UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

KMC Thermo, LLC	)	EC26-39-000
Alpha Generation Brandywine, LLC	)	

COMMENTS OF THE INDEPENDENT MARKET MONITOR FOR PJM

Pursuant to Rule 211 of the Commission's Rules and Regulations,[1] Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor ("Market Monitor") for PJM Interconnection, L.L.C. ("PJM"),[2] submits these comments responding to the filing submitted by KMC Thermo, LLC ("KMC Thermo") and Alpha Generation Brandywine, LLC ("Alpha Gen Brandywine" and, with KMC Thermo, "Applicants") submitted on December 10, 2025 ("December 10th Filing"). The December 10th Filing requests authorization for Alpha Gen Brandywine to acquire 100 percent of the interests in KMC Thermo from Webb Energy LLC ("Seller") ("Transaction").

Alpha Gen Brandywine is ultimately owned by ArcLight. Alpha Gen Brandywine is indirectly owned by Alpha Generation Super Holdings, LLC ("Alpha Gen") which is owned by a fund controlled by ArcLight Capital Holdings, LLC ("ArcLight") and a subsidiary of Abu Dhabi Investment Authority ("ADIA"). Canada Pension Plan Investment Board

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1 18 CFR § 385.211 (2025).

2 Capitalized terms used herein and not otherwise defined have the meaning used in the PJM Open Access Transmission Tariff ("OATT"), the PJM Operating Agreement ("OA") or the PJM Reliability Assurance Agreement ("RAA").

("CPPIB") has requested FERC authorization to acquire greater than 10 percent ownership in Alpha Gen.[3] Applicants do not specify the exact share of ownership in Alpha Gen between ArcLight, ADIA, and CPPIB. Alpha Gen is controlled by ArcLight as its general partner.

KMC Thermo owns and operates a 230 MW combined cycle generating facility in Prince George's County, Maryland ("Brandywine"). KMC Thermo is directly owned by Seller. Seller is an indirect subsidiary of Onward Energy Holdings, LLC ("Onward"), and an affiliate of J.P. Morgan Investment Management Inc. ("J.P. Morgan"). J.P Morgan owns 96 percent of Onward.[4]

Table 1 shows the existing generation in PJM for ArcLight, and other related entities, with and without acquisitions that are pending FERC authorization. ArcLight owns and operates through subsidiaries of Alpha Gen 5,661.0 MW of generation in PJM, and through subsidiaries and affiliates of funds controlled by ArcLight, Alpha Gen is affiliated with generation owners of another 1,690.1 MW of generation. ArcLight has requested FERC authorization to acquire control of an additional 1,905.0 MW of generation in PJM.[5] In total, through ArcLight and Alpha Gen's own subsidiaries, ArcLight owns and controls 7,351.1 MW of generation in PJM. ArcLight's ownership will increase to 9,256.1 MW of generation in PJM if the Commission approves the identified pending transactions. The 9,256.1 MW is the baseline ArcLight ownership used on the IMM's market power analysis.

Through ADIA, Alpha Gen is also affiliated with 84.0 MW of generation in PJM. Through the pending acquisition of greater than 10 percent of Alpha Gen by a subsidiary of CPPIB, Alpha Gen may become affiliated with additional generation owners, totaling 350.5

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[3] *See* Joint Application for Authorization Under Section 203 of the Federal Power Act of Alpha Generation, LLC, et al. under EC26-21.

[4] IIF US Holding 2 LP ("IIF") owns 96 percent of Onward. The Commission determined that IIF is an affiliate of J.P. Morgan. *See* Order on Notice of Change in Status etc. re Mankato Energy Center, LLC et al. under ER20-2705 et al (on September 21, 2023).

[5] *See* Joint Application for Authorization Under Section 203 of the Federal Power Act of Carroll County Energy LLC, et al. under EC25-123.

MW. In total, Alpha Gen is currently affiliated with generation owners with 7,435.1 MW of generation in PJM and may be affiliated with up to 9,340.1 MW of generation in PJM through other transactions pending before the Commission. The additional MW from ADIA and CPPIB are not included in ArcLight's generation portfolio in the IMM's market power analysis.

Table 1 also shows the generation in PJM that ArcLight would own after the Transaction, and with and without acquisitions that are pending FERC authorization.

Table 1 Pre and Post Transaction generation in PJM for entities related to the Transaction, including acquisitions that are pending FERC authorization

	Pre Transaction		Post Transaction	
	Total Generation	Total Generation Including Carroll County and South Field	Total Generation	Total Generation Including Carroll County and South Field
Alpha Gen	5,661.0	5,661.0	5,891.0	5,891.0
Non Alpha Gen ArcLight	1,690.1	3,595.1	1,690.1	3,595.1
Non Alpha Gen ADIA	84.0	84.0	84.0	84.0
Non Alpha Gen CPPIB	350.5	350.5	350.5	350.5
Alpha Gen Affiliations (Alpha Gen + ArcLight + ADIA)	7,435.1	9,340.1	7,665.1	9,570.1
Alpha Gen Affiliations Including Pending Acquisition by CPPIB (Alpha Gen + ArcLight + ADIA + CPPIB)	7,785.6	9,690.6	8,015.6	9,920.6
ArcLight Affiliations (Alpha Gen + ArcLight)	7,351.1	9,256.1	7,581.1	9,486.1
ADIA Affiliations (Alpha Gen + ADIA)	5,745.0	5,745.0	5,975.0	5,975.0
CPPIB Affiliations Including Pending Acquistion of Alpha Gen (Alpha Gen + CPPIB)	6,011.5	6,011.5	6,241.5	6,241.5

The Market Monitor provides its analysis of the proposed Transaction in a report ("Market Monitor Report"). The Market Monitor files a public version of the Market Monitor Report with redactions as an Attachment, and files separately a nonpublic confidential version.

The Applicants have not asserted that this Transaction enhances competition or market efficiency. The Applicants have not explained why the Transaction is consistent with the public interest.[6]

Consideration of the impact of the Transaction on market power is critical to determine whether the Transaction is in the public interest, given that competitive markets are relied upon to ensure just and reasonable rates in PJM.[7] The Market Monitor's market power analysis shows that the Transaction would result in a decrease in ArcLight's energy and capacity market pivotal supplier scores, meaning an increase in structural market power for ArcLight. ArcLight currently has market power in the PJM Capacity Market and in the PJM energy market and the Transaction would increase that market power. The Market Monitor's market power analysis shows that the Transaction would result in an increase in PJM energy and capacity market HHIs. The fact that the Transaction does not fail the Commission's HHI thresholds in the Applicants' Delivered Price Test ("DPT") analysis does not ensure that the Transaction does not increase market power.

The Commission does not require a pivotal supplier analysis in the initial evidentiary support in applications for approval of transactions that pass the Commission's market power screens.[8] The Commission has found that the Market Monitor's analyses and findings of market power do not "cast doubt on the results of Applicants' DPT."[9] The Commission has relied on the DPT alone in determining whether a transaction is in the public interest. The Market Monitor believes that it is important for the Commission to consider the

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6 *See* 16 U.S.C. § 824b ("the Commission shall approve the proposed disposition, consolidation, acquisition, or change in control, if it finds that the proposed transaction will be consistent with the public interest").

7 *See* Shell Energy N. Am. (US), L.P. v. FERC, 107 F.4th 981, 986–987 (DC Cir. 2024); Public Citizen, Inc. v. FERC, 7 F.4th 1177, 1193–1195 (2021).

8 192 FERC ¶ 61,074 at P 130.

9 193 FERC ¶ 61,124 (2025) at P 65.

implications of ownership consolidation in the PJM market, as defined by the Commission approved PJM tariff. The Market Monitor has access to the market data required to perform the pivotal supplier analyses. The pivotal supplier analysis shows that Applicants have market power as defined by the Commission approved PJM tariff, and that this market power would increase as a result of the Transaction. There are gaps in the market power mitigation rules for the PJM energy, capacity, and ancillary services markets. The existence of pivotal suppliers in the PJM markets, along with insufficient market power mitigation, means that all increases in structural market power undermine the competitiveness of the PJM markets. The Market Monitor does oppose the proposed Transaction without the condition that any order approving the Transaction require specific behavioral commitments by the resulting entity, none of which creates a burden on applicants because all are designed to help ensure competitive behavior. Absent the acceptance of the identified conditions, the Market Monitor opposes the Transaction because it would increase structural market power without any mitigating factors and therefore would not be consistent with the public interest. The Market Monitor recommends that the Transaction be rejected and that ArcLight be required to resubmit its 203 application including behavioral commitments. The Transaction as filed does not provide assurance that market power will not be exercised, and, as filed, it is not consistent with the public interest.[10]

The broader question for the Commission's merger policy is whether any transactions that result in incremental increases in market power in the PJM Capacity Market, or any PJM market, without clear behavioral conditions should be approved as consistent with the public interest given the fact that the PJM Capacity Market is already characterized by endemic market power.[11]

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[10] *See* 16 U.S.C. § 824b.

[11] *See* 16 U.S.C. § 824b.

I. COMMENTS

A. The Transaction Increases Structural Market Power.

ArcLight's existing assets in PJM consist of 7,351 MW of generation, including coal fired, gas fired, oil fired, and wind resources in the AEP, APS, ATSI, DEOK, Penelec, Pepco, PPL and PSEG Zones of PJM. Including the pending acquisition of Carroll County and South Field,[12] ArcLight's existing assets in PJM will consist of 9,256.1 MW of generation, including coal fired, gas fired, oil fired, and wind resources in the AEP, APS, ATSI, DEOK, Penelec, Pepco, PPL and PSEG Zones of PJM. The Market Monitor's analysis includes the pending transactions as the pretransaction case.

The Transaction would increase market power in the PJM markets. ArcLight has local market power created by binding constraints in the PJM energy market before the Transaction, and the Transaction would increase ArcLight's local market power with respect to multiple transmission constraints. ArcLight is a pivotal supplier in the aggregate energy market before the Transaction, and the Transaction would increase ArcLight's market power in the aggregate energy market. ArcLight has market power in the PJM Capacity Market before the transaction, and the Transaction would increase ArcLight's market power in the capacity market. The market power report discusses specific local areas in the energy and capacity market where market power would be increased.

The current need for new generating capacity in PJM is an opportunity for increased competition and new entry. Instead, ownership of generation is being consolidated in a small group of owners. ArcLight has been one of the largest owners of generation in PJM since its 2017 joint acquisition of resources from AEP with Blackstone, creating the subsidiary called

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[12] *See Joint Application for Authorization Under Section 203 of the Federal Power Act of Carrol County Energy LLC, et al.,* FERC Docket No. EC25-123.

Lightstone.[13] ArcLight entered the top five owners of PJM capacity in 2022, entering the 2022/2023 planning year at 15,146.9 MW, and becoming the second largest owner of capacity in PJM after Constellation by the end of 2022.[14] After several resource sales, including the sale of Lightstone, ArcLight owned 6,658.4 MW in September 2025, ranking as the 7th largest owner in PJM. In 2025, ArcLight filed a series of acquisition transactions that, if approved, would increase its ownership in PJM to 9,486.1 MW including Brandywine, placing it back in the top 5 owners.[15] Other owners in the top five also have recent and/or pending transactions: Constellation, Vistra, and Talen.[16] The market power created by this ownership consolidation creates the potential for additional upward pressure on PJM energy and capacity prices, at a time when data center load growth is already resulting in noncompetitive prices.[17] Price increases that result from market power are inefficient, unjust and unreasonable. The Commission's consideration of this trend in consolidation in each and every 203 application review is necessary to ensure that the transactions are consistent with the public interest.

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13 *See* FERC Docket No. EC17-11.

14 *See* Monitoring Analytics, L.L.C., *2022 State of the Market Report for PJM*, Vol. 2, Section 5: Capacity, at Table 5-4.

15 *See* FERC Docket Nos. EC25-30, EC25-106, EC25-123, EC25-151.

16 *See* FERC Docket Nos. EC25-43, EC25-97, EC25-121, EC25-125. For expected transactions, *see* Vistra Adds to its Industry-Leading Generation Portfolio with Acquisition of Cogentrix <*https://investor.vistracorp.com/2026-01-05-Vistra-Adds-to-its-Industry-Leading-Generation-Portfolio-with-Acquisition-of-Cogentrix*>. Also *see* Talen Energy Continues Portfolio Expansion with Acquisition of Additional High-Quality PJM Natural Gas Assets from Energy Capital Partners <*https://ir.talenenergy.com/news-releases/news-release-details/talen-energy-continues-portfolio-expansion-acquisition*>.

17 *See* Monitoring Analytics, LLC, *Analysis of the 2027/2028 RPM Base Residual Auction–Part A*, (January 5, 2026) <*https://www.monitoringanalytics.com/reports/Reports/2026/IMM_Analysis_of_the_20272028_RPM_Base_Residual_Auction_Part_A_20260105.pdf*>.

B. HHI Is Not a Definitive Test of Market Power.

The Commission's review of transactions under Section 203 of the Federal Power Act relies in part on the Herfindahl-Hirschman Index (HHI) as a measure of the concentration of ownership in a market. The HHI is the sum of the squared market shares of all market participants.

Notwithstanding whether the HHI level exceeds the Commission defined levels for concern, a supplier may have the ability to raise market prices above the competitive level. If reliably meeting the PJM system load requires energy from a single supplier, that supplier is singly pivotal and has monopoly power in the aggregate energy market. If a small number of suppliers are jointly required to reliably meet the PJM system load, those suppliers are jointly pivotal and have oligopoly power. The number of pivotal suppliers in the energy market is a more precise measure of structural market power than the HHI. The same is true in the capacity market. If the capacity of a single supplier is needed to clear the capacity market, that supplier is pivotal. The HHI is not a definitive measure of structural market power. The capacity market illustrates the mismatch between the HHI metric and the pivotal supplier metric. The identification of jointly pivotal suppliers as a source of market power does not require an assumption that the suppliers collude. There are multiple mechanisms that would permit the exercise of market power when there are limited suppliers providing relief to a constraint. FERC's definition of highly concentrated markets, based on an HHI greater than 1800, includes between five and six owners with equal market shares while the three pivotal supplier test evaluates whether three suppliers are jointly required in order to clear the market.

The current market power mitigation rules for the PJM energy market rely on the assumption that the aggregate market includes sufficient competing sellers to ensure competitive market outcomes. With sufficient competition, any attempt to economically or physically withhold generation would not result in higher market prices, because another supplier would replace the generation at a similar price. This assumption requires that the

total demand for energy can be met without the supply from any individual supplier or without the supply from a small group of suppliers. This assumption is not correct when there are pivotal suppliers in the energy market. In the first nine months of 2025, there were pivotal suppliers in the aggregate energy market on 94.1 percent of days.[18]

The Market Monitor's market power analysis shows an increase in the capacity market and energy market HHIs based on the Transaction. The Market Monitor's analysis shows that ArcLight is a pivotal supplier in the PJM Capacity Market and in the PJM Energy Market. Regardless of the market power metric, the results indicate that ArcLight's ability and incentive to exercise market power would increase due to the Transaction.

The overall context of this proposed Transaction is also important. PJM's Capacity Market is extremely tight and was actually short in the 2026/2027 and 2027/2028 auctions. The capacity market is likely to remain extremely tight for the foreseeable future, resulting in prices that are extremely high by PJM capacity market historical standards, which increases the potential impact of market power.[19] When there is endemic market power, effective mitigation is essential to ensure competitive pricing. It is consistent with the public interest to condition the approval of transactions that increase market power on behavioral conditions that address market power.

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[18] Monitoring Analytics, L.L.C., *2025 Quarterly State of the Market Report for PJM: January through September*, Section 3: Energy Market at 225—226.

[19] *See* Monitoring Analytics, L.L.C., *Analysis of the 2025/2026 Base Residual Auction*, Parts A through H,<https://www.monitoringanalytics.com/reports/Reports/2024.shtml>, the *Analysis of the 2026/2027 RPM Base Residual Auction - Part A* (October 1, 2025). <https://www.monitoringanalytics.com/reports/Reports/2025/IMM_Analysis_of_the_20262027_RPM_Base_Residual_Auction_Part_A_20251001.pdf> and the *Analysis of the 2027/2028 RPM Base Residual Auction – Part A* (January 5, 2026). <https://www.monitoringanalytics.com/reports/Reports/2026/IMM_Analysis_of_the_20272028_RPM_Base_Residual_Auction_Part_A_20260105.pdf>, <https://www.monitoringanalytics.com/reports/Reports/2025.shtml> and <https://www.monitoringanalytics.com/reports/Reports/2026.shtml> .

C. Behavioral Recommendations Would Address the Exercise of Market Power Due to the Transaction.

Market power mitigation rules in PJM are not sufficient to address all actual and potential exercises of market power. As a result, the Commission cannot ensure that the Transaction would have no adverse effects on competition in the PJM markets.

In order to ensure that market power is not exercised as a result of the Transaction, the Market Monitor recommends the following behavioral conditions as part of approval:

1. A commitment, for all resources owned or controlled by ArcLight, to develop cost-based offers using a fuel cost policy that passes the Market Monitor's review using the Market Monitor's defined criteria, and to limit price-based offers to a markup no greater than $1 per MWh, would prevent the exercise of aggregate market power in the energy market.
2. A commitment, for all resources owned or controlled by ArcLight, to refrain from using crossing price-based and cost-based energy market offer curves (markup switching) would ensure that a price-based offer curve with a high markup would not be chosen by PJM's least cost offer determination when a resource has local market power as determined by the TPS test.[20]
3. A commitment, for all resources owned or controlled by ArcLight, to submit only operating parameters based on physical limits, as defined in the PJM tariff, in the energy market would ensure that ArcLight cannot use market power to operate inflexibly during weather alerts, emergencies, and periods when its units fail the TPS test.

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[20] This restriction is necessary for effective market power mitigation until PJM implements its Commission approved solution in Docket ER24-2905. There is currently no deadline for implementation because PJM is waiting for a long delayed software fix for other issues. There is no reason for PJM to wait to implement this solution.

4. A commitment, for all resources owned or controlled by ArcLight, to propose retirement only if the unit is expected to be uneconomic, defined to be when projected avoidable costs exceed projected net revenues, after accounting for identified risks.
5. A commitment, for all supply owned or controlled by ArcLight, to use a market seller offer cap equal to its net Avoidable Cost Rate (ACR), including Capacity Performance Quantifiable Risk ("CPQR") in gross ACR prior to subtracting net revenues would ensure competitive capacity market offers. The net ACR is the marginal cost of capacity and is the competitive offer for a capacity resource.
6. A commitment, for all supply owned or controlled by ArcLight, to offer the full ICAP MW equivalent of all their cleared UCAP capacity MW in the day-ahead and real-time energy markets every day.
7. A commitment to refrain from removing resources from the PJM market to serve co-located load behind the generator's meter.

II. CONCLUSION

The Market Monitor respectfully requests that the Commission afford due consideration to this pleading as the Commission resolves the issues raised in this proceeding.

Respectfully submitted,

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ATTACHMENT
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Monitoring Analytics

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Market Power Analysis: ArcLight/KMC Thermo Transaction

The Independent Market Monitor for PJM

January 26, 2026

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Introduction

This report was prepared by PJM's Independent Market Monitor (IMM). The report provides an assessment of the impact of ArcLight's proposed purchase of the 230 MW Brandywine generation facility from Onward on the structure of the PJM energy and capacity markets and its implications for local and aggregate market power in both markets. In conducting this analysis, the IMM used market data including market shares and the results from the PJM test for structural market power, the three pivotal supplier test (TPS). The IMM used market data to define the relevant markets and to examine the effects of the proposed acquisitions on those markets.

Brandywine is a 230 MW natural gas fired combined cycle in the Pepco Zone of PJM, owned and operated by KMC Thermo. ArcLight's assets in PJM consist of 7,351.1 MW of generation, including coal fired, gas fired, oil fired, and wind resources in the AEP, APS, ATSI, DEOK, Penelec, Pepco, PPL and PSEG Zones. Including the pending acquisition of Carroll County and South Field,[1] ArcLight's assets in PJM consist of 9,256.1 MW of generation, including coal fired, gas fired, oil fired, and wind resources in the AEP, APS, ATSI, DEOK, Penelec, Pepco, PPL and PSEG Zones. Table 1 shows the generation asset included in the transaction, the control zone where it is located, the summer rating, the fuel type and the technology type. Table 2 shows ArcLight's generation assets in PJM before and after the Transaction and identifies ArcLight's Alpha Gen Subsidiaries and ArcLight's other subsidiaries and affiliates. Table 2 includes totals for existing ArcLight assets and for ArcLight assets including the pending acquisition of Carroll County and South Field.

Table 1 Transaction Assets

Unit Name	Control Zone	Summer Rating (MW)	Fuel	Technology
Brandywine	Pepco	230	Natural Gas	CC

[1] *See Joint Application for Authorization Under Section 203 of the Federal Power Act of Carrol County Energy LLC, et al.*, FERC Docket No. EC25-123.

Table 2 ArcLight assets pre and post Transaction for existing and pending assets

	ArcLight Asset	Pre Transaction Generation (MW)	Post Transaction Generation (MW)
Existing Assets	Alpha Gen Subsidiaries	5,661.0	5,891.0
	Other Subsidiaries/Affiliates	1,690.1	1,690.1
	ArcLight Total	7,351.1	7,581.1
Assets Including Pending Acquisitons	Alpha Gen Subsidiaries	5,661.0	5,891.0
	Other Subsidiaries/Affiliates	3,595.1	3,595.1
	ArcLight Total	9,256.1	9,486.1

The ArcLight acquisition of Brandywine would increase ArcLight's market power in the aggregate energy market and local energy markets as measured by ArcLight's pre and postacquisition market share and pivotal supplier test scores. The ArcLight acquisition of Brandywine would increase market power in the aggregate energy market as measured by the increase in the hourly average HHI and the increase in frequency with which all the top 10 pivotal suppliers fail the three pivotal supplier test. The ArcLight acquisition of Brandywine would increase ArcLight's market power in the capacity market as measured by ArcLight's pivotal supplier score and would increase concentration in the capacity market as measured by HHI. ArcLight currently has market power in the PJM energy and capacity markets and adding Brandywine would increase that market power.

The IMM recommends behavioral remedies that would address flaws in PJM's energy local market power mitigation rules and help ensure that ArcLight cannot exercise market power as a result of the Brandywine acquisition. The IMM's behavioral remedies would also protect against potential exercises of market power in the capacity market and in the aggregate energy market.

Sufficiency of PJM Market Power Mitigation

In Section 203 applications and market based rate applications, the Commission relies on the sufficiency of the market monitoring and market power mitigation provisions in the RTO's tariff to mitigate local market power within the RTO region.[2] If the market monitoring and market power mitigation provisions in the RTO's tariff are insufficient, detailed analysis of submarkets created by constraints within the RTO is necessary and any market power created or enhanced by the merger or acquisition requires explicit mitigation to ensure market power is not exercised.[3]

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2 *See Market-Based Rates for Wholesale Sales of Electric Energy, Capacity and Ancillary Services by Public Utilities*, Order No. 697, FERC Stats. & Regs. ¶ 31,252 at P 241 (2007), *order on reh'g*, Order No. 697-A, 123 FERC ¶ 61,055 (2008).

3 Order No. 697-A at P 111.

As the PJM markets have evolved, the IMM has identified significant flaws in the market power mitigation provisions of the PJM tariff. Some flaws permit market participants to evade the explicit intent of the PJM market power mitigation rules. Other flaws are gaps in the PJM market power mitigation rules. The overstated Market Seller Offer Cap (MSOC) in the capacity market permitted market power to be exercised for a period.[4] The Commission issued an order in Docket EL19-47 to remedy the market power mitigation issues in the capacity market.[5] PJM again filed to weaken the market power mitigation rules and FERC accepted the changes by permitting standalone CPQR offers without net revenue offsets and permitting segmented offer curves.[6] Given that the Commission has approved these rules, the IMM will challenge specific noncompetitive offers if and when they occur.

On October 25, 2024, the Commission ordered changes to PJM's market power mitigation process in the energy market that would remedy the flaws identified by the IMM, but PJM has failed to set an implementation date and has no specific deadline for doing so. The IMM recommends immediate implementation of the new rules. The IMM's recommended behavioral remedies for local market power in the energy market in this report resolve the same issue as the rules approved by FERC that do not have an implementation date. But even correction of the flaws in the application of local market power mitigation rules would not address aggregate market power in the energy market, which occurs when a limited number of suppliers are pivotal for meeting daily demand, creating the incentive to exercise market power. PJM has no market power mitigation in place for aggregate market power in the energy market.

Summary

The Transaction would increase market power in the PJM markets. Both companies have local market power created by binding constraints in the PJM energy market before the transaction. ArcLight has aggregate market power in the energy and capacity markets before and after the transaction. The Transaction would increase ArcLight's market power. Onward would have no capacity resources in PJM following the transaction. The sale of Brandywine to ArcLight would increase local market power for multiple

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4 *See* "Analysis of the 2022/2023 RPM Base Residual Auction,"<http://www.monitoringanalytics.com/reports/Reports/2022/IMM_Analysis_of_the_20222023_RPM_BRA_20220222.pdf> (February 22, 2022). "Analysis of the 2022/2023 RPM Base Residual Auction - Revised," <http://www.monitoringanalytics.com/reports/Reports/2023/IMM_Analysis_of_the_20222023_RPM_BRA_Revised_20230113.pdf> (January 13, 2023).

5 *See Independent Market Monitor for PJM v. PJM*, 176 FERC ¶61,137 (2021), *reh'g denied*, 177 FERC ¶ 62,066 (2021), *further order on reh'g*, 178 FERC ¶61,121 (2022), *aff'd*, ArcLight Corp. et al. v. FERC, Case No. 21-1214 et al. (D.C. Cir August 15, 2023), *cert. denied*.

6 *See PJM Interconnection, L.L.C.*, 190 FERC ¶ 61,117 (2025); *reh'g denied*, 191 FERC ¶ 61,221 (2025).

constraints. The transaction would increase energy and capacity market concentration at the aggregate level. {BEGIN CUI/PRIV} REDACTED. {END CUI/PRIV}

The IMM analyzed the effect of the ArcLight purchase of Brandywine on market power in the PJM aggregate energy market and local energy markets using data from January 2024 through December 2025. The IMM analyzed the effects of the ArcLight purchase of Brandywine on market power in the PJM Capacity Market using auction data for the 2025/2026, 2026/2027, and 2027/2028 Base Residual Auctions. The transaction would increase ArcLight's market power in all these markets.

The IMM does not oppose the proposed transaction, with the condition that any order approving the transaction require specific behavioral commitments by ArcLight, none of which creates a burden on applicants because all are designed to help ensure competitive behavior. Absent the acceptance of the identified conditions, the IMM opposes the transaction.

Aggregate Energy Market

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- There are no rules in the PJM tariff to address aggregate market power in the energy market.

Local Energy Markets

- For the following constraints, with the acquisition of Brandywine, ArcLight would have an increase in the number of hours in which they failed the TPS test in the real-time energy market from January 2024 through December 2025.
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- There are identified issues with PJM's market power mitigation rules for local market power in the energy market that allow suppliers to exercise market power. The IMM's behavioral recommendations address these issues.

Capacity Market

- The IMM analyzed the 2025/2026, 2026/2027, and 2027/2028 BRA results to measure the effect of the acquisition on the PJM Capacity Market.
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- The IMM's behavioral recommendations address the issues of competitive offers in the capacity market.

Behavioral Recommendations

The IMM recommends that behavioral rules apply to ArcLight's energy and capacity market offers to help ensure that market power mitigation is effective in preventing the exercise of market power. None of the commitments creates a burden on the company because all are designed to ensure competitive behavior.

Summary of Behavioral Recommendations

1. Develop cost-based energy market offers using a fuel cost policy that passes the IMM's review and limit price-based offers to a markup no greater than $1 per MWh.
2. Refrain from using crossing price-based and cost-based energy market offer curves (markup switching).
3. Submit only operating parameters based on physical limits, as defined in the PJM tariff, in the energy market.
4. Propose to retire unit only if the unit is expected to be uneconomic, defined to be when projected avoidable costs exceed projected net revenues, after accounting for identified risks.
5. Submit capacity market offers that do not exceed the net avoidable cost rate, including the CPQR component of avoidable costs.
6. Offer the full ICAP MW equivalent of all cleared UCAP capacity MW in the day-ahead and real-time energy markets every day.
7. Refrain from removing resources from the PJM market to serve co-located load behind the generator's meter.

Cost-based Energy Market Offers

As a result of the transaction, ArcLight would have market power more frequently in the aggregate energy market. The PJM energy market has no market power mitigation rules for aggregate market power. To ensure competitive energy market offers, the IMM recommends that ArcLight always develop cost-based offers using a fuel cost policy that passes the IMM's review using the IMM's defined criteria, and limit price-based offers to a markup no greater than $1 per MWh.[7]

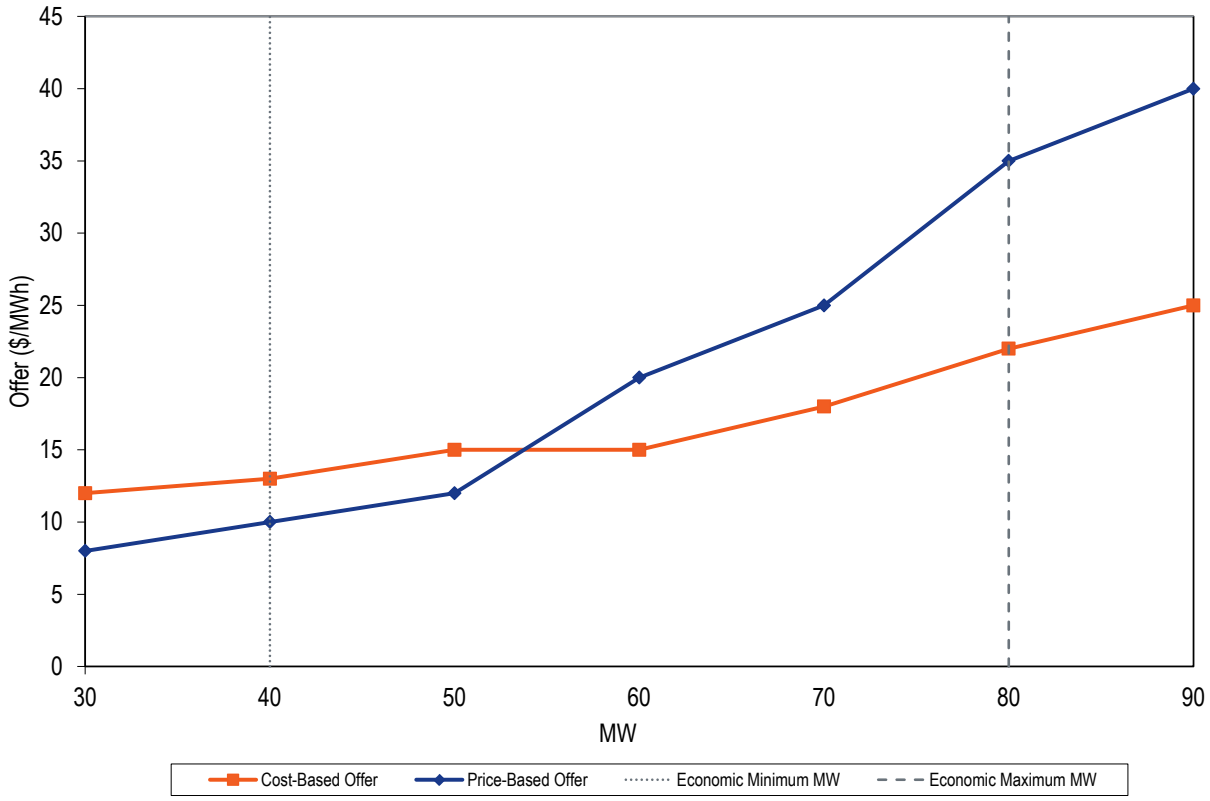
No Crossing Curves (No Mark Up Switching)

Given the ability to submit offer curves with different markups at different output levels in the price-based offer, suppliers with market power can evade mitigation by using a low

[7] The IMM provides a template for Fuel Cost Policies on its website, <https://www.monitoringanalytics.com/tools/tools.shtml>. As of June 30, 2025, 92 percent of all generating units in the PJM Energy Market had a Fuel Cost Policy that passed the IMM review. See Monitoring Analytics, L.L.C., *2025 Quarterly State of the Market Report for PJM: January through June*, Section 3: Energy Market at 266.

markup at low output levels and a high markup at higher output levels. Even when resources fail the TPS test, PJM frequently selects the price-based offer with the high markup based on its negative markup at low output levels. This occurs because PJM chooses between the price-based offer and the cost-based offer considering only the offers at the economic minimum output level in the real-time market and only the offers up to the projected dispatch point in the day-ahead market.[8] Figure 1 shows an example of offers from a unit that has a negative markup at the economic minimum MW level and a positive markup at the economic maximum MW level. The result would be that a unit that failed the TPS test would be committed on its price-based offer, even though the price-based offer is higher than the cost-based offer at higher output levels and includes positive markups, inconsistent with the explicit goal of local market power mitigation. Frequently, resources with crossing curves committed on the price-based offer are dispatched into the high markup range of the offer curve, allowing the exercise of market power.

Figure 1 Offers with varying markups at different MW output levels



[8] On October 25, 2024, in Docket ER24-2905, the Commission approved a new method for selecting among price and cost schedule that would resolve this issue, but PJM has not set an implementation date. The behavioral commitment is needed until implementation.

Physical Operating Parameters

All resources in PJM are required to submit at least one cost-based offer. Cost-based offers, for a defined set of technologies, must include defined unit specific parameters, termed parameter limited schedules that are based on the physical or contractual capabilities of the units and are subject to review by PJM and the IMM.

All resources that choose to make price-based offers are required to make available at least one price-based parameter limited offer with the same parameters as the cost-based offer (referred to as price-based PLS). For resources that are not capacity resources, the price-based parameter limited schedule is used by PJM for committing generation resources when a maximum emergency generation alert is declared. For capacity resources, the price-based parameter limited schedule is used by PJM for committing generation resources when hot weather alerts and cold weather alerts are declared.[9]

The current implementation is not consistent with the goal of having parameter limited schedules, which is to prevent the use of inflexible operating parameters to exercise market power. Instead of ensuring that parameter limits apply, PJM chooses the lower of the price-based schedule and the price-based parameter limited schedule during hot and cold weather alerts. [10] Instead of ensuring that parameter limits apply, PJM chooses the lower of the price-based schedule and the cost-based parameter limited schedule when a resource fails the TPS test. This occurs because PJM chooses between the price-based offer and the cost-based offer considering only the offers at the economic minimum output level in the real-time market and only the offers up to the projected dispatch point in the day-ahead market, and does not consider all of the physical operating parameters. The result is that PJM frequently selects price-based offer schedules with inflexible parameters for resources that have market power, undermining the purpose of parameter mitigation which is to require flexible parameters for resources with market power in order to limit the exercise of market power based on the parameters.

Market Seller Offer Cap

For capacity market offers, ArcLight should be required to use a market seller offer cap equal to its net Avoidable Cost Rate (ACR), including CPQR in gross ACR prior to subtracting net revenues.

The net ACR is the marginal cost of capacity and is the competitive offer for a capacity resource.

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9 *See* OA Schedule 1 § 6.6.

10 On October 25, 2024, in Docket ER24-2905, the Commission approved a new method for selecting among price and cost schedule that would resolve this issue, but PJM has not set an implementation date. The behavioral commitment is needed until implementation.

Generation Retirement

The PJM Capacity Market has become extremely tight in recent auctions and was actually short in the 2026/2027 and 2027/2028 auctions, and any generation retirements can have a significant effect on the market. Given the increase in ArcLight's market power in the capacity market due to the transaction, the IMM recommends that, ArcLight retire units only if analysis shows that the resource is expected to be uneconomic, defined to mean that projected avoidable costs exceed projected net revenues, after accounting for identified risks. The retirement of economic units can be a mechanism for the exercise of market power.

Energy Market Must Offer Requirement

Generation capacity resources are required to offer their full ICAP MW into the day-ahead and real-time energy markets, unless the unit is on an outage for the difference.[11] The full installed capacity (ICAP) is the ICAP of the resources that cleared in the capacity market. This is known as the ICAP must offer requirement. PJM's current enforcement of the ICAP must offer requirement is inadequate. The problem is a complex combination of generator behavior, and inadequate, inconsistent and unsynchronized reporting tools. Compliance is subject to mistakes and susceptible to manipulation. ArcLight should be required to offer the full ICAP MW equivalent of all their cleared UCAP capacity MW in the day-ahead and real-time energy markets every day, unless the unit is on an outage for the difference.

Co-located Load

Bilateral co-location contracts have the same effect on PJM markets as a retirement, in addition to exacerbating effects associated with back up arrangements that require other customers to pay for the backup and the shifting of the costs of transmission and ancillary services to other customers. ArcLight should agree not to pursue any co-location arrangements where the load is behind the generator's meter.

Methods of Analysis

In analyzing whether a proposed merger or acquisition is consistent with the public interest, the Commission considers the "effect of the transaction on competition, rates, and regulation of the applicant by the Commission and state commissions with jurisdiction over any party to the transaction."[12] In this report, the IMM focuses on the first factor, the effect on competition, measured by the impact on the structure of relevant markets based on actual market data. The IMM evaluates the impact of the merger or acquisition using pivotal supplier analysis and concentration thresholds.

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[11] OA Schedule 1 § 1.10.1A(d).

[12] 18 CFR § 33.2(g).

Any analysis of market structure depends on an accurate definition of the relevant markets. Market definitions depend on properly identifying and evaluating potential substitutes for a given product. Within organized markets data are available, and should be used, to define markets based on how the units are evaluated and dispatched to meet demand, based on network relationships between resources and load, relative costs, availability and operational parameters. Such an approach provides definitions of the relevant markets based on actual operational data related to the participants and the markets in which they operate. Within organized markets, relevant market definitions can change significantly over time as a result of changes in fuel costs, generation mix, load and transmission system expansion. Market definitions are dynamic. No market definition can be accurate for the long term and market power protections should recognize that fact rather than being linked closely to a single definition of relevant markets.

In the IMM analysis, the definition of the relevant local markets for the time period of the analysis is based on the actual substitutability among available, relevant resources which in turn is based on the physical facts of the system and how the PJM markets defined the substitutability among available resources in the relevant markets over the analysis period. Rather than limit the analysis to a predefined range of load and price levels, the IMM has analyzed the actual relevant markets defined by constraints in the real-time look ahead tool used by PJM to identify structural market power, known as Intermediate Term Security Constrained Economic Dispatch (IT SCED). The relevant PJM submarkets defined in this analysis are those local energy markets created by transmission constraints within the broader PJM market that occurred for two hundred or more hours from January 2024 through December 2025. The relevant capacity markets in this analysis are those that resulted from the actual operation of the markets for the 2025/2026, 2026/2027, and 2027/2028 Delivery Years, the last three Base Residual Auctions run by PJM.

The IMM analysis of the relevant markets reflects the information available based on the actual operation of the PJM wholesale power markets, rather than static market definitions that ignore dynamic changes in constraints. For different resources and different time periods, market conditions would change, and the relevant identified local markets would change. The information used to prepare the analysis included in this report is highly confidential and market sensitive as it relates to specific market participants.[13]

While analysis of actual markets is limited by available data and actual market dynamics, the nature of PJM markets means that those market dynamics will change, in unpredictable ways. Consideration of the impacts of mergers and acquisitions must also consider changing market structures. Consolidating ownership of assets in smaller numbers of owners will always increase structural market power. Structural remedies

[13] *See* OATT Attachment M–Appendix § I.

based on the recent history of market structures cannot remedy that fact. If further concentration of ownership is accepted, strong behavioral remedies are the only way to help mitigate the impacts of increased concentration on competitive outcomes. The Commission's merger policy does not address longer term trends in concentration or define a maximum level of concentration that is consistent with competitive outcomes or the standard for defining such a maximum level of concentration in reviewing mergers.

Merger Standards

For the evaluation of the impact of a merger or acquisition on competition, FERC adopted the 1992 Horizontal Merger Guidelines ("1992 Guidelines") as the analytical framework as described in the Competitive Analysis Screen relied on by the Commission.[14] The 1992 Guidelines predate the creation of the PJM wholesale power market in 1999.[15] The Commission reevaluated and reconfirmed its Merger Guidelines in 2012.

The Commission reserves the opportunity to consider alternative approaches for analyzing the impact of proposed mergers and acquisitions, including pivotal supplier analyses similar to the analysis included in this report, when evaluating proposed mergers and acquisitions in PJM.[16]

The 1992 Guidelines presented the enforcement policy of the Department of Justice and the Federal Trade Commission concerning horizontal mergers subject to section 7 of the Clayton Act, Section 1 of the Sherman Act, and Section 5 of the Federal Trade Commission Act. As noted in the 1992 Guidelines, "[t]he unifying theme of the Guidelines is that

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[14] *See Order Adopting Guidelines for the Submission of Documents in Electronic Form*, Order No. 642, 93 FERC ¶ 61,177 *mimeo* at 4–*5* (November 15, 2000) ("Order No. 642"); U.S. Dept. of Justice & Federal Trade Commission, "Horizontal Merger Guidelines" (1992, revised April 8, 1997). DOJ and FTC modified their guidelines in 2010, increasing their HHI and market share thresholds and expanding the criteria used to define the relevant market. U.S. Dept. of Justice & Federal Trade Commission, "Horizontal Merger Guidelines" (August 19, 2010). FERC considered whether to revise its policies to follow the DOJ and FTC 2010 modifications, but decided, after notice and inquiry, to retain the 1992 Guidelines. *See Analysis of Horizontal Market Power*, 138 FERC ¶61,109 (2012).

[15] *See Pennsylvania-New Jersey-Maryland Interconnection*, 81 FERC¶61,257 (1997).

[16] *See Id*. at P 38 ("We reiterate, however, that the Commission may consider arguments that a proposed transaction raises competitive concerns that have not been captured by the Competitive Analysis Screen. Likewise, while applicants must continue to provide a Competitive Analysis Screen, we will also consider any alternative methods or factors, if adequately supported."); *Exelon Corporation, NRG Energy Group, Inc.*, 138 FERC ¶ 61,167 (2012).

mergers should not be permitted to create or enhance market power or facilitate its exercise."[17]

The Commissions' Competitive Analysis Screen, based on the 1992 Guidelines, uses market concentration, measured by the HHI, as a basic metric of the structural competitiveness of a market. The 1992 Guidelines define three basic levels of market concentration while recognizing that "[o]ther things being equal, cases falling just above and just below a threshold present comparable competitive issues."[18] A market with an HHI of less than 1000 is considered to be unconcentrated. Mergers and acquisitions resulting in an HHI level less than 1000 are not considered to have adverse competitive effects. A market with an HHI between 1000 and 1800 is considered to be moderately concentrated. A merger or acquisition resulting in a moderately concentrated market is not considered to have an adverse effect on competition if it increases the market's HHI by less than 100 points. A merger or acquisition resulting in a moderately concentrated market is considered to "potentially raise significant competitive concerns" if it increases the market's HHI by 100 points or more.[19] A market with an HHI of 1800 or above is considered to be highly concentrated. A merger or acquisition resulting in a highly concentrated market is not considered to have an adverse effect on competition if it increases the market's HHI by less than 50 points. A merger or acquisition producing an increase in the market HHI of 50 points or more in a highly concentrated market "potentially raises significant competitive concerns."[20]

In a market with an inelastic demand curve, the existence of two, or three, jointly pivotal suppliers, regardless of the amount of excess capacity available, does not provide a market structure that will result in a competitive outcome. An HHI in excess of 2500 does not demonstrate market power if the relevant owners are not jointly pivotal and are unlikely to be able to affect the market price. An HHI less than 2500 does not demonstrate the absence of market power if the relevant owners are jointly pivotal and are likely to be able to affect the market price.[21]

Higher concentration ratios indicate that comparatively small numbers of sellers dominate a market while lower concentration ratios mean larger numbers of sellers split

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17 1992 Guidelines at 2.

18 1992 Guidelines at 15.

19 *Id*. at 16.

20 *Id*.

21 For detailed examples, see Joseph E. Bowring, PJM Market Monitor. "MMU Analysis of Combined Regulation Market," PJM Market Implementation Committee Meeting (December 20, 2006). <http://www.monitoringanalytics.com/reports/Presentations/2006/20061220-combined-regulation-market-mic.pdf>.

market sales more equally. Lower aggregate market concentration ratios establish neither that a market is competitive nor that participants are unable to exercise market power. Higher concentration ratios do, however, indicate an increased potential for participants to exercise market power and an increased incentive to exercise market power. Despite their significant limitations, concentration ratios provide some useful information on market structure.

Notwithstanding the HHI level, a supplier may have the ability to raise market prices. If reliably meeting demand requires a single supplier, that supplier is pivotal and has monopoly power. If a small number of suppliers are jointly required to meet demand, those suppliers are jointly pivotal and have oligopoly power. The number of pivotal suppliers in the market is a more precise measure of structural market power than the HHI. The HHI is not a definitive measure of structural market power.

The residual supply index (RSI) is a measure of the extent to which one or more generation owners are pivotal suppliers in a market. A single generation owner is pivotal if the output of the owner's generation facilities is needed to meet demand. Multiple generation owners are jointly pivotal when the output of the owners' generation facilities, taken together, is needed to meet demand. When a generation owner is pivotal, it has the ability to affect market price. For a given level of market demand, the RSI compares the market supply, net of the supply controlled by one or more generation owners, to the market demand. The RSI value is calculated as a ratio, where total supply minus the supply of the tested suppliers is divided by the market demand. If the RSI is greater than 1.00, the supply of the specific generation owner(s) is not needed to meet market demand and that generation owner(s) has a reduced ability to influence market price. If the RSI is less than 1.00, the supply owned by the specific generation owner(s) is needed to meet market demand and the generation owner(s) is a pivotal supplier with an ability to influence price. When the RSI is reported for a market, the reported RSI is for the largest supplier or identified number of the largest suppliers.

The three pivotal supplier test (TPS) defines market power even in the presence of market share and concentration levels that fall below 1992 Guidelines for a competitive market structure.[22]

Three Pivotal Supplier Test

In the IMM analysis, the basic metrics used for each market include market share, the Herfindahl-Hirschman Index (HHI), and the three pivotal supplier test (TPS), a residual supplier index used in the PJM markets to define locational market power. Market share measures the proportion of market output contributed by a supplier. Market share is calculated by dividing the output of a supplier by total market output. Concentration ratios are a summary measure of market share. The concentration ratio used here is the

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22 *See AEP Power Marketing, Inc., et al.*, 107 FERC ¶ 61,018 at P 111 (2004) ("AEP Order").

Herfindahl-Hirschman Index (HHI), calculated by summing the squares of the market shares of all firms in a market.

The IMM uses the three pivotal supplier test as the key measure of market structure and structural market power. The three pivotal supplier test is used in PJM markets to define the existence of local market power and as a trigger for market power mitigation. A test for local market power based on the number of pivotal suppliers has a solid basis in economics and is clear and unambiguous to apply in practice. There is no perfect test, but the three pivotal supplier test for local market power strikes a reasonable balance between the requirement to limit extreme structural market power and the goal of limiting intervention in markets when competitive forces are adequate.

The three pivotal supplier test is used by PJM for market power mitigation in the real-time energy market, the day-ahead energy market, the regulation market, and the capacity market. The three pivotal supplier test considers the interaction between individual participant attributes and features of the relevant market structure, and the three pivotal supplier test takes into account the incremental ability of resources to affect prices in a constrained area from both the loading and relief sides of the constraint. The three pivotal supplier test is an explicit test for the ability to exercise unilateral market power as well as market power via coordinated action which accounts for market shares and the supply-demand balance in the market.

The results of the three pivotal supplier test can differ from the results of the HHI and market share tests. The three pivotal supplier test can show the existence of structural market power when the HHI is less than 2500 or less than 1800. The three pivotal supplier test can also show the absence of market power when the HHI is greater than 2500. The three pivotal supplier test is more accurate than the HHI and market share tests because it focuses on the relationship between demand and the most significant aspect of the ownership structure of supply available to meet it. An HHI in excess of 2500 does not indicate market power if the relevant owners are not jointly pivotal and are unlikely to be able to affect the market price. An HHI less than 2500 does not indicate the absence of market power if the relevant owners are jointly pivotal and are likely to be able to affect the market price.[23]

The three pivotal supplier test was designed in light of actual elasticity conditions in constrained areas in wholesale power markets in PJM. The price elasticity of demand is a critical variable in determining whether a particular market structure is likely to result in a competitive outcome. A market with a specific set of market structure features is likely

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[23] For detailed examples, see Joseph E. Bowring, PJM Market Monitor, "MMU Analysis of Combined Regulation Market," PJM Market Implementation Committee Meeting (December 20, 2006) <http://www.monitoringanalytics.com/reports/Presentations/2006/20061220-combined-regulation-market-mic.pdf> .

to have a competitive outcome under one range of demand elasticity conditions and a noncompetitive outcome under another set of elasticity conditions. It is essential that market power tests account for actual elasticity conditions and that evaluation of market power tests neither ignore elasticity nor make counterfactual elasticity assumptions. As the Commission stated, "In markets with very little demand elasticity, a pivotal supplier could extract significant monopoly rents during peak periods because customers have few, if any, alternatives."[24] The Commission also stated:

> In both of these models, the lower the demand elasticity, the higher the mark-up over marginal costs. It must be recognized that demand elasticity is extremely small in electricity markets; in other words, because electricity is considered an essential service, the demand for it is not very responsive to price increases. These models illustrate the need for a conservative approach in order to ensure competitive outcomes for customers because many customers lack one of the key protections against market power: demand response. [25]

TPS Test: Defining the Relevant Market

The goal of defining the relevant market is to include those producers that actually compete to determine the market price. Conversely, the goal of defining the relevant market is to exclude those units that are not meaningful competitors and therefore do not have an impact on the clearing price. The existence of market power within that defined market depends on the ability of the producer to raise price while continuing to sell its output. A producer cannot successfully increase the market price above the competitive level if competitors would replace its output when it did so.

The Commission definition of the relevant market includes all suppliers with cost-based offers less than or equal to 1.05 times the clearing price. The Commission definition means that, if the marginal unit sets the clearing price based on an offer of $200 per MWh, all units with cost-based offers less than, or equal to, $210 per MWh are defined to have a competitive effect on the offer of the marginal unit. These units are all defined to be meaningful competitors in the sense that it is assumed that their behavior constrains the behavior of the marginal and inframarginal units. The TPS definition of the relevant market includes all suppliers with cost-based offers less than or equal to 1.50 times the clearing price. The three pivotal supplier definition means that, if the marginal unit sets the clearing price based on an offer of $200 per MWh, all units with costs less than, or equal to, $300 per MWh are defined to have a competitive effect on the offer of the

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[24] AEP Order at P 72.

[25] *Id*. at P 103.

marginal unit. These units are all defined to be meaningful competitors in the sense that it is assumed that their behavior constrains the behavior of the marginal and inframarginal units. The three pivotal supplier test incorporates a definition of meaningful competitors that is at the extreme high end of inclusive. It is questionable whether a unit with a competitive offer price of $300 meaningfully constrains the offer of a $200 unit. This broad market definition is combined with the recognition that multiple owners can be jointly pivotal. The three pivotal supplier test includes three pivotal suppliers while the Commission test includes only one pivotal supplier.

The three pivotal supplier test is designed to test the relevant market. For example, in the case of the market for out of merit generation needed to relieve a constraint in real time, the three pivotal supplier test examines the market specifically available to provide that relief. Under these conditions, the three pivotal supplier test measures the degree to which the supply from three generation suppliers is required in order to meet the demand to relieve a constraint, as defined by PJM's market solution software. The market demand is the amount of incremental, effective MW required to relieve the constraint.[26] The market demand is calculated as the difference between the defined MW limit on flow across the constraint and the flow in an economic dispatch solution if the limit did not exist (unconstrained flow). The market supply consists of the incremental, effective MW of supply available to relieve the constraint. This includes resources that can ramp up or start up to provide relief for the constraint as well as resources that can ramp down to provide relief for the constraint. The sign of the distribution factor (dfax) of a resource with respect to the defined constraint indicates whether a resource would relieve the constraint by increasing or decreasing output. A resource with a positive dfax with respect to a constraint provides relief by reducing its output, and a resource with a negative dfax with respect to the same constraint provides relief by increasing its output. A resource's incremental effective MW are the product of its incremental available MW and its dfax with respect to the constraint defining the market. For purposes of the test, incremental effective MW are attributed to specific suppliers on the basis of their control of the assets in question. Generation capacity controlled directly or indirectly through affiliates or through contracts with third parties are attributed to a single supplier.

Unlike structural tests that define markets by geographic proximity, the TPS test makes explicit and direct use of the incremental, effective MW of supply available to relieve the

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[26] A unit's contribution toward effective, incrementally available supply is based on the distribution factor (dfax) of the unit relative to the constraint and the unit's incrementally available capacity over current load levels, if the capacity in question is available within the period that the relief will be needed. Effective, incrementally available MW from an unloaded 100 MW 15-minute start combustion turbine (CT) with a dfax of -0.05 to a constraint would be 5 MW relative to the constraint in question. Effective, incrementally available MW from a 200 MW steam unit, with 100 MW loaded, a 50 MW ramp rate and a dfax of -0.5 to the constraint would be 25 MW.

constraint at a distribution factor greater than, or equal to, the dfax used by PJM in operations. Only the supply that is part of the market as defined by the reality of the electric network, as measured by unit characteristics and distribution factors is included in the three pivotal supplier test. That supply is included only to the extent that it is incremental, effective MW of supply available at a price less than, or equal to, 1.5 times the clearing price that would result from the intersection of demand (constraint relief required) and the incremental supply available to resolve the constraint.

Constraints: Defining the Relevant Market

In its Order Reaffirming the 1992 Guidelines, the Commission stated:

> The Commission will remain flexible in its approach and will reevaluate whether a previously recognized submarket continues to exist if the evidence shows that the persistent transmission constraints that led to the recognition of that submarket are no longer present. We clarify that we will not require applicants to submit a DPT for an identified submarket if the applicants do not have overlapping generation within the submarket and lack firm transmission rights to import capacity into that market.[27]

ArcLight's Delivered Price Test considers the PJM RTO market, the submarkets recognized in previous 203 and Market Based Rates proceedings. Patterns of congestion and constraints have been and will continue to be dynamic in PJM. It is important to analyze existing submarkets but also to address the fact that market power is persistent and may be actionable in submarkets that do not yet exist. The IMM analyzed all submarkets based on historic market data, not only the subset of markets analyzed in the Applicants' Delivered Price Test analysis. The IMM analysis shows that ArcLight has local market power in PJM and that local market power would increase with the acquisition of Brandywine.

The Commission's guidelines as implemented by ArcLight do not accurately reflect the ability to exercise market power in an LMP market, like PJM. Mergers and acquisitions can affect submarkets created by transmission constraints whether or not there is overlapping generation on the high price side of the constraint. The IMM analysis considers all available supply that can relieve a constraint regardless of its location, which is the relevant supply that determines prices in an LMP market.

The broader point about congestion in an LMP market is that it is dynamic and unpredictable. Submarkets in one period may not be submarkets in subsequent periods. The analysis of market power and of mergers should reflect these basic facts. Local market power may not exist in one period and may exist in the next. Local market power may

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[27] *See Analysis of Horizontal Market Power*, 138 FERC ¶ 61,109 at P 43 (2012).

exist in one period and not exist in the next. It is essential that merger reviews recognize that, in a dynamic nodal and locational energy market, and in a dynamic and locational capacity market, increased concentration of ownership creates the potential for market power beyond the specific facts of a specific period. It is essential for that reason to have clear, workable and enforceable rules for market power mitigation that can address the dynamic reality of PJM markets and that are not narrowly linked to a static definition of relevant markets.

Energy Market Results

Aggregate Market Power

The IMM analyzed the impact of the proposed transaction on aggregate energy market concentration using actual generation data for a two year period, January 2024 through December 2025.[28]

The concentration metrics are the market share for energy and the HHI for energy in the aggregate PJM market. The IMM also uses a pivotal supplier screen for the aggregate day-ahead energy market.

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Table 3 ArcLight's average hourly market share of PJM generation: January 2024 through December 2025

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Table 4 Energy market HHI: January 2024 through December 2025

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To assess the number of aggregate pivotal suppliers in the day-ahead energy market, the IMM determines, for each supplier, the MW available for economic commitment that were already running or were available to start between the close of the day-ahead energy market and the peak load hour of the operating day. The available supply is defined as MW offered at a price less than 150 percent of the applicable locational marginal price.

[28] *See* 192 FERC ¶ 61,074 at 131.

Generating units, import transactions, economic demand response, and virtual supply ("INCs"), are included for each supplier. Demand is the total MW required by PJM to meet physical load, cleared load bids, export transactions, and virtual demand ("DECs"). A supplier is pivotal if PJM would require some portion of the supplier's available economic capacity in the peak hour of the operating day in order to meet demand. Suppliers are jointly pivotal if PJM would require some portion of the joint suppliers' available economic capacity in the peak hour of the operating day in order to meet demand.

When ArcLight is a pivotal supplier in the energy market, it has the ability to raise prices in the energy market which benefits the inframarginal energy resources that it owns. There are no market power mitigation rules to address aggregate market power in the PJM energy market. Acquiring Brandywine would increase ArcLight's aggregate market power, increasing its incentive and ability to raise prices.

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Table 5 PJM Day-ahead aggregate energy market pivotal supplier frequency: January 2024 through December 2025

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Local Market Power

The IMM also analyzed the real-time energy market results for the relevant submarkets defined by actual binding constraints for the two year period, 2024 and 2025. [29] The analysis identifies constraints for which ArcLight has market power, as shown by failures of the TPS test.

The TPS test considers incremental, effective MW available to provide relief to binding constraints in the energy market. Onward's and ArcLight's fleets frequently have incremental, effective MW available to provide constraint relief in PJM's energy market meaning that ArcLight has local market power as measured by TPS test failures both before and after the transaction.

Table 6 identifies the constraints on the PJM system that were binding for more than 200 hours during the period including 2024 and 2025. It provides the number of hours for

[29] *See* 192 FERC ¶ 61,074 at 131.

which ArcLight failed the TPS Test and the number of hours for which ArcLight would have failed the TPS Test with the acquisition.[30]

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Table 6 Constraints where ArcLight had market power as determined by the real-time energy market TPS test: January 2024 through December 2025

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Table 7 identifies the constraints on the PJM system that were binding for more than 200 hours during January 2024 through December 2025. It provides the average TPS score for ArcLight and the average TPS score ArcLight would have with the acquisition. A TPS score of less than 1.0 indicates that a supplier has market power. {BEGIN CUI//PRIV} REDACTED. {END CUI//PRIV}

Table 7 Preacquisition and Postacquisition TPS scores for constraints where ArcLight had market power as determined by the real-time energy market TPS test: January 2024 through December 2025

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Table 8 identifies the constraints on the PJM system that were binding for more than 200 hours during 2024 and 2025. Table 8 provides the average HHI for constraints where ArcLight had market power as determined by the real-time energy market TPS test and the average HHI the constraints would have with the acquisition.

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[30] The IMM increased the number of constrained hours in its analysis from 100 to 200 with the increase in the time frame from one year to two years.

Table 8 Preacquisition and Postacquisition HHI for constraints where ArcLight had market power as determined by the real-time energy market TPS test: January 2024 through December 2025

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Capacity Market Results

Market Design

The Reliability Pricing Model (RPM) Capacity Market design was implemented in the PJM region on June 1, 2007. The RPM Capacity Market is a forward-looking, annual, locational market, with a must offer requirement for Existing Generation Capacity Resources and mandatory participation by load, with performance incentives, that includes clear market power mitigation rules and that permits the direct participation of demand-side resources. Recent changes to the market power mitigation rules include ending the categorical exemption from the must offer requirement for intermittent and storage resources.[31] Capacity storage resources include hydroelectric, flywheel and battery storage. Intermittent resources include wind, solar, landfill gas, run of river hydroelectric, and other renewable resources. Demand resources remain exempt from the must offer requirement. In addition, the Commission recently approved the inclusion of standalone CPQR offers with no net revenue offset and segmented offers based on CPQR, both of which were opposed by the IMM as undermining market power mitigation.[32]

Under RPM, capacity obligations are annual. Base Residual Auctions (BRA) are held for delivery years that are three years in the future, although recent events have resulted in shorter lead times for BRAs. Effective with the 2012/2013 Delivery Year, First, Second and Third Incremental Auctions (IA) are held for each delivery year if there is time available.[33]

RPM prices are locational by LDA and may vary depending on transmission constraints between LDAs and local supply and demand conditions within LDAs.[34] Existing generation that qualifies as a capacity resource must be offered into RPM auctions, except for resources owned by entities that elect the fixed resource requirement (FRR) option. Participation on the demand side by LSEs is mandatory, except for those entities that elect

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31 *See* 190 FERC ¶ 61,117.

32 *See id*.

33 *See* 126 FERC ¶ 61,275 at P 86 (2009).

34 Transmission constraints are local capacity import capability limitations (low capacity emergency transfer limit (CETL) margin over capacity emergency transfer objective (CETO)) caused by transmission facility limitations, voltage limitations or stability limitations.

the FRR option. Load must buy all cleared capacity. There is an administratively determined demand curve that defines shortage pricing levels and that, with the supply curve derived from capacity offers, determines market prices in each BRA. Under RPM there are explicit market power mitigation rules that define the must offer requirement, that define structural market power using the three pivotal supplier test, that define offer caps, that define the minimum offer price, and that have flexible criteria for competitive offers by new entrants. Market power mitigation is effective only when these definitions are up to date and accurate. Demand resources may be offered directly into RPM auctions and receive the clearing price without mitigation. Demand resources may exercise market power under the existing rules.

The capacity market is, by design, always tight in the sense that total supply is generally only slightly larger than demand.[35] The capacity market, following the implementation of PJM's approach to the ELCC definition of capacity, is much tighter. Local LDA markets may have different supply demand balances than the aggregate market. Demand is inelastic because the market rules require loads to purchase the system capacity requirement. The result is that any supplier that owns more capacity than the typically

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[35] Recent reports by the Market Monitor explain many of the current issues in the capacity market design. See "Analysis of the 2025/2026 RPM Base Residual Auction - Part A," (September 20, 2024) ("IMM BRA Report Part A"). <https://www.monitoringanalytics.com/reports/Reports/2024/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_A_20240920.pdf>; "Analysis of the 2025/2026 RPM Base Residual Auction - Part B," (October 15, 2024) ("IMM BRA Report Part B") <https://www.monitoringanalytics.com/reports/Reports/2024/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_B_20241015.pdf> ; "Analysis of the 2025/2026 RPM Base Residual Auction - Part C," (November 6, 2025) ("IMM BRA Report Part C") <https://www.monitoringanalytics.com/reports/Reports/2024/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_C_20241106.pdf>; "Analysis of the 2025/2026 RPM Base Residual Auction - Part D," (December 6, 2024) ("IMM BRA Report Part D") <https://www.monitoringanalytics.com/reports/Reports/2024/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_D_20241206.pdf>; "Analysis of the 2025/2026 RPM Base Residual Auction - Part E," (January 31, 2025) ("IMM BRA Report Part E") <https://www.monitoringanalytics.com/reports/Reports/2025/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_E_20250131.pdf>; "Analysis of the 2025/2026 RPM Base Residual Auction - Part F," (February 4, 2025) ("IMM BRA Report Part F") <https://www.monitoringanalytics.com/reports/Reports/2025/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_F_20250204.pdf>; "Analysis of the 2025/2026 RPM Base Residual Auction - Part G Revised," (June 3, 2025) ("IMM BRA Report Part G") <https://www.monitoringanalytics.com/reports/Reports/2025/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_G_20250603_Revised.pdf>; Analysis of the 2025/2026 RPM Base Residual Auction - Part H," (July 31, 2025) ("IMM BRA Report Part H") <https://www.monitoringanalytics.com/reports/Reports/2025/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_H_20250731.pdf> ("2025/2026 BRA Reports").

small difference between total supply and the defined demand is individually pivotal and therefore has structural market power. Any supplier that, jointly with two other suppliers, owns more capacity than the difference between supply and demand either in aggregate or for a local market is jointly pivotal and therefore has structural market power.

The market design for capacity leads, almost unavoidably, to structural market power in the capacity market. Given the basic features of the PJM Capacity Market, including significant market structure issues, inelastic demand, tight supply-demand conditions, the relatively small number of nonaffiliated LSEs and supplier knowledge of aggregate market demand, the potential for the exercise of market power is high. Market power is and will remain endemic to the existing structure of the PJM Capacity Market.

Nonetheless, a competitive outcome can be ensured by appropriate market power mitigation rules. Attenuation of those rules would mean that market participants would not be able to rely on the competitiveness of the market outcomes. The market power rules are not perfect and, as a result, competitive outcomes require continued improvement of the rules and ongoing monitoring of market participant behavior and market performance.

The capacity market currently has explicit market power mitigation rules designed to permit competitive, locational capacity prices based on limiting the exercise of market power. The capacity market construct has been consistent with the appropriate market design objectives of permitting competitive prices to reflect local scarcity conditions based on explicitly limiting market power. The capacity market design provides that competitive prices can reflect locational scarcity while not relying on the exercise of market power to achieve that design objective by limiting the exercise of market power via the application of the three pivotal supplier test and the resultant offer capping. The efficacy of the market power mitigation rules under recent rule changes remains to be seen and cannot be assumed. The modifications to the nature of the demand curve by PJM also create significant issues and have resulted in market prices above the competitive level.[36]

On February 20, 2025, FERC issued an order accepting proposed rules in Docket No. ER25-785-000 which became effective February 21, 2025, beginning with the 2026/2027 Delivery Year. The rule changes include elimination of the categorical RPM must offer exemption for Intermittent Resources, Capacity Storage Resources, and Hybrid Resources; modifying the Market Seller Offer Cap definition to include unit specific standalone Capacity Performance Quantifiable Risk (CPQR); and modifying the Market Seller Offer Cap definition to include segmented unit specific offer caps. The filing highlights the fact that

[36] *See* 2025/2026 BRA Reports.

market power mitigation rules are uncertain. The inclusion of offers based on standalone CPQR and segmented offers both undermine market power mitigation.[37]

Market Analysis

The analysis of the impact of the ArcLight acquisition of Brandywine on the capacity market examines the locational markets defined by the underlying economics of the market including supply and demand curves and transmission constraints. Each transmission zone is a Locational Deliverability Area (LDA) which can be a separate submarket if PJM models the zone as an LDA and market conditions result in binding transmission constraints and associated price separation in an auction. There are, in addition, several defined subzonal LDAs, including PSEG North, DPL South, and ATSI Cleveland.

For the defined submarkets, market concentration and HHI levels were calculated on a preacquisition and a postacquisition basis for each market.

As in the energy market, to the extent that total RTO demand for capacity can be met without any constraints binding, the optimal solution is defined by the intersection of the aggregate supply and demand curves. However, if the next increment of demand for capacity in an LDA cannot be met by the next economic increment of total supply and must be met by higher cost supply within the LDA, then the transmission constraint is binding and there is a separate market created. That separate market is defined by the incremental demand that must be met by capacity within the LDA and the higher cost incremental supply within the LDA available to meet that demand.

The ability to exercise market power in the LDA is determined by the ownership structure of the incremental supply and the relationship between incremental supply and incremental demand. The incentive to exercise market power in the LDA is a function of the ownership structure of all capacity in the LDA. Regardless of offer price and regardless of whether the capacity was incremental, all capacity in a constrained LDA receives the higher constrained clearing price. The ability to exercise market power can be measured most accurately by the TPS test while the HHI provides a measure of the incentive to exercise market power.

When the capacity market clears as a single market, total RTO supply and demand determine the clearing price and all resources receive the single market clearing price. When an LDA within the RTO clears as a separate market, the incremental locational supply available to meet the locational demand determines the clearing price for the LDA.

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[37] *See* Comments of the Independent Market Monitor for PJM, Docket No. ER25-785-000 (January 10, 2025); Answer and Motion for Leave to Answer of the Independent Market Monitor for PJM, Docket No. ER25-785-000 (February 18, 2025); Request for Rehearing of the Independent Market Monitor for PJM, Docket No. ER25-785-000 (March 19, 2025).

All capacity resources in the LDA receive the single locational market clearing price, regardless of whether the capacity resources are incremental.

When there are multiple LDAs that clear as separate markets and the LDAs are not overlapping, the logic is exactly the same for each LDA separately and its relationship to the rest of RTO.[38] When the LDAs are nested, the analysis becomes more complex.

For this analysis, the actual sell offer prices and offered MW quantities in the 2025/2026, 2026/2027, and 2027/2028 RPM BRAs were used.[39]

Aggregate Market: HHI

Table 9 shows pre and post Brandywine acquisition HHIs for the 2025/2026, 2026/2027, and 2027/2028 RPM Base Residual Auctions, including all modeled LDAs for each BRA. The HHIs in Table 9 measure concentration of ownership for all cleared capacity in the identified LDAs.

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Table 9 Preacquisition and postacquisition HHI

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Locational Capacity Markets: TPS

The pivotal supplier analysis uses the pre and postacquisition Three Pivotal Supplier test scores to measure the change in market power for the RTO and LDAs. Table 10 shows the preacquisition and postacquisition TPS scores for ArcLight. Onward would have no capacity resources in PJM following the transaction.

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The market for a constrained LDA is defined by the incremental supply available to meet the incremental demand when locational incremental demand must be met by capacity resources within the LDA. The RTO market is defined to include all supply that is not

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38 *See* 2025/2026 BRA Reports

39 If the ownership of assets changed between the conduct of the BRA and the present, the current parent company ownership was used in both the preacquisition and postacquisition cases.

incremental supply in a constrained LDA. The RTO market includes all MW that resulted in the clearing price for the rest of RTO.

The three pivotal supplier (TPS) test measures the degree to which the incremental supply from three suppliers of capacity is required in order to meet the incremental demand in an LDA. In applying the TPS test in the capacity market, the relevant demand consists of the incremental MW of capacity required to relieve a constraint or clear a market. The relevant supply consists of the incremental MW of supply from generation resources available to relieve the constraint or clear the market. The supply does not include demand response resources.

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Table 10 Preacquisition and postacquisition TPS results for ArcLight and Onward

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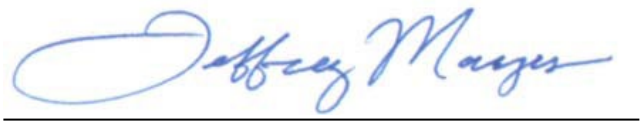
CERTIFICATE OF SERVICE

I hereby certify that I have this day served the foregoing document upon each person designated on the official service list compiled by the Secretary in this proceeding.

Dated at Eagleville, Pennsylvania,
this 26th day of January, 2026.



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