

**United States Court of Appeals**  
FOR THE DISTRICT OF COLUMBIA CIRCUIT

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Argued February 14, 2017

Decided June 20, 2017

No. 16-1234

ADVANCED ENERGY MANAGEMENT ALLIANCE,  
PETITIONER

v.

FEDERAL ENERGY REGULATORY COMMISSION,  
RESPONDENT

OLD DOMINION ELECTRIC COOPERATIVE, ET AL.,  
INTERVENORS

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Consolidated with 16-1235, 16-1236, 16-1239

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

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*Randolph Lee Elliott* argued the cause for petitioner American Public Power Association. *Katherine Desormeau* argued the cause for petitioner Natural Resources Defense Council. With them on the joint briefs were *Gerit F. Hull*, *Jill Barker*, *Paul Breakman*, *Adrienne E. Clair*, *Casey A. Roberts*, *Delia D. Patterson*, *Christopher S. Porrino*, Attorney General, Office of the Attorney General for the State of New Jersey, *Carolyn McIntosh*, Deputy Attorney General, *Aaron S. Colangelo*, *Jennifer Chen*, *David Bender*, *Gary J. Newell*,

*Andrea I. Sarmentero-Garzón, Susan Stevens Miller, and Jill Tauber.*

*Bruce A. Grabow, Jennifer Brough, and Eugene Grace* were on the briefs for intervenors American Wind Energy Association, et al. in support of petitioners.

*Carol J. Banta*, Senior Attorney, Federal Energy Regulatory Commission, argued the cause for respondent. With her on the brief were *Robert H. Solomon*, Solicitor, and *Nicholas M. Gladd*, Attorney.

*Matthew E. Price* argued the cause for intervenors PJM Interconnection, L.L.C., et al. in support of respondents. With him on the brief were *Ishan K. Bhabha, Jeffrey A. Lamken, Paul M. Flynn, Ryan J. Collins, Jennifer H. Tribulski, Jeffrey Whitefield Mayes, Abraham Silverman, Kenneth R. Carretta, Cara J. Lewis, Neil Lawrence Levy, Cortney Madea, and Larry F. Eisenstat.*

*Ashley C. Parrish, Paul Alessio Mezzina, David G. Tewksbury, Stephanie S. Lim, Jason A. Levine, John S. Decker, and Stacy Linden* were on the brief for *amici curiae* The Electric Power Supply Association, et al. in support of respondent.

Before: BROWN, *Circuit Judge*, and SENTELLE and RANDOLPH, *Senior Circuit Judges*.

Opinion for the Court filed PER CURIAM<sup>1</sup>:

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<sup>1</sup> We shared the writing of this opinion. Judge Brown wrote Section VI. Judge Sentelle wrote Sections III, VII, and VIII. Judge Randolph wrote Sections I, II, IV, and V.

The Federal Energy Regulatory Commission approved new rules governing the buying and selling of “capacity.” “Capacity” is the ability to produce electricity. Purchasers of capacity acquire the right to buy electricity in the future. Petitioners object to the Commission’s approval of revisions to the rules for capacity markets operated by PJM Interconnection.

### I.

PJM Interconnection is a regional transmission organization that oversees the electric grid covering all or parts of thirteen Mid-Atlantic and Midwestern states and the District of Columbia. Regional transmission organizations are independent organizations that manage the transmission of electricity over the electric grid and ensure electricity is reliably available for consumers. *See generally* 18 C.F.R. § 35.34. In the PJM region, independent generation resources—such as nuclear power plants, renewable energy resources, and oil-, coal-, and natural-gas-fired plants—produce electricity. The resource owners sell electricity at wholesale to traditional utilities, or “load serving entities,” which deliver it to consumers. PJM operates competitive “markets” for the wholesale sale of electricity and other related products. One of these markets is a capacity market.

Capacity is not actual electricity. It is a commitment to produce electricity or forgo the consumption of electricity when required. Generation resource owners sell capacity to utilities, which need sufficient capacity to provide electricity to their customers reliably. This creates a kind of options contract. When a utility experiences a high demand for electricity, it can call on the capacity resource to produce that electricity. *See Conn. Dep’t of Pub. Util. Control v. FERC*, 569 F.3d 477, 479 (D.C. Cir. 2009).

PJM procures capacity for the entire system. It is more efficient if utilities share capacity. Each utility needs enough capacity to be able to meet its expected peak demand. Individual utilities will experience peak demand at different times, and PJM can transmit electricity to where it is needed. *See generally Gainesville Utils. Dep't v. Fla. Power Corp.*, 402 U.S. 515, 518-20 & n.3 (1971). PJM uses a capacity market to determine what resources will provide capacity and at what price.

PJM's capacity market involves a yearly auction. The auction works as follows. Resource owners offer to sell a set amount of capacity at a specific rate. PJM accepts offers, beginning with the offer at the lowest rate, until the system has sufficient capacity to meet projected demand. Regardless of the resource owner's offer price, PJM purchases all capacity at the rate of the highest accepted bid—the market-clearing price. The utilities then pay for their assigned share of capacity. When the utilities within PJM's system need more electricity in order to meet consumer demand, PJM calls on resources with a capacity commitment. Capacity resources must provide their committed share of the needed electricity. *See Hughes v. Talen Energy Mktg., L.L.C.*, 136 S. Ct. 1288, 1293 (2016).

PJM has operated this capacity market since 2006. *See generally PJM Interconnection, L.L.C.*, 117 FERC ¶ 61,331 (2006). It had market rules in place to enforce capacity commitments. According to PJM, the rules were not working. Resource owners were making capacity commitments but not providing electricity when it was needed. The penalties for a capacity resource that did not provide electricity were slight and easily avoided.

PJM wanted to establish new enforcement mechanisms to ensure resources that made a capacity commitment provided

electricity when called upon. In December 2014, PJM submitted revised capacity market rules to the Federal Energy Regulatory Commission for its approval under section 205 of the Federal Power Act, 16 U.S.C. § 824d. PJM concurrently submitted a separate filing under section 206 of the Federal Power Act, 16 U.S.C. § 824e, which suggested that some of PJM’s energy market rules would become unjust and unreasonable if the Commission approved the new capacity market rules. We will more thoroughly discuss the relevant details of the revised rules when addressing each of petitioners’ various challenges. Generally, PJM’s revised rules would require resources participating in the capacity market to be able to deliver the committed level of electricity at any time for the entire delivery year. PJM proposed various market mechanisms to ensure the resources would actually deliver the electricity when it is needed. These included the ability to offer capacity at a higher price in the auctions; bonuses for producing additional electricity; and steep penalties for resources that did not meet their capacity commitment, with very limited exemptions.

In June 2015, the Commission approved PJM’s proposed changes. *PJM Interconnection, L.L.C.*, Order on Proposed Tariff Revisions, 151 FERC ¶ 61,208 (2015) (“Tariff Order”). The Commission denied rehearing. *PJM Interconnection, L.L.C.*, Order on Rehearing and Compliance, 155 FERC ¶ 61,157 (2016) (“Rehearing Order”). Nine organizations<sup>2</sup>

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<sup>2</sup> Three petitioners are environmental groups: the Natural Resources Defense Council, Sierra Club, and Union of Concerned Scientists. Three petitioners—the American Public Power Association, the National Rural Electric Cooperative Association, and the Public Power Association of New Jersey—are service organizations representing utilities, with members within PJM’s service region. The Advanced Energy Management Alliance is a national trade association representing demand response resources. The New Jersey Board of Public Utilities is a state administrative

petitioned this court for review. The petitioners, together and separately, raise eight challenges.

## II.

Seven of the petitioners argue that the Commission did not adequately consider the costs and benefits of PJM's proposal. The Commission balanced the benefits of the revised rules against the increased costs and reached a reasoned judgment. *See, e.g., Blumenthal v. FERC*, 552 F.3d 875, 885 (D.C. Cir. 2009). The Commission's decision was not arbitrary or capricious. *See, e.g., Pub. Utilities Comm'n of State of Cal. v. FERC*, 254 F.3d 250, 253 (D.C. Cir. 2001).

PJM presented significant evidence that the old capacity market was not ensuring reliable electricity. PJM explained that the system obtained sufficient capacity during auctions. But resources frequently did not perform when called upon. PJM faced particular problems in January 2014. The PJM service region experienced unusually cold weather that resulted in very high demand for electricity. Twenty-two percent of PJM's resources experienced an outage and could not provide any power. In addition, PJM demonstrated increasing levels of resource outages. And those outages were likely to continue. Many of PJM's traditional coal- and oil-fired generators were aging and retiring. PJM found itself depending more on new, natural-gas-fired generation plants, which presented new reliability concerns.<sup>3</sup> Resource outages lead to increased energy

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agency charged with supervising public utilities. American Municipal Power is a nonprofit composed of both utilities and resources; it both buys and sells capacity in PJM's market.

<sup>3</sup> Unlike coal- and oil-fired resources, natural-gas-fired resources do not store fuel on site. They are particularly vulnerable to fuel interruptions, especially during winter storms.

costs, because energy supply is low. Eventually, they can lead to power outages.

The Commission identified three primary reasons for the old market's failure: "(i) a lack of an adequate penalty structure; (ii) a limited ability to recover costs of necessary investments; and (iii) an incentive to trim capital improvement plans and operating budgets." Rehearing Order P 23. The revisions would address these concerns in three ways.

First, the new rules would eliminate most of the excuses for resources that did not perform. Under the old rules, PJM did not impose a penalty if the resource's failure to perform was outside of management control. This exception encouraged resource owners to shift the blame to other parties instead of ensuring reliability. Even when PJM deemed the resource owner responsible for the outage, it only imposed a direct penalty if the resource's average performance over 500 high-demand hours during the year was worse than that resource's own five-year average. A resource owner could offset the resource's complete non-performance during the worst hours by performing during other "high-demand" hours. In the revised market, resource owners would face direct penalties if the resource failed to perform during any emergency hour.<sup>4</sup> The new rules would exempt resource owners from penalties in only two narrow circumstances. The first is if the resource was on a pre-approved outage, such as for maintenance. The second is if PJM independently decided not to schedule the resource for reasons unrelated to the costs of operating the resource.

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<sup>4</sup> PJM's proposed tariff defines emergency hours, or "Performance Assessment Hours." PJM will declare emergency hours when the PJM system is stressed and at risk of a shortage.

Second, the new rules would significantly increase the direct penalties for resources that do not perform. The direct financial penalties under the old rules were slight. For the 2013-2014 year, PJM estimates that those resources that were assessed penalties lost only 3.5% of their capacity revenues. The new penalties could deprive resource owners of all of their capacity revenues. These more robust penalties would discourage resources from not meeting their capacity commitments.

Third, resource owners could offer their capacity at higher prices under the new rules. And resources that provide more electricity than their capacity commitment would receive bonuses. These changes would encourage resource owners to invest in capital improvements and upgrades to ensure reliability. They would reduce the incentives for resource owners to cut corners in order to submit a more competitive offer.

The Commission concluded that the revised rules would benefit the PJM system. The revisions would help avoid the financial costs of energy price peaks and system outages likely under the old system. These rules would also increase system reliability. Higher payments and the possibility of bonuses would encourage reliable resources to enter the market. At the same time, higher penalties would encourage less reliable resources to exit the market. Eventually, PJM would need to procure less capacity to ensure reliability.

The Commission also considered the costs of the new capacity market. *See, e.g., Michigan v. E.P.A.*, 135 S. Ct. 2699, 2707 (2015); *TransCanada Power Marketing Ltd. v. FERC*, 811 F.3d 1, 11-12 (D.C. Cir. 2015). It acknowledged that the revisions would increase the costs of obtaining capacity by billions of dollars. On rehearing the Commission cited a formal cost-benefit analysis, the *Exelon* study, which concluded that the

new market rules would have net savings of between \$900 million and \$4.7 billion annually, starting in 2016. Rehearing Order P 34. Petitioners are correct that the *Exelon* study used a higher penalty for resources that failed to perform than the penalty the Commission approved. But the savings the study found do not depend on the amount of the penalty. The savings come from the penalty successfully increasing reliability. The Commission approved the lower penalty because it decided that the penalty would sufficiently induce resources to perform and increase reliability. *See* discussion *infra* Section IV. Even with a lower penalty, the net savings may be substantial.

Regardless, the Commission decided that, on balance, increased system reliability justified even a net increase in costs. *See Consol. Edison Co. of N.Y., Inc. v. FERC*, 510 F.3d 333, 342 (D.C. Cir. 2007). Increased costs can be “just and reasonable” if the costs are warranted. 16 U.S.C. § 824d(e). The Commission explained the important non-cost reasons for approving PJM’s proposal. It does not have to find net savings. *Process Gas Consumers Grp. v. FERC*, 866 F.2d 470, 476-77 (D.C. Cir. 1989). We defer to the Commission’s weighing of the various considerations and ultimate “policy judgment.” *Md. Pub. Serv. Comm’n v. FERC*, 632 F.3d 1283, 1286 (D.C. Cir. 2011).

### III.

The Federal Power Act (the “Act”) requires that “[a]ll rates and charges . . . by any public utility for or in connection with the transmission or sale of electric energy” “and all rules and regulations affecting or pertaining to such rates or charges” must be “just and reasonable” and not “undu[ly] preferen[tial].” 16 U.S.C. § 824d(a), (b). Two sections of the Act “govern FERC’s adjudication of just and reasonable rates . . . .” *FirstEnergy Serv. Co. v. FERC*, 758 F.3d 346, 348 (D.C. Cir. 2014). Under

section 205, when a public utility seeks to “change” any rates or rules, it must file the proposed changes with the Commission. 16 U.S.C. § 824d(d). The utility bears “the burden of proof to show that the increased rate . . . is just and reasonable . . .” *Id.* § 824d(e). When acting on a public utility’s rate filing under section 205, the Commission undertakes “an essentially passive and reactive role” and restricts itself to evaluating the confined proposal. *City of Winnfield v. FERC*, 744 F.2d 871, 875-76 (D.C. Cir. 1984).

Relatedly, section 206 authorizes the Commission to investigate existing rates on a complaint or its own initiative. 16 U.S.C. § 824e(a). If the Commission finds that a rate is “unjust, unreasonable, unduly discriminatory or preferential, the Commission shall determine the just and reasonable rate . . . and shall fix the same by order.” *Id.* Thus, under section 206, “[i]t is the Commission’s job—not the petitioner’s—to find a just and reasonable rate.” *Md. Pub. Serv. Comm’n*, 632 F.3d at 1285 n.1. When the Commission changes an existing filed rate under section 206, it is “the Commission’s burden to prove the reasonableness of its change in methodology.” *PPL Wallingford Energy L.L.C. v. FERC*, 419 F.3d 1194, 1199 (D.C. Cir. 2005).

PJM filed proposed changes to the capacity market under section 205 (“Capacity Performance Filing”). PJM concurrently submitted a section 206 complaint (“Energy Market Filing”), which stated that certain PJM energy market rules were now unjust and unreasonable and proposed replacements. Most of the energy market rules were contained in PJM’s Operating Agreement. PJM could not file changes to the Operating Agreement under section 205 because it did not hold the member vote necessary to amend the Operating Agreement. Therefore, PJM asked the Commission to make the changes to the Operating Agreement under section 206. The Commission accepted PJM’s section 205 Capacity Performance Filing as just

and reasonable, subject to compliance requirements not at issue in this case. At the same time, the Commission granted PJM's section 206 Energy Market Filing, finding that provisions in PJM's then-current Operating Agreement were unjust and unreasonable. A basis for the Commission's section 206 finding was that PJM's Capacity Performance filing under section 205 made provisions in PJM's Operating Agreement unjust and unreasonable: "We agree with PJM that given the changes we are accepting to its capacity market provisions, its existing energy market rules with respect to operating parameters, force majeure, and generator outages are unjust and unreasonable and must be revised." Tariff Order P 400.

Petitioners American Public Power Association, National Rural Electric Cooperative Association, and Public Power Association of New Jersey<sup>5</sup> ("Public Power Petitioners") assert that the Commission's section 205 findings were thus irreconcilable with its section 206 findings, arguing that the Commission could not accept PJM's section 205 Capacity Performance Filing as just and reasonable while simultaneously finding that this very filing rendered the Operating Agreement unjust and unreasonable under section 206. "In effect," they argue, "FERC found that PJM had created the factual premise and legal basis for FERC to order a change in rates that PJM could not have unilaterally made. This bootstrapping of results is impermissible." Pet'rs' Br. at 54. Instead, Public Power Petitioners assert that the Act required the Commission "to act under section 206 alone, without first accepting a portion" of the proposed market rule changes under section 205. *Id.* at 54-55.

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<sup>5</sup> The Commission objects to the Public Power Association of New Jersey joining in this argument, asserting that only the American Public Power Association and the National Rural Electric Cooperative Association raised it on rehearing. *See* Resp'ts. Br. at 33-34 n.5.

The Commission rejected this argument, noting that PJM is permitted to make unilateral filings under section 205 to revise capacity market provisions because they relate to the reliability of the regional system. The Commission determined: “[W]e cannot conclude that a proper interpretation of the FPA would deny PJM the right it has reserved unilaterally to file changes to its [Tariff] under section 205 merely because some related provisions of the Operating Agreement may be implicated by the filing.” Rehearing Order P 16.

Public Power Petitioners do not explain why PJM’s section 205 filings regarding the capacity market necessarily must complement existing energy market agreements to be just and reasonable. The Commission could find that PJM’s proposed capacity market rules were just and reasonable under section 205 even though they rendered some rules in PJM’s energy market unjust and unreasonable. Effects on other tariff provisions are not dispositive. The Commission has broad discretion to balance competing concerns. “If the total effect of the rate order cannot be said to be unjust and unreasonable,” we will defer to the Commission’s finding. *Fed. Power Comm’n v. Hope Nat. Gas Co.*, 320 U.S. 591, 602 (1944). In the analogous Natural Gas Act context, the court has specifically recognized that the Commission can approve a proposal as just and reasonable even if the Commission recognizes that other rates or rules are unjust and unreasonable. *Pub. Serv. Comm’n of N.Y. v. FERC*, 866 F.2d 487, 491 (D.C. Cir. 1989).

Relatedly, the Public Power Petitioners cite no precedent for their theory that the Commission was required to act “under section 206 alone” in this instance. Had PJM simply waited for the Commission’s approval of its section 205 filing to submit its section 206 filing, there would be no issue. The Commission has previously exercised its authority under section 206 to modify energy market rates after determining that the

implementation of the capacity market system via section 205 had rendered the energy market rates unjust and unreasonable. For example, in *PJM Interconnection, L.L.C.*, 149 FERC ¶ 61,091, P 30 (2014), the Commission found pre-existing energy market price adders “ha[d] been rendered unjust and unreasonable due to evolving market mechanisms, including PJM’s implementation of its capacity market auctions.” We have held that the Commission’s actions under the two sections “need not be exercised in separate proceedings.” *Sea Robin Pipeline Co. v. FERC*, 795 F.2d 182, 184 (D.C. Cir. 1986) (construing equivalent provisions in the Natural Gas Act). Also, in *Public Service Commission*, we noted in the context of equivalent Natural Gas Act provisions that “where a § 4 proceeding is under way, the Commission may discover facts that persuade it that . . . changes are appropriate that require the exercise of its § 5 powers . . . . [T]he Commission is free to act on those discoveries, so long as it shoulders the § 5 burdens.” 866 F.2d at 491. We therefore see no reason why the Commission was not entitled to approve changes under section 206 in anticipation of the impacts of the section 205 filing rather than wait for those impacts to be realized.

Moreover, the Commission did not rely solely on the section 205 changes. It specifically found that certain existing energy market rules were unjust and unreasonable in light of basic capacity market objectives. The Commission found that PJM’s existing operating-parameter provisions were “unjust and unreasonable because they can allow capacity resources to submit energy market offers with inflexible operating parameters that do not reflect their current, actual operating capabilities.” Tariff Order P 433. Such action by a capacity resource would be “inconsistent with its obligation to make its capacity available to the PJM region, including during the most critical hours of the year.” *Id.* The Commission also found that existing generator outage provisions “impede PJM’s ability to

ensure reliability” because they do not give PJM the authority to rescind approval for a planned outage when there is an emergency. *Id.* P 493. Finally, the Commission found “an expansive definition of force majeure . . . incompatible with reasonable expectations of performance” in the context of PJM’s “markets”—including both the capacity and energy market. *Id.* P 462. These rationales support the Commission’s finding that the energy market rules were unjust and unreasonable, even independent of the section 205 changes to the capacity market rules.

Because the Commission’s interpretation of the Act’s requirements is reasonable, we defer to its judgment. *See Transmission Access Policy Study Grp. v. FERC*, 225 F.3d 667, 687 (D.C. Cir. 2000) (the Commission’s interpretation of the Act it administers is entitled to *Chevron* deference).

#### IV.

Under the revised market rules, a resource that fails to meet its capacity commitment during an emergency hour must pay a penalty. Two of the petitioners<sup>6</sup> claim the penalty is too low and will not adequately ensure performance. Specifically, petitioners argue that the formula overestimates the number of emergency hours the PJM system will experience in a year.

Recall that generation resources can sell capacity through the yearly auctions. When the PJM system needs additional electricity, such as during an emergency hour, it calls on the resources with a capacity commitment to provide the

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<sup>6</sup> The Public Power Association of New Jersey, a non-profit organization representing utilities in New Jersey, and the New Jersey Board of Public Utilities, the state agency responsible for overseeing the state’s utilities, bring this challenge.

corresponding level of electricity. For example, say that PJM procures 1000 megawatts of capacity during an auction. Resource A made a 100 megawatt capacity commitment. During a particular emergency hour, the PJM system needs 900 megawatt-hours of energy. PJM then calls on the capacity resources. Resource A must provide 90 megawatt-hours. If resource A can only produce 80 megawatt-hours, it owes a penalty for 10 megawatt-hours. And if resource A cannot perform at all, it owes a penalty for the full 90 megawatt-hours.

The Commission approved a penalty rate of  $\frac{NetCONE}{30}$  per megawatt-hour of electricity the resource does not produce. NetCONE is the theoretical value of capacity and it is a set number each year.<sup>7</sup> Thirty is the estimated number of emergency hours PJM will experience in a year.<sup>8</sup> To calculate the penalty, PJM multiplies the megawatt-hours of electricity a resource failed to provide by  $\frac{NetCONE}{30}$ . The idea is that underperforming resource owners should repay PJM the value of the capacity their resource did not in fact provide.

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<sup>7</sup> Specifically, *CONE* stands for the “Cost of New Entry,” and it is the estimated cost of obtaining capacity from a new combustion turbine generator.

<sup>8</sup> PJM initially proposed thirty hours, based on the number of emergency hours in 2013-2014. In its Answer, PJM defended its original estimate; however, it stated that it would be “willing to revise” its tariff to use a rolling average of the number of emergency hours for the three previous years. J.A. 753-54. The Commission acknowledged that PJM was willing to make this change. Tariff Order P. 135. The Commission decided that thirty was a just and reasonable estimate. Thirty does not have to be better than other estimates. *Duke Energy Trading & Mktg., L.L.C. v. FERC*, 315 F.3d 377, 382 (D.C. Cir. 2003).

Petitioners claim that the Commission's estimate of thirty hours is too high. But petitioners' real concern is the effect the number thirty has on the overall penalty. Because the estimated number of emergency hours is in the denominator, a higher estimate results in a lower penalty. If the penalty rate is too low, resources can make money by participating in the capacity market even if they fail to perform during emergency hours. This could encourage resources to make a capacity commitment without investing in their resources to be able to meet the commitment.

The Commission acknowledged that the average number of emergency hours over recent years is less than thirty. However, thirty is within the range. In 2013-2014, PJM experienced thirty emergency hours. In other recent years, many areas within PJM experienced more than thirty emergency hours. The Commission also considered that PJM's older oil- and coal-fired generators are retiring and PJM is relying increasingly on natural-gas-fired generators. These changes could cause PJM to declare emergency hours more frequently in coming years.<sup>9</sup> Because the Commission explained why it chose thirty hours and pointed to supporting evidence in the record, we will not disturb its decision. *FERC v. Elec. Power Supply Ass'n*, 136 S. Ct. 760, 784 (2016).

The Commission had good reason to conclude that the formula results in a high enough penalty to encourage resources to meet their capacity commitments. The penalty is appropriate

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<sup>9</sup> The Commission's approval was contingent on PJM filing information about the penalty rate each delivery year. The filings must include the revenue and penalties for various resources using the thirty-hour estimate and higher and lower estimates. The Commission can revise the penalty in the future if it becomes unjust and unreasonable. *See* 16 U.S.C. § 824e.

even if the region typically experiences fewer than thirty emergency hours in a year. After all, it is “the *possibility* of zero or negative net capacity revenues” that incentivizes performance. Rehearing Order P 72. The Commission decided the penalty was also low enough to avoid introducing “excessive risk” into the capacity market. *Id.* P 73. Too high a penalty could discourage even reliable resources from entering the market. We defer to the Commission’s balancing of these competing concerns. *Blumenthal*, 552 F.3d at 885. The Commission adequately explained and supported its decision. *See, e.g., Elec. Power Supply Ass’n*, 136 S. Ct. at 784.

## V.

PJM requires resource owners to offer capacity at a cost-based rate. If a resource owner offers capacity at too high of a rate, PJM will not consider the offer during the auctions. This requirement prevents dominant resource owners from exercising market power and raising the price of capacity. Under the old market rules, resource owners could only offer capacity at a rate equal to each individual resource’s avoidable costs. A resource’s avoidable costs are the operational costs the resource would not incur in the following year if it did not have a capacity commitment.

The revised rules set a default offer cap. PJM will assume offers below this cap are cost based and include the offer in the capacity auction. It will independently investigate any offers above the cap, and will only include the offer in the auction if it determines it is cost based. Five of the petitioners, four organizations representing utilities and the New Jersey Board of Public Utilities, claim the cap is too high.

The Commission approved the default offer cap because it reflects the new penalties and bonuses. Recall that resources

with a capacity commitment must provide their share of electricity or face a penalty. If some capacity resources do not provide their committed share of electricity, PJM may obtain electricity from other resources to satisfy demand. Under the new rules, PJM would use the revenue from penalties to pay bonuses to resources that fill the gap. Capacity resources can earn bonuses if they produce more electricity than their commitment. Resources without a capacity commitment earn bonuses for all of the electricity they produce. The bonuses help incentivize resources to perform when electricity is most needed.

The penalties and bonuses create opportunity costs for resources with a capacity commitment. Say, for example, Resource A and Resource B can both produce 50 megawatts of power for a given emergency hour. Resource A has a 45 megawatt capacity commitment and Resource B does not have a capacity commitment. Resource A will receive bonuses for only 5 megawatt-hours. Resource B, on the other hand, will receive bonuses for all 50 megawatt-hours. If both resources can only produce 40 megawatts of power during the emergency hour, Resource A will owe a penalty for 5 megawatt-hours and receive no bonuses. But resource B will still receive bonuses for all 40 megawatt-hours. Resource A has to earn enough in the capacity market to make up for these lost bonuses. The new default offer cap is set at this rate. The cap is the rate<sup>10</sup> a resource needs in the capacity market to earn more with a

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<sup>10</sup> The rate can be expressed algebraically as  $NetCONE \times B$ . Remember, *NetCONE* is the theoretical value of capacity. *B* is the expected proportion of a resource's capacity commitment it will need to produce during emergency hours. It is currently set at 0.85, meaning that PJM predicts it will need capacity resources to provide 85% of their committed capacity during emergency hours. Petitioners do not challenge the algebraic derivation of the formula.

capacity commitment than without. It is by definition a competitive offer for a low-cost resource.<sup>11</sup>

Petitioners counter that the offer cap does not reflect the resources' actual costs. Resource owners must offer their capacity in PJM's capacity market in order to participate in PJM's energy market. Therefore, petitioners argue, a resource owner cannot forgo a capacity commitment in order to earn bonuses.

There are two problems with this argument. First, resource owners do not have to *sell* capacity in PJM's capacity market. They only have to offer it. If PJM does not purchase the capacity, because the offer price is too high, the resource owners can still sell energy in PJM's markets. Some resource owners could also forgo participating in PJM's markets and sell to external energy markets. Second, PJM and the Commission can allow resource owners to submit offers that take into consideration opportunity costs, even if they require resource owners to offer all available capacity. The must-offer requirement is a market mechanism to prevent artificial scarcity.<sup>12</sup> It prevents resource owners from making rational economic decisions based on the risks and benefits of offering to sell capacity in the market. PJM can still allow resources to recover these costs from the market. Market mitigation

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<sup>11</sup> A low-cost resource is a resource that could make a profit without any capacity commitment. A resource that must make a capacity commitment in order to be profitable does not have the same opportunity costs. PJM will continue to calculate unit-specific offer caps for resources that cannot cover their operating costs without making a capacity commitment.

<sup>12</sup> The must-offer requirement prevents resource owners from withholding some of their capacity from the market in order to drive up the price of capacity.

measures do not need to protect consumers from the actual costs of capacity. The Commission reasonably concluded that resource owners can consider all of their costs and risks in formulating an offer.

This brings us to petitioners' other objection: that the offer cap will raise the price of capacity and could harm reliability. The Commission had three responses. First, increased capacity prices are necessary. Resource owners need to be able to offer capacity at a higher price in order to recover the costs of improvements. PJM wants to encourage new, reliable resources to enter the capacity market. Second, although capacity will become more expensive, it will not necessarily reach the default offer cap. Resource owners take into consideration a variety of factors in formulating offers. Third, the higher clearing prices will not encourage resource owners to make capacity offers they do not intend to keep. As we have already discussed, underperforming resources face significant, unavoidable penalties under the new rules. The Commission was aware of the potential for higher capacities prices when it approved the penalty. It reasonably determined that the penalty is sufficient to encourage performance. *See* discussion *supra* Section IV.

## VI.

To ensure year-round capacity, PJM's revised market rules require sustained, predictable operation from all capacity resources. The Commission found PJM's year-round capacity requirement reasonable, both in the Commission's initial order and on rehearing, "because [the requirement] creates the same expectations for all Capacity Performance Resources (i.e., the expectation that such resources will be available to provide energy and reserves when called upon), without regard to technology type." Tariff Order P 99; Rehearing Order P 59 ("PJM is treating all resources identically . . ."). The

performance of some capacity resources, however, such as wind and solar resources, will necessarily vary by season. This led the Commission to conclude that “non-year-round resources do not provide equivalent service as year-round resources,” which “could result in a loss of reliability during the fall, winter and spring.” Rehearing Order P 59.

Concerns over reliable capacity led the Commission to reject exempting non-year-round resources from the year-round requirement, *see id.*, but the Commission allowed those resources to aggregate their respective performance and make a single capacity offer, *id.* P 51. Aggregation allows the non-year-round resources an opportunity to expand competition within the capacity market by bidding alongside the year-round resources. For example, wind resources generate more electricity during the winter than during the summer and no amount of investment can change that. Because of the Capacity Performance market’s year-round requirement, a wind resource could only offer at its summer generation limit without risking significant penalties. Under PJM’s plan, wind resources could pair with summer-peaking resources, such as solar resources, to offer more capacity. At the same time, by not allowing *all* resources to submit aggregated offers, sustained, predictable capacity operation by each bidding resource is preserved, and the individual-resource bidding process is not “transform[ed]” into a “portfolio-bidding approach” that neither the Commission nor PJM embraced. *See* Tariff Order P 102.

Various petitioners challenge this entire scheme—the metric of annual capacity performance, the disparate treatment it poses for non-year-round resources, and the use of and limitations on aggregate offers—as unduly discriminatory. *See* 16 U.S.C. § 824d(b) (prohibiting a utility from “grant[ing] any undue preference or advantage” or “subject[ing] any person to any undue prejudice or disadvantage”); *cf. Ala. Elec. Coop., Inc.*

v. *FERC*, 684 F.2d 20, 21, 27-28 (D.C. Cir. 1982) (explaining that, in the “unusual case,” the same rate charged to differently-situated customers could be undue discrimination). Petitioners Natural Resources Defense Council, Sierra Club, and Union of Concerned Scientists challenge the year-round capacity requirement both as a metric of quality and the “disparate burdens” it imposes on non-year-round resources. Aggregation, in their view, does not dissipate the discrimination; non-year-round resources are required to absorb aggregation’s “transaction costs” that are not experienced by annual resources. Petitioner American Municipal Power (“AMP”) contends that the aggregation does not go far enough, and the new capacity market rules should allow all resources to aggregate. In AMP’s view, limiting aggregation to non-year-round resources is discriminatory because some traditional resources may also be unable to upgrade to ensure performance. And the Commission did not explain, AMP claims, how allowing all resources to aggregate would transform the individual-resource bidding process into a portfolio approach, but allowing non-year-round resources to aggregate would not. In AMP’s view, aggregation should either apply to all resources or to none. AMP also contends the Commission’s decision to reject aggregation across “Locational Deliverability Areas,” geographically designated areas within PJM where PJM may be unable to transmit enough capacity from other parts of the PJM region to ensure reliability, was also unreasoned. None of these challenges overcome the deferential standard of review afforded the Commission’s determinations.<sup>13</sup>

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<sup>13</sup> The Commission suggests these challenges were not raised within petitioners’ rehearing request and are, accordingly, waived. Petitioners, while conceding their arguments were raised only “brief[ly]” below and not in the plainest of language, note their arguments were mentioned in the “body” of their rehearing request. As “even [a] brief assertion” of the grounds for rehearing is “sufficient,” petitioners’ arguments are not waived. *See, e.g., La.*

The year-round capacity commitment is at the core of what PJM expects of capacity resources and the essential attribute of its revised market rules. PJM’s experience with winter weather events in 2014, discussed above, confirmed the virtue of capacity that is available to perform at any time, year round. This experience reinforced the prior treatment of solar and wind as “an Annual Resource,” *see PJM Interconnection, L.L.C.*, 146 FERC ¶ 61,052, P 2 (2014), and the rejection of “seasonal pricing and operational reliability requirements” since the creation of PJM’s capacity market, *see PJM Interconnection, L.L.C.*, 117 FERC ¶ 61,331, P 29 (2006). The Commission explained why allowing non-year-round resources to meet only a seasonal capacity standard would threaten annual capacity reliability. *See* Rehearing Order P 59. The Commission explained that exempting non-year-round resources from the annual capacity requirement would mean PJM would not have as many available resources in non-summer months, which could reduce reliability. The Commission’s statements are supported by record evidence justifying PJM’s connection of annual capacity availability with reliability. *See* J.A. 74-76 (explaining how PJM had to alter its reliability goals by ten percent “to facilitate the commitment of less-available resources to be an acceptable level of risk”). Even if, as the environmental petitioners claim, some measurement of reliability other than annual capacity availability is just and reasonable, the relevant question here is whether the annual standard the Commission approved is just and reasonable. *See Fla. Gas Transmission Co. v. FERC*, 604 F.3d 636, 645 (D.C. Cir. 2010). The Commission’s policy decision to assess reliability through a year-round capacity commitment is the type of policy judgment

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*Intrastate Gas Corp. v. FERC*, 962 F.2d 37, 42 (D.C. Cir. 1992). Moreover, the Commission explicitly considered—and rejected—the substance of these arguments on rehearing. *See, e.g.*, Rehearing Order P 59. Sidestepping petitioners’ arguments here would elevate form to a fault.

to which we afford deference, and that deference is justified by the record.

We reject petitioners' claim that the year-round requirement imposes *undue* discrimination against non-year-round resources. 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. To be sure, if the rate requirement at issue is a uniform requirement based on a generator's costs, but costs vary based on the generator, insisting all generators meet one generator's costs would be the "unusual case" of a uniform standard constituting undue discrimination. *See, e.g., Alabama Electric Cooperative, Inc.*, 684 F.2d at 21, 27-28. But "*Alabama Electric* does not stand for the proposition that charging the same rates to differently situated customers always constitutes undue discrimination." *Complex Consol. Edison Co. of N.Y., Inc. v. FERC*, 165 F.3d 992, 1013 (D.C. Cir. 1999).

To assess undue discrimination, the "critical determination" is whether the uniform performance requirement at issue—here, the requirement of year-round capacity availability—constitutes undue discrimination against non-year-round resources. *See id.* Requiring that capacity be available at any time does disadvantage resources with seasonally-fluctuating capacity. But, "the difference in service here was not unreasonable because of operational constraints." *Id.* at 1014. As the Commission observed, "non-year-round resources do not provide equivalent service as year-round resources." Rehearing Order P 59; *id.* P 51 ("no reasonable amount of investment can mitigate the non-performance risk they face"). Indeed, even petitioners acknowledge that, on the metric of annual availability, "of course annual resources will appear superior." Pet'rs' Br. at 74. "The court will not find a Commission

determination to be unduly discriminatory if the entity claiming discrimination is not similarly situated to others.” *Transmission Agency of N. Cal. v. FERC*, 628 F.3d 538, 549 (D.C. Cir. 2010). Using an annual performance standard is a reflection of the Commission’s policy judgment as to the level of capacity performance the market requires, not an undue privileging of one resource’s costs over another’s. We defer to the Commission’s judgment.

Moreover, the disparate effect on non-year-round resources is mitigated by their ability to make aggregated capacity offers. The Commission considered aggregated offers “a reasonable accommodation to permit greater participation in the capacity market” from non-year-round resources; expanding competition within the capacity market to the benefit of consumers while not undermining the annual capacity requirement’s reliability goal. Rehearing Order P 51. The aggregation accommodation is only available to non-year-round resources, *see id.*, and for good reason: this accommodation reflects the resources’ operational nature, it is not intended to undermine individual capacity bidding in general. *See* Tariff Order P 102. The environmental petitioners contend aggregation does not obviate the discrimination of a year-round performance standard because aggregation itself imposes “transaction costs.” Petitioners cite no record evidence for this proposition, however, and their briefing does not specify what these costs are. Their brief makes only the vague assertion that “resources with complementary availability within the same delivery area” will be “burden[ed] . . . with” “finding each other,” putting together a single capacity offer, and determining how to “share the risks and rewards of Capacity Performance.” Pet’rs’ Br. at 75. Even if such costs are bona fide, aggregation is merely an *accommodation*, not a rate, and the rate standard does not itself produce *undue* discrimination. Nothing in applicable law requires a rate standard to result in *no* disparate impact on *any* power resource

whatsoever. The aggregated offer accommodation is just and reasonable.

Finally, the challenges to the limitations on the aggregation accommodation are without merit. The accommodation's goal is to expand the number of capacity resources that can participate in capacity auctions, not change the bidding process itself. Yet that would be the result of expanding the aggregation accommodation beyond non-year-round resources, as AMP urges. Such "portfolio" bidding is, according to the Commission, not necessary to ensuring reliable capacity, and we defer to the Commission's policy judgments. Similarly, the Commission acted reasonably in limiting aggregation to those capacity resources within the same "Locational Deliverability Areas." These Areas are designed to ensure prompt response to a capacity demand. If PJM relied on the capacity promised by an aggregated bid, and the aggregation occurred across multiple Areas, an obvious risk to the sustained, predictable deliverability of reliable capacity comes into view. *See, e.g.*, Tariff Order P 103. PJM indicated in its Answer that "it can permit aggregation across" Locational Deliverability Areas. J.A. 714. But the Commission reasonably concluded that PJM had not proven that the proposal was just and reasonable. PJM designates a Locational Deliverability Area as constrained if PJM predicts it will have limited ability to transfer enough capacity into the area to ensure reliability. In such cases, capacity commitments from outside the Locational Deliverability Area might not help during emergency conditions. *See* Rehearing Order P 52. The Commission's decision to disallow aggregation across these Areas was just and reasonable.

## VII.

Petitioner Advanced Energy Management Alliance ("AEMA") raises a narrow challenge to the Commission's

orders approving PJM's demand resource rules, asserting that the orders are arbitrary and capricious because "[t]he Commission accepted, without explanation, the same type of demand resource performance rules it had previously rejected in approving PJM's prior capacity market construct." Pet'rs' Br. at 76.

Demand resources do not produce electricity. Instead, a demand resource provides capacity by obtaining commitments from consumers to decrease electricity consumption during peak periods. *See Elec. Power Supply Ass'n*, 136 S. Ct. at 767. PJM calculates a demand resource's performance in order to determine whether the demand resource met its capacity commitment. A demand resource's performance at any given time equals its customers' expected consumption—i.e., how much they are expected to consume if PJM does not instruct them to reduce their consumption—minus their actual consumption. AEMA challenges PJM's proposed method of calculating a demand resource's expected consumption.

PJM proposed to use two formulas for calculating expected consumption—one for estimating expected consumption during summer months and one for estimating expected consumption during non-summer months (with one limited exception not relevant to this case). The summer formula (termed the annual-peak or "Peak Load Contribution" method) is based on a demand resource customer's contribution to the five hours of the previous year when system-wide demand peaked. *See, e.g., PJM Interconnection, L.L.C.*, 137 FERC ¶ 61,108, P 1 n.2 (2011). In comparison, the non-summer formula (termed the recent-peak or "Customer Baseline Load method") is based on a demand resource customer's contribution to the system's load for the four days of peak system-wide load during the most recent forty-five days. *See, e.g., id.* P 10 n.24; *PJM Interconnection, L.L.C.*, 137 FERC ¶ 61,216, P 47 (2011).

AEMA supports the annual-peak method but challenges the recent-peak method. AEMA contends that the Commission's orders are arbitrary and capricious because the Commission's "approval of PJM's rules governing demand resource performance departs from prior determinations addressing the same subject matter without providing a reasoned explanation." Pet'rs' Br. at 76. AEMA asserts that the Commission previously rejected the recent-peak method and accepted the annual-peak method, *id.* at 78 (citing *PJM Interconnection, L.L.C.*, 137 FERC ¶ 61,108 (2011)), consistent with precedent, *id.* at 78-79 (citing *La. Pub. Serv. Comm'n v. FERC*, 184 F.3d 892, 895 (D.C. Cir. 1999); *Town of Norwood v. FERC*, 962 F.2d 20, 26 (D.C. Cir. 1992)). Further, AEMA argues, the recent-peak method "is unrelated to the quantity of capacity . . . PJM avoids purchasing when the customer commits to reduce load[.]" instead "measur[ing] demand resource performance in off-peak periods that do not affect the cost of PJM's capacity procurement." Pet'rs' Br. at 82.

As the Commission noted, "PJM's Capacity Performance proposal was put in place, in part, to create the proper incentives for resources to perform all year round, and more specifically in the winter." Rehearing Order P 120. Demand resources, like all other capacity resources under the Capacity Performance rules, are annual products and thus their performance must be measured any time the PJM system has an urgent need for capacity—i.e., during emergency hours. Measuring performance in the winter against the summer peak is problematic because a customer's normal energy use in the winter may already be lower than its summer peak. If called upon to reduce usage in the winter, a demand resource could claim to have reduced its energy usage below its summer peak, when in reality it continued its normal winter usage and is requesting payment despite doing nothing to alleviate the present emergency.

Measuring demand resource performance against its recent peak load “help[s] guarantee that Demand Resources are available to be dispatched to help supply meet demand in the winter period.” *Id.* It was therefore reasonable for the Commission to accept PJM’s proposal to use the recent-peak method for non-summer months. *See Elec. Power Supply Ass’n*, 136 S. Ct. at 784 (finding reasoned decision-making where the Commission “weighed competing views, selected a compensation formula with adequate support in the record, and intelligibly explained the reasons for making that choice”).

AEMA’s principal argument is that the Commission did not adequately distinguish its action in an earlier proceeding affirming reliance on the annual-peak method to measure performance. But the previous proceeding concerned only summer performance. *See PJM Interconnection, L.L.C.*, 137 FERC ¶ 61,108, P 51 (2011). The annual demand resource product, expected to perform year-round, did not yet exist. Indeed, the Commission expressly recognized that the annual-peak method may not be appropriate for non-summer measurement and urged PJM “to give consideration to how to appropriately measure performance of capacity for resources that are procured specifically to perform outside of PJM’s June through September summer period.” *Id.* P 85. The Commission thus reasonably distinguished the 2011 action, explaining that Capacity Performance “has stronger performance incentives than the preexisting capacity product, with an emphasis on improved resource performance in winter periods,” which “provides PJM adequate justification to move to a stronger measurement standard than was approved through [the earlier proceeding].” Rehearing Order P 124.

Finally, AEMA argues that under the proposed method, demand resources “are penalized by not receiving compensation for the full value of their on-peak summertime load reduction

capability and may even be precluded from participating.” Pet’rs’ Br. at 77. This argument simply rehashes the more general dispute with the annual requirement of the Capacity Performance proposal as applied to demand resources and is addressed above.

Because it was reasonable for the Commission to accept PJM’s proposal to use the recent-peak method for non-summer months and any alleged departure from past practice was adequately explained, we defer to the Commission’s determination on this issue. *See, e.g., Elec. Power Supply Ass’n*, 136 S. Ct. at 784.

### VIII.

Petitioner AMP also challenges the imposition of Capacity Performance penalties on resources that fail to perform due to unit-specific constraints. Under PJM’s proposal, resources generally incur non-performance penalties if they do not operate in an emergency hour. However, PJM proposed two exceptions. First, a resource would not incur a non-performance penalty if it is unavailable due to a PJM-approved planned outage or maintenance outage. Second, a resource generally would not incur a non-performance penalty for failing to perform during an emergency hour if PJM did not schedule it to operate. However, if the reason PJM did not schedule the resource to operate is (1) due to the seller’s own operating-parameter limitations or (2) because the seller offered its energy at a market-based price that was higher than its cost-based price, then a resource nevertheless incurs a non-performance penalty.

AMP argues that these rules are inconsistent with energy market rules, which require PJM to cover a resource’s costs if PJM schedules the resource to run outside of its parameter limits. AMP also argues that penalizing a resource for failing to

operate when the resource “ha[s] little or no ability to operate beyond [its] unit-specific parameters at *any* cost” is unreasonable. Pet’rs’ Reply Br. at 37-38.

Given the different purposes of the capacity market and the energy market, there is no inconsistency in treating the operating-parameter limitations differently in the two markets. A Capacity Performance resource commits to perform *whenever needed* and sets its market offer to cover the costs of ensuring its ability to perform. Given this commitment, it is reasonable for PJM to apply a non-performance charge when a resource is not available pursuant to its obligation. In contrast, a resource in the energy market—which does not have the same commitments—may choose not to perform when called upon to perform outside its operating parameters if the cost of performing is higher than the price it will receive. In that scenario, PJM covers the resource’s actual costs so that the resource is incentivized to run when called upon. “If PJM did not cover the costs resulting from the parameter limit, the resource might choose not to run when scheduled, potentially causing reliability problems.” Rehearing Order P 105.

Finally, the Commission concluded that it is reasonable to penalize a resource for failing to operate outside of its parameter limitations. It explained that

parameter limits should not be viewed as a permanent entitlement to under-perform. Instead, those limits should be exposed to financial and market consequences: if sellers of resources with fewer operating limits earn more from the capacity market (after taking Non-Performance Charge and Performance credits into account) than sellers of resources with more restrictive operating limits, then all sellers will

be incented to find ways to minimize those operating limits, which should over time increase overall fleet performance and benefit loads in the region.

*Id.* P 103 (quoting PJM December 12, 2014 Capacity Markets Filing at 46) (internal quotation marks and alterations omitted). In other words, the Commission approves of PJM’s decision to hold resources with restrictive operating limits to the same standards as resources with fewer limitations. Over time, the Commission believes, the market will incentivize all sellers to minimize operating limits, thereby increasing overall performance.

Because the Commission’s explanation is reasonable, we defer to its conclusion that operating limits cannot excuse non-performance in the capacity market. *See S.C. Pub. Serv. Auth. v. FERC*, 762 F.3d 41, 55 (D.C. Cir. 2014) (“[T]he Commission must have considerable latitude in developing a methodology responsive to its regulatory challenge[.]”) (internal quotation omitted); *see also Tenn. Gas Pipeline Co. v. FERC*, 400 F.3d 23, 27 (D.C. Cir. 2005) (noting that “[t]he court properly defers to policy determinations invoking the Commission’s expertise in evaluating complex market conditions”).

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