrade costs to their host-transmission-facility costs and thereby qualify for a fine-free withdrawal. And in those rare cases, FERC could reasonably require a withdrawing customer to pay a 20-percent fine, particularly because the fine helps offset costs stomached by the other members of the cluster.

The Clean Energy Petitioners respond with several critiques of FERC's balancing. None succeeds.

They first argue that FERC policy forbids penalizing customers that cannot avoid the fine. *See* Clean Energy Petitioners Br. 7, 21–22 (citing, *e.g.*, *El Paso Nat. Gas Co.*, 125 FERC ¶ 61,309, at P 105 (2008)). But they forfeited that argument. The Clean Energy Petitioners' rehearing application raised it, if at all, only by implication—through one brief citation parenthetical tucked into a footnote. That is not enough to preserve a claim. *See Ctr. for Biological Diversity v. FERC*, 67 F.4th 1176, 1184–85 (D.C. Cir. 2023) (explaining that one "*see, e.g.*," citation cannot exhaust a claim).

The Clean Energy Petitioners say next that FERC ignored "record evidence" showing that affected-system studies can drive large increases in upgrade costs. Clean Energy Petitioners Br. 23. Not so. FERC understood the problem and directly addressed it. Indeed, the existing exemptions already

account for affected-system-study costs through the facilities-study stage. And as explained above, FERC adopted reforms to reduce the risk that affected-system studies would surprise interconnection customers with higher upgrade costs. FERC, nevertheless, declined to create a separate late-stage exemption because that exemption would favor the "cost certainty of a few interconnection customers . . . awaiting affected system stud[ies]" over greater certainty for "the many interconnection customers who did not impact an affected system and had to finalize their" agreement. Order 2023-A at P 502. Therefore, FERC did not ignore the record; it weighed the evidence differently than these petitioners preferred. *See Level the Playing Field v. FEC*, 961 F.3d 462, 465 (D.C. Cir. 2020) ("[T]hat plaintiffs may disagree with the Commission's weighing of the evidence presented to it is not enough for the courts to overturn the Commission's decisions as arbitrary, capricious, or contrary to law." (citation modified)).

The Clean Energy Petitioners also dispute how much the energy-service standard will reduce upgrade-cost increases from affected-system studies. But that objection misses the point. FERC did not represent that the energy-service standard would eliminate those increases. FERC merely determined that "affected systems network upgrade costs will *likely* be lower" under that standard, and that interconnection customers "assigned" those network upgrades will be "less likely to withdraw at a later stage." Order 2023 at P 1279 (emphasis added).

We defer to that sort of predictive judgment. FERC may "base its findings on basic economic theory, including relying on generic factual predictions," so long as it "explains and applies the relevant economic principles in a reasonable manner." *Xcel Energy Servs.*, 41 F.4th at 560–61 (citation modified). FERC did so here. After considering comments on

both sides, FERC reasonably made the energy-service standard the default. The network-service standard "will likely" require "more network upgrades to accommodate the interconnection of a generating facility[,]" driving costs beyond what the requested service demands. Order 2023 at PP 1256, 1279. By tying upgrades to the service provided, FERC also sought to "help prevent the cascading restudies" and queue withdrawals that had burdened the interconnection process. *Id.* at P 1279; *see also* Section V, *infra*. That saves money for affected customers and those remaining in the queue.

And tellingly, neither set of petitioners seriously disputes that the energy-service standard benefits interconnection customers. The Clean Energy Petitioners describe projects facing large affected-system study cost increases as "unlucky," Clean Energy Petitioners Br. 25, suggesting that such outcomes will not be the norm. The Transmission Petitioners go further, calling it "obvious" that the energy-service standard "will result in lower cost assignments to generators." Transmission Petitioners Br. 84.

The Clean Energy Petitioners next argue that FERC wrongly assumed that "allowing [fine]-free withdrawal . . . would result in more withdrawals . . . than if interconnection customers faced a withdrawal [fine]." Clean Energy Petitioners Br. 28. But FERC made a simple economic determination that fines make late withdrawal less attractive, and so they "incentivize[]" customers "to withdraw non-viable interconnection requests earlier in the process." Order 2023 at PP 786–87. And as discussed above, FERC may rely on "basic economic theory" to make "generic factual predictions." *Xcel Energy Servs.*, 41 F.4th at 561 (citation modified).

Clean Energy Petitioners also argue that denying penalty-free withdrawal could "adversely incentivize affected system

transmission providers to delay" a study and thereby sabotage interconnection customers. Clean Energy Petitioners Br. 31–32. But Petitioners did not raise that argument on rehearing. *See* J.A. 3113–17. We therefore lack jurisdiction to consider it. *See Citadel FNGE Ltd. v. FERC*, 77 F.4th 842, 861 (D.C. Cir. 2023).

Finally, the Clean Energy Petitioners say that withdrawal fines will not prevent every customer awaiting an affected-system study from withdrawing. Some affected-system studies, they say, will reveal upgrade costs so high that customers will withdraw anyway—even after other customers in the queue have executed interconnection agreements. That may be true. But it does not make the rule unreasonable. FERC never claimed that fines would prevent every late-stage withdrawal. It expected only that the fines would reduce some late withdrawals and soften the harm from others. And when withdrawals do occur, the fines collected can help cover costs imposed on the customers left behind. *See* Order 2023 at PP 798–799. FERC reasoned that better cost certainty "for *all* interconnection customers" mattered more than fuller protection for the few customers still awaiting affected-system-study results. Order 2023-A at P 502. That tradeoff falls comfortably within FERC's expertise. "Such a reasonable balancing of divergent considerations on a matter within the Commission's expertise merits deference." *Xcel Energy Servs.*, 41 F.4th at 562.

We therefore hold that FERC's decision declining to create a separate fine-free withdrawal option for late-arriving affected-system studies was not arbitrary and capricious.

C

Trying another route, the Clean Energy Petitioners contend that FERC offered no reasonable explanation for departing from prior precedent and policy. Their argument rests mainly on several FERC orders involving the regulation of individual Regional Transmission Organizations—the Midcontinent Independent System Operator ("MISO") and Southwest Power Pool, Inc. ("Southwest"). Those orders, these petitioners say, establish that an interconnection customer must be exempt from fines whenever it "faces significant and unanticipated cost increases." Clean Energy Petitioners Br. 32. But whatever force that argument might have, it comes too late. The Clean Energy Petitioners did not preserve it, and we therefore do not reach it.

Our jurisdiction to review a FERC order is "strictly limited by the specific arguments a petitioner makes in its application for rehearing." *Citadel FNGE*, 77 F.4th at 861 (citation modified); *see also* 16 U.S.C. § 825*l*(b). A petitioner does not satisfy that requirement by "merely refer[ring] to an argument generally" or "simply allud[ing] to the argument in a single statement." *Citadel FNGE*, 77 F.4th at 861. Nor may a petitioner raise an argument "indirectly" or "implicitly" and expect us to decide it. *Ameren Servs. Co. v. FERC*, 893 F.3d 786, 793 (D.C. Cir. 2018) (citation modified). And when the objection is that the order conflicts with precedent, the petitioner must identify the specific authorities FERC allegedly disregarded. *See City of Port Isabel v. FERC*, 111 F.4th 1198, 1217–18 (D.C. Cir. 2024) (holding that a petitioner failed to raise noncompliance with a specific regulation on rehearing).

The Clean Energy Petitioners failed to clearly raise this argument in their rehearing request. Their rehearing application cited no MISO or Southwest orders with which the

challenged orders supposedly conflict. Indeed, they did not argue on rehearing that the exemption thresholds conflicted with any precedent, much less the particular precedent they now invoke. *See Citadel FNGE*, 77 F.4th at 861–62 (explaining that a petitioner must specifically raise an argument in its rehearing request to exhaust a claim).

To be sure, we may hear an argument not raised in a petitioner's application for rehearing if "there is reasonable ground" for the petitioner's "failure" to raise the argument. 16 U.S.C. § 825*l*(b). But we reserve that exception for an "extraordinary situation, such as when a Commission practice is admitted or adjudged to be unlawful." *New England Power Generators Ass'n v. FERC*, 879 F.3d 1192, 1199 (D.C. Cir. 2018) (citation modified). We have also reserved that exception when new evidence first arises after the rehearing request. *See Wabash Valley Power Ass'n v. FERC*, 268 F.3d 1105, 1114 (D.C. Cir. 2001) (considering a claim that was not raised below because it was based on a report issued several months after the rehearing request).

This case presents no such circumstance. The Clean Energy Petitioners failed to make this argument in their petition for rehearing. FERC issued the MISO and Southwest orders before the Clean Energy Petitioners filed their petition for rehearing. Because the Clean Energy Petitioners had the opportunity to raise these claims before FERC but failed to do so, the "reasonable ground" exception in 16 U.S.C. § 825*l*(b) does not apply.

We therefore lack jurisdiction to consider the Clean Energy Petitioners' argument concerning the MISO and Southwest orders. *See Consol. Edison Co. of N.Y. v. FERC*, 45 F.4th 265, 289 (D.C. Cir. 2022) (*per curiam*) ("Under 16 U.S.C. § 825*l*(b), no objection to an order of the Commission

shall be considered by the court unless such objection shall have been urged before the Commission in the application for rehearing." (citation modified)); *United Power, Inc. v. FERC*, 49 F.4th 554, 559 (D.C. Cir. 2022) ("We therefore have no jurisdiction over an objection the petitioner fails to raise with specificity.").

For all these reasons, we deny the Clean Energy Petitioners' petition in full.

IV. Interconnection Study Incentive System

Transmission Petitioners take aim at Order 2023's incentive system for the timely completion of interconnection studies. Order 2023 replaced the prior reasonable-efforts standard for evaluating interconnection-study delays, which had proven ineffectual, with a new, uniform fee schedule that enforces firm deadlines by "reduc[ing] what transmission providers can charge [customers] for interconnection studies that fail to meet . . . performance standards." Order 2023-A at P 358.

Transmission Petitioners raise four challenges to the new incentive system. First, they contend that the scheme exceeds FERC's statutory authority. Second, they argue that the fees violate the Takings and Due Process Clauses of the Fifth Amendment. Third, they insist that FERC lacked substantial evidence to abandon the reasonable-efforts standard and impose a uniform, industry-wide incentive system. Finally, they claim that FERC failed to respond adequately to concerns that the rule would unduly discriminate against certain classes of transmission providers. None of these challenges succeeds.

A

The reasonable-efforts standard for undertaking timely interconnection studies first emerged in FERC Order 2003. That order established deadlines for each interconnection-study phase: 45 calendar days for the Interconnection Feasibility Study, 60 calendar days for the Interconnection System Impact Study, and 90–180 calendar days for the Interconnection Facilities Study. Order 2003 at P 36. FERC charged transmission providers with exerting "[r]easonable [e]fforts" to meet those deadlines, and it then defined "[r]easonable [e]fforts" as "actions that are timely and consistent with Good Utility Practice and are substantially equivalent to those a Party would use to protect its own interests." *Id.* at PP 67, 69. Order 2003, however, imposed "no explicit consequences . . . for transmission providers that fail[ed] to meet their study deadlines." Order 2023 at P 872.

In the 2010s, interconnection delays began to accumulate, causing "longer development timelines[] and increased uncertainty regarding the cost and timing of interconnecting to the transmission system." Order 2023 at P 37 (citation modified). Those problems inhibited energy developers' ability to get their power on the transmission system in an economically timely manner. *See* NPRM at P 19. Concerned that a sluggish interconnection process could generate "higher costs to customers, more uncertainty in the process, and less competition in the [wholesale] market" for electricity, FERC began to identify and address the key drivers of delay. *Reform of Generator Interconnection Procedures and Agreements*, 163 FERC ¶ 61,043, at P 37. During the rulemaking for Order 845, an early interconnection reform in 2018, several commenters urged FERC to implement a firm deadline for interconnection studies. *See id*. at P 315. While, at that time, FERC did not believe that the record supported abandoning the reasonable-

efforts standard, FERC instituted study-delay reporting requirements to "encourage timely processing of interconnection studies" and to "help inform" whether "any future action should be considered." *Id.* at P 323.

Five years later, FERC reviewed the collected data and concluded that "[d]elays in the interconnection study process are an important contributor to interconnection queue backlogs nationwide." Order 2023 at P 40. In formulating a comprehensive remedial plan to tackle these backlogs, FERC adopted measures that both discourage interconnection customers from withdrawing from the interconnection queue, *see* Section III, *supra*, and incentivize transmission providers to reduce their study delays.

Specifically, Order 2023 adjusts the study deadlines to accommodate the new cluster-study regime. Transmission providers have 150 days to complete the initial cluster study, plus 150 days to conduct any necessary restudy. Order 2023-A at P 317. The Order gives those deadlines bite by imposing late fees for delayed studies: $1,000 per business day for delayed cluster studies; $2,000 per business day for delayed cluster restudies; $2,000 per business day for delayed affected-system studies; and $2,500 per business day for delayed facilities studies. *Id.* at P 454.

FERC explained that the escalating fee structure "reflects the progressively greater harm to interconnection customers of delayed studies at those later stages[,]" Order 2023 at P 977, as well as the reduced burden on transmission providers to conduct studies at later stages, when the volume of interconnection requests commonly will be lower, *see id.* at P 978. When studies run late, transmission providers must distribute those late fees "to interconnection customers in the relevant study on a pro rata per interconnection request basis to

offset" what they paid for the study to be done on the prescribed timeline. *Id*. at P 963.

Order 2023 also provides a variety of safeguards to ensure that the scheme will not unduly burden transmission providers. First, a given transmission provider is not subject to fees until the third study cycle after FERC approves that provider's Order 2023 compliance filing. Order 2023 at P 980. Second, Order 2023 gives transmission providers an automatic grace period of ten business days after each study deadline, *id*. at P 981, which can be extended to thirty days upon the approval of all interconnection customers in the study, *id*. at P 982. Third, total fees per study are capped at 100 percent of the initial study deposit paid by customers. *Id.* at P 984. "By tying the study delay penalty cap to the study deposits," FERC explained, the Order "ensure[s] that the maximum penalty bears a relationship to the costs of the study that was late." *Id.*

Finally, transmission providers can challenge any fees they believe were unreasonably incurred before FERC, which may grant relief if it finds "good cause." Order 2023 at P 987. In evaluating whether "good cause" exists, FERC "may consider, among other factors:"

> (1) extenuating circumstances outside the transmission provider's control, such as delays in affected system study results;
>
> (2) efforts of the transmission provider to mitigate delays; and
>
> (3) the extent to which the transmission provider has proposed process enhancements either in the stakeholder process or at the Commission to prevent future delays.

Id. (citation modified). Evidence that an interconnection customer generated the delay supplies "a potentially compelling basis" to find good cause. *Id.* at P 993.

B

The Transmission Petitioners argue that the study-delay fees are civil penalties under *Kokesh v. SEC*, 581 U.S. 455 (2017), and that FERC could impose such penalties only under Federal Power Act Section 316A, 16 U.S.C. § 825o-1. The Transmission Petitioners also argue that the late fees are a confiscatory taking and that the framework for imposing them violates due-process principles.

We disagree. FERC acted under Section 206, which authorizes it to revise unjust or unreasonable rules, practices, or rates and to replace them with just and reasonable ones. The study-delay fees function as part of that ratemaking remedy, and the framework provides adequate process for transmission providers to appeal the late fees. Challenges to the procedures to be provided in a particular appeal are unripe, as is the takings claim.

1

In Order 2023-A, FERC describes the study-delay fees as part of its "regulation of the interaction between [interconnection] parties," designed "to serve a compensatory function." P 308. The interconnection customer prepays deposits to fund the transmission provider's study work. When a study is completed after the required deadline, the customer receives a refund of part or all of that deposit. *Id.* at P 358 (explaining that the late fee "reduces what transmission providers can charge for interconnection studies that fail to

meet the performance standards set forth in Order No. 2023"); *id.* at P 389 (providing transmission providers an opportunity for full cost recovery when they meet "relevant standards of performance" and avoid contributing to interconnection queue backlogs that "result[] in unjust and unreasonable rates to customers"). That refund compensates the customer for the diminished value of a late study. In turn, the transmission provider must absorb some of the economic consequence of the delay. *Id.* at P 358. Framed this way, the mechanism operates as a performance-based adjustment to the terms under which the study is provided. *See id.* FERC has therefore permissibly determined under its Section 206 authority that transmission providers' compensation for conducting a study is justly and reasonably decreased when that study is delayed.

The study-delay refund is not a civil penalty. It differs in kind from the sanction addressed in *Kokesh*. There, the Supreme Court's analysis rested on three features: the monetary remedy was imposed for violations of public law; it was imposed for punitive purposes; and the proceeds were paid to the government. *Kokesh*, 581 U.S. at 463–65. Regardless of whether this fee is imposed for punitive purposes—an issue the parties dispute—the other two features are absent here. The study-delay refunds go only to the customers who provided the deposits, and the rule identifies no violation of the Federal Power Act, no breach of a tariff obligation, and no enforcement consequence. Order 2023 at P 990 (payment to interconnection customers); Order 2023-A at P 308 (fees not imposed for public-law violations). The mechanism thus reallocates study costs between transmission providers and interconnection customers; it does not impose a fine payable to the Government. That the refunds may influence providers' incentives does not convert what is otherwise a compensatory

adjustment into a "civil penalty" that FERC can impose only under Section 316A.

Nor does the framework's failure to match refund amounts to individualized delay costs transform the refund into a civil penalty. On this record, the cost of study delays to the interconnection customers waiting in the queue likely exceeds the deposit-based refunds Order 2023 affords. *See* Order 2023 at P 976 & n.1900 (citing *Comments of Pine Gate Renewables, LLC* at 39–40 (Oct. 13, 2022); *Comments of Cypress Creek Renewables, LLC* at 24 (Oct. 13, 2022)). In other words, there is reason to think that fees calculated based on the actual cost of delay would be even greater than they are. Rather than accounting for the exact cost of delay, the refund framework "effectively adjusts what transmission providers can charge" given the diminished value of a late study. Order 2023-A at P 289. FERC reasonably chose a uniform, administrable method that likely undercharges transmission providers and undercompensates interconnection customers relative to actual delay-related harms. Indeed, FERC rejected arguments for fee amounts that more closely approximate actual study-delay costs and for higher uniform late fees as "overly punitive." Order 2023 at P 976.

Because the study-delay refunds compensate interconnection customers for the reduced value of untimely studies, direct all payments to the affected parties rather than the government, and operate within the terms of the tariffed service, they are not civil penalties. They fall within FERC's authority under Section 206 to establish just and reasonable practices governing the provision of interconnection studies.[7]

[7] The transmission providers also contend that FERC exceeded its Section 206 authority because it failed to demonstrate that study-

2

Petitioners argue that the study-delay fees are confiscatory because the rule may require a transmission provider to refund study deposits even when the provider has already incurred the costs of completing the study. That argument is premature. Under the Federal Power Act and the governing constitutional standard, a limit on a utility's rates is confiscatory if it is "so unjust as to destroy the value of the property for all the purposes for which it was acquired" and thereby "practically deprives the owner of property without due process of law." *Duquesne Light Co. v. Barasch*, 488 U.S. 299, 307–08 (1989) (quoting *Covington & Lexington Tpk. Rd. Co. v. Sandford*, 164 U.S. 578, 597 (1896)). That standard does not require advance assurance that a utility will recover each expense associated with providing service, or that any particular cost will be recoverable in all circumstances. To the contrary, the Supreme Court has upheld rate orders that disallowed recovery of substantial costs so long as the overall regulatory scheme permitted the utility "to maintain its financial integrity." *Fed. Power Comm'n v. Hope Nat. Gas Co.*, 320 U.S. 591, 605 (1944); *see Jersey Cent. Power & Light Co. v. FERC*, 810 F.2d 1168, 1175, 1178 (D.C. Cir. 1987) (en banc).

Petitioners have not shown that Order 2023 produces such an end result. The penalties they fear have not yet been imposed, and the rule provides multiple avenues for mitigating or avoiding uncompensated costs. Order 2023 establishes a

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delay fees will "directly affect" electric rates. Transmission Petitioners Br. 54–56. But FERC's jurisdiction extends to "both wholesale rates and the panoply of rules and practices affecting them." *FERC v. Elec. Power Supply Ass'n*, 577 U.S. 260, 277–78 (2016). Because the study-delay fees regulate a critical part of the interconnection process, they fall squarely within FERC's jurisdiction.

good-cause process through which a provider may seek waiver of a late fee by showing that the delay was beyond its control. *See* Order 2023-A at P 387 (explaining that providers may argue on appeal that good cause exists, including on confiscation grounds). The rule also permits tariff filings that seek to recover specific late-fee costs or to establish a default recovery structure. *See id.* at P 266. Nothing in the record suggests that these procedures are illusory or incapable of preventing the speculative confiscation.

A challenge framed in the abstract cannot substitute for the concrete factual showing the *Hope* end-result test requires. Petitioners speculate that providers will incur unrecoverable costs when a study deadline is missed. But no such penalty has yet been assessed, and the administrative process for seeking waiver or recovery has not yet operated in any particular case, so Petitioners have not shown that the overall effect of Order 2023 will deprive any transmission provider of a just and reasonable opportunity to recover its costs or to maintain financial integrity.

The claim is therefore unripe. FERC's orders do not require Petitioners to incur penalties before seeking relief. *See* Order 2023 at P 987 (appeal filing stays obligation to pay late fee). They simply require that challenges to the consequences of a specific late fee await the factual context necessary to apply the *Hope* standard.

3

Petitioners further argue that the study-delay mechanism violates due process because penalties attach automatically when a deadline is missed and because the relief process is not defined with sufficient specificity. We disagree. FERC has provided procedures adequate to the nature of the regulatory

scheme, and Petitioners' concerns about how those procedures might operate in future cases are premature.

The orders give transmission providers clear notice of the circumstances that will trigger a refund obligation and set out a sufficiently defined formula for calculating the amount owed. After FERC issues a late-fee determination, providers may seek relief through a good-cause showing, including on the ground that the delay resulted from factors beyond their control, and then through judicial review of the agency's good-cause determination. *See* Order 2023 at P 987 (outlining non-exhaustive factors for consideration under the good-cause standard); Order 2023-A at PP 359, 362 (providing process for appeals, rehearing, and petition for judicial review). Order 2023-A further states that providers "will have the opportunity to argue on appeal that there is good cause to grant relief," and specifically acknowledges that fairness considerations—including constitutional limits—may be raised in that process. P 387. These procedures provide the core constitutional protection: an "opportunity to be heard at a meaningful time and in a meaningful manner." *Mathews v. Eldridge*, 424 U.S. 319, 333 (1976) (cleaned up).

Petitioners' objections to the sufficiency of the good-cause process are, at this stage, speculative. They identify no instance in which a provider has been denied relief, no application of the process that has produced an arbitrary result, and no example showing that FERC would refuse to consider circumstances that fairly excuse delay. Their challenge therefore rests on predictions about how FERC might apply its process in the future. Those concerns are unripe. Due process requires fair notice of the conduct that triggers regulatory consequences; it does not oblige an agency to catalogue in advance every circumstance in which relief may be granted or denied. *See Sprint Corp. v. FCC*, 151 F.4th 347, 367 (D.C. Cir.

2025) (rejecting a fair-notice challenge because agencies need not "give advance warning of a statute's every possible application"). Where, as here, the validity of the procedure turns on its future application rather than any defect in its facial structure, judicial review can await a concrete dispute. *Cf., e.g.*, *Tennessee Gas Pipeline Co. v. FERC*, 972 F.2d 376, 381 (D.C. Cir. 1992); *Nat'l Ass'n of Regul. Util. Comm'rs v. FERC*, 964 F.3d 1177, 1185–90 (D.C. Cir. 2020).

Nor does the timing of the good-cause process render it facially unconstitutional. We discern no due process violation where the regulatory scheme permits the transmission providers to opt in to receiving process *before* any deprivation is effected. *See* Order 2023 at P 987 (filing of appeal stays obligation to pay fee); *see, e.g.*, *Statewide Bonding, Inc. v. Dep't of Homeland Sec.*, 980 F.3d 109, 118–19 (D.C. Cir. 2020) (no due process violation where an agency makes a bond-breach determination but stays collection of the bond until the end of the appeal process); *cf. Myersville Citizens for a Rural Cmty., Inc. v. FERC*, 783 F.3d 1301, 1327 (D.C. Cir. 2015) ("The demands of due process do not require a hearing, at the initial stage or at any particular point or at more than one point in an administrative proceeding so long as the requisite hearing is held before the final order becomes effective." (quoting *Opp Cotton Mills, Inc. v. Adm'r of Wage & Hour Div.*, 312 U.S. 126, 152–53 (1941))).[8]

In sum, the rule supplies clear notice of the obligations imposed, establishes a mechanism for seeking individualized relief, and preserves review to ensure fairness in particular

[8] Transmission Petitioners argue that penalties may be assessed only "after notice and opportunity for public hearing" under Section 316A(b) of the Federal Power Act. But because that provision governs only civil penalties, it is inapposite here.

cases. Petitioners' speculation about future applications of that process does not establish a present due-process violation. The study-delay framework is consistent with constitutional requirements.

C

All but one of the Transmission Petitioners challenge FERC's imposition of a study-delay incentive system as arbitrary and capricious.[9]

When, as here, FERC regulates under its Section 206 authority, 16 U.S.C. § 824e, it must make two findings: first, that the existing practice or rule is unjust, unreasonable, or unduly discriminatory; and second, that FERC's replacement scheme is just, reasonable, and not unduly discriminatory, *id.* § 824e(a); *see Emera Maine*, 854 F.3d at 24–25. FERC must support both conclusions with substantial evidence. *See Emera Maine*, 854 F.3d at 24–25 ("[S]ection 206 mandates a two-step procedure that requires FERC to make an explicit finding that the existing rate is unlawful before setting a new rate."). To satisfy that standard, FERC must supply "such relevant evidence as a reasonable mind might accept as adequate to support [each] conclusion." *Kentucky Mun. Energy Agency v. FERC*, 45 F.4th 162, 174 (D.C. Cir. 2022) (quoting *South Carolina Pub. Serv. Auth. v. FERC*, 762 F.3d 41, 54 (D.C. Cir. 2014) (*per curiam*)); *see also LSP Transmission Holdings II, LLC v. FERC*, 45 F.4th 979, 991 (D.C. Cir. 2022) (holding that to survive arbitrary and capricious review, an agency must have "examined the relevant considerations and articulated a satisfactory explanation for its action, including a rational connection between the facts found and the choice made"

[9] Long Island Power Authority does not join this challenge.

(quoting *Old Dominion Elec. Coop. v. FERC*, 898 F.3d 1254, 1260 (D.C. Cir. 2018))).

Transmission Petitioners attack FERC's reasoning at each step. They assert that FERC's decision to dispose of the existing reasonable-efforts standard for study delays was unsupported by substantial evidence. They also insist that FERC acted arbitrarily and capriciously in replacing the reasonable-efforts standard with firm deadlines and late fees, especially when many transmission providers had already implemented their own reforms.

These arguments fail. FERC reasonably determined a need both for (1) departing from the reasonable-efforts standard, and (2) imposing a fee system, with a safety valve for needed exceptions, to promote timely study completion and compensate customers for delays.

1

FERC marshaled substantial evidence to support its finding that the reasonable-efforts regime was unjust and unreasonable.

First, the data collected under Order 845 revealed widespread interconnection-study delays. As FERC explained, most transmission providers that completed studies in 2022 reported ongoing and delayed studies at the end of the year. *See* Order 2023 at P 1012, app. B tbls. 2–5. In addition, 68 percent of the 2,179 interconnection studies completed in 2022 were late. *See id.* at P 1012.

Second, FERC connected these delays to a glaring flaw in the existing regime: "[T]he reasonable efforts standard does not provide an adequate incentive for transmission providers to

complete interconnection studies on time." Order 2023 at P 966; *see id.* at P 878 & n.1650 (citing more than two dozen comments supporting the elimination of reasonable efforts and imposition of late study fees).

FERC's conclusion is rooted in the multiple comments pointing out that the reasonable-efforts standard had proven toothless. Over two decades, commenters explained, FERC "ha[d] *never* concluded that a transmission provider has failed to use Reasonable Efforts, even when the average processing time for interconnection requests has nearly doubled." *Joint Comments of the Affected Interconnection Customers to the Commission's Notice of Proposed Rulemaking on Generator Interconnection Agreements and Procedures* at 23 (Oct. 13, 2022) (emphasis added); *see also Initial Comments of the New Jersey Board of Public Utilities* at 12 (Oct. 13, 2022) ("Despite the near 1,900 interconnection studies delayed across the country by the end of 2021, the Commission has never ruled that a transmission provider has violated [the reasonable-efforts] standard.").

Similarly, a group of renewable-energy developers from across the country explained that "many transmission providers simply lack the incentive to timely process interconnection studies, and independent [system operators] seem to have different goals and interests than their interconnection customers." *Joint Comments of the Affected Interconnection Customers to the Commission's Notice of Proposed Rulemaking on Generator Interconnection Agreements and Procedures* at 23 (Oct. 13, 2022). The Electric Power Supply Association, meanwhile, observed that "there have . . . been vast failures by Transmission Providers to process interconnection studies and provide necessary information to prospective and existing interconnection customers in a timely manner." *Initial Comments of the Electric Power Supply*

Association at 10 (Oct. 13, 2022); *see also* J.A. 1248–49 (initial comments of the American Clean Power Association and RENEW Northeast) ("At present, there is no specific incentive for delivering on-time and accurate studies, and late or inaccurate studies bring few if any consequences.").

FERC also relied on record evidence documenting an asymmetry between the stringent demands placed on interconnection customers and the feeble reasonable-efforts standard for transmission providers. *See* Order 2023 at P 881 ("Some commenters point out that the . . . proposal resolves an imbalance between interconnection customers, which are held to strict deadlines, and transmission providers, which are currently not required to meet study deadlines."). As SEIA put it, "[u]nder the current interconnection paradigm . . . only interconnection customers bear the burden of compliance." J.A. 1312. While an interconnection customer could "lose[] its queue position" and thus "much of the investment it made" for failing to satisfy FERC requirements, transmission providers did "not face any penalties" for "fail[ing] to meet a tariff deadline." *Id.*; *see also Comments and Protest of the Community Renewable Energy Association and Newsun Energy LLC on Notice of Proposed Rulemaking* at 83–84 (Oct. 13, 2022) (similar). Implementing a balanced set of reforms that evenhandedly incentivizes timely conduct by both customers and transmission providers, another commenter explained, would "help bring certainty to the interconnection process, turning the vicious cycle of delays, withdrawals, and further delays into a virtuous one, in which projects have certainty in timelines and financing, leading to more finalized projects." J.A. 1315 (comments of SEIA).

Third, faced with rampant study delays in transmission systems nationwide, FERC reasonably found unjust and unreasonable a system that, in practice, imposed no constraints

on the very entities responsible for running those studies. *See* Order 2023-A at P 300 ("[U]nwarranted flexibility to the detriment of timely study completion represents a defect in the reasonable efforts standard in light of the record demonstrating such backlogs: [I]t allows transmission providers too much discretion to extend their own study deadlines.").

Transmission Petitioners insist that FERC overstated the severity of study delays. They point to a perceived inconsistency in FERC's data analysis. Specifically, FERC excluded data from one system operator, Southwest, because Southwest was transitioning to a new interconnection process and so was "not clearly comparable to the other [system operators]." Order 2023 at app. B tbl. 4 n.5. But, Petitioners emphasize, FERC initially failed to exclude PJM, which also was transitioning from a serial study process to a cluster study process starting at "the end of 2020/beginning of 2021." J.A. 3310 n.50 (PJM rehearing request); *see* Order 2023 at app. B tbl. 4 (Order 2023 table including PJM data). That objection does not hold up.

To be sure, PJM's inclusion increased FERC's first-round estimate of the number of studies delayed at the end of 2022. In Order 2023, FERC noted that "an additional 2,544 studies were delayed (*i.e.*, ongoing and past their deadline)" at the end of 2022, and acknowledged that the "vast majority of these studies (2,211) were in PJM[,]" Order 2023 at P 40 & n.116. But FERC's analysis ultimately did not depend on PJM's 2021–2022 data. *See Food & Water Watch v. FERC*, 104 F.4th 336, 347 (D.C. Cir. 2024). For instance, the asserted error did not disturb FERC's findings that most non-system operator transmission providers (*i.e.*, "non-RTO/ISO" transmission providers) had pending delayed studies at the end of 2022. *See* Order 2023-A at P 292. As for the system operators, FERC excluded PJM from its data analysis on rehearing and found

that its bottom-line conclusion remained the same. *See id.* Even excluding both PJM and Southwest, FERC found that three out of the four remaining system operators (*i.e.*, "RTOs/ISOs") had delayed studies at the end of 2022. *Id.* Overall, then, the data continued to support FERC's finding that the study-delay problem extended well beyond "isolated pockets" of the market. *Associated Gas Distribs. v. FERC*, 824 F.2d 981, 1019 (D.C. Cir. 1987); Order 2023-A at P 292.

Trying a different tack, Transmission Petitioners suggest that Section 206 requires FERC to find that "a single transmission provider's interconnection process was unjust and unreasonable," in addition to finding a structural problem nationwide. Transmission Petitioners Br. 49.

Not at all. "[T]he Commission ha[s] authority under Section 206" to impose "generic remed[ies] for *systemic*" problems. *South Carolina*, 762 F.3d at 49–50 (citation modified). When it wields that power, FERC is "not required to make specific findings that individual rates charged by individual [market participants] [are] unlawful, or to offer empirical proof for all the propositions upon which its order depend[s], before promulgating a generic rule." *Transmission Access Pol'y Study Grp. v. FERC*, 225 F.3d 667, 688 (D.C. Cir. 2000) (*per curiam*); *see also South Carolina*, 762 F.3d at 67 ("[T]he Commission may rely on 'generic' or 'general' findings of a systemic problem to support imposition of an industry-wide solution." (alterations in original) (quoting *Interstate Nat. Gas Ass'n of Am. v. FERC*, 285 F.3d 18, 37 (D.C. Cir. 2002))). Accordingly, in crafting Order 2023, FERC appropriately relied on industry-wide trends in study delays in concluding that the reasonable-efforts standard produces unjust and unreasonable results.

2

Substantial evidence supports FERC's second finding that its new system of firm study deadlines backed by fines was just and reasonable.

FERC found that putting the onus on transmission providers to ensure the timeliness of their studies makes sense because transmission providers "have the most complete knowledge as to what actions to better ensure study timeliness will be most effective as to their specific processes." Order 2023-A at P 301. "As the entity that conducts the study," FERC explained, transmission providers "have control over (among other things): the resources allocated to the study process; the actual conduct of the study, e.g., the use of advanced computing or other methods to improve efficiency; coordination with interconnection customers and consultants; and providing the conclusions of the study." *Id.* at P 284.

Based on those findings, FERC reasonably adopted financial incentives for timely compliance that would induce transmission providers to act on the information they possess and control, while refunding interconnection customers for studies for which they had paid but did not receive on time. In doing so, FERC avoided prescribing a top-down, wooden approach to ensuring timeliness in favor of a system that left individual transmission providers with "flexibility . . . as to how they achieve those standards, along with appropriate safeguards." Order 2023-A at P 301.

At the same time, FERC acknowledged several ways in which transmission providers might streamline studies, ranging from "exploring administrative efficiencies and innovative study approaches," Order 2023 at P 967, to "hiring additional personnel or investing in new software[,]" *id*. at P 975; *see also*

Order 2023-A at P 284 ("[T]ransmission providers have significant authority to help ensure that other entities do not unduly delay the results of the interconnection study, including by deeming withdrawn the requests of interconnection customers that fail to adhere to [FERC rules].").

Commenters, too, pointed to potential levers, including improved computing processes and "providing better information to reduce the complexity of individual requests." *Reply Comments of Public Interest Organizations* at 4 (Dec. 15, 2022); *see also id.* at 3–4 ("[T]here are a number of process and policy improvements available to transmission providers who are regularly falling behind in their interconnection studies, which are not yet implemented . . . . [A]ny claim that an individual provider has done absolutely everything in its power to improve the processing rate of interconnection requests at this point almost certainly comes from a lack of imagination."); *Comments of the Northwest & Intermountain Power Producers Coalition* at 14 (Sept. 14, 2022) ("Many [Northwest and Intermountain Power Producers Coalition] members believe that at least some of the problem is a result of transmission providers failing . . . to dedicate sufficient resources to complete studies on time. Eliminating the reasonable efforts standard and imposing penalties for delays will encourage transmission providers to complete their studies on time."); *Comments of the Interwest Energy Alliance* at 8 (Oct. 13, 2022) ("[I]mposing penalties for delays will encourage this investment [in study resources] . . . and potentially lead to more training for the expertise needed among a shrinking pool of engineering experts.").

FERC's analysis was reasonable on the record before it. "The idea that firms respond to financial incentives is . . . hardly revolutionary . . . ." *Connecticut Dep't of Pub. Util. Control v. FERC*, 593 F.3d 30, 35 (D.C. Cir. 2010). The study-

delay incentive system operates on the core economic theory that firms make decisions after rationally weighing costs and benefits—and the intuitive corollary that late fees increase transmission providers' incentive to meet study deadlines. *See, e.g.*, Order 2023 at P 966 ("[W]e find that the elimination of the reasonable efforts standard and the adoption of penalties for late studies are needed to create an incentive for transmission providers."); *id.* at P 977 ("We find it appropriate that transmission providers face study-delay penalties structured in a similar manner to provide adequate incentives to complete interconnection studies on time."); Order 2023-A at P 289 ("This incentive will help ensure that transmission providers exercise the control they have over the interconnection process as to the timely conduct of those studies . . . ."); *see also Xcel Energy Servs. Inc.*, 41 F.4th at 561 (holding that an agency can rely on "'basic economic theory,' including relying on 'generic factual predictions[,]' as long as the agency 'explain[s] and applie[s] the relevant economic principles in a reasonable manner'" (alteration in original) (quoting *Sacramento Mun. Util. Dist. v. FERC*, 616 F.3d 520, 531 (D.C. Cir. 2010) (*per curiam*))).

Transmission Petitioners throw out a variety of attacks on the sufficiency of FERC's analysis. The spaghetti does not stick.

First, Transmission Petitioners fault FERC for failing to prove that "transmission providers are at least partially responsible for study delays." Transmission Petitioners Br. 44. To be sure, FERC acknowledged that forces outside transmission providers' control might contribute to study delays. *See* Order 2023 at P 43 ("[T]ransmission providers may face uncertainty regarding the size and makeup of the interconnection queue and the commercial viability of the project in the interconnection queue, creating inefficiencies in

the study process, increasing interconnection study costs, and delayed study results.").

That is precisely why Order 2023 contains multiple reforms aimed at preventing other market participants, like interconnection customers, from dragging out the interconnection process. *See* Order 2023-A at P 287 ("Order No. 2023 recognized that study delays are caused by a number of factors, and adopted a comprehensive package of reforms aimed at alleviating many of those factors from various angles."). Beyond that, it defies credulity to suggest that the transmission providers—the entities that "control and are responsible for the conduct of [interconnection] studies," *id.* at P 372—do not bear even *partial* responsibility for delays in their own studies. In implementing the study-delay incentive system, then, FERC reasonably shifted the burden to the party with the most information about and control over the study process. At the same time, FERC provided transmission providers with an avenue for relief on a case-by-case basis if delay is caused by circumstances beyond their control. *See id.* at P 289.

Second, Transmission Petitioners contend that FERC did not adequately respond to arguments that the incentive scheme would generate perverse incentives for (1) transmission providers to cut corners to meet study deadlines, and (2) interconnection customers to prolong delays to receive a payout.

FERC reasonably explained why neither concern undercuts its determination that Order 2023 was just and reasonable.

With respect to the incentives for transmission providers, FERC disagreed that the new incentive system would reduce

study "accuracy" and "system reliability." Order 2023 at P 1007. The agency again pointed to various reasonable administrative measures transmission providers could take to avoid late fees, "such as hiring additional staff[] to efficiently process interconnection queues without sacrificing accuracy, flexibility, or reliability." *Id.* And to the extent such measures ultimately drive up the costs of studies, FERC explained, those "costs will be passed on to interconnection customers," who "ultimately bear the costs of . . . studies." *Id.* In addition, Order 2023 provides "safeguards . . . that allow transmission providers avenues of relief from the strict application of study deadlines[,]" including an appeals process for transmission providers that find themselves against a wall through no fault of their own. Order 2023-A at P 375; *see* Order 2023 at P 979–87 (describing safeguards including delayed implementation, grace periods, a cap on fees at 100 percent of the initial study deposits, and an appeals process). Transmission Petitioners apparently agree that accuracy will not suffer because they strenuously disavow any intent to "consciously sacrifice reliability to avoid penalties." Transmission Petitioners Br. 57.

FERC also assuaged transmission providers' concerns about interconnection customers' incentives, explaining that "the economic harms to the interconnection customer of delayed study completion significantly outweigh any incentive to delay the interconnection process." Order 2023-A at P 373. Further, any incentive to delay the process would be low-powered because any delay fees would be divided among "all the interconnection customers included in the relevant study that did not withdraw." *Id.*

Third, Transmission Petitioners insist that nationwide rulemaking was unwarranted because the majority of transmission providers had already shifted to a cluster-study approach. But cluster studies are just one of the many

interlocking tools that Order 2023 adopts to streamline the interconnection process. Incentivizing timely studies is another. Imposing a tiered fee schedule for queue withdrawals is one more still. So some transmission providers' adoption of piecemeal reforms does nothing to undermine FERC's decision to adopt a uniform and comprehensive scheme, the challenged elements of which *no transmission provider had previously implemented.* *See* Order 2023-A at P 380 ("The Commission has found that adoption of a cluster study approach is such a just and reasonable reform, but that additional reforms are also necessary."); *see also South Carolina*, 762 F.3d at 67 (upholding Section 206 rulemaking even when "some current practices in some regions may have already been satisfying a minimum set of requirements that must be met under the Final Rule" (citation modified)). Nor does the industry-wide shift to cluster studies alter FERC's factual basis for imposing its package of reforms since FERC found that even transmission providers that use cluster studies "still often fail to meet interconnection study deadlines." NPRM at P 166.[10]

[10] On the flip side, it is of no moment that FERC had recently approved transmission rate schemes that did not include any study-delay fees. *Contra* Transmission Petitioners Br. 51–52. When FERC considers individual rate filings under Section 205, it must act in "an essentially passive and reactive role[;] [it] may accept or reject the proposal, but it may not suggest modifications that result in an entirely different rate design than the utility's original proposal or the utility's prior rate scheme." *Hecate Energy LLC v. FERC*, 126 F.4th 660, 662 (D.C. Cir. 2025) (citation modified). As a result, FERC lacked authority in those Section 205 proceedings to impose *sua sponte* a novel incentive scheme. Instead, FERC formulated Order 2023 through a thoroughgoing Section 206 rulemaking, where it could weigh the industry-wide implications of a shift away from the prior reasonable-efforts standard, and elicit comments from a range of industry participants on how to combat interconnection-study delays most effectively.

Fourth, a subset of Transmission Petitioners complains that Order 2023 unreasonably upends PJM's recently adopted reforms.[11] FERC explained, however, that PJM's reforms were still in their "early stages," so the "record d[id] not contain any information regarding the effects of such reforms, including whether PJM [was] meeting all study deadlines on time." Order 2023-A at P 40. Instead of creating a carveout, FERC provided system operators like PJM the opportunity to preserve just and reasonable reforms through "independent entity variations." *Id.* at P 453 n.884. To that point, FERC has since allowed PJM to preserve the three-stage structure of its cluster process. *Order on Compliance*, 192 FERC ¶ 61,077, at P 66 (2025).

Fifth, a different group of Transmission Petitioners contend that FERC was arbitrary and capricious in imposing on system operators a uniform 150-day deadline for cluster studies.[12] That argument has no purchase. FERC clarified that Order 2023 does "not preempt transmission providers from proposing tariff-defined study deadlines that may differ from the . . . 150-day schedule." Order 2023-A at P 156. FERC has practiced what it promised. When FERC approved PJM's three-stage cluster studies, it also sanctioned an individualized study timeline: 120 days for phase I, 180 days for phase II, and 180 days for phase III. *Order on Compliance*, 192 FERC ¶ 61,077, at PP 67–68 (finding that "PJM's cluster study timeline is just and reasonable and not unduly discriminatory

[11] The MISO Transmission Owners and PacifiCorp do not join this portion of the brief.

[12] Avangrid, Inc., New York State Electric & Gas Corp., Rochester Gas and Electric Corp., Long Island Power Authority, the MISO Transmission Owners, and PacifiCorp do not join this challenge.

or preferential and accomplishes the purposes" of Order 2023); *id*. at P 211 n.415.

Of course, Order 2023 will not satisfy all transmission providers (or interconnection customers) all the time. But FERC has "considerable latitude in drawing th[ese] types of lines." *LSP Transmission Holdings II*, 45 F.4th at 993. Here, FERC reasonably concluded, using "the most recent data set available" when it issued Order 2023 in July 2023, that transmission providers were generally able to "complete system impact studies in an average of fewer than 150 days[,]" even "for clusters containing significant numbers of interconnection requests." Order 2023-A at P 322. While it acknowledged that some studies exceeded 150 days, FERC explained that the timeline for those studies had been examined under the lax reasonable-efforts regime, and that Order 2023 would incentivize providers to streamline their studies. *See id*.

Sixth, that same group of Transmission Petitioners accuses FERC of "present[ing] a false dichotomy between subjecting System Operators to, or 'categorically exempt[ing]' them from, the strict liability penalty scheme." Transmission Petitioners Br. 74 (quoting Order 2023-A at P 400). But Transmission Petitioners point to no comments or rehearing requests proposing an alternative systemic reform. What few proposals Transmission Petitioners did proffer were throwaways that would perpetuate the very interconnection-delay problems FERC sought to combat. *See* J.A. 3018 (New York Independent System Operator ("NYISO") rehearing request suggesting allowing individual System Operators "to propose" their own "alternative rules as independent entity variations," while sending FERC back to the drawing board to "updat[e] and enhanc[e] its reporting requirements"); *id*. at 3084 (MISO rehearing request insisting that, in its multi-phase study process, "[i]t is the ultimate result that matters and there should

be no penalties for any delays of preliminary or revised studies if the final study is delivered within a reasonable combined timeline").

Anyhow, even if these Transmission Petitioners had proposed an alternative approach that would also address the problem of late interconnection studies contributing to queue backlogs and, ultimately, unjust and unreasonable rates, that would say nothing about whether Order 2023's chosen deadline and penalty structure is itself just and reasonable. *See Entergy Arkansas, LLC v. FERC*, 109 F.4th 583, 594 (D.C. Cir. 2024) ("FERC is not required to choose the best solution, only a reasonable one." (quoting *Petal Gas Storage, LLC v. FERC*, 596 F.3d 695, 703 (D.C. Cir. 2007))).

Nor did FERC ignore the variations among system operators. While FERC set a new *default* in Order 2023, it has allowed system operators to seek variations during the compliance process upon an appropriate showing that Order 2023's baseline will still be met. Order 2023-A at P 453 ("On compliance, transmission providers can propose deviations from the [Order 2023] requirements . . . and demonstrate how those deviations meet the relevant standard."); *see also Order on Compliance*, 191 FERC ¶ 61,229, at P 181 (2025) (denying MISO's requested variation for late fees to trigger only at the end of its three-phase study process).

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In sum, FERC calibrated its study-delay incentives to spur transmission providers to act in a timely manner and to compensate interconnection customers for the decreased value of delayed studies, while not imposing excessive fees. It heard from all interested parties and responded to their objections. FERC confronted the "trade-off[s] inherent" in the study-delay

scheme and "determined that 'the trade-off[s] w[ere] worth it.'" *Affirmed Energy, LLC v. FERC*, 166 F.4th 1070, 1086 (D.C. Cir. 2026) (quoting *Competitive Enter. Inst. v. Nat'l Highway Traffic Safety Admin.*, 956 F.2d 321, 324 (D.C. Cir. 1992)). For all of those reasons, Transmission Petitioners' arbitrary and capricious challenges fail.

D

Transmission Petitioners next argue that FERC failed to adequately respond to comments raising concerns that the study-delay incentive scheme would be unduly discriminatory within the meaning of 16 U.S.C. § 824e(a). They are incorrect.

Under the Federal Power Act, a rate or practice is unduly discriminatory when it treats "similarly situated" entities differently "for no good reason." *Tenaska Clear Creek Wind, LLC v. FERC*, 108 F.4th 858, 868 (D.C. Cir. 2024) (quoting *Consol. Edison Co. of N.Y., Inc.*, 45 F.4th at 282). In contrast, "[n]o undue discrimination exists where there is a 'rational basis for treating [two entities] differently' and such differential treatment is 'based on relevant, significant facts which are explained.'" *BP Energy Co. v. FERC*, 828 F.3d 959, 967 (D.C. Cir. 2016) (second alteration in original) (quoting *"Complex" Consol. Edison Co. of N.Y. v. FERC*, 165 F.3d 992, 1012–13 (D.C. Cir. 1999) (*per curiam*)).

Transmission Petitioners lay out two theories of undue discrimination. First, they argue that transmission providers in regions with substantial renewable development will be more likely to face study-delay fees due to higher volumes of interconnection requests. Second, they argue that system operators' inability to pass costs on to shareholders unfairly increases their costs of complying with Order 2023 compared to traditional transmission providers. FERC adequately

considered and reasonably responded to both of those concerns.[13]

1

Transmission Petitioners worry that regions with large numbers of renewable interconnection requests will be more likely to face study-delay fees. *See* J.A. 3235 (PJM Rehearing Request) ("Zones and regions with long queues will experience a greater risk of incurring penalties than those that do not due to factors that transmission owners cannot control.").[14]

FERC acknowledged that concern and then explained why it was premature:

> [G]iven the structure of Order No. 2023—under which we have imposed deadlines that should be reasonably achievable, replaced the serial study process with cluster studies, and afforded several safeguards, including the appeals process—it is not necessarily the case that some transmission providers will be more likely to have to pay penalties than others

[13] To the extent Transmission Petitioners claim that Order 2023 itself unreasonably causes undue discrimination, that claim is not yet ripe for judicial resolution. The Order on its face does not exhibit undue discrimination, and because the incentive scheme has not yet taken effect, "no . . . discrimination ha[s] as yet been documented." *Tennessee Gas Pipeline Co. v. FERC*, 972 F.2d 376, 381 (D.C. Cir. 1992). Plus, FERC has "promised to address case-by-case such complaints of discrimination as [parties] might later raise." *Id*. So the only question before us is whether the rulemaking record discloses a procedural deficiency by FERC in addressing the asserted risks of discrimination identified by the Transmission Petitioners.

[14] Long Island Power Authority does not join this challenge.

> based on the uneven distribution of interconnection requests.

Order 2023-A at P 384 (citation modified).

FERC also provided several avenues for any over-burdened parties to obtain relief, including the appeals process and individual Section 205 filings. *See* Order 2023-A at P 384 ("[T]ransmission providers may propose variations from the requirements of Order No. 2023, under the applicable standard, which provides a further vehicle to ensure that the late study deadline and penalty structure does not unduly burden certain transmission providers as compared to others."); *id*. at P 384 n.715 ("That the Commission can consider the individualized factors in a particular case to determine whether to grant relief from penalties is another avenue to ensure that undue discrimination does not occur."); *id.* at P 324 ("[T]o the extent that transmission providers assert that factors allegedly outside of their control may render it difficult or infeasible to meet the interconnection study deadlines, this appeals process is the avenue to raise those considerations in particular cases and seek relief.").

Our precedent confirms the point. In *Transmission Access Policy Study Group v. FERC*, 225 F.3d 667 (D.C. Cir. 2000) (*per curiam*), a variety of market participants leveled challenges to FERC Order 888, which required transmission providers to allow open and equal access to their services, *id.* at 682–83. Before FERC promulgated the rule, vertically integrated transmission owners in Georgia had invested heavily in forming a transmission system and establishing reciprocal open access. *See id.* at 689. One of those vertically integrated entities, which operated both as a transmission provider and as a customer utility, claimed that the rule unduly discriminated against old customers of integrated transmission systems

because it gave new customers access to the system without requiring any investment in the transmission system. *See id.*

This court rejected that argument. We explained that FERC "recognized that its generic findings may have exceptions, and thus that Order 888 may in individual circumstances have a different result than that intended." *Transmission Access*, 225 F.3d at 689. But, as with Order 2023, market participants could "argue their particular circumstances" and seek relief from FERC on a case-by-case basis. *Id.* Order 888 "merely shift[ed] from a regulatory norm in which a user of transmission services must demonstrate to FERC an individualized need for open access to one in which a provider of transmission services must present to FERC individualized circumstances requiring relief from open access." *Id.*

So too here. Order 2023 simply shifts the default rule from individual customers having to try to obtain relief from transmission providers' study delays to a background norm of timeliness from which individual transmission providers can seek individualized relief.

Transmission Petitioners try to distinguish *Transmission Access* on the ground that FERC there relied on "extensive commentary as well as its own experiences" to "conclude[] that, as a general matter, transmission industry conditions were conducive to discriminatory practices and anti-competitive behavior, such that case-by-case adjudication could not adequately address the problem," and a nationwide rule was needed. Transmission Petitioners Reply Br. 29 (second and third alterations in original) (quoting *Transmission Access*, 225 F.3d at 688–89). So too here. In crafting Order 2023, FERC came forth with substantial evidence showing that study delays

were a serious, recurring, and nationwide problem. *See* Section IV.C, *supra*.

2

Lastly, some Transmission Petitioners argue that Order 2023 failed to address system operators' restricted funding opportunities. Unlike other transmission providers, system operators are generally not-for-profit entities that cannot pass the cost of late fees through to their shareholders.[15]

FERC squarely addressed that concern. To start, FERC provided a special exemption in Order 2023 to accommodate system operators' different funding structure. While Order 2023 generally prohibits transmission providers from recovering study-delay fees through increased rates, *see* Order 2023 at P 992, the rule permits system operators to submit a "[S]ection 205 filing to propose a default structure for recovering study delay penalties and/or make individual [Section] 205 filings to recover the costs of any specific study delay penalties," *id.* at P 994.[16]

FERC also pointed the system operators to several additional safety valves. In particular, FERC found that system operators could fund study-delay fees using administrative fees collected from market participants. Order 2023 at P 998. In

[15] Avangrid, Inc., New York State Electric & Gas Corp., Rochester Gas and Electric Corp., Long Island Power Authority, the MISO Transmission Owners, and PacifiCorp do not join this challenge.

[16] FERC also explained that system operators like NYISO that might require majority stakeholder approval for such filings could alternatively file a complaint under Section 206 to unilaterally alter their tariffs. *See* Order 2023-A at P 464.

addition, FERC noted that Order 2023 assigns study-delay fees to the party that conducts the study. *See id.* at P 995. That is, when a transmission-owning member of a system operator performs a study, that member—not the system operator—is responsible for paying any study-delay fees. *See id.* This assignment rule, FERC explained, "aligns the incentive created by the study delay penalty with the entity most in control of the study timeline." *Id.*

Finally, FERC concluded that any lingering disparate impact would not be undue given the costs to the nationwide energy system from delays in bringing new generation online. "[A]ny residual uncertainty as to [a system operator's] ability to recover penalty costs," FERC found, "is outweighed by the critical need for all transmission providers, including [system operators], to process interconnection studies in a timely manner." Order 2023-A at P 401.

In short, FERC directly addressed those transmission providers' concerns and provided a reasoned explanation for its decision accompanied by tailored accommodations. Having done so, FERC's decision to incentivize uniformly all transmission providers, including system operators, to meet study deadlines is "the type of policy judgment to which we afford deference, and that deference is justified by the record" in this case. *Advanced Energy Mgmt. All. v. FERC*, 860 F.3d 656, 670 (D.C. Cir. 2017) (*per curiam*); *see also id.* ("The law provides no basis to claim the Commission cannot approve uniform performance requirements simply because those requirements will be easier to satisfy for some generators than for others.").

*****

FERC reasonably explained that the potential discriminatory impact of Order 2023 has not been demonstrated on this record, and that the Order provides avenues for individualized relief as needed. Should FERC fail in the future to adequately address a pattern of discriminatory impact, affected parties can seek relief from FERC and, if necessary, the court.

V. Energy-Service Modeling

Certain Transmission Petitioners also challenge as arbitrary and capricious Order 2023's requirement that all affected-system studies be conducted using the Energy Resource Interconnection Service modeling standard. That argument fails.[17]

By way of background, interconnection customers are new energy-generating facilities, such as solar farms, wind turbines, or natural gas plants. *See Tenaska Clear Creek Wind*, 108 F.4th at 863. These energy generators seek to connect to a transmission provider, which is an entity that both operates transmission equipment like power lines and manages regional energy movement on the grid. *See Green Dev., LLC v. FERC*, 77 F.4th 997, 1001 (D.C. Cir. 2023). New energy generators must connect to a transmission provider to move their newly generated energy onto the larger energy grid and, eventually, to consumers of their energy. *Id.*

[17] Avangrid, Inc., New York State Electric & Gas Corp., Rochester Gas and Electric Corp., Midcontinent Independent System Operator Transmission Owners, the Midcontinent Independent System Operator, Inc., and PacifiCorp do not join this challenge.

When a prospective customer seeks to connect to a transmission provider, the transmission provider initiates a study of the new generator's impact on its transmission system to determine whether any system updates are required to add the new energy generation. Before that study goes forward, a customer must select one of two types of service for the delivery of its power.

The first option, Network Resource Interconnection Service, also known as "firm service," provides a high level of connectivity that permits customers to "demand power or transmission at any time." *Tenaska Clear Creek Wind*, 108 F.4th at 864 (quoting *Fort Pierce Utils. Auth. v. FERC*, 730 F.2d 778, 785–86 (D.C. Cir. 1984)); Order 2023 at P 1277 & n.2413. When an interconnection customer selects firm service, it is given priority access to transmit its power over the grid even when the transmission provider is overloaded and has to curtail or cut off service to some energy-generation sources. *See Advanced Energy United, Inc. v. FERC*, 82 F.4th 1095, 1104 (D.C. Cir. 2023). Put another way, firm service ensures that the energy output of the interconnection customer "will not be 'bottled up' during peak load conditions" on the host transmission system, allowing that customer to keep supplying energy to the grid and thus to profit from sales to consumers. NPRM at P 209 n.290 (quoting Order 2003-A, 106 FERC ¶ 61,220, at P 531 (2004)).

The second option, known as Energy Resource Interconnection Service ("energy service"), is a lower-level service that means that the transmission provider can "shut off [service] at any point" if its capacity to provide service falls below what is needed "to guarantee the needs of the [transmission service's] firm [service] customers." *Tenaska Clear Creek Wind*, 108 F.4th at 864 (quoting *Fort Pierce*, 730 F.2d at 786). Because energy service is less flexible and those

customers are the first to have the energy they are putting into the grid curtailed, energy service "is typically offered at a significant discount" compared to firm service. *Id.* (quoting *Fort Pierce*, 730 F.2d at 786).

Once the customer designates the level of service desired, the host transmission system uses that type of service to model the impacts on its system if the customer were to connect and demand that level of transmission capacity full-time.

Another issue that arises with new customer interconnection is that the provision of service to a new customer may occasionally impact a neighboring "affected system." NPRM at PP 213–14; Order 2023 at P 1284. That is because a host system may share transmission lines with a nearby system to increase overall efficiency. But at certain times, such as peak energy production, higher inputs of energy from generators on the host system could cause the excess energy to spill over into the affected system. *See* NPRM at PP 213–14; Order 2023-A at P 511. That is, energy pumped into one transmission system could end up adding to the energy level on an affected system. *See Indiana Michigan Power Co. and Ohio Power Co.*, 64 FERC ¶ 61,184, at 2 (1993) ("[I]n reality power flows are rarely confined to a designated contract path. Rather, power flows over multiple parallel paths that may be owned by several utilities that are not on the contract path."). If that affected system were already overloaded with excess energy, the injection of energy from the host system could cause the affected system to have to curtail its transmission service for its regular customers that contracted for firm service. *See* NPRM at PP 213–14.

Because of the potential for such repercussive effects when new generation is added to a transmission system, interconnection studies often include an analysis of the impact

that the new interconnection could have on an affected system. *See* NPRM at PP 174–75, 214–15. Interconnection customers are then required to pay for any system upgrades for affected systems that the host's provision of service could occasion. *Id.* at PP 191–92, 210.

The prior FERC order, Order 2003, required host systems to coordinate any needed affected-systems studies with their neighboring systems. *See* Order 2003 at P 121; NPRM at P 175. But FERC did not regulate *how* the affected system would conduct those studies. FERC instead left it to the affected system to choose whether to run its studies using firm- or energy-service modeling. *See* Order 2003, at P 121; NPRM at P 175.

Due to the lack of oversight for the affected-systems study process, significant problems arose, including a lack of transparency in how the studies were conducted and unpredictability as to how expensive the identified upgrades would be. *See* Order 2023 at PP 1278–80. For example, a prospective customer could be charged for first-class upgrades needed to support firm service on the affected system even if the customer would never receive firm service from the affected system. *Id.* at P 1278. That is because, although a customer's host system is contractually obliged to enable firm service if its customer has paid for it, an affected system owes no such duty to its neighbor's customer. *Id.* So if there is an overload of energy on the affected system, it has no obligation to prioritize the energy generation of its neighboring system's customer even if that customer paid for upgrades needed to provide firm service, and the customer may well lose out to the affected system's own energy generators that are benefiting from those paid-for upgrades. *Id.* at P 1279–80.

Order 2023 changed that. Instead of allowing the affected system to select whether it wanted to study the customer's impact on its system using firm or energy service, the affected system is now required to use an energy-service model at the interconnection-study stage. Order 2023 at P 1276.

Transmission Petitioners challenge this requirement, arguing that it (i) is not supported by substantial evidence, (ii) fails to address the problems identified by commenters, and (iii) departs from prior precedent without adequate explanation.

Because substantial evidence and reasoned analysis by FERC support the newly required energy-service baseline for interconnection studies on affected systems, this challenge fails.

A

FERC's adoption of energy-service modeling is grounded in substantial evidence demonstrating both the problems with the prior system and the benefits of adopting energy-service modeling as the default for interconnection studies of affected systems. As FERC noted, sixteen commenters urged it to adopt such a rule based on their own difficult experiences with the prior regime. Order 2023 at P 1263 & nn.2373, 2377. FERC also accorded weight to a case study of the energy-service modeling approach that was used successfully by a Regional Transmission Organization for the midcontinental region of the United States for "many years." NPRM at P 213; *see* Order 2023 at P 1285 (citing J.A. 922); *see also EDF Renewable Energy, Inc. v. MISO*, 168 FERC ¶ 61,173, at PP 71–72, 80–81 (discussing the organization's practice of using energy-service modeling for affected-system studies).

Substantial evidence is "such relevant evidence as a reasonable mind might accept as adequate to support a conclusion, and requires less than a preponderance of evidence." *Kentucky Mun. Energy Agency*, 45 F.4th at 174 (formatting modified). In crafting a nationwide rule, FERC "may rely on generic or general findings of a systemic problem to support imposition of an industry-wide solution." *South Carolina*, 762 F.3d at 67 (citation modified); *see Transmission Access*, 225 F.3d at 710–11 (same).

In adopting Order 2023, FERC credited over a dozen comments that explained the benefits of adopting energy-service modeling as a uniform standard for affected-system studies and illustrated the adverse effects of the prior regime. *See, e.g.*, Order 2023 at P 1263 nn.2373–78. For example, Shell Energy North America (US), L.P., and its related entities urged FERC to "require the lowest cost solution with 'guardrails' to ensure that transmission is not being overbuilt." J.A. 1065. Shell also explained that "if the study is implemented reasonably, a traditional [energy-service] analysis will identify power flow, short-circuit, and stability impacts on the affected system." *Id.* at 1066.

NextEra Energy, Inc., echoed Shell's concerns about firm-service modeling leading to affected systems overbuilding their transmission systems on the financial backs of their neighbor's customers. NextEra explained that its "subsidiaries have experience with excessive network upgrades being identified in affected system studies based on [firm-service] analysis." J.A. 817. NextEra complained that "[t]here is no rational basis" for permitting affected systems to use firm-service modeling "because the [new] project's output is not supposed to be delivered to the affected system," but rather to the host transmission provider. *Id.* In NextEra's view, only in rare

cases would a customer's energy input have an impact on an affected system. *See id.*

Enel North America, Inc., also supported the energy-service modeling rule because, "based on its experience in interconnection queues, many Transmission Owners push for more stringent study criteria and minimum impact thresholds which will result in more network upgrades being assigned to Interconnection Customers." J.A. 751.

Fervo Energy Company added that the lack of "consistency in the use of modeling standards" leads to affected systems' "identification of a wider range of required network upgrades," and so "require[s] interconnection customers to incur additional unjust and unreasonable costs that are not related to the provision of transmission service for the interconnection customer." *Initial Comments of Fervo Energy Company on Commission Notice of Proposed Rulemaking* at 6 (Oct. 13, 2022); *see also* J.A. 1007 (Pine Gate Renewables, LLC comment that "[e]nforcing [energy-service] modeling standards—rather than [firm-service] modeling standards—better aligns the modeling and network upgrade identification with the intended operation of the resources."); *Initial Comments of Utah Municipal Power Agency* at 6 (Oct. 13, 2022) (similar).

Pattern Energy Group LP offered yet another perspective, explaining that "interconnection studies are based on 'snapshots' of system conditions" including "peak load[s]" and "very low load[s]" of energy that "only exist a few times per year." *Initial Comments of Pattern Energy Group LP* at 26 (Oct. 12, 2022). Pattern asserted that an energy-service modeling requirement more closely approximates what the average load on an affected system is throughout the year than firm-service modeling, which focuses on "snapshot, simulated

conditions [that] are not the norm." *Id.* That is, using a less strict modeling standard would balance out the fact that these studies generally overestimate possible impacts on affected systems by focusing on peak energy production days.

The SEIA added that the high cost of affected-system upgrades due to the use of firm-service modeling leads to the "cascading withdrawals" of interconnection customers, causing interconnection queue delays for more than just the impacted customer. *Initial Comments of The Solar Energy Industries Association* at 11 (Oct. 13, 2022).

Buttressing these comments was a study of MISO's use of energy-service modeling across the fifteen states it serves. *See* J.A. 815; Order 2023 at P 1285 (citing MISO's comments at J.A. 922); Order 2023-A at P 510. FERC noted that MISO had successfully employed energy-service modeling for "many years" for its affected-system studies "without adverse reliability impacts." NPRM at P 213; Order 2023 at P 1285; Order 2023-A at P 510. MISO also explained that its use of the energy-service approach had proved "adequate to cover the reliability needs of the MISO system." J.A. 922. MISO's past experience, FERC noted, indicates that mandating an energy-service modeling standard across the board "will not cause unnecessary curtailment or redispatch on affected systems." Order 2023-A at P 510. That finding was critical because the justification for having interconnection customers foot the bill for expensive, firm-service upgrades to affected systems had been the assumption that the new customers would cause energy overloads on an affected system that would force that system to curtail movement of the energy of its own customers. *See* J.A. 1345–46; *see also EDF Renewable Energy*, 168 FERC ¶ 61,173, at P 80.

FERC's consideration of the MISO case study—which had successfully operated across a significant swath of the country—as empirical evidence from which to predict the impact of adopting a nationwide energy-service modeling standard was reasonable. "It is . . . quite clear FERC may make predictions[,]" and we uphold a rule based on such predictions so long as it is "rationally based on record evidence." *Michigan Consol. Gas Co. v. FERC*, 883 F.2d 117, 124 (D.C. Cir. 1989) (citation modified).

In sum, the adverse experiences of those with direct and repeat involvement in the interconnection process over time, as well as the proven track record in the MISO system of FERC's chosen remedy, provide substantial evidence supporting the modeling rule.

B

The same Transmission Petitioners next challenge FERC's explanation for its adoption of the energy-service modeling standard as arbitrary and capricious, arguing that FERC failed to grapple with important aspects of the problem, including the impact on Independent System Operators and Regional Transmission Organizations (collectively "System Operators"). Because FERC adequately explained its reasoning for adopting the energy-service modeling standard and directly addressed the concerns voiced by these Transmission Petitioners, their arbitrary and capricious challenge fails.

1

FERC provided three explanations for its decision to require interconnection studies for affected systems to be conducted under an energy-service framework, rather than

allowing the affected systems to choose whichever model they preferred.

First, FERC reasoned that selecting the energy-service model for affected-system studies will create a fairer relationship between the prospective interconnection customer and the affected system. *See* Order 2023 at PP 1277–78; Order 2023-A at PP 511–12. Unlike a host transmission provider, an affected system "has no obligation to continually ensure deliverability" on its transmission system even for an "interconnection customer that has obtained [firm service] on its host system." Order 2023 at PP 1277–78. As a result, modeling conducted by an affected system using firm service caused the customer to pay for system upgrades aimed at providing a level of service the customer had no guarantee of ever receiving. Order 2023-A at PP 511–12. That is because the affected system can prioritize deliverability to its own customers over a neighboring system's customers, and when congestion or curtailment of energy flow occurs, the neighboring customer that paid for the system upgrades must take a back seat to the affected system's primary customers. *See* Order 2023 at P 1278; Order 2023-A at PP 507–11; *see also* J.A. 751 (Fervo Energy comment that "many Transmission Owners push for more stringent study criteria and minimum impact thresholds which will result in more network upgrades being assigned to Interconnection Customers and thus not funded by" the affected system's own customers), *id.* at 817 (NextEra Resources comment that its "subsidiaries have experience with excessive network upgrades being identified in affected system studies based on [firm-service] analysis").

Put another way, allowing the affected system to impose upgrade expenses on a prospective customer for service it will rarely use and might never receive gave the affected system and

its customers an unreasonable windfall at the expense of new energy generators. At the same time, the use of energy-service modeling would bring upgrade expenses more in line with the service guarantees a prospective customer would receive. *See* Order 2023 at P 1280; Order 2023-A at P 511.

Second, after two decades of experience with allowing affected systems to charge for firm-service upgrades, FERC reasonably concluded that mandating one standard modeling system across affected systems "will create consistency and provide transparency for affected system interconnection customers[,]" one of the major goals of Order 2023. Order 2023 at P 1280.

Similarly, because the previous order permitted affected systems to use different modeling standards, it was harder for customers seeking interconnection to predict what network upgrades would be required and how much they would cost. As Order 2023 explains, "interconnection customers could be assigned dramatically different affected-system network upgrade costs due to those varying modeling standards, without any factual or service differences to justify the discriminatory treatment." Order 2023 at P 1280.

That inability to accurately predict the likely costs of interconnection set up artificial barriers to the addition of new energy generation on the grid. *See* Order 2023 at PP 1279–80; Order 2023-A at P 511. FERC's decision, by contrast, facilitates the addition of new power source customers by adopting a uniform modeling system that can reduce the "'sticker shock' from affected system network upgrades." Order 2023 at P 1151.

Third, FERC found that using energy-service modeling would result in lower upgrade costs for new energy generation

customers. That, in turn, would reduce the number of prospective customers that are forced to withdraw from the interconnection queue—the line of energy generators seeking to connect to any given transmission system—after receiving an unexpectedly high bill for affected-system upgrades. *See* Order 2023 at PP 1279–80.

Reducing such late-stage withdrawals was a critical goal of Order 2023 both because withdrawals keep new energy sources off the grid and because those withdrawals can result in cascading withdrawals and restudies as each prospective customer in the queue either bows out when confronted with a higher price tag for its interconnection (since the study costs are shared among the remaining prospective customers), or must face a whole new study of its impact on the grid if interconnected. *See* Order 2023 at PP 49–50, 1279–80.

FERC, in short, identified a real problem in the energy generation system, selected a reasonable alternative to the status quo, and provided rational policy reasons for its decision. Nothing more is required. *See also South Carolina*, 762 F.3d at 55 ("[T]he Commission must have considerable latitude in developing a methodology responsive to its regulatory challenge . . . ." (citation modified)); *Coal. of MISO Transmission Customers v. FERC*, 45 F.4th 1004, 1017 (D.C. Cir. 2022) ("Arbitrary and capricious review is 'narrow'—we are 'not to ask whether a regulatory decision is the best one possible or even whether it is better than the alternatives.'" (quoting *Motor Vehicle Mfrs. Ass'n of the U.S. v. State Farm Mut. Auto. Ins. Co.*, 463 U.S. 29, 93 (1983))).

2

Transmission Petitioners do not contest the accuracy of these three reasons. Instead, they argue that FERC failed to

consider the negative impacts that the new modeling rule would have on affected systems in regions managed by System Operators. They also argue that the modeling rule violates cost-causation principles and favors interconnection customers over affected systems. Neither argument holds up.

Far from ignoring the effect of the new rule on System Operators, FERC relied upon the success of an energy-service modeling approach that had already been adopted and used "for many years" across fifteen states by a Regional Transmission Organization, MISO. NPRM at P 213; Order 2023-A at PP 510–11. FERC noted, in particular, that MISO's adoption of energy-service modeling had "not result[ed] in reliability issues and [has] not cause[d] unnecessary curtailment or redispatch on affected systems," contrary to the Transmission Petitioners' arguments. Order 2023-A at P 510.[18]

With respect to the subgroup's concerns about affected systems' ability to preserve their transmission capacity for their own customers, FERC found that, "in the majority of circumstances, interconnection alone is unlikely to affect the reliability of an affected system transmission provider's transmission system." Order 2023 at P 1288; Order 2023-A at

[18] The Transmission Petitioners have not argued that, for purposes of their argument, there is any relevant difference between Independent System Operators and Regional Transmission Organizations such that FERC could not draw on the lessons gleaned from MISO and apply them to Independent System Operators. *See* Transmission Petitioners Br. 81–82 (arguing only that FERC ignored the impact of the energy-service modeling rule on "System Operator areas[,]" a term inclusive of both Independent System Operators and Regional Transmission Organizations); *see also Energy Markets*, FERC, https://www.ferc.gov/opp/energy-markets (explaining similarities between Independent System Operators and Regional Transmission Organizations).

P 507. In addition, FERC determined in Order 2003 that "interconnection and delivery [are] separate aspects of transmission service," Order 2003 at P 118, and Order 2023 regulates affected-system studies at the interconnection stage only, *see* Order 2023 at PP 1284–85. So any concerns about the impact of interconnection customers on affected systems at the deliverability stage are beyond the scope of Order 2023. Further, at that later stage, other tariff requirements kick in, such as a common tariff requirement that renders a new customer "responsible for obtaining any necessary engineering, permitting, and construction" on affected systems. *Id.* at P 1284.

One Regional Transmission Organization, Southwest, argues that the separate treatment of interconnection and deliverability does not address its situation, which is that one of its neighboring System Operators grants interconnection and deliverability simultaneously. So that one single operator will not have a second opportunity to address any needed deliverability upgrades.

As a commenter noted, "this appears to be a problem of [Southwest]'s own making, based on how it has implemented [energy service] and [firm service] on its own system," and Southwest could fix the problem by "revising its own methods for determining what is firm or deliverable" service. J.A. 1381.

In any event, FERC addressed Southwest's situation and reasonably concluded that its one-off problem did not undermine FERC's rationale for adopting the energy-service modeling standard as a default rule nationwide. Order 2023-A at P 507–08; *cf. South Carolina*, 762 F.3d at 67 ("[B]ecause petitioners have not shown that the deficiencies identified by the Commission exist only in isolated pockets, . . . the Commission could reasonably proceed to address a systemic

problem with an industry-wide solution.") (citation modified). FERC added that Southwest could seek an "independent entity variation" from aspects of Order 2023 when it files its compliance paperwork. *See* Order 2023-A at P 508 n.944; *see also* Order 2023 at P 1764 & n.3346. Alternatively, Southwest has the right to submit a Federal Power Act "section 205 filing" in which it could "request [to] use [a firm-service] modeling standard in affected system studies." Order 2023 at P 1293; *see Transmission Access*, 225 F.3d at 710–11 (holding that FERC may make generic nationwide rules if they are in the "generic public interest" and address outliers on a "case-by-case" basis when reviewing applications for individual variations).[19]

Finally, contrary to these Transmission Petitioners' argument, energy-service modeling comports with cost-causation principles and does not impermissibly preference the interests of interconnection customers over affected systems. FERC found that the use of energy-service modeling will reduce late-stage withdrawals of customers from the interconnection queue, and that change will help transmission providers as well as customers. That is because speculative projects that progress through various studies before being scrapped end up wasting transmission providers' time, while also delaying the interconnection of needed and viable generation customers that are later in the queue. *See* NPRM at P 14 (noting that the consequences of late-stage withdrawals "can then impede the transmission provider's ability to process its interconnection queue in an efficient manner").

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[19] Southwest is well aware that Section 205 filings can allow for individual exceptions to FERC Orders since FERC granted several of Southwest's Section 205 filings over the past seventeen years to override aspects of Order 2003. *See* Order 2003 at PP 4–5, 39–40.

In any event, FERC can "reasonably chang[e] its policies, and implement[] the consequences of those changes to the detriment of some parties and the benefit of others" as long as the change reflects a reasoned exercise of FERC's policy judgment about the most efficient and effective approaches to bringing more power to the grid for the Nation as a whole. *Union Pac. Fuels, Inc. v. FERC*, 129 F.3d 157, 162 (D.C. Cir. 1997). After all, "[p]olicy changes sometimes have distributive effects that may appear arbitrary from the perspective of their corporate victims, but in fact proceed logically from the reasoned premises underlying the changes." *Id.*; *see also Belmont Mun. Light Dep't v. FERC*, 38 F.4th 173, 184 (D.C. Cir. 2022) ("Due to practical challenges and myriad divergent interests, FERC must be given the latitude to balance the competing considerations and decide on the best resolution in its regulation of electricity markets." (quoting *New England Power Generators Ass'n*, 881 F.3d at 210)).

As for the concerns about cost-causation principles, nothing in Order 2023 requires affected systems to ever provide service to a neighboring system's customer. Plus, the use of energy-service modeling to protect against customers having to pay for expensive upgrades from which they might never benefit fully aligns with cost-causation principles. *See* Order 2023 at P 1278 (describing the prior regime as a "mismatch between costs and services received" because, while the customer had to pay for "significant network upgrades" on the affected system, that system had "no obligation" to provide firm service to the customer or prevent curtailment of that customer's energy); Order 2023-A at P 511 (same).

C

Finally, these Transmission Petitioners argue that FERC acted arbitrarily and capriciously by changing its modeling standard policy from previous orders without adequate justification. But all that is required of an agency facing arbitrary and capricious review to a policy change is to "display awareness that it *is* changing position[,]" and to provide "good reasons" for the change. *FCC v. Fox Television Stations, Inc.*, 556 U.S. 502, 515 (2009). FERC's decision meets that mark.

FERC expressly acknowledged its change from its past *laissez-faire* approach to modeling choices, stating that it had "previously allowed affected system transmission providers to justify their own approach to selecting the modeling standard used to evaluate affected system impacts." Order 2023-A at P 511; *see also* Order 2023 at P 1292 (noting that the energy-service modeling standard is different from "the status quo").

FERC then provided sound reasoning for the changed approach: The frequent use of firm-service modeling resulted in customers having to undertake "significant" upgrades "without a commensurate increase in service" and "would result in unjust and unreasonable rates[,]" Order 2023-A at P 511, which the Federal Power Act prohibits, 16 U.S.C. § 824e(a); *see Transmission Access*, 225 F.3d at 708 ("Simply put, it has been traditionally required that all approved rates reflect to some degree the costs actually caused by the customer who must pay them." (citation modified)).

FERC then reiterated its three specific reasons supporting the adoption of energy-service modeling as the default rule: avoiding the imposition of significant costs with no commensurate effect on service; the acutely disruptive queue withdrawals caused by high upgrade price tags; and the goal of

increasing transparency, consistency, and fairness in the interconnection process. *See* Order 2023-A at P 511; Section V.B, *supra*.

Because FERC explicitly acknowledged the change in course from Order 2003, and its reasoning is logical and draws on supportive evidence from involved parties, FERC has met its burden to address its policy shift.

VI

For the foregoing reasons, the petitions for review are denied.

So ordered.