UNITED STATES OF AMERICA
BEFORE THE
FEDERAL ENERGY REGULATORY COMMISSION

Grays Harbor Energy LLC	)	Docket No. EC26-76-000
Hardee Power Partners Limited	)	
Invenergy Cannon Falls LLC	)	
Invenergy Nelson LLC	)	
Invenergy Nelson Expansion LLC	)	
Lackawanna Energy Center LLC	)	
Spindle Hill Energy LLC	)	
	)	
Gray Wolf Power, 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 on March 24, 2026 ("March 24th Filing"), requesting approval of a proposed transaction under Section 203 of the Federal Power Act in which ArcLight will purchase fifty percent of Invenergy's Lackawanna, Nelson, and Nelson Expansion plants. The March 24th Filing requests approval of the transaction ("Transaction") in which Gray Wolf Power, LLC ("Gray Wolf"), a subsidiary of a fund controlled by ArcLight Capital Partners, LLC ("ArcLight Capital"), will acquire 50 percent of the interests in Invenergy AMPCI Thermal Power LLC

[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").

("IA Thermal Power") from DigitalBridge Group, Inc. ("DigitalBridge"). IA Thermal Power owns, wholly or partially, Grays Harbor Energy LLC ("Grays Harbor"), Hardee Power Partners Limited ("Hardee Power"), Invenergy Cannon Falls LLC ("Cannon Falls"), Invenergy Nelson LLC ("Nelson"), Invenergy Nelson Expansion LLC ("Nelson Expansion"), Lackawanna Energy Center LLC ("Lackawanna"), Spindle Hill Energy LLC ("Spindle Hill") (collectively, the "Project Companies" and, together with Gray Wolf, "Applicants").[3] Applicants state (at 1) that the Transaction will not affect the ownership of the remaining 50 percent of the interests in IA Thermal Power, which is owned by Invenergy Clean Power LLC ("Invenergy"). Following consummation of the Transaction, Gray Wolf will directly own 50 percent of the interests in IA Thermal Power and will control Project Companies. DigitalBridge will no longer be affiliated with IA Thermal Power or the Project Companies.

The Project Companies own and operate electric generation facilities located in the balancing authority area ("BAA") operated by PJM. In the PJM BAA, there is overlap between Nelson, Nelson Expansion, and Lackawanna, and the generation facilities affiliated with Buyer, meaning both ArcLight and Invenergy own generation in the BAA. Applicants claim that the Affidavit and Exhibits provided by Secretariat Advisors, LLC, in Attachment 1 to the March 24th Filing (the "Secretariat Affidavit"), show that the overlap does not raise any competitive concerns.

ArcLight owns and controls 9,560.1 MW of generation in PJM. ArcLight's ownership will increase by 2,262.0 MW to 11,822.1 MW of generation in PJM if the Commission approves the Transaction.

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[3] All Project Companies are wholly owned by IA Thermal Power except Lackawanna, although Lackawanna is still controlled by IA Thermal Power. Lackawanna's ownership interests are comprised of Class A and Class B membership units. BlackRock Inc. ("BlackRock") controls 87.71 percent of the Class A membership units (passive) while the remaining 12.29 percent of the Class A membership units and 100 percent of the Class B membership units are owned by subsidiaries of IA Thermal Power. *See Lackawanna Energy Center LLC,* Notice of Change in Status (January 31, 2025) and *Lackawanna Energy Center LLC,* Triennial Market Power Analysis for Northeast Region under ER18-140 (June 30, 2023) for ownership details.

The Market Monitor has identified significant concerns about the potential exercise of market power that could result from approval of the Transaction.[4] Applicants have not asserted that this Transaction provides any offsetting public benefits, such as enhanced competition or market efficiency. Applicants have not proposed any mitigation. Section 203 of the Federal Power Act requires a finding that approval of the Transaction is consistent with the public interest. Although Section 203 has been interpreted not to require Applicants to show benefits to the public interest, it cannot be approved if concerns about harm to competition are supported with evidence in the record, and those concerns are not mitigated.[5] The Transaction cannot be approved "on balance," where on balance the transaction is harmful because the Applicants do not show that benefits offset unmitigated harms.[6] In this case, Applicants ignore the concerns and show no offsetting benefits. The Transaction cannot be approved, including on balance, without a finding that benefits to the public interest offset

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[4] *See* Attachments A-1 (Public) & A-2 (Highly Confidential). Because the Market Monitor's analysis contains market sensitive information that should not be disclosed to competitive duty personnel, the Market Monitor has included an IMM Protective Agreement, similar to an agreement recently relied on in Docket No.EC26-63, that protects from disclosure highly confidential privileged information to competitive duty personnel. The Protective Agreement, included as Attachment B, largely follows the Model Protective Order.

[5] *See* 16 U.S.C. § 824b; *Inquiry Concerning the Commission's Merger Policy Under the Federal Power Act: Policy Statement*, Order No. 592, 77 FERC ¶ 61,263 (1996) (*mimeo*), FERC Stats. & Regs. ¶ 31,044 (1996) ("Merger Policy Statement"), *reconsideration denied*, Order No. 592-A, 79 FERC ¶ 61,321 (1997) ("Merger Policy Statement"); *see also Revised Filing Requirements Under Part 33 of the Commission's Regulations*, Order No. 642, FERC Stats. & Regs. ¶ 31,111 (2000) ("Order No. 642"); *Transactions Subject to FPA Section 203*, Order No. 669, FERC Stats. & Regs. ¶ 31,200 (2005) ("Order No. 669"), *order on reh'g*, Order No. 669-A, FERC Stats. & Regs. ¶ 31,214 ("Order No. 669-A"), *order on reh'g*, Order No. 669-B, FERC Stats. & Regs. ¶ 31,225 (2006) ("Order No. 669-B").

[6] *See* Merger Policy Statement, FERC Stats. & Regs. ¶ 31,044 at 68597 ("we recognize that there may be unusual circumstances in which, for example, a merger that raises competitive concerns may nevertheless be in the public interest because customer benefits (such as the need to ensure reliable electricity service from a utility in severe financial distress) may clearly compel approval. Consistent with the Guidelines, the Commission would continue to account for such circumstances and could, in a particular case, conclude that on balance the merger is consistent with the public interest")

the harm identified in the record.[7] Applicants have not accepted limited and targeted mitigation, including a commitment not to remove resources serving existing load from the market to serve data centers. The failure to accept such limited and targeted mitigation validates the concern that such removal may occur and harm the public interest if the Transaction is approved. Applicants have not explained why the Transaction is consistent with the public interest.

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.[8] Applicants provide results showing that the Transaction would result in an increase in structural market power for ArcLight, but that it passes the thresholds defined for the Commission's initial screen for market power. The Market Monitor's market power analysis identifies an additional submarket, using the Commission's standards, that is relevant to the Transaction. There is not an overlap of generation between Applicants inside the submarket, but the Transaction combines generation outside and inside the submarket that creates a new incentive and opportunity to raise prices in the submarket to the benefit of ArcLight's generation. The exercise of market power involves causing the submarket constraints to bind more frequently or at a higher cost, and, therefore, to raise prices. The Market Monitor's market power analysis also shows that the Transaction would result in an increase in structural market power for ArcLight, as measured by a decrease in ArcLight's energy and capacity market pivotal supplier scores, for both three pivotal supplier (TSP) and one pivotal supplier (OPS) tests. ArcLight currently has market power in the PJM Capacity Market and in the PJM

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[7] *See* 16 U.S.C. § 824b(b) ("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").

[8] *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).

energy market and the Transaction would increase that market power. The Market Monitor's market power analysis also 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 DPT is based on assumptions about generator marginal costs, rather than actual market offers, and it does not account for the realities of the nodal power market in which PJM market prices are formed. In particular, the DPT equally weights all MW in a submarket, while the actual market weights them by the distribution factors with respect to constraints in clearing the market and forming prices. Market power can increase at levels below the Commission's thresholds, and market power can increase in ways that the Commission's analysis does not consider.

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, based on the DPT.[9] The Commission has found in a prior case that the Market Monitor's analyses and findings of market power do not "cast doubt on the results of Applicants' DPT."[10] The Commission has previously determined not to rely on the Market Monitor's pivotal supplier analysis in a prior case.[11][12] As a result, the Commission has not analyzed the relative merits of the DPT analysis and the Market Monitor's pivotal supplier analysis for transactions in the PJM LMP markets. The Commission has instead relied on the DPT alone, using HHI only, in determining whether a transaction is in the public interest. For this Transaction, the Market Monitor limits its analysis of constraints to those that meet

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9 *See* 192 FERC ¶ 61,074 at P 130 (2025).

10 193 FERC ¶ 61,124 at P 65 (2026).

11 195 FERC ¶ 61,082 at P 63 (2026).

12 *See id.* at P 64.

the Commission's threshold for frequently binding constraints, so that the Commission can make a better comparison of the results. The Market Monitor also provides further explanation of the types of exercises of market power that could cause harm to competition that the DPT cannot detect.

In this case, the Transaction results in the acquisition of generation assets by ArcLight located outside the submarket where some of the ArcLight assets are located. Nonetheless, the acquired assets create structural market power for ArcLight. The assets outside the submarket could be used to produce excess energy that causes the constraints defining the submarket to bind more frequently or at a higher cost, raising prices above competitive levels inside the submarket to the benefit of current ArcLight generation inside the submarket. The excess energy could result from a range of behaviors including self scheduling, not following PJM's economic dispatch signal, or by submitting inflexible operating parameters. These strategies would deviate from the market's economic solution in a way analogous to withholding generation on the high price side of the constraint. This would apply to the PJM West submarket or to the defined Chesapeake submarket, which the Market Monitor defines in its Market Power Report.

In addition, the Market Monitor recommends that the Commission consider the implications of the longer term consolidation of generation ownership by ArcLight and other suppliers in the PJM market through sequential transactions, including consideration of aggregate market pivotal suppliers.

The Market Monitor opposes the proposed Transaction unless it includes the condition that any order approving the Transaction require specific behavioral commitments by ArcLight, none of which would create 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 Section 203 application including the identified behavioral commitments. The Transaction as filed would increase market power and fails to mitigate that increase in market power, and, as filed, it is therefore not consistent with the public interest.[13]

The Market Monitor requests that the Commission consider whether any transaction that results in increases in market power in the PJM Capacity 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.[14] [15] The Market Monitor does not propose in this proceeding any measures to correct flaws in or to enhance the PJM market rules, recognizing that such matters are not within the scope of Section 203 proceedings. The actual state of the existing markets does determine the context within which the Transaction must be evaluated.

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.[16] 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

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13 *See* 16 U.S.C. § 824b.

14 *See id*.

15 *See* Monitoring Analytics, L.L.C., *2025 State of the Market Report for PJM*, Vol. 2, Section 5: Capacity at 313-314.

16 *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).

is not exercised.[17] Each of the behavioral conditions proposed by the IMM meets this Commission defined standard.

I. COMMENTS

A. The Transaction Would Increase Structural Market Power.

ArcLight's existing assets in PJM consist of 9,560.1 MW of generation, including coal fired, gas fired, oil fired, wind, and battery resources in the AEP, APS, ATSI, DEOK, DOM, PENELEC, PEPCO, PPL, and PSEG Zones of PJM. With the Transaction, ArcLight's assets in PJM will consist of 11,822.1 MW of generation and will add assets in the ComEd Zone.

The Transaction would increase market power in PJM energy and capacity markets, based on multiple metrics. The Transaction would increase ArcLight's local market power with respect to the defined Chesapeake submarket. The Transaction would increase ArcLight's market power in the aggregate energy and capacity markets. The market power report discusses the defined Chesapeake submarket 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 existing 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 Lightstone.[18] ArcLight became the second largest owner of capacity in PJM after Constellation by the end of 2022.[19] After several resource sales, including the sale of Lightstone, ArcLight was the seventh largest owner of capacity in PJM. In 2025, ArcLight filed a series of acquisition transactions that increase its ownership in PJM to 9,486.1 MW

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[17] Order No. 697-A at P 111.

[18] *See* FERC Docket No. EC17-11.

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

including the recent purchase of KMC Thermo's Brandywine, placing it back in the top 5 owners.[20] Other owners in the top five also have recent and/or pending transactions: Constellation, Talen, and Vistra.[21] The structural market power created by this ownership consolidation undermines competition and creates the potential for the exercise of market power, at a time when data center load growth is already resulting in noncompetitive prices.[22] Price increases that result from market power are noncompetitive, inefficient, unjust and unreasonable. The Commission's consideration of this trend in the concentration of asset ownership in PJM with every Section 203 application review is essential to ensure that the transactions are consistent with the public interest and that PJM competitive markets remain competitive.

B. The Transaction Would Create the Ability to Exercise Market Power and to Increase Prices in PJM Chesapeake Submarket Above the Competitive Level.

The Commission has focused on the definition of submarkets within the PJM region.[23] Based on FERC's statements, a submarket consists of an area within a broader market with higher prices than neighboring areas defined by transmission constraints that bind for more than five percent of annual hours, especially during high demand conditions.[24] Such submarkets exist in PJM, and the Transaction creates the ability and incentive for ArcLight to raise prices in a specific submarket, the Chesapeake submarket.

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

21 *See* FERC Docket Nos. EC25-43, EC25-121, EC25-125, EC26-59, and EC26-63.

22 *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*>.

23 *See KMC Thermo, LLC*, 195 FERC ¶ 61,082 at PP 35–42 (2026).

24 *See* Order No. 697, FERC Stats. & Regs. ¶ 31,252 at P 268 (2007); *See also Exelon Corp.* 138 FERC ¶ 61,167 at P32 (2012) ("The Commission has stated that any proposal to use an alternative geographic market must include a demonstration regarding whether there are frequently binding transmission constraints during historical seasonal peaks and at other competitively significant times that prevent competing supply from reaching customers within the proposed alternative geographic market.").

A portion of the PJM footprint around the Chesapeake Bay has been transmission constrained historically, but has not been formally defined as a submarket. This area includes the DOM, BGE, and PEPCO transmission zones, but also extends into transmission zones in Pennsylvania and Delaware. The exact list of transmission constraints defining the Chesapeake submarket has changed over time and will continue to change, but it includes many of the same transmission elements over time, which limit the flow of energy from the shale gas production regions of Pennsylvania and West Virginia into the Baltimore and Washington, DC metropolitan areas, including Data Center Alley in Northern Virginia. These constraints are frequently binding in the PJM energy market, as defined by the Commission, and bind at times of system peak loads.[25] The 2025 locational marginal pricing map shown in Figure 1 shows the price separation, with higher prices (shown in purple, red, and orange) in the south of Pennsylvania extending south and expanding through the states on the Chesapeake Bay.

ArcLight owns generation resources both inside and outside the Chesapeake submarket. The Invenergy resources involved in the Transaction are outside the submarket. Resources outside the submarket can be used to cause the constraints that define the submarket to bind more frequently and/or with a higher degree of price separation, benefiting the resources inside the submarket. The structural market power that creates the potential for this exercise of market power would result from this transaction because of the specific resources involved, the location of those resources, the submarket that meets the Commission's standards for identifying local market power, and the mechanism by which it raises prices.[26]

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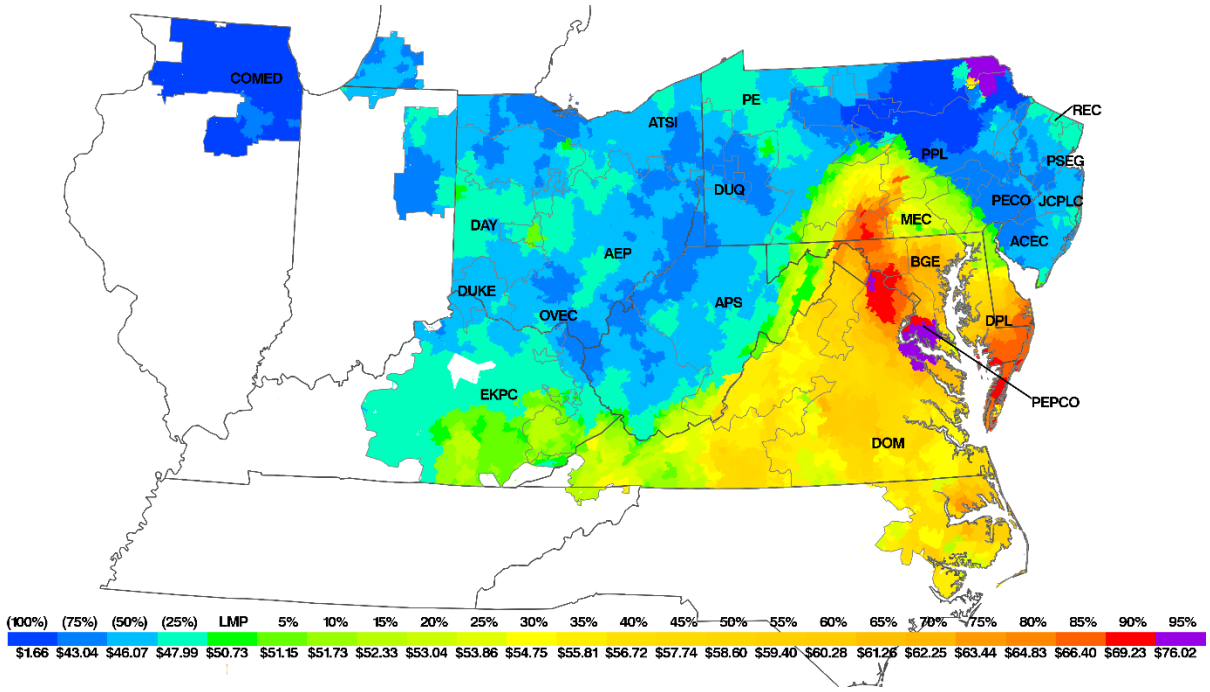
[25] For example, during Winter Storm Fern, the winter peak of January and February 2026, and during the May 18 to 20, 2026, heatwave, PJM required capacity demand response to curtail in the DOM, BGE, and PEPCO Zones due to binding constraints. *See* PJM Emergency Procedures Postings at <https://emergencyprocedures.pjm.com/ep/pages/dashboard.jsf>.

[26] *See id.* at P 37.

Figure 1 PJM Average Annual LMP Map: 2025



C. 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 defined market.[27] The HHI is the sum of the squared market shares of all market participants.

The Commission's Merger Policy Statement requires applicants to file a Delivered Price Test ("DPT") analysis.[28] The DPT analysis is designed to serve as a screen for impacts on competition. Applicants filed a DPT analysis, the Secretariat Affidavit, that did not identify any competitive concerns. In response to concerns raised that Section 203 proceedings should not turn on "that the proposed filing requirements place the Commission in a position of relying on merger applicants' potentially biased analysis," the Commission

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27 *See* U.S. Department of Justice and Federal Trade Commission, Horizontal Merger Guidelines, 57 Fed. Reg. 41,552 (1992); Merger Policy Statement, FERC Stats. & Regs. at 30,119-20.

28 *See* 18 CFR Part 33; Merger Policy Statement.

indicated that it "will continue to use all means available to ensure that merger applications are complete, accurate, and free from bias."[29] A check on whether applicants' analyses contain bias is the consideration of alternative analyses. In the Merger Policy Statement, the Commission recognized the limits of the DPT analysis, particularly when applied to wholesale power markets rather than the prior vertically integrated utility status quo at the time of the Merger Policy Statement.[30] The Merger Policy Statement explicitly welcomes alternative analyses from intervenors.[31] Rejecting alternative analyses without explanation because they are not the DPT analysis contradicts the Merger Policy Statement, which are

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[29] Order No. 642 *mimeo* at 24–25.

[30] *See* Order No. 642 *mimeo* at 17 ("One value of the screen process is that some mergers may be quickly approved if the evidence as to the lack of effect on competition is convincing and verifiable and the merger is otherwise found to be consistent with the public interest. The screen process may also be useful in narrowing issues that may require further analysis. This can be especially helpful to intervenors. In addition, the screen process is useful to suggest possible mitigation measures if there is a potential competitive concern.").

[31] *See id.* at 68600 ("[T]he Commission will need to evaluate the relevant product and geographic markets affected by each merger proposal; these markets, in turn, depend on the specific characteristics of the merger applicants and the products and markets in which they potentially trade. Consequently, mergers may require analysis of different product and geographic markets due to factors (such as the existence of constrained transmission paths) that affect the size of a particular market or the hours in which trade of the product is critical to determine whether merger applicants possess market power. Such distinguishing factors will need to be identified and analyzed on a case-by-case basis. Thus, the analytical process explained in this Policy Statement is a framework under which appropriate adjustments may be required to be incorporated to take account of factors unique to a merger. Furthermore, as noted above, this Policy Statement also is intended to be sufficiently flexible to accommodate the kinds of new merger proposals that will be presented to the Commission as the energy industry evolves to meet the challenges of a more competitive marketplace."); see also Order No. 642 *mimeo* at 37 ("The Commission emphasized in the NOPR that the horizontal screen is not meant to be a definitive test of the likely competitive effects of a proposed merger. Instead, it is intended to provide a standard, generally conservative check to allow the Commission, applicants and intervenors to quickly identify mergers that are unlikely to present competitive problems. The horizontal screen approach allows applicants, intervenors and the Commission to have a common starting point from which to evaluate proposed mergers. Failing the initial screen does not necessarily mean the Commission will reject the merger. Rather, it means only that the Commission must take a closer look at the competitive impacts of the proposed merger.").

rules. Decisions of the Commission cannot properly ignore rules.[32] The Market Monitor's analysis has been accepted for consideration in other proceedings.[33] The Market Monitor's analysis provides a more granular look at the impacts on PJM markets, taking into account how PJM markets operate. The Market Monitor's analysis can and does identify concerns that a DPT analysis can and does miss, even when the DPT analysis is performed as designed. The DPT analysis does not take into account that PJM markets rely on locational marginal pricing ("LMP"). LMP markets are dynamic, and transmission constraints bind at specific times and locations. The DPT analysis can serve its intended purpose as a screen, but the impacts on competition cannot be properly evaluated in an LMP market in reliance on the DPT analysis alone. The Secretariat Affidavit demonstrates that the traditional DPT analysis does not detect the kind of market power concerns identified in the Market Monitor's analysis.

A benefit of the Three Pivotal Supplier ("TPS") test, which is used in the Market Monitor's analysis, is that it considers the power flows on the transmission system created by market participants. In the 1996 Merger Policy Statement, the Commission recognized that transmission flows could change as a result of combined operations by the merging parties. The Commission stated (at 72) that "[t]ransmission line loadings are likely to change as a result of the merging parties combined operations. These changes are likely to result in transmission availability that is different from historical experience."[34] This statement is also applicable to nodal markets. When a transaction changes the incentives of the market

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32 *See, e.g.*, Arizona Grocery Co. v. Atchison, T. & S. F. R. Co., 284 U.S. 370, 389 (1932) ("Where … the Commission has made an order having a dual aspect, it may not in a subsequent proceeding, acting in its quasi-judicial capacity, ignore its own pronouncement promulgated in its quasi-legislative capacity.").

33 *See Dynegy Inc., et al.*, 150 FERC ¶ 61, 231 (2015); *Exelon Corporation, Constellation Energy Group, Inc.*, 138 FERC ¶ 61,167 (2012); *NRG Energy Holdings, Inc., Edison Mission Energy*, 146 FERC ¶ 61,196 (2014); *see also Analysis of Horizontal Market Power under the Federal Power Act*, 138 FERC ¶ 61,109 (2012).

34 Merger Policy Statement at 72.

participants, it can also change power flows on transmission constraints. A merged entity with assets on both sides of a transmission constraint has the ability to exercise market power in a way that the owner of a standalone asset would not have. Congestion caused by its generation on the low priced side of the constraint can increase prices to the benefit of its supply on the high priced side of the constraint. This scenario is outside the scope of the PJM market power mitigation rules, which only apply to generating units on the high priced side of constraints. This scenario is created by the specific combination of assets in this Transaction, and it has an adverse effect on horizontal competition.

Notwithstanding whether the HHI level, or the change in 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 better 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 as a result of the interaction between demand and available incremental supply. That is the definition of a pivotal supplier or group of pivotal suppliers. In 2025, there were pivotal suppliers in the aggregate energy market on 95.3 percent of days.[35]

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. The Market Monitor's analysis identifies a relevant submarket in PJM for which competition is adversely affected by the Transaction using the Commission's criteria for identifying frequently binding constraints, the Chesapeake submarket. The Market Monitor's pivotal supplier analysis includes both three pivotal supplier tests with a market defined by supply within 150 percent of the competitive market price and singly pivotal supplier tests with a market defined by supply within 105 percent of the competitive market price. The 105 percent threshold is consistent with the market definition used for the DPT, and the one pivotal supplier test is consistent with the Commission's pivotal supplier screen used for Market Based Rates.[36] Under multiple metrics, the results show that ArcLight's ability and incentive to exercise market power would increase as a result of the Transaction.

The overall market 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

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[35] *See* Monitoring Analytics, L.L.C., *2025 State of the Market Report for PJM*, Vol. 2, Section 3: Energy Market at 136.

[36] *See* 119 FERC ¶ 61,295 (2007) and 153 FERC ¶ 61,065 (2015).

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 and results in every capacity owner being singly pivotal.[37] Every capacity market owner is required in order to clear the market. When there is endemic market power, effective market power mitigation is essential to ensure competitive pricing. Conditioning the approval of transactions that increase market power on behavioral conditions that address market power would help ensure that the public interest is not harmed.

D. Applicants Should Commit to Keep Existing Capacity in the PJM Capacity Market.

ArcLight's comments indicate its interest in co-located load arrangements for data centers in PJM. Such arrangements threaten the reliability and economics of the PJM market if they result in the removal of existing capacity from the market to serve large data center loads. The impact on competition from the growth of load from data centers is the most critical issue affecting PJM markets and the public interest in competitive outcomes today. A comprehensive solution has not been defined. In the meantime, consolidation in the markets continues and is evaluated transaction by transaction. The Commission was in a similar situation in 1996 when it adopted the Merger Policy Statement. Open access was the overriding issue at that time, and the Commission exercised its conditioning authority to

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[37] *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>, which can also be found at <https://www.monitoringanalytics.com/reports/Reports/2025.shtml> *and* <https://www.monitoringanalytics.com/reports/Reports/2026.shtml>.

make open access a condition for approval of mergers.[38] The conditioning authority can and should be invoked today to address a new issue requiring priority attention. Indeed, the condition recommended by the Market Monitor, a commitment to not remove resources from the markets to serve data centers is less burdensome than the requirement to provide open access was in the mid 1990s. Applicants have provided no information on how the inclusion of such a commitment would affect their plans, if at all.

The 2027/2028 Base Residual Auction ("BRA") resulted in a capacity procurement shortfall, falling below PJM's installed reserve margin for the second time in successive auctions.[39] Capacity owners in PJM were pivotal in almost all RPM auctions prior to the current extreme conditions in the capacity market. The current market shortage conditions due to growing data center load amplify that market power by making every individual capacity resource pivotal.[40]

The potential removal of existing capacity from the capacity market by ArcLight would be a form of withholding and result in PJM market prices that exceed the competitive level. The Market Monitor has documented and quantified the negative impact of data center

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38 *See, e.g.*, 16 U.S.C. § 824b; Merger Policy Statement at 68598 ("The Commission's interpretation of the public interest standard has never been static. … [O]ur view of what it takes to mitigate market power sufficiently to allow approval of a merger had evolved over time. We pointed out that as the industry had become more competitive, we began examining market power in transmission more closely, and that comparable access was now required. … [W]hile in the past we had focused only on increases in market power, we no longer believed that we could find any merger to be consistent with the public interest, whether or not the merger created increased market power, unless the merging utilities provided open access. We adopted this revised view of the public interest in light of EPAct's goal of encouraging greater wholesale competition and the significant increase in actual competition."), citing *El Paso Electric Company and Central and Southwest Services Inc.*, 68 FERC ¶ 61,181 61,914–15 (1994), *dismissed*, 72 FERC ¶ 61,292 (1995).

39 *See* Analysis of the 2027/2028 RPM Base Residual Auction—Part A ("2027/2028 BRA Report—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*>.

40 *See* Market Monitor Comments in Docket Nos. EC25-148, EC25-151, EC26-13, EC26-31, EC26-39, EC26-58.

loads on the competitiveness of the capacity market and on the prices in the capacity market for PJM customers in the last three BRAs.[41] The Market Monitor has also documented and quantified the negative impact of data center loads removing capacity from the capacity market on the competitiveness of the energy market and prices in the energy market.[42] There is, thus, significant evidence in the record showing the adverse impact on competition in the capacity market and in the energy market resulting from the removal of resources from the

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41 *See* Monitoring Analytics, LLC, "Analysis of the 2025/2026 RPM Base Residual Auction—Part A," (September 20, 2024) <*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) <*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," (October 15, 2024) <*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) <*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). <*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) <*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); <*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) <*https://www.monitoringanalytics.com/reports/Reports/2025/IMM_Analysis_of_the_20252026_RPM_Base_Residual_Auction_Part_H_20250731.pdf*>; "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*>; "Analysis of the 2026/2027 RPM Base Residual Auction—Part B," (March 3, 2026) <*https://www.monitoringanalytics.com/reports/Reports/2026/IMM_Analysis_of_the_20262027_RPM_Base_Residual_Auction_Part_B_20260303.pdf*>.

42 *See* Monitoring Analytics, LLC Comments to the Maryland PSC Senate Bill 1 Co-location Study Administrative Docket PC 61 (September 24, 2024); <*https://www.monitoringanalytics.com/filings/2024/IMM_Comments_MDPSC_PC61_20240924.pdf*>; Supplemental Comments to the Maryland PSC Senate Bill 1 Co-location Study Administrative Docket PC 61 (December 13, 2024). <*https://www.monitoringanalytics.com/filings/2024/IMM_Supplemental_Comments_re_MDPSC_PC61_Co_Located_Load_20241213.pdf*>;

markets to serve data centers. Removal of capacity from the capacity market would also make PJM less reliable. The fact that PJM is already short of its reliability target and that PJM faces very significant levels of forecast data center load makes this reliability impact an even greater risk. Allowing the removal of capacity to serve data center load would shift the costs and risks of data centers from data centers to all other PJM customers. This is inconsistent with the policy goal of ensuring that data centers do not impose their costs and risks on other customers.[43]

The current rules in the PJM tariff do not explicitly address the removal of capacity resources from the capacity market to serve data center load. Although the Market Monitor does not agree, PJM staff have publicly stated that the deactivation rules that define the PJM analysis and the Market Monitor analysis of proposed deactivations and their conclusions do not apply to the removal of resources to serve data center load.[44] For example, if the deactivation rules do not apply, PJM does not have to make a reliability determination and the Market Monitor does not make a market power determination. For example, if the deactivation rules do not apply, there are no rules governing Section V (RMR) status for resources that would exit the market to serve data center load.

The scope of this proceeding does not include revising or supplementing PJM's market rules. The PJM market rules are the context within which the impact of the Transaction must be evaluated.[45] The existing rules do not address or mitigate the potential

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43 *See* National Energy Dominance Council, Statement of Principles Regarding PJM (January 16, 2026), <*https://www.energy.gov/documents/statement-principles-regarding-pjm*> ("Principles").

44 *See* PJM, Co-Located Load Order Workshop (March 18, 2026) <*https://www.pjm.com/committees-and-groups/workshops/cllsco*>.

45 *See* Merger Policy Statement at 68598 ("We believe that if the Commission is to fulfill its statutory responsibilities, it must determine what is consistent with the public interest in light of conditions in the electric industry in general as well as the specific circumstances presented by a proposed merger. In an era of traditional, cost-of-service based regulation, the Commission defined its public interest responsibilities consistent with that structure. Today, we believe that the public interest requires policies that do not impede the development of vibrant, fully competitive generation markets. We

adverse impact on competition from the removal of resources from the markets to serve data center loads, a reasonably foreseeable consequence of the Transaction. A commitment by the Applicants to not remove resources from the markets to serve data centers could address this issue, protect the public interest and would have no impact on the Applicants if they have no plans to engage in this behavior.

The Transaction cannot be approved as consistent with the public interest while ignoring the identified adverse impact to competition and to rates, including the prices paid by customers for capacity, energy and transmission. The Market Monitor has calculated the cost impact on customers of removing capacity to serve data center loads.[46] Competitive market power screens are not relevant to the specific market power issue of removing existing resources from the markets to serve data center load and, therefore, cannot be relied on to support a presumption that market power is lacking or to reasonably shift the burden of proof away from the Applicants. In the January 30th Filing the Applicants did not address this issue, did not provide any analysis of the potential financial impact of such removal, did not include any statement about plans to serve data centers, and did not propose any associated mitigation.[47]

The Commission's new co-location rules create a special framework for transmission service for a range of load configurations, but these new rules do not approve or address the removal of existing resources from the market to serve data center load and the associated adverse reliability and affordability impacts on existing customers.[48]

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are refining our analysis of the effects of proposed mergers on competition in order to protect the public interest in the development of such highly competitive markets....").

46 *See* 2027/2028 BRA Report—Part A.

47 *See* 18 CFR § 33.2; *Se*e Tucson Elec. Power Co., 156 FERC ¶ 61,170 (2016) ("This finding is consistent with the 1996 Merger Policy Statement, where the Commission noted that the merger guidelines "contemplate using remedies to mitigate any harm to competition."), citing Merger Policy Statement, FERC Stats. & Regs. ¶ 31,044 at 30,118.

48 *See PJM Interconnection, L.L.C.*, 193 FERC ¶ 61,217 (2025).

The Transaction enhances ArcLight's ability to exercise market power adverse to competition and adverse to rates, and those adverse impacts on competition and rates cannot be ignored in this proceeding. These negative impacts are not consistent with the Commission's definition of the public interest.

ArcLight should be required to state that they will not remove the Project Companies' assets from the PJM Capacity Market to serve data center load. The White House Ratepayer Protection Pledge and the Principles issued by the National Energy Dominance Council and the PJM Governors make explicit that new data center load should be met by new generation.[49] Removing this capacity from the PJM Capacity Market would be directly counter to the Pledge and the Principles, would shift risks and costs to PJM customers, would have a negative impact on PJM competitive markets, and therefore would not be consistent with the public interest as the Commission has defined it.[50]

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

Market power mitigation rules in PJM are not sufficient to address the identified increases in structural market power and the resultant potential exercises of market power. The Transaction would have an adverse impact on competition in PJM, unless conditions are included.

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 defined

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[49] *See* White House, "Ratepayer Protection Pledge Proclamation," (March 4, 2026), <https://www.whitehouse.gov/presidential-actions/2026/03/ratepayer-protection-pledge-proclamation/> accessed March 20, 2026 ("Pledge").

[50] *See* National Energy Dominance Council, Statement of Principles Regarding PJM (January 16, 2026), <https://www.energy.gov/documents/statement-principles-regarding-pjm> ("Principles").

review 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 not use 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.[51]
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.
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, would ensure that retirements of economic resources are not used to exercise market power in the energy and capacity markets.
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.

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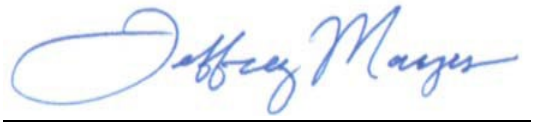
[51] This restriction is necessary for effective market power mitigation until PJM implements its Commission approved solution in Docket ER24-2905. There is currently no deadline for implementation because PJM is waiting for a long delayed software fix for other issues. There is no reason for PJM to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

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 would ensure that ArcLight meets its offer commitments and therefore that the energy market is competitive.
7. A commitment to not remove resources from the PJM Capacity Market to serve data center load would help ensure that the capacity market and energy market are competitive.

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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May 26, 2026

Attachment A-1
Public Market Power Analysis

Monitoring Analytics

PUBLIC

Market Power Analysis: ArcLight / Invenergy Transaction

The Independent Market Monitor for PJM

May 26, 2026

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Table of Contents

Introduction

This report was prepared by PJM's Independent Market Monitor (IMM). The report evaluates the impact of ArcLight's proposed purchase of fifty percent of the Invenergy thermal assets on the structure of the PJM energy and capacity markets. The IMM evaluated the transaction by attributing full control of the Invenergy assets to ArcLight in combination with ArcLight's existing assets. The report evaluates the implications of the purchase for the potential exercise of local and aggregate market power in both markets. The report evaluates whether the proposed purchase meets the public interest standard.

In conducting this analysis, the IMM addresses the Commission's feedback in the May 1, 2026, Order regarding ArcLight's purchase of KMC Thermo's Brandywine plant.[1] The IMM will continue to develop its approach to the analysis of mergers and acquisitions under Section 203 of the FPA. The IMM used publicly available market data on frequently binding constraints, using the Commission's duration criterion, and market prices to define a relevant submarket, as requested.[2] The IMM also used confidential PJM 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 both public data and confidential PJM market data to examine the effects of the proposed acquisitions on PJM markets.

The Invenergy thermal assets in PJM include 2,262.0 MW of natural gas fired generation in the ComEd and PPL Zones of PJM. ArcLight's assets in PJM consist of 9,560.1 MW of generation, including coal fired, gas fired, and oil fired, wind, and battery resources in the AEP, APS, ATSI, DEOK, DOM, PENELEC, PEPCO, PPL, and PSEG Zones of PJM. Table 1 shows the generation assets included in the transaction, the control zone where they are located, the nameplate rating, the fuel type and the technology type. Table 2 shows ArcLight's generation assets in PJM before the Transaction and ArcLight's total generation in PJM after the Transaction. ArcLight's generation capacity in PJM would increase by 2,262.0 MW to 11,822.1 MW with the transaction.

1 *See* 195 FERC ¶ 61,082 (2026).

2 *See id* at Chang and LaCerte concurrence at P 4.

Table 1 Invenergy Assets included and not included in the Transaction

Unit Name	Control Zone	Summer Rating (MW)	Fuel	Technology
Beech Ridge Energy	APS	100.0	Wind	Windmill
Beech Ridge Energy Storage	APS	31.5		Battery
Blooming Grove Wind Energy	ComEd	260.9	Wind	Windmill
Cadence Solar Energy	AEP	240.0	Solar	Solar
Folwer Ridge 2	AEP	150.5	Wind	Windmill
Grand Ridge Energy	ComEd	99.0	Wind	Windmill
Grand Ridge Energy II	ComEd	51.0	Wind	Windmill
Grand Ridge Energy III	ComEd	49.5	Wind	Windmill
Grand Ridge Energy IV	ComEd	10.5	Wind	Windmill
Grand Ridge IV Storage	ComEd	4.5		Battery
Hardin Solar Energy II	AEP	150.0	Solar	Solar
Hardin Solar Energy III	AEP	250.0	Solar	Solar
Richfield Solar Energy	DPL	100.0	Solar	Solar
Todd Solar	DPL	25.2	Solar	Solar
Invenergy Assets Not Included in the Transaction		1,522.6		
Nelson	ComEd	586.0	Natural Gas	CC
Nelson Expansion	ComEd	314.0	Natural Gas	CT
Lackawanna	PPL	1,362.0	Natural Gas	CC
Invnergy Assets Included in the Transaction		**2,262.0**		
Total Invenergy Assets		3,784.6		

Table 2 ArcLight assets pre and post Transaction

Unit Name	Control Zone	Summer Rating (MW)	Fuel	Technology
Backbone Mountain	APS	66.0	Wind	Windmill
Bay Shore	ATSI	153.2	Petroleum Coke and Oil	Steam
Bergen	PSEG	1,210.9	Natural Gas	CC
Brandywine	PEPCO	230.0	Natural Gas	CC
Burlington	PSEG	168.0	Natural Gas	CT
Carroll County	AEP	710.2	Natural Gas	CC
Conemaugh (22.5%)	PENELEC	385.0	Coal	Steam
Kearny	PSEG	456.4	Natural Gas	CT
Keys Energy Center	PEPCO	755.0	Natural Gas	CC
Keystone (22.84%)	PENELEC	390.8	Coal	Steam
Linden	PSEG	1,582.1	Natural Gas	CC
Lordstown	ATSI	867.0	Natural Gas	CC
Meyersdale	PENELEC	30.0	Wind	Windmill
Middletown	DEOK	463.6	Natural Gas	CC
Mill Run	APS	15.0	Wind	Windmill
Northwest Ohio	AEP	105.0	Wind	Windmill
Prospect Power (in development)	DOM	150.0		Battery
Sewaren	PSEG	538.0	Natural Gas	CC
Somerset	PENELEC	9.0	Wind	Windmill
South Field	ATSI	1,210.4	Natural Gas	CC
Waymart	PPL	64.5	Wind	Windmill
Total Pre Transaction ArcLight Assets		9,560.1		
Total Transaction Assets		2,262.0		
Total Post Transaction ArcLight Assets		11,822.1		

The Delivered Price Test ("DPT") analysis provided by applicants shows no screen failures in the PJM market nor in the previously established submarkets that include both the Invenergy assets and ArcLight generation, which are 5004/5005, AP South, and PJM West submarkets, for which applicants submitted analysis. The IMM does not find HHI threshold failures for the aggregate PJM energy and capacity markets or for submarkets. The IMM does find increased market power, determined by pivotal supplier analysis, both in the PJM Capacity Market and in the energy market submarket defined by local constraints that bind for more than five percent of hours.

There are frequently binding transmission constraints in the PJM market that limit the flow of low marginal cost energy from the shale gas production regions of Pennsylvania and West Virginia into Maryland and Virginia and neighboring areas of other states. These frequently binding constraints, which the IMM identifies in this report, create a significant submarket within PJM, which the IMM has identified as the Chesapeake submarket. The transaction creates the potential and incentive for ArcLight to exercise market power by creating uneconomic congestion from outside the submarket, raising

prices for ArcLight resources in the submarket. PJM has no market power mitigation rules that address this problem.

The IMM recommends specific behavioral remedies that would address the insufficiency of specific and defined market power mitigation elements of PJM's tariff and provide explicit mitigation to ensure market power is not exercised. Each of the behavioral conditions proposed by the IMM meets this Commission defined standard.

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.[3] 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.[4] Each of the behavioral conditions proposed by the IMM meets this Commission defined standard.

The IMM has established that the market power mitigation rules in the PJM tariff are insufficient to mitigate local market power in PJM. PJM agreed and filed to modify the market power mitigation rules in the energy market. On October 25, 2024, the Commission approved changes to PJM's market power mitigation process in the energy market that would remedy the flaws identified by the IMM.[5] PJM has failed to set an implementation date and has no specific deadline for doing so.[6] The result is that it is clearly established that PJM's market power mitigation rules are insufficient to mitigate local market power in the energy market.

The IMM's recommended behavioral remedies for local market power in the energy market in this report address the demonstrated insufficiency of the local market power mitigation rules. This is not a general market issue but a specific insufficiency in the rules. The proposed behavioral rules are an explicit mitigation of this issue. (See proposed behavioral rules 1, 2, 3 and 6.)

The IMM has established that the market power mitigation rules in the PJM tariff are insufficient to mitigate aggregate market power in the energy market. PJM has no market power mitigation in place for aggregate market power in the energy market. This is a fact

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3 *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).

4 Order No. 697-A at P 111.

5 *See* 189 FERC ¶ 61,060 (2024) ("October 2024 Order").

6 *See id*.

that demonstrates the insufficiency of the market power mitigation rules in PJM. This is not a general market issue but a specific insufficiency in the rules. The proposed behavioral rules are an explicit mitigation of these issues. The proposed behavioral rules are an explicit mitigation of this issue. (See proposed behavioral rules 1, 2, 3 and 6.)

The IMM has established that PJM does not enforce the must offer obligation of capacity resources to offer the full ICAP MW equivalent of all cleared UCAP capacity MW in the day-ahead and real-time energy markets every day.[7] This is a fact that demonstrates the insufficiency of the market power mitigation rules in PJM. This is not a general market issue but a specific insufficiency in the rules. The proposed behavioral rules are an explicit mitigation of this issue. (See proposed behavioral rules 4 and 5.)

The IMM's position is that the current market power mitigation rules in the capacity market are insufficient in a specific area. PJM filed to weaken the market power mitigation rules in the capacity market by permitting standalone CPQR offers without net revenue offsets and permitting segmented offer curves and FERC accepted the changes.[8] These rules are insufficient to prevent the exercise of market power because they permit capacity market offers in excess of competitive levels when energy market net revenues exceed the sum of all avoidable costs, including the CPQR component. This is not a general market issue but a specific insufficiency in the rules. The proposed behavioral rules are an explicit mitigation of this issue. (See proposed behavioral rules 4 and 5.)

The removal of capacity from the market through bilateral sales to data center load is not governed by the PJM market rules, including the rules for retirement of resources. It requires no market power review and no reliability review. Removal of capacity from the market can have a significant impact on market prices and reliability that benefits other generating resources in a company's portfolio and increases market prices above the competitive level.[9] Such removal of capacity is a current issue in PJM with potentially extreme consequences for the markets and for customers in the PJM markets. The absence of any rules governing the dedication of existing resources to data center load means that the PJM rules are insufficient to prevent the exercise of market power. This is not a general market issue but a specific insufficiency in the rules. The proposed behavioral rules are an explicit mitigation of this issue. (See proposed behavioral rule 7.)

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77 *See* Monitoring Analytics, L.L.C., *2026 State of the Market Report for PJM: January through March*, Section 3: Energy Market at p. 166-167.

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

9 The Commission's order on transmission arrangements for co-located load does not address the effect of capacity removal on competition or prices or reliability. *See PJM Interconnection, L.L.C., et al.*, 193 FERC ¶ 61,217 (2026).

Summary

The Transaction would increase market power in the PJM markets. The sale of the Invenergy assets to ArcLight would increase local structural market power for multiple frequently binding constraints. The transaction would also increase structural market power in the aggregate energy and capacity markets.

The IMM analyzed the effect of the ArcLight purchase of the Invenergy assets on market power in the PJM local energy markets and aggregate energy market using data from April 2024 through March 2026. The IMM analyzed the effects of the ArcLight purchase of the Invenergy assets 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 recommends that any order approving the transaction require specific behavioral commitments by ArcLight. None of the behavioral commitments would create a burden on applicants because all are designed to help ensure competitive behavior. Each of the conditions addresses an identified insufficiency in the PJM market power mitigation rules. Absent the inclusion of the identified behavioral commitments, the IMM opposes the transaction. If the identified conditions were accepted, the IMM does not oppose 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

- The IMM analyzed the impact of the acquisition on frequently binding constraints for April 2024 through March 2026 to measure the effect of the acquisition on local market power in the energy market. ArcLight would fail the TPS test for more hours as a result of the proposed acquisition for the identified frequently binding constraints, defined using the Commission's definition.
- {BEGIN CUI//PRIV//HC}
- REDACTED
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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 for which the Commission has approved a solution but for which PJM has failed to identify an implementation date. The IMM's behavioral recommendations address the insufficiency of the existing rules to address market power mitigation.

Capacity Market

- The IMM analyzed the 2025/2026, 2026/2027, and 2027/2028 BRA results for all modeled LDAs to measure the effect of the acquisition on the PJM Capacity Market.
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- REDACTED
- {END CUI//PRIV//HC}
- The IMM's behavioral recommendations address the insufficiency of the existing rules to address market power mitigation in the capacity market.

Behavioral Recommendations

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.[10] 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.[11] Each of the behavioral conditions proposed by the IMM meets this Commission defined standard. 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 defined review criteria and limit price-based offers to a markup no greater than $1 per MWh.
2. Will not use 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.

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[10] *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).

[11] Order No. 697-A at P 111.

7. Will not remove resources from the PJM capacity market to serve data center load.

Cost-based Energy Market Offers

As a result of the transaction, ArcLight would have market power more frequently in local energy markets and 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.[12]

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 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.[13] 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.

PJM filed a correction with the Commission to address this issue and the Commission approved the correction in the October 2024 Order. The revised rules require that sellers that fail the TPS test will be offer capped at their cost-based offers and that operating parameters will be mitigated. The schedule selection process between the price-based offer and the cost-based offer is removed, so the problem with incorrectly selecting an

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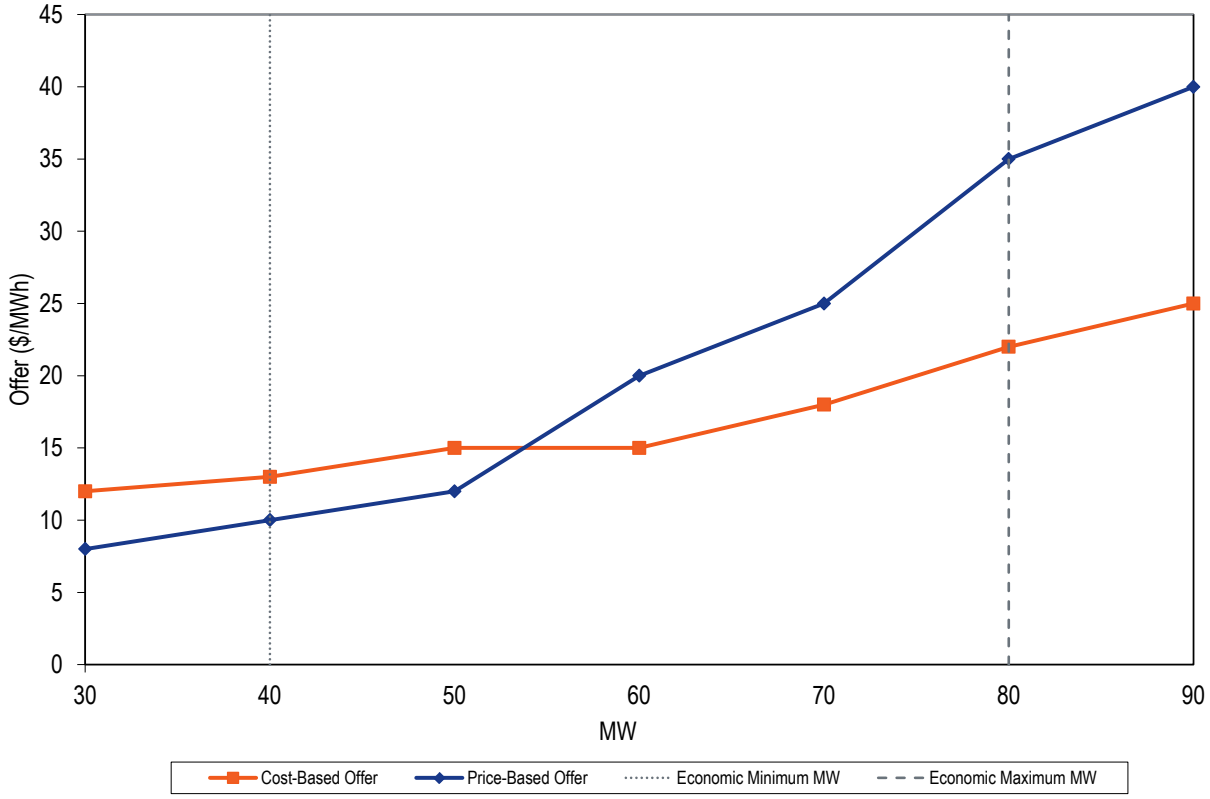
[12] The IMM provides a template for Fuel Cost Policies on its website, <https://www.monitoringanalytics.com/tools/tools.shtml>. As of June 30, 2025, 92 percent of all generating units in the PJM Energy Market had a Fuel Cost Policy that passed the IMM review. See Monitoring Analytics, L.L.C., *2025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

[13] 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.

offer with markup when a resource has local market power would be eliminated if PJM implemented the Commission approved proposal.

Figure 1 Offers with varying markups at different MW output levels



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.[14]

[14] *See* OA Schedule 1 § 6.6.

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. [15] 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.

The October 2024 Order approved a solution to the problem. The revised rules require that sellers that fail the TPS test and sellers in emergencies will always be placed on a schedule with parameter limits. The schedule selection process between the price-based offer and the cost-based offer and between the price-based offer and the price-based parameter limited offer would be removed, so the problem with incorrectly selecting an offer with inflexible parameters when a resource has local market power or during emergency conditions would be eliminated if PJM implemented the Commission approved proposal.

Capacity 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.

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 from the energy, ancillary

[15] 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.

services and capacity markets, after accounting for identified risks. The retirement of economic units can be a mechanism for the exercise of market power by making the balance of the portfolio more profitable and more than offsetting the lost net revenue from the retired asset.

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.[16] 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.[17] 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.

Data Center Load

On April 23, 2025, the PJM Power Providers Group ("P3"), a group of PJM generators that includes ArcLight, filed comments on the Commission's inquiry concerning the large loads co-located at generating facilities.[18] P3's comments indicate its members' interest in pursuing co-located load arrangements for data centers in PJM. Such arrangements threaten the reliability and economics of the PJM market, because they would remove existing capacity from the market to serve large data center loads. Removing (delisting) capacity from the PJM markets via bilateral capacity contracts has the same effect on PJM markets as a retirement. Such removal can provide more benefits to the seller than simple retirement because the removal simultaneously provides above market revenue through the bilateral contract and increases the overall capacity market price to the benefit of the rest of the seller's portfolio. ArcLight, along with DigitalBridge, has recently invested in a data center power services provider, Takanock, LLC.[19] ArcLight should agree not to

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16 OA Schedule 1 § 1.10.1A(d).

17 *See* Monitoring Analytics, L.L.C., 2026 State of the Market Report for PJM, Section 3: Energy Market, p. 166-167.

18 *See* Comments of the Electric Power Supply Association and the PJM Power Producers Group, Docket No. AD24-11-000, et al.

19 *See* DigitalBridge Press Release, "Takanock Secures $500 Million Commitment from ArcLight and DigitalBridge," (June 25, 2025), <https://ir.digitalbridge.com/news-releases/news-release-details/takanock-secures-500-million-commitment-arclight-and>, accessed May 25, 2026.

pursue any arrangements to serve data centers that would remove capacity and energy from the PJM markets.

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."[20] 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 effect on competition also includes the effect on rates because the level of market competition affects market prices. The IMM evaluates the impact of the merger or acquisition on competition using pivotal supplier analysis and concentration thresholds.

Any analysis of market structure depends on an accurate definition of the relevant markets and market participants. Market power analysis depends on properly identifying and evaluating potential substitutes for a given product and their costs. In the DPT analysis, substitutes are limited to suppliers that can increase output to meet load within a defined market. All supply MW that can access a market, either a balancing authority or a submarket based on transmission zones, at a price less than 105 percent of the market price are considered to be perfect substitutes. Publicly available data from a variety of sources plus commercially available data in some cases allows applicants to construct static supply curves based on estimates of marginal cost. This is in contrast to the actual functioning of wholesale power markets, like PJM, where demand is defined by constraints including the RTO power balance constraint, transmission constraints, and ancillary service requirement constraints. All MW are perfect substitutes with respect to the power balance constraint, but not for transmission constraints. MW are weighted by their electrical proximity to constraints using a distribution factor (dfax) that measures the share of the power output from the generators' electrical location to the constraint. Prices are determined both by suppliers that can raise output and suppliers that can reduce output to relieve constraints that limit power flow into a defined submarket. Within organized markets data are available, and should be used, to assess market power based on how generating units are evaluated and dispatched to meet demand using their own market offers and transmission constraints, based on network relationships between resources and load, relative costs, operational availability and operational parameters. Such an approach provides measures of market power based on actual operational data related to the participants and the markets in which they operate.

The data needed to define local markets include constraint data and data reflecting the impact of generating units on those constraints. Data on binding transmission constraints

[20] 18 CFR § 33.2(g).

is publicly available on PJM's website. The energy market distribution factor ("dfax") data is not made public by PJM. It is necessary to determine each generating units' effect on each transmission constraint.[21]

Regardless of how accurately existing local markets are defined, wholesale power markets are extremely dynamic. Within organized markets, relevant submarket definitions can change significantly over time as a result of changes in fuel costs, generation mix, load and transmission system expansion. Submarket definitions are dynamic. No submarket 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. This requires effective rules to mitigate market power in the PJM tariff or, where the PJM tariff is lacking, behavioral commitments by market sellers.

In the IMM analysis, the definition of the relevant submarkets 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. The IMM has analyzed the relevant submarkets 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 frequently binding constraints identified in this analysis are, following the Commission's preference, those that were binding for 876 or more hours from April 2024 through March 2025, or five percent of hours. 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 submarkets reflects the information available based on the actual operation of the PJM wholesale power markets in the last two years. For different resources and different time periods, market conditions change, and the relevant identified local markets change.

The nature of PJM markets means that 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. If further concentration of ownership is allowed, 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 the effect of sequential transactions. The Commission's merger policy does not define a maximum level of concentration or a maximum market share that is consistent with competitive outcomes or the standard for defining such a maximum level of concentration or market share in

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[21] *See* PJM Data Miner 2, Real-Time Marginal Value, <https://dataminer2.pjm.com/feed/rt_marginal_value/definition>.

reviewing mergers. For example, these static market power analyses ignore the gradual accumulation of market power by ArcLight over repeated transactions dating back to 2017.

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.[22] The 1992 Guidelines predate the creation of the PJM wholesale power market in 1999.[23] The Commission reevaluated and reconfirmed its Merger Guidelines in 2012.[24]

The Commission reserves the option to consider alternative approaches to 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.[25]

The 1992 Guidelines adopted the analytical framework 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 mergers should not be permitted to create or enhance market power or facilitate its exercise."[26]

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

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22 *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).

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

24 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).

25 *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).

26 1992 Guidelines at 2.

concentration while recognizing that "[o]ther things being equal, cases falling just above and just below a threshold present comparable competitive issues."[27] 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.[28] 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."[29]

The HHI on its own is of limited value in determining the impact of a merger on the structural competitiveness of a wholesale power market. In a market with an inelastic demand curve, the existence of one, 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.[30]

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

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27 1992 Guidelines at 15.

28 *Id*. at 16.

29 *Id*.

30 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*>.

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 Commission has relied on pivotal supplier analysis as an indicative screen for market power since at least 2007 with Order No. 697, reaffirmed in 2015 with Order No. 816.[31] The Commission uses a market share screen together with a pivotal supplier screen, stating that "[u]se of the two screens, therefore, provides a more complete picture of a Seller's ability to exercise market power."[32]

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) recognizes that market power exists even in the presence of market share and HHI concentration levels that fall below 1992 Guidelines for a competitive market structure.[33]

Three Pivotal Supplier Test

In the IMM analysis, the basic metrics used for each market include market share, the Herfindahl-Hirschman Index (HHI), the three pivotal supplier test (TPS) and in some cases a one pivotal supplier test, both pivotal supplier tests based on a standard residual

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31 *See* 119 FERC ¶ 61,295 (2007) and 153 FERC ¶ 61,065 (2015).

32 Federal Energy Regulatory Commission, "Horizontal Market Power," <https://www.ferc.gov/horizontal-market-power>, last updated February 18, 2022.

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

supplier index. 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 indices are a summary measure of market share. The concentration index used here is the 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 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.[34] 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

[34] 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.

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.

A benefit of the TPS test is that it defines the market based on the electricity network, rather than geography. Power on the grid does not flow based on geographic boundaries. Transmission zone borders are historical artifacts that define transmission owner responsibilities and have no special significance for defining actual power flow based submarkets. 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 constraints that create markets, using distribution factors greater than, or equal to, the dfax used by PJM in market 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.

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.[35]

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 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."[36] 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. [37]

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.

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35 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*> .

36 AEP Order at P 72.

37 *Id*. at P 103.

The Commission definition of the relevant market includes all suppliers with marginal costs 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 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's pivotal supplier screen includes only one pivotal supplier.

The three pivotal supplier test uses the correct definition of the relevant market. However, use of the correct definition of the relevant market does not require the use of the three pivotal supplier test.

The Chesapeake Submarket

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.[38]

ArcLight's Delivered Price Test considers the PJM RTO market as well as 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

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

analyze existing submarkets but also to address the fact that market power is persistent and may become 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 the Invenergy assets.

A portion of the PJM footprint around the Chesapeake Bay has been transmission constrained historically, but has not been formally defined as a submarket. This area includes the DOM, BGE, and PEPCO transmission zones, but also extends into transmission zones in Pennsylvania and Delaware. The exact list of transmission constraints defining the Chesapeake submarket has changed over time and will continue to change, but it includes many of the same transmission elements over time, which limit the flow of energy from the shale gas production regions of Pennsylvania and West Virginia into the Baltimore and Washington, DC metropolitan areas, including Data Center Alley in Northern Virginia. These constraints are frequently binding in the PJM energy market, as defined by the Commission, and bind at times of system peak loads.[39]

Table 3 provides the congestion event hours for the frequently binding PJM constraints that meet the Commission's criterion of binding at least five percent of annual hours.

Table 3 Frequently binding constraints: April 2024 through March 2026

Frequently Binding Constraints (April 2024 - March 2026)			
Facility	Real-Time Congestion Event Hours	Percent of Hours	Chesapeake Submarket
Bedington - Black Oak	990	5.7%	Yes
Chicago Ave - Praxair	1,186	6.8%	
Conastone - Northwest	1,241	7.1%	Yes
Dune Acres - Michigan City	1,617	9.2%	
East Towanda - Hillside	2,666	15.2%	
Graceton - Manor	1,245	7.1%	Yes
Haumesser Road - Steward	2,315	13.2%	
Kewanee	2,732	15.6%	
Lenox - North Meshoppen	7,551	43.1%	
Nottingham	2,946	16.8%	Yes
Prest - Tibb	1,925	11.0%	

The Chesapeake submarket includes but is not limited to the BGE, DOM, and PEPCO transmission zones. Rather than using transmission zone definitions, a more accurate

[39] For example, during Winter Storm Fern, the winter peak of January and February 2026, and during the May 18 to 20, 2026, heatwave, PJM required capacity demand response to curtail in the DOM, BGE, and PEPCO Zones due to binding constraints. *See* PJM Emergency Procedures Postings at <https://emergencyprocedures.pjm.com/ep/pages/dashboard.jsf>.

definition of the electrical submarket can be obtained using the pricing nodes affecting flows on the frequently binding constraints. The list of frequently binding constraints includes those that define the Chesapeake submarket and also include other frequently binding constraints. A negative dfax indicates the high price side of the constraint in the load pocket, and all pnodes with a negative dfax to the identified constraints greater than three percent are defined to be inside the submarket.[40] A positive dfax indicates the low price side of the constraint where resources have the ability to exercise market power by creating uneconomic flows on the transmission constraint in order to cause or exacerbate price separation, and all pnodes with a positive dfax to the identified constraints greater than three percent are defined to be outside the submarket.

Figure 2 shows the price separation directly resulting from binding constraints, along with the location of the constraints. The map plots the congestion component of LMP ("CLMP") associated with binding constraints by pnode for the constraints that caused the most price separation and related congestion costs, in 2025. The CLMP measures the amount a pnode is priced above or below the PJM system marginal price ("SMP") due to binding constraints.[41] The Bedington-Black Oak, Conastone-Northwest, Graceton-Manor, and Nottingham constraints that define the purple area are priced more than $20 per MWh above the SMP. The surrounding red and dark orange areas are priced more than $10 per MWh above the SMP due to the same binding constraints. Binding constraints at Pleasant View, Ashburn, Goose Creek, and Brambleton-Evergreen Mills further constrain flows into Data Center Alley within the Chesapeake submarket. Only one constraint in the top 10 constraints by congestion cost is not associated with the Chesapeake submarket, Lenox – North Meshoppen.

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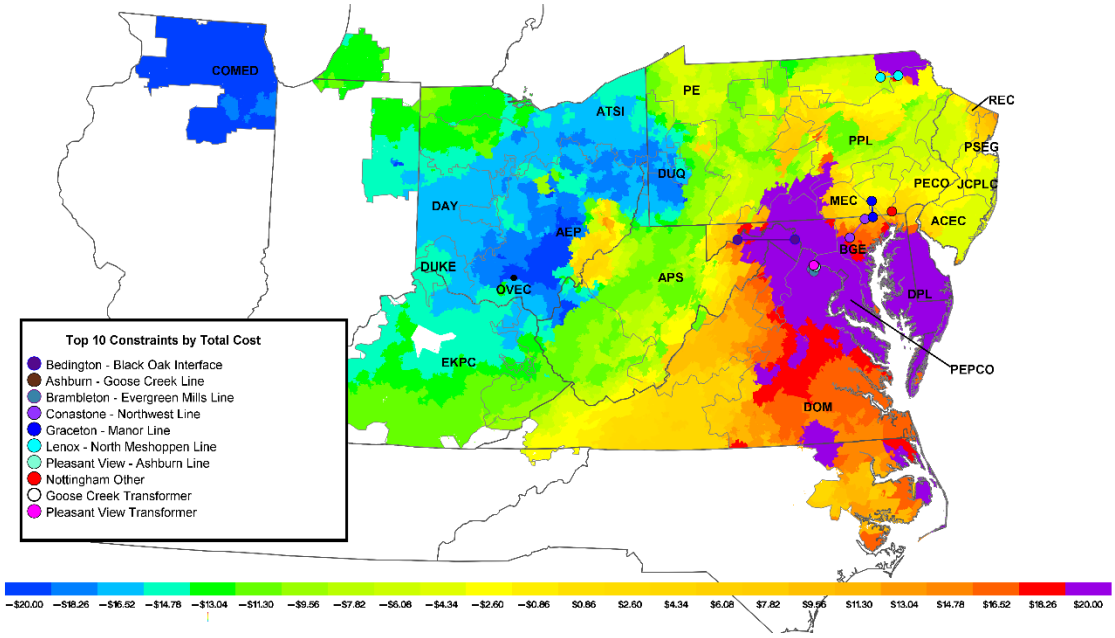
40 The dfax threshold is used to exclude resources that do not have a significant impact on a constraint. Three percent is the threshold used by PJM to determine whether a generating unit is eligible for offer capping for local market power mitigation.

41 See the *2025 State of the Market Report for PJM*, Volume 2, Section 11: Congestion and Marginal Losses (March 13, 2026) <https://www.monitoringanalytics.com/reports/PJM_State_of_the_Market/2025.shtml>.

Figure 2 Map of price differences resulting from the top 10 binding constraints by total congestion cost: 2025



The Commission previously accepted the PJM West submarket, including some of the same constraints that define the Chesapeake submarket, but includes AP; AEP; ATSI; BGE; ComEd; DAY; DOM; DEOK; DLCO; EKPC; OVEC; PENELEC; and PEPCO.[42] [43] The constraints that defined the PJM West submarket included Nottingham, Conastone-Northwest, Graceton-Safe Harbor, Lenox-North Meshoppen, and Fremont-Fremont. The analysis considered the sign, but not the magnitude, of the dfax between the constraints and zonal load aggregates, rather than individual pnodes. As a result, the PJM West submarket is much larger than the Chesapeake submarket and includes transmission zones where generation does not have a significant effect on the Chesapeake submarket constraints. As the map shows, prices vary considerably within the PJM West submarket. Because the DPT analysis does not consider dfax in determining the amount of relief that generation can provide to demand in the submarket, the PJM West submarket does not accurately capture the extent of local market power present in the Chesapeake submarket. In the actual operations of the PJM market, the Chesapeake submarket is a relevant submarket. To accurately define the submarket by generators with an electrical location that can actually provide constraint relief and, therefore, affect prices in the submarket, the IMM has limited the pnodes defining the Chesapeake submarket based on a dfax greater than three percent in magnitude.

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42 192 FERC ¶ 61,073 (July 23, 2025) at P.56.

43 *See* PJM. PJM Transmission Zone Map, <https://www.pjm.com/library/-/media/B7455E69D97B45FFB390EEFAD84AD50D.ashx> .

As the pnodes and constraints defining this submarket may shift over time, updating the submarket definition based on frequently binding constraints and shifting distribution factors is essential to accurate analysis. All of the binding constraint data is available on PJM's website.[44] All of the CLMP data is available on PJM's website.[45]

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. Local market power may not exist in one period and may exist in the next. Local market power may 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, April 2024 through March 2026.[46] The IMM uses data from PJM's real-time energy market.

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 4 ArcLight's average hourly market share of PJM generation: April 2024 through March 2026

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[44] *See* PJM Data Miner 2, Real-Time Marginal Value, <https://dataminer2.pjm.com/feed/rt_marginal_value/definition>.

[45] *See* PJM Data Miner 2, Settlements Verified Five Minute LMPs, <https://dataminer2.pjm.com/feed/rt_fivemin_mnt_lmps/definition>.

[46] *See* 192 FERC ¶ 61,074 at 131.

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Table 5 Energy market HHI: April 2024 through March 2026

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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. 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 the Invenergy assets would increase ArcLight's aggregate market power, increasing its incentive and ability to raise prices.

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Table 6 PJM Day-ahead aggregate energy market pivotal supplier frequency: April 2024 through March 2025

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Local Market Power

The IMM also analyzed the real-time energy market results for frequently binding constraints for more than five percent of hours in the two year period, April 2024 through

March 2026. [47] The analysis identifies constraints for which ArcLight had market power, or would have market power with the acquisition, 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. Invenergy'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 7 identifies the constraints on the PJM system that were frequently binding based on the Commission's criteria of more than 876, or 5 percent, of hours during the period, April 2024 through March 2026. It provides the number of hours for which ArcLight failed the TPS Test and the number of hours for which ArcLight would have failed the TPS Test with the acquisition.[48]

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Table 7 Constraints where ArcLight had market power as determined by the real-time energy market TPS test: April 2024 through March 2026

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Table 8 identifies the constraints on the PJM system that were binding for more than 876 or 5 percent of hours during April 2024 through March 2026. 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.

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Table 8 Preacquisition and Postacquisition TPS scores for constraints where ArcLight had market power as determined by the real-time energy market TPS test: April 2024 through March 2026

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47 *See* 192 FERC ¶ 61,074 at 131.

48 The IMM increased the number of constrained hours in its analysis from 200 hours in two years to 876 hours (5 percent of hours in two years) in response to the Commission's requests in Docket No. EC26-39.

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Table 9 identifies the constraints on the PJM system that were binding for more than 876 or five percent of hours during April 2024 through March 2026. Table 9 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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Table 9 Preacquisition and Postacquisition HHI for constraints where ArcLight had market power as determined by the real-time energy market TPS test: April 2024 through March 2026

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Local Market Power on Both Sides of the Constraint

Combining generation on the high and low priced sides of constraints creates market power that allows generators to increase prices to their benefit. For a given constraint, the high priced side refers to nodal locations with a positive congestion component of LMP and the low priced side refers to nodal locations with a negative congestion component of LMP. LMPs on both sides of constraints are affected by constraint shadow prices, and market participants on both sides of constraints affect flows on constraints, and thus, they both affect the shadow prices. A constraint shadow price equals the marginal cost associated with providing another MW of relief flow on the constraint. Flows on the constraint from a generator depend on the distribution factor ("dfax") for the generator pnode and constraint pair. The output of a generator can either increase or decrease prices depending on the generator dfax and the constraint shadow price.

Figure 3 shows a simple two bus example with four generation units. All the load is located at B. The limit on the transmission flow between the two buses is 700 MW. The offers and parameters are shown for each generator. For instance, economic minimum of generator G3, located at B, is 350 MW and economic maximum is 550 MW. Generator G3's offer is a flat $60 per MWh. The operator's task is to find the cheapest feasible dispatch MW to meet the 1,000 MW load at B using the four generators while respecting the transmission constraint and generator parameter limits.

The solution shows that G2 dispatched to 600 MWh and G3 dispatched to 400 MWh minimizes the total production cost. The flow on the transmission constraint in this

solution would be 600 MW or 100 MW below the limit of 700 MW. The shadow price is $0 per MWh since the flow is not at the limit. There is no price separation between the buses and G3 is the only marginal generator. The locational marginal price for bus A and B, in this example, is $60 per MWh, same as the offer price of the marginal generator G3.

Figure 3 Two Bus Example: Base Case

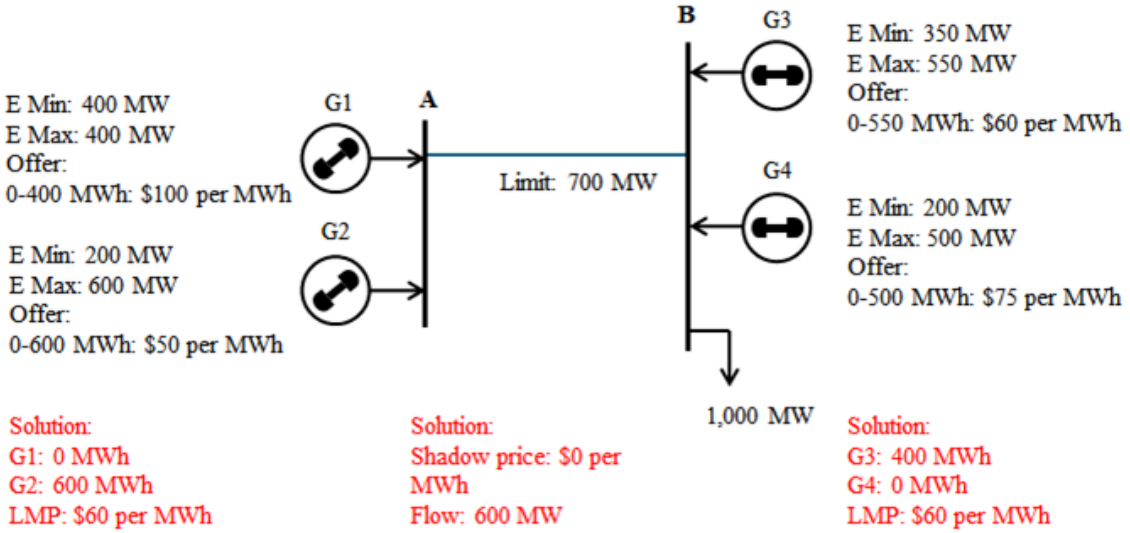
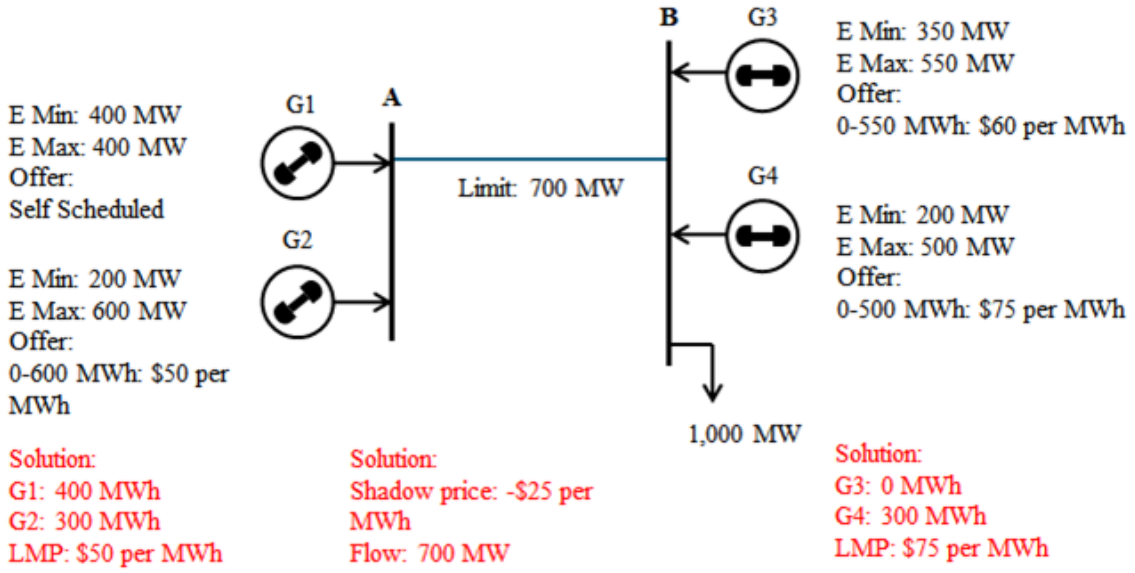


Figure 4 shows the same two bus example shown in Figure 3 except for generator G1 at A offered as a self scheduled resource. All other generator parameters, transmission limits, generator offers and load remain the same. The addition of 400 MWh from G1 results in price separation between A and B. The cheapest solution that satisfies the generator parameter limits and transmission limit requires G2 dispatched to 300 MW and G4 dispatched to 300 MW. Even though G4's is offer is higher compared to the offer of G3, satisfying the parameter limits of G3 and G4 results in a solution that requires G4 to supply all the remaining generation needed to meet the 300 MW of load after accounting for 700 MW of flow from A.

Both G2 and G4 are marginal resources. The LMP for bus A is $50 per MWh, same as the offer price of the marginal generator G2 and LMP for bus B is $75 per MWh, same as the offer price of the marginal generator G4. In this solution, the flow on A to B transmission constraint is at its limit. The shadow price, which represents the incremental value of additional transmission capacity, is $25 per MWh. In other words, if the transmission capacity were to increase by 1 MW, the cheapest marginal generator G1 would increase its output by 1 MWh and production cost by $50 per MWh; and the expensive marginal generator G4 would decease its output by 1 MWh and production cost by $75 MWh; for a net decrease in the production cost by $25 per MWh.

The examples demonstrate that a self scheduled or a low offer generation on the lower price side of a transmission constraint could increase the prices on the higher price side of the transmission constraint.

Figure 4 Two Bus Example: Self Scheduled Generator on the lower pricing side



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The Commission's 1996 Merger Policy Statement expressed concern about transmission constraints limiting access to markets. Transmission capability will be affected by ArcLight's purchase of the Invenergy assets, because it creates incentives for "line loadings to change based on the merging parties combined operations. These changes are likely to result in transmission availability that is different from historical experience." Such changes would be an adverse effect of the transaction on competitive market outcomes, as illustrated by the example and shown by the TPS test results.[49]

Capacity Market Results

Market Design

The Reliability Pricing Model (RPM) Capacity Market design was implemented in PJM 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.[50] Capacity storage resources include hydroelectric, flywheel and battery storage. Intermittent resources include wind, solar, landfill gas, run of river hydroelectric, and

[49] 77 FERC ¶ 61,263 Order No. 592, 1996 Merger Policy Statement at 72.

[50] *See* 190 FERC ¶ 61,117.

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.[51]

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.[52]

RPM prices are locational by LDA and may vary depending on transmission constraints between LDAs and local supply and demand conditions within LDAs.[53] 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 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.[54] The capacity market, following the implementation of

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51 *See id*.

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

53 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.

54 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

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 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

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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"); 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>; 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>; Analysis of the 2026/2027 RPM Base Residual Auction - Part B," (March 3, 2026) <https://www.monitoringanalytics.com/reports/Reports/2026/IMM_Analysis_of_the_20262027_RPM_Base_Residual_Auction_Part_B_20260303.pdf>.

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.[55]

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 market power mitigation rules are uncertain. The inclusion of offers based on standalone CPQR and segmented offers both undermine market power mitigation.[56]

Market Analysis

The analysis of the impact of the ArcLight acquisition of the Invenergy assets 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.

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55 *See* 2025/2026 BRA Reports.

56 *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).

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. 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.[57] 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.[58]

Aggregate Market: HHI

Table 10 shows pre and post ArcLight 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 10 measure concentration of ownership for all cleared capacity in the identified LDAs.

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57 *See* 2025/2026 BRA Reports

58 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.

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Table 10 Preacquisition and postacquisition HHI

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Locational Capacity Markets: Pivotal Supplier Tests

The pivotal supplier analysis uses the pre and postacquisition One Pivotal Supplier (OPS) and Three Pivotal Supplier test scores to measure the change in market power for the RTO and LDAs. The OPS analysis uses the same basic residual supplier logic as the TPS analysis, except that the OPS defines whether a single supplier is pivotal and the OPS uses a price threshold of 105 percent instead of 150 percent to define competitive suppliers. Table 11 shows the preacquisition and postacquisition OPS scores for ArcLight and Invenergy. Table 12 shows the preacquisition and postacquisition TPS scores for ArcLight and Invenergy. Invenergy results are affected by the fact that there was no capacity market must offer requirement for intermittent resources in the 2025/2026 BRA.

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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 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 11 Preacquisition and postacquisition OPS results for ArcLight and Invenergy

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Table 12 Preacquisition and postacquisition TPS results for ArcLight and Invenergy

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Attachment A-2
Highly Confidential
Market Power Analysis

REDACTED

Attachment B
IMM Protective Agreement

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Grays Harbor Energy LLC	)	
Hardee Power Partners Limited	)	
Invenergy Cannon Falls LLC	)	EC26-76-000
Invenergy Nelson LLC	)	
Invenergy Nelson Expansion LLC	)	
Lackawanna Energy Center LLC	)	
Spindle Hill Energy LLC	)	
	)	
Gray Wolf Power, LLC	)	
	)	

PROTECTIVE AGREEMENT

This Protective Agreement is entered into this _____ day of _____, ____, by and between the Independent Market Monitor for PJM (Monitoring Analytics, LLC) ("Market Monitor") and _____ ("Applicants"), and shall govern the use of all Privileged Material, as defined herein, submitted by the Market Monitor to the Federal Energy Regulatory Commission (the "Commission") in this proceeding. The Market Monitor and Applicants are referred to herein individually as a "Party" and jointly as "Parties."

1. The pleading filed by The Market Monitor in the above-captioned proceeding included documents that contained Privileged Material. The Market Monitor is a "participant" in such proceeding, as such term is defined in 18 C.F.R. § 385.102(b), or has filed a timely motion to intervene or a notice of intervention in such proceeding. The Parties enter into this Protective Agreement to govern the use of Privileged Material or CEII produced by The Market Monitor in the above-referenced proceeding. Notwithstanding any order terminating such proceeding, this Protective Agreement shall remain in effect unless and until specifically modified or terminated jointly by the Parties or by the Commission or a court of competent jurisdiction.

2. The Commission's regulations[1] and its policy governing the labelling of controlled unclassified information ("CUI"),[2] establish and distinguish the respective designations of Privileged Material and CEII. As to these designations, this Protective Agreement provides that a Party:

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[1] *Compare* 18 C.F.R. § 388.112, *with* 18 C.F.R. § 388.113. This Protective Agreement does not alter the respective requirements imposed by these sections on Privileged Material or CEII.

[2] *Notice of Document Labelling Guidance for Documents Submitted to or Filed with the Commission or Commission Staff*, 82 Fed. Reg. 18,632 (Apr. 20, 2017) (issued by Commission Apr. 14, 2017).

A. *may* designate as Privileged Material any material which customarily is treated by that Party as market sensitive, commercially sensitive or proprietary or material subject to a legal privilege, which is not otherwise available to the public, and which, if disclosed, would subject that Party or its customers to risk of competitive disadvantage or other business injury or would harm competitive markets; and

B. *must* designate as CEII, any material that meets the definition of that term as provided by 18 C.F.R. §§ 388.113(a), (c).

3. For the purposes of this Protective Agreement, the listed terms are defined as follows:

A. Party(ies): As defined above.

B. Privileged Material:[3]

i. Material (including depositions) provided by a Party in response to discovery requests or filed with the Commission, and that is designated as Privileged Material by such Party;[4]

ii. Material that is designated Highly Confidential Privileged Material because it is commercially sensitive among the Participants or of such a private, personal nature that the producing Participant is able to justify a heightened level of confidential protection with respect to those materials or because it is market sensitive and its disclosure may harm competitive markets. The rules for Privileged Material apply to Highly Confidential Privileged Material except that Competitive Duty Personnel are prohibited from access to Highly Confidential Privileged Material as provided in Paragraph 7.

iii. Material that is privileged under federal, state, or foreign law, such as work-product privilege, attorney-client privilege, or governmental privilege, and that is designated as Privileged Material by such Party;[5]

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[3] The Commission's regulations state that "[f]or the purposes of the Commission's filing requirements, non-CEII subject to an outstanding claim of exemption from disclosure under FOIA will be referred to as privileged material." 18 C.F.R. § 388.112(a). The regulations further state that "[f]or material filed in proceedings set for trial-type hearing or settlement judge proceedings, a participant's access to material for which privileged treatment is claimed is governed by the presiding official's protective order." 18 C.F.R. § 388.112(b)(2)(v).

[4] *See infra* P 11 for the procedures governing the labeling of this designation.

[5] The Commission's regulations state that "[a] presiding officer may, by order …. restrict public disclosure of discoverable matter in order to …. [p]reserve a privilege of a participant…." 18 C.F.R. § 385.410(c)(3). To adjudicate such privileges, the regulations further state that "[i]n the absence of controlling Commission precedent, privileges will be determined in accordance with decisions of the Federal courts with due consideration to the Commission's need to obtain information necessary to discharge its regulatory responsibilities." 18 C.F.R. § 385.410(d)(1)(i).

iv. Any information contained in or obtained from such designated material;

v. Any other material which is made subject to this Protective Agreement by the Commission, any court, or other body having appropriate authority, or by agreement of the Parties;

vi. Notes of Privileged Material (memoranda, handwritten notes, or any other form of information (including electronic form) which copies or discloses Privileged Material);[6] or

vii. Copies of Privileged Material.

viii. Privileged Material does not include:

a. Any information or document that has been filed with and accepted into the public files of the Commission, or contained in the public files of any other federal or state agency, or any federal or state court, unless the information or document has been determined to be privileged by such agency or court;

b. Information that is public knowledge, or which becomes public knowledge, other than through disclosure in violation of this Protective Agreement; or

C. Critical Energy/Electric Infrastructure Information (CEII): As defined at 18 C.F.R. §§ 388.113(a), (c).

D. Non-Disclosure Certificate: The term "Non-Disclosure Certificate" means the certificates attached to this Protective Agreement, by which individuals granted access to Privileged Material, Highly Confidential Privileged Material and/or CEII must certify their understanding that such access to such material is provided pursuant to the terms and restrictions of this Protective Agreement, and that such Parties have read the Protective Agreement and agree to be bound by it.

E. Reviewing Representative: A person who has signed a Non-Disclosure Certificate and who is:

i. Commission Trial Staff designated as such in this proceeding;

ii. An attorney who has made an appearance in this proceeding for a Party;

iii. Attorneys, paralegals, and other employees associated for purposes of this case with an attorney who has made an appearance in this proceeding on behalf of a Party;

[6] Notes of Privileged Material are subject to the same restrictions for Privileged Material except as specifically provided in this Protective Agreement.

iv. An expert or an employee of an expert retained by a Party for the purpose of advising, preparing for, submitting evidence or testifying in this proceeding;

v. A person designated as a Reviewing Representative by order of the Commission; or

vi. Employees or other representatives of a Party appearing in this proceeding with significant responsibility for this docket.

F. A trade association or industry group may not sign a Non-Disclosure Certificate on behalf of its members to grant its members access to Privileged Material, Highly Confidential Privileged Material, and/or CEII. Instead, the Reviewing Representative of the trade association or industry group shall only execute a Non-Disclosure Certificate on behalf of the relevant trade association or industry group. An individual member of a trade association or industry group will only have access to Privileged Material, Highly Confidential Privileged Material, and/or CEII if the relevant representative of such member individually signs the applicable Non-Disclosure Certificate to be permitted access to such material.

G. The term "Reviewing Representative" for purposes of reviewing Highly Confidential Privileged Material defined in Paragraph 3(B)(ix) shall mean a person who has signed a Non-Disclosure Certificate and who is:

i. listed in Paragraph 3(E) but is not Competitive Duty Personnel as defined in Paragraph 3(H); or

ii. designated as a Reviewing Representative for purposes of reviewing Highly Confidential Privileged Material by written agreement of the producing Participant.

H. The term "Competitive Duty Personnel" shall mean any individual(s) whose scope of employment or engagement includes any of the activities described in Paragraph 7. If at any time a Reviewing Representative's scope of employment changes to include any such activities, that Reviewing Representative shall immediately execute a Competitive Duty Personnel Non-Disclosure Certificate and will return or destroy any materials designated as CUI//PRIV-HC previously provided to them.

4. Privileged Material and/or CEII shall be made available under the terms of this Protective Agreement only to Parties and only to their Reviewing Representatives as provided in Paragraphs 6-10 of this Protective Agreement. The contents of Privileged Material, CEII or any other form of information that copies or discloses such materials shall not be disclosed to anyone other than in accordance with this Protective Agreement and shall be used only in connection with this specific proceeding.

5. All Privileged Material and/or CEII must be maintained in a secure place. Access to those materials must be limited to Reviewing Representatives specifically authorized pursuant to Paragraphs 7-9 of this Protective Agreement.

6. Privileged Material and/or CEII must be handled by each Party and by each Reviewing Representative in accordance with the Non-Disclosure Certificate executed pursuant to Paragraph 9 of this Protective Agreement. Privileged Material and/or CEII shall not be used except as necessary for the conduct of this proceeding, nor shall they (or the substance of their contents) be disclosed in any manner to any person except a Reviewing Representative who is engaged in this proceeding and who needs to know the information in order to carry out that person's responsibilities in this proceeding. Reviewing Representatives may make copies of Privileged Material and/or CEII, but such copies automatically become Privileged Material and/or CEII. Reviewing Representatives may make notes of Privileged Material, which shall be treated as Notes of Privileged Material if they reflect the contents of Privileged Material.

7. If a Reviewing Representative's scope of employment includes any of the activities listed under this Paragraph 7, such Reviewing Representative is prohibited from receiving Highly Confidential Privileged Information and may not use information contained in any Privileged Material and/or CEII obtained in this proceeding for a commercial purpose (e.g. to give a Party or competitor of any Party a commercial advantage):

   A. Energy marketing;

   B. Direct supervision of any employee or employees whose duties include energy marketing; or

   C. The provision of consulting services, including legal consultation or advice, to any person whose duties include energy marketing.

8. If a Party wishes to designate a person not described in Paragraph 3(E) above as a Reviewing Representative, the Party must seek agreement from the Party providing the Privileged Material and/or CEII. If an agreement is reached, the designee shall be a Reviewing Representative pursuant to Paragraph 3(E) of this Protective Agreement with respect to those materials. If no agreement is reached, the matter must be submitted to the Commission for resolution.

9. A Reviewing Representative shall not be permitted to inspect, participate in discussions regarding, or otherwise be permitted access to Privileged Material, Highly Privileged Confidential Information and/or CEII pursuant to this Protective Agreement until that Reviewing Representative first has executed and served a Non-Disclosure Certificate.[7] Competitive Duty Personnel shall not be permitted to inspect, participant in discussion regarding, or otherwise be permitted access to Privilege Material and/or CEII pursuant to this Protective Agreement until that Competitive Duty Personnel has first has executed and served a Competitive Duty Personnel Non-Disclosure Certificate. Competitive Duty

[7] During this three-day period, a Party may file an objection with the Commission contesting that an individual qualifies as a Reviewing Representative, and the individual shall not receive access to the Privileged Material and/or CEII until resolution of the dispute.

Personnel shall not be permitted to inspect, participant in discussion regarding, or otherwise be permitted access to Highly Confidential Privilege Material.

10. Any Reviewing Representative or Competitive Duty Personnel may disclose Privileged Material and/or CEII to any other Reviewing Representative or Competitive Duty Personnel as long as the Reviewing Representatives have executed a Non-Disclosure Certificate and the Competitive Duty Personnel have executed a Competitive Duty Personnel Non-Disclosure Certificate. In the event any Reviewing Representative to whom Privileged Material and/or CEII are disclosed ceases to participate in this proceeding, or becomes employed or retained for a position that renders him or her ineligible to be a Reviewing Representative under Paragraph 3(D) of this Protective Agreement, access to such materials by that person shall be terminated. Even if no longer engaged in this proceeding, every person who has executed a Non-Disclosure Certificate or a Competitive Duty Personnel Non-Disclosure Certificate shall continue to be bound by the provisions of this Protective Agreement and the Non-Disclosure Certificate or Competitive Duty Personnel Non-Disclosure Certificate for as long as the Protective Agreement is in effect.[8]

11. All Privileged Material and/or CEII in this proceeding filed with the Commission or submitted to any Commission personnel, must comply with the Commission's *Notice of Document Labelling Guidance for Documents Submitted to or Filed with the Commission or Commission Staff*.[9] Consistent with those requirements:

    A. Documents that contain Privileged Material must include a top center header on each page of the document with the following text: CUI//PRIV. Any corresponding electronic files must also include CUI-PRIV in the file name.

    B. Documents that contain Highly Confidential Privileged Material must include a top center header on each page of the document with the following text: CUI//PRIV-HC. Any corresponding electronic files must also include CUI-PRIV-HC in the file name.

    C. Documents that contain CEII must include a top center header on each page of the document with the following text: CUI//CEII. Any corresponding electronic files must also include CUI-CEII in the file name.

    D. Documents that contain both Privileged Material and CEII or Highly Confidential Privileged Material and CEII must include a top center header on each page of the document with the following text, as applicable: CUI//CEII//PRIV or CUI//CEII//PRIV-HC. Any corresponding electronic files must also include CUI-CEII-PRIV-HC in the file name.

    E. The specific content on each page of the document that constitutes Privileged Material and/or CEII must also be clearly identified. For example, lines or individual words or numbers that include both Privileged Material and CEII shall

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8 *See infra* P 19.

9 82 Fed. Reg. 18,632 (Apr. 20, 2017) (issued by Commission Apr. 14, 2017).

be prefaced and end with "BEGIN CUI//CEII//PRIV" and "END CUI//CEII//PRIV".

12. If any Party desires to include, utilize, or refer to Privileged Material or information derived from Privileged Material in testimony or other exhibits during the hearing in this proceeding in a manner that might require disclosure of such materials to persons other than Reviewing Representatives, that Party first must notify counsel for the disclosing Party, and identify all such Privileged Material. Thereafter, use of such Privileged Material will be governed by procedures determined by the Commission.

13. Nothing in this Protective Agreement shall be construed as precluding any Party from objecting to the production or use of Privileged Material and/or CEII on any appropriate ground.

14. Nothing in this Protective Agreement shall preclude any Party from requesting the Commission or any other body having appropriate authority to find this Protective Agreement should not apply to all or any materials previously designated Privileged Material pursuant to this Protective Agreement. The Commission or any other body having appropriate authority may alter or amend this Protective Agreement as circumstances warrant at any time during the course of this proceeding.

15. Each Party governed by this Protective Agreement has the right to seek changes in it as appropriate from the Commission or any other body having appropriate authority.

16. Subject to Paragraph 18, the Commission shall resolve any disputes arising under this Protective Agreement pertaining to Privileged Material according to the following procedures. Prior to presenting any such dispute to the Commission, the Parties to the dispute shall employ good faith best efforts to resolve it.

    A. Any Party that contests the designation of material as Privileged Material shall notify the Party that provided the Privileged Material by specifying in writing the material for which the designation is contested.

    B. In any challenge to the designation of material as Privileged Material, the burden of proof shall be on the Party seeking protection. If the Commission finds that the material at issue is not entitled to the designation, the procedures of Paragraph 18 shall apply.

    C. The procedures described above shall not apply to material designated by a Party as CEII. Material so designated shall remain subject to the provisions of this Protective Agreement, unless a Party requests and obtains a determination from the Commission's CEII Coordinator that such material need not retain that designation.

17. The designator will have five (5) days in which to respond to any pleading requesting disclosure of Privileged Material. Should the Commission determine that the information should be made public, the Commission will provide notice to the designator no less than five (5) days prior to the date on which the material will become public. This Protective Agreement shall automatically cease to apply to such material on the sixth (6th) calendar day after the notification is made unless the designator files a motion with the Commission,

with supporting affidavits demonstrating why the material should continue to be privileged. Should such a motion be filed, the material will remain confidential until such time as the interlocutory appeal or certified question has been addressed by the Motions Commissioner or Commission, as provided in the Commission's regulations, 18 C.F.R. §§ 385.714, .715. No Party waives its rights to seek additional administrative or judicial remedies after a decision regarding Privileged Material or the Commission's denial of any appeal thereof or determination in response to any certified question. The provisions of 18 C.F.R. §§ 388.112 and 388.113 shall apply to any requests under the Freedom of Information Act (5 U.S.C. § 552) for Privileged Material and/or CEII in the files of the Commission.

18. Privileged Material and/or CEII shall remain available to Parties until the later of 1) the date an order terminating this proceeding no longer is subject to judicial review, or 2) the date any other Commission proceeding relating to the Privileged Material and/or CEII is concluded and no longer subject to judicial review. After this time, the Party that produced the Privileged Material and/or CEII may request (in writing) that all other Parties return or destroy the Privileged Material and/or CEII. This request must be satisfied with within fifteen (15) days of the date the request is made. However, copies of filings, official transcripts and exhibits in this proceeding containing Privileged Material, or Notes of Privileged Material, may be retained if they are maintained in accordance with Paragraph 5 of this Protective Agreement. If requested, each Party also must submit to the Party making the request an affidavit stating that to the best of its knowledge it has satisfied the request to return or destroy the Privileged Material and/or CEII. To the extent Privileged Material and/or CEII are not returned or destroyed, they shall remain subject to this Protective Agreement.

19. Regardless of any order terminating this proceeding, this Protective Agreement shall remain in effect until specifically modified or terminated by the Commission. All CEII designations shall be subject to the "[d]uration of the CEII designation" provisions of 18 C.F.R. § 388.113(e).

20. Any violation of this Protective Agreement and of any Non-Disclosure Certificate executed hereunder shall constitute a violation of an order of the Commission.

21. Neither Party waives the right to pursue any other legal or equitable remedies that may be available in the event of actual or anticipated disclosure of Privileged Material, including but not limited to indemnification for unwarranted release of Privileged Material and injunctive relief.

IN WITNESS WHEREOF, the Parties each have caused this Protective Agreement to be signed by their respective duly authorized representatives as of the date first set forth above.

By: _____	By: _____
Name: _____	Name: _____
Title: _____	Title: _____
Representing The Market Monitor	Representing Applicant
	By: _____

Name: _____
Title: _____
Representing Applicant

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Grays Harbor Energy LLC	)	
Hardee Power Partners Limited	)	
Invenergy Cannon Falls LLC	)	EC26-76-000
Invenergy Nelson LLC	)	
Invenergy Nelson Expansion LLC	)	
Lackawanna Energy Center LLC	)	
Spindle Hill Energy LLC	)	
	)	
Gray Wolf Power, LLC	)	
	)	

NON-DISCLOSURE CERTIFICATE

I hereby certify my understanding that access to Privileged Material and/or Critical Energy/Electric Infrastructure Information ("CEII") is provided to me pursuant to the terms and restrictions of the Protective Agreement in this proceeding, that I have been given a copy of and have read the Protective Agreement, and that I agree to be bound by it. I understand that the contents of Privileged Material (including Highly Confidential Privileged Material) and/or CEII, any notes or other memoranda, or any other form of information that copies or discloses such materials, shall not be disclosed to anyone other than in accordance with the Protective Agreement. I acknowledge that a violation of this certificate constitutes a violation of an order of the Federal Energy Regulatory Commission.

By: _____
Title: _____
Representing: _____
Date: _____

UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Grays Harbor Energy LLC	)	
Hardee Power Partners Limited	)	
Invenergy Cannon Falls LLC	)	EC26-76-000
Invenergy Nelson LLC	)	
Invenergy Nelson Expansion LLC	)	
Lackawanna Energy Center LLC	)	
Spindle Hill Energy LLC	)	
	)	
Gray Wolf Power, LLC	)	
	)	

COMPETITIVE DUTY PERSONNEL
NON-DISCLOSURE CERTIFICATE

I hereby certify my understanding that access to Privileged Material and/or Critical Energy/Electric Infrastructure Information ("CEII") in the above-captioned proceeding is provided to me pursuant to the terms and restrictions the Protective Order in this proceeding, that I have been given a copy of and have read the Protective Order, and that I agree to be bound by it. I understand that the contents of Privileged Material and/or CEII, any notes or other memoranda, orany other form of information that copies or discloses such materials, shall not be disclosed to anyone other than in accordance with the Protective Order and shall be used only in connection with this proceeding. I acknowledge that I do not meet the qualifications to review Highly Confidential Privileged Materials because my duties and responsibilities may include "Competitive Duties" as described in Paragraph 7 of the Protective Order. As such, I understand that I am prohibited from accessing Highly Confidential Privileged Materials, any notes or other memoranda, or any other form of information that copies or discloses Highly Confidential Privileged Materials. I acknowledge that a violation of this certificate constitutes a violation of an order of the Federal Energy Regulatory Commission.

By: _____
Title: _____
Representing: _____
Date: _____

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 May, 2026.

Jeffrey W. Mayes
General Counsel
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Eagleville, Pennsylvania 19403
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