192 FERC ¶ 61,077
UNITED STATES OF AMERICA
FEDERAL ENERGY REGULATORY COMMISSION

Before Commissioners: Mark C. Christie, Chairman;
David Rosner, Lindsay S. See,
and Judy W. Chang.

PJM Interconnection, L.L.C. Docket Nos. ER24-2045-000
ER24-2045-002

ORDER ON COMPLIANCE

(Issued July 24, 2025)

1. On May 16, 2024, as amended on October 29, 2024, PJM Interconnection, L.L.C. (PJM) submitted a filing in compliance with the requirements of Order Nos. 2023 and 2023-A,[1] which amended the Commission's *pro forma* Large Generator Interconnection Procedures (LGIP), *pro forma* Large Generator Interconnection Agreement (LGIA), *pro forma* Small Generator Interconnection Procedures (SGIP), and *pro forma* Small Generator Interconnection Agreement (SGIA).[2] As discussed below, we find that PJM's filing partially complies with the requirements of Order Nos. 2023 and 2023-A.

2. We note that PJM's filing included multiple "conceptual proposals" which included no revisions to its Open Access Transmission Tariff (Tariff), contrary to the compliance deadlines required by Order Nos. 2023 and 2023-A.[3] While we accept PJM's

[1] *Improvements to Generator Interconnection Procs. & Agreements*, Order No. 2023, 184 FERC ¶ 61,054, *order on reh'g*, 185 FERC ¶ 61,063 (2023), *order on reh'g*, Order No. 2023-A, 186 FERC ¶ 61,199, *errata notice*, 188 FERC ¶ 61,134 (2024).

[2] The *pro forma* LGIP and *pro forma* LGIA establish the terms and conditions under which public utilities that own, control, or operate facilities for transmitting energy in interstate commerce must provide interconnection service to generating facilities larger than 20 megawatts (MW). The *pro forma* SGIP and *pro forma* SGIA establish the terms and conditions under which public utilities that own, control, or operate facilities for transmitting energy in interstate commerce must provide interconnection service to generating facilities no larger than 20 MW. Order No. 2023, 184 FERC ¶ 61,054 at P 2.

[3] *See* Order No. 2023, 184 FERC ¶ 61,054 at P 1762 (requiring each transmission provider to submit a compliance filing revising its LGIP, LGIA, SGIP, and SGIA, as necessary, to demonstrate that it meets the requirements set forth in the final rule); Order No. 2023-A, 186 FERC ¶ 61,199 at P 667 ("An item-by-item justification must be

compliance filing in part, and direct PJM to submit a further compliance filing, including any necessary revisions to its Tariff, within 60 days of the date of this order, we note that compliance deadlines are set, and may only be extended, by the Commission.

I. Background

3. On July 28, 2023, the Commission issued Order No. 2023. Order No. 2023 requires all public utility transmission providers to adopt revised *pro forma* LGIPs, *pro forma* LGIAs, *pro forma* SGIPs, and *pro forma* SGIAs. These revisions ensure that interconnection customers are able to interconnect to the transmission system in a reliable, efficient, transparent, and timely manner, and will prevent undue discrimination.[4] In Order No. 2023, the Commission adopted a comprehensive package of reforms in three general categories: (1) reforms to implement a first-ready, first-served cluster study process; (2) reforms to increase the speed of interconnection queue processing; and (3) reforms to incorporate technological advancements into the interconnection process.

4. To implement a first-ready, first-served cluster study process, Order No. 2023: (1) requires transmission providers to post public interconnection information in an interactive heatmap to provide interconnection customers information before they enter the queue; (2) eliminates individual serial feasibility and system impact studies; (3) creates a cluster study; (4) creates a range of allowable allocations of cluster study costs; (5) requires transmission providers to use a proportional impact method to assign network upgrade costs within a cluster; (6) requires increased financial commitments and readiness requirements from interconnection customers, including increased study deposits, site control, commercial readiness deposits, and an LGIA deposit; (7) requires transmission providers to institute penalties for withdrawn interconnection requests; and (8) creates a transition mechanism for moving to the cluster study process adopted in Order No. 2023 from the existing serial study process.[5]

5. To increase the speed of interconnection queue processing, Order No. 2023: (1) eliminates the reasonable efforts standard for completing interconnection studies and adopts study delay penalties applicable when transmission providers fail to complete interconnection studies by the deadlines in their tariff; and (2) establishes a more detailed

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offered for each variation from the *pro forma* provisions modified in Order No. 2023; general statements alone are insufficient under the consistent with or superior to or the independent entity variation standard.")

[4] *Id.* P 1.

[5] *Id.* P 5.

affected system study process in the *pro forma* LGIP, including *pro forma* affected system agreements and uniform modeling standards.[6]

6. To incorporate technological advancements into the interconnection process, Order No. 2023: (1) requires transmission providers to allow more than one generating facility to co-locate on a shared site behind a single point of interconnection and share a single interconnection request; (2) requires transmission providers to evaluate the proposed addition of a generating facility to an existing interconnection request prior to deeming such an addition a material modification; (3) requires transmission providers to allow interconnection customers to access the surplus interconnection service process once the original interconnection customer has an executed LGIA or requests the filing of an unexecuted LGIA; (4) requires transmission providers, at the request of the interconnection customer, to use operating assumptions in interconnection studies that reflect the proposed charging behavior of electric storage resources; (5) requires transmission providers to evaluate an enumerated list of alternative transmission technologies during the study process; (6) requires each interconnection customer requesting to interconnect a non-synchronous generating facility to submit to the transmission provider certain specific models of the generating facility; (7) establishes ride through requirements during abnormal frequency conditions and voltage conditions within the "no trip zone" defined by North American Electric Reliability Corporation Reliability Standard PRC-024-3 or successor mandatory ride through reliability standards; and (8) requires that all newly interconnecting large generating facilities provide frequency and voltage ride through capability consistent with any standards and guidelines that are applied to other generating facilities in the balancing authority area on a comparable basis.[7]

7. In Order No. 2023-A, the Commission granted certain requests for rehearing and clarification. The Commission set aside Order No. 2023 in part, to specify that: (1) where an interconnection customer is in the interconnection queue of a transmission provider that currently uses, or is transitioning to, a cluster study process and the transmission provider proposes on compliance to adopt the new readiness requirements in Order No. 2023 or a variation for its annual cluster study, the interconnection customer must comply with the transmission provider's new readiness requirements within 60 days of the Commission-approved effective date of the transmission provider's compliance filing, where such readiness requirements are applicable given the status of the individual interconnection customer in the queue; (2) a network upgrade that is required for multiple interconnection customers in a cluster, not part of an affected system, and may be constructed without affecting day-to-day operations of the transmission system during its

[6] *Id.* P 6.

[7] *Id.* P 7.

construction, may be considered a stand alone network upgrade if all such interconnection customers mutually agree to exercise the option to build; (3) a transmission provider must complete its determination that an interconnection request is valid by the close of the cluster request window such that only interconnection customers with valid interconnection requests proceed to the customer engagement window; and (4) acceptable forms of security for the commercial readiness deposit and deposits prior to the transitional serial study, the transitional cluster study, the cluster restudy, and the interconnection facilities study should include not only cash or an irrevocable letter of credit, but also surety bonds or other forms of financial security that are reasonably acceptable to the transmission provider.[8]

8. Additionally, in Order No. 2023-A, the Commission granted several clarifications on the following topics: (1) conflicts with ongoing interconnection queue reform efforts; (2) public interconnection information; (3) the cluster study process; (4) allocation of cluster network upgrade costs; (5) shared network upgrades; (6) withdrawal penalties; (7) study delay penalties and the appeal structure; (8) affected systems; (9) revisions to the material modification process to require consideration of generating facility additions; (10) availability of surplus interconnection service; (11) operating assumptions for interconnection studies; (12) consideration of the enumerated alternative transmission technologies in interconnection studies; and (13) ride-through requirements.[9]

II. PJM's Compliance Filing

9. PJM asserts that its Tariff already "substantially complies" with the *pro forma* LGIP, *pro forma* LGIA, *pro forma* SGIP, and *pro forma* SGIA reforms as required by Order Nos. 2023 and 2023-A.[10] PJM states that the requirements under Order Nos. 2023 and 2023-A parallel many reforms PJM has already implemented to reform its generator interconnection process (2022 Interconnection Reforms Filing), which the Commission accepted on November 29, 2022.[11] Specifically, PJM notes that it comprehensively reformed the PJM interconnection process "to more efficiently and timely process" new

[8] Order No. 2023-A, 186 FERC ¶ 61,199 at P 7.

[9] *Id.* P 8.

[10] Filing at 1.

[11] *Id.* at 1-2; *see also PJM Interconnection, L.L.C.*, 181 FERC ¶ 61,162, at P 1 (2022) (2022 Interconnection Reforms Order), *reh'g denied*, 184 FERC ¶ 61,006 (2023).

interconnection requests by transitioning from a serial first-come, first-served queue approach to a first-ready, first-served cluster study approach.[12]

10. PJM asserts that, to the extent that its Tariff is not fully compliant with Order Nos. 2023 and 2023-A, it requests independent entity variations regarding some of the directives in Order Nos. 2023 and 2023-A to allow it to retain its comprehensive reform package of interconnection rules.[13] Specifically, PJM proposes variations related to: (1) the requirement for transmission providers to post public interconnection information in an interactive heatmap to provide interconnection customers information before they enter the queue; (2) the cluster study process; (3) allocations of cluster study costs; (4) the requirement for transmission providers to use a proportional impact method to assign network upgrade costs within a cluster; (5) the requirement for increased financial commitments and readiness requirements from interconnection customers, including increased study deposits, site control, commercial readiness deposits, and a LGIA deposit; and (6) the requirement for transmission providers to institute penalties for withdrawn interconnection requests. PJM submits a copy of its Tariff sections, as revised by the 2022 Interconnection Reforms Filing, that are affected by Order Nos. 2023 and 2023-A.[14] PJM states that Commission approval of the independent entity variations to retain its Tariff provisions from its recent interconnection queue reform as an integrated package would prevent PJM from having to halt the processing of interconnection requests, revise the Tariff to change provisions it has already implemented, and then restart processing interconnection requests under the Order Nos. 2023 and 2023-A *pro forma* tariff provisions.[15]

11. PJM states that it plans to submit a second phase of its Order Nos. 2023 and 2023-A compliance filing (phase two compliance filing) for several requirements, such as: (1) elimination of the reasonable efforts standard and adoption of study delay penalties; and (2) affected system coordination.[16] In the instant compliance filing, PJM does not propose any Tariff revisions in eTariff related to these requirements. Instead, PJM sets forth a proposal for handling study penalties and consequences of study delays

[12] Filing at 4.

[13] *Id.* at 2.

[14] *Id.* at 13 & attach. B.

[15] *Id.* at 3, 13.

[16] *Id.* at 13. PJM states that it will submit a schedule for filing the phase two compliance filing within 30 days of the Commission's order on this filing. *Id.*

and provides an explanation of further Tariff revisions it intends to submit concerning affected systems coordination issues.

III. Notice and Responsive Pleadings

12. Notice of PJM's compliance filing was published in the *Federal Register*, 89 Fed. Reg. 45655 (May 23, 2024), with interventions and protests due on or before June 6, 2024. An extension of time for filing protests and interventions was granted until June 20, 2024.[17]

13. Timely motions to intervene were submitted by American Electric Power Service Corporation; Constellation Energy Generation, LLC; Solar Energy Industries Association; American Clean Power Association;[18] Sierra Club; Dominion Energy Services, Inc.; Union of Concerned Scientists; Maryland Office of People's Counsel; Lincoln Generating Facility, LLC and Crete Energy Venture, LLC; Rockland Energy Company; Natural Resource Defense Council; Calpine Corporation; Exelon Corporation; Pine Gate Renewables, LLC; Buckeye Power, Inc.; Advanced Energy United;[19] EDF Renewables, Inc. (EDF Renewables); Duquesne Light Company; Cordelio Services, LLC; PPL Electric Utilities Corporation; Clearway Energy Group, LLC; AES Clean Energy Development, LLC; Arevon Energy, Inc.; Midcontinent Independent System Operator, Inc. (MISO), Environmental Law and Policy Center; Leeward Renewable Energy, LLC (Leeward Renewable); North Carolina Electric Membership Corporation; Shell Energy North America (US), L.P., Shell New Energies US, LLC, and Savion LLC (collectively, Shell Companies); Longroad Energy Holdings, LLC (Longroad Energy); Orsted Wind Power North America LLC; Enbridge Holdings (Green Energy) LLC; Mid-Atlantic Offshore Development, LLC; EDP Renewables North America LLC (EDP Renewables); and RWE Clean Energy, LLC (RWE Clean Energy). Notices of intervention were submitted by the New Jersey Board of Public Utilities (New Jersey Commission) and the North Carolina Utilities Commission.

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[17] *PJM Interconnection, L.L.C.*, Notice (issued May 29, 2024) (granting extension of time).

[18] American Clean Power Association represents over 800 energy storage, wind, utility-scale solar, clean hydrogen, and transmission companies.

[19] Advanced Energy United is an industry association representing advanced energy technologies and services, both grid-scale and distributed. Advanced Energy United's members include generation owners, operators, and aggregators that participate in PJM.

14. Out-of-time motions to intervene were submitted by Monitoring Analytics, LLC, acting in its capacity as the Independent Market Monitor for PJM (IMM), and the Maryland Public Service Commission.

15. EDP Renewables, Clean Energy Associations,[20] WATT Coalition,[21] EDF Renewables, Leeward Renewable and RWE Clean Energy, Shell Companies, Longroad Energy, Public Interest Organizations,[22] and New Jersey Commission filed protests.

16. On July 12, 2024, PJM filed an answer in response to protests (PJM July 12 Answer). On July 26, 2024 and July 29, 2024, EDF Renewables and Longroad Energy, respectively, submitted answers to the PJM July 12 Answer. On August 12, 2024, PJM filed an answer in response to the answers (PJM August 12 Answer).

17. On July 31, 2024, Commission staff issued a data request advising PJM that additional information was necessary to process its compliance filing (Data Request). On October 29, 2024, PJM filed a response to the Data Request in Docket No. ER24-2045-002 (Data Request Response). Notice of PJM's Data Request Response was published in the *Federal Register*, 89 Fed Reg. 87869 (Nov. 5, 2024), with interventions and protests due on or before November 19, 2024. Rockland Capital, LP and Swift Current Energy, LLC (Swift Current) filed timely motions to intervene. On December 5, 2024, UGI Utilities Inc. (UGI) filed a motion to intervene out-of-time.

18. On November 19, 2024, Clean Energy Associations, Public Interest Organizations, Shell Companies, and Swift Current filed protests to PJM's Data Request Response. On December 4, 2024, PJM filed an answer to these protests (PJM December 4 Answer). On December 26, 2024, Swift Current filed an answer to the PJM December 4 Answer.

19. On March 11, 2025, EDF Renewables filed a notice of partial withdrawal of certain portions of the pleadings it had previously submitted in this docket.

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[20] Clean Energy Associations refers to American Clean Power Association, Advanced Energy United, and Solar Energy Industries Association.

[21] WATT Coalition represents grid enhancing technologies, including dynamic line ratings, advanced power flow control, and topology optimization.

[22] Public Interest Organizations refers to Environmental Law and Policy Center, Illinois Citizens Utility Board, Sierra Club, Natural Resources Defense Council, Penn Future, Union of Concerned Scientists, and Sustainable FERC Project.

IV. Discussion

A. Procedural Matters

20. Pursuant to Rule 214 of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214 (2024), the timely, unopposed motions to intervene serve to make the entities that filed them parties to this proceeding.

21. Pursuant to Rule 214(d) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.214(d), we grant the IMM, Maryland Public Service Commission, and UGI late-filed motions to intervene given their interest in the proceeding, the early stage of the proceeding, and the absence of undue prejudice or delay.

22. Rule 213(a)(2) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.213(a)(2) (2024), prohibits an answer to a protest or answer unless otherwise ordered by the decisional authority. We accept the answers filed in this proceeding because they have provided information that assisted us in our decision-making process.

23. Rule 216(a) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.216(a) (2024), provides that any person that filed a pleading may seek to withdraw it by filing a notice of withdrawal. Rule 216(b) of the Commission's Rules of Practice and Procedure, 18 C.F.R. § 385.216(b), provides that the withdrawal of any pleading is effective at the end of 15 days from the date of filing of a notice of withdrawal, if no motion in opposition to the notice of withdrawal is filed within that period and the Commission does not issue an order disallowing the withdrawal within that period. Pursuant to Rule 216, EDF Renewables' withdrawal of certain portions of its previously filed comments and reply comments is effective.

B. Substantive Matters

24. As discussed below, we find that PJM's filing partially complies with the requirements of Order Nos. 2023 and 2023-A and, where identified, direct PJM to make a further compliance filing within 60 days of the date of this order.

1. Proposed Variations

25. As discussed further below, PJM has requested certain variations from the Commission's requirements in Order Nos. 2023 and 2023-A. The Commission explained in Order No. 2023 that such variations would be reviewed under the same standard allowed by Order Nos. 2003, 2006, and 845.[23] In Order No. 2003, the Commission

[23] Order No. 2023, 184 FERC ¶ 61,054 at P 1764 (citing *Standardization of Generator Interconnection Agreements & Procs.*, Order No. 2003, 104 FERC ¶ 61,103, at P 826 (2003), *order on reh'g*, Order No. 2003-A, 106 FERC ¶ 61,220, *order on reh'g*,

permitted Regional Transmission Organizations/Independent System Operators (RTO/ISO) to seek "independent entity variations" for pricing and non-pricing provisions, and stated that RTOs/ISOs "shall have greater flexibility to customize [their] interconnection procedures and agreement to fit regional needs."[24] The Commission stated that this approach recognizes that an RTO/ISO is less likely to act in an unduly discriminatory manner than a transmission provider that is a market participant.[25] The Commission has granted independent entity variations from interconnection-related rulemakings where the RTO/ISO demonstrates that the proposed variation: (1) is just and reasonable and not unduly discriminatory or preferential; and (2) accomplishes the purposes of the order.[26] It is not a sufficient justification to state that a variation conforms to current RTO/ISO practices or to the RTO's/ISO's tariff definitions and terminology.[27] Even if the transmission provider is an RTO/ISO, it must still justify its variations in light of the Commission's *pro forma* LGIP and/or *pro forma* LGIA and/or *pro forma* SGIP and/or *pro forma* SGIA.[28] We evaluate PJM's variations from the requirements of Order Nos. 2023 and 2023-A accordingly.

Order No. 2003-B, 109 FERC ¶ 61,287 (2004), *order on reh'g*, Order No. 2003-C, 111 FERC ¶ 61,401 (2005), *aff'd sub nom. Nat'l Ass'n of Regul. Util. Comm'rs v. FERC*, 475 F.3d 1277 (D.C. Cir. 2007); *Standardization of Small Generator Interconnection Agreements & Procs*., Order No. 2006, 111 FERC ¶ 61,220, at PP 447, 549, *order on reh'g*, Order No. 2006-A, 113 FERC ¶ 61,195 (2005), *order granting clarification*, Order No. 2006-B, 116 FERC ¶ 61,046 (2006); *see Reform of Generator Interconnection Procs. & Agreements*, Order No. 845, 163 FERC ¶ 61,043, at P 556 (2018), *order on reh'g*, Order No. 845-A, 166 FERC ¶ 61,137, *order on reh'g*, Order No. 845-B, 168 FERC ¶ 61,092 (2019)).

[24] Order No. 2003, 104 FERC ¶ 61,103 at P 826.

[25] *Id.* P 827.

[26] *See, e.g.*, *ISO New England Inc.*, 164 FERC ¶ 61,222, at P 9 (2018) (citing Order No. 2003, 104 FERC ¶ 61,103 at PP 26, 827; *Midcontinent Indep. Sys. Operator, Inc.*, 154 FERC ¶ 61,247, at P 20 (2016); *Cal. Indep. Sys. Operator Corp.*, 140 FERC ¶ 61,070, at P 44 (2012)).

[27] *See Cal. Indep. Sys. Operator Corp.*, 170 FERC ¶ 61,112, at P 11 (2020); *Sw. Power Pool, Inc.*, 170 FERC ¶ 61,042, at P 14 (2020); *ISO New England Inc.*, 170 FERC ¶ 61,209, at P 14 (2020); *Midcontinent Indep. Sys. Operator, Inc.*, 169 FERC ¶ 61,221, at P 18 (2019); *PJM Interconnection, L.L.C.*, 169 FERC ¶ 61,226, at P 15 (2019).

[28] *See PJM Interconnection, L.L.C.*, 108 FERC ¶ 61,025, at P 16 (2004).

2. Public Interconnection Information

26. In Order No. 2023, the Commission adopted section 6.1 (Publicly Posted Interconnection Information)[29] of the *pro forma* LGIP to require transmission providers to maintain and make publicly available an interactive visual representation of available interconnection capacity (commonly known as a "heatmap") as well as a table of relevant interconnection metrics that is produced in response to user-specified input about each prospective generating facility.[30] The table will allow prospective interconnection customers to see certain estimates of a potential generating facility's effect on the transmission provider's transmission system. Specifically, the Commission required transmission providers to post on their public website a heatmap of estimated incremental injection capacity (in MW) available at each point of interconnection to the whole transmission provider's footprint under N-1 conditions,[31] as well as provide a table of results in response to a specific user's input showing the estimated impact of the addition of the proposed project (based on the user-specified MW amount, voltage level, and point of interconnection) for each monitored facility impacted by the proposed project on: (1) the distribution factor; (2) the MW impact (based on the proposed project size and the distribution factor); (3) the percentage impact on the monitored facility (based on the MW values of the proposed project and the monitored facility rating); (4) the percentage of power flow on the monitored facility before the proposed project; and (5) the percentage power flow on the monitored facility after the injection of the proposed project.

27. The Commission required that heatmaps be calculated under N-1 conditions and studied based on the power flow model of the transmission system used in the most recent cluster study or restudy, and with the transfer simulated from each point of interconnection to the whole transmission provider's footprint (to approximate Network Resource Interconnection Service (NRIS)[32]), and with the incremental capacity at each

[29] We note that the section or article title appears in parentheticals following the first usage of that section or article in this order.

[30] Order No. 2023, 184 FERC ¶ 61,054 at P 135; *see also pro forma* LGIP § 6.1.

[31] N-1 conditions refer to system conditions following loss of a single element of the bulk power system (e.g., generator, transmission line, transformer).

[32] The *pro forma* LGIP defines NRIS service as "an Interconnection Service that allows the Interconnection Customer to integrate its Large Generating Facility with the Transmission Provider's Transmission System (1) in a manner comparable to that in which the Transmission Provider integrates its generating facilities to serve native load customers; or (2) in an RTO or ISO with market-based congestion management, in the same manner as Network Resources. Network Resource Interconnection Service in and

point of interconnection decremented by the existing and queued generation at that location (based on the existing or requested interconnection service limit of such generation). The Commission required transmission providers to update their heatmaps within 30 calendars days after the completion of each cluster study and cluster restudy. Further, the Commission clarified that transmission providers are not required to make their heatmaps available until after their transition periods.

a. PJM's Compliance Filing

28. PJM requests an independent entity variation to use PJM's Queue Scope tool to comply with Order No. 2023's public interconnection information requirements.[33] PJM explains that although not specified in its Tariff, Queue Scope allows a potential interconnection customer to screen potential points of interconnection and assess grid impacts based on a given amount of MW injection or withdrawal at a given point of interconnection, and includes both a tabular and a geospatial user interface.[34]

29. PJM states that interconnection customers will still have access to current analytical information used by Queue Scope prior to the start of a Cycle,[35] and PJM will provide the updated models for the three phases' system impact studies once those studies are complete.[36] PJM also states that study cases are available to interconnection customers that submit valid Critical Energy Infrastructure Information (CEII) requests, which provide the interconnection customers access to additional data concerning the

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of itself does not convey transmission service." *Pro forma* LGIP § 1.

[33] Filing at 14.

[34] *Id.* at 14-15; Data Request Response, attach. A at 74. Queue Scope's tabular interface is available to the public without an account on PJM's website; the geospatial interface is only available to registered users.

[35] PJM refers to its first-ready, first-served cluster study process as a "Cycle." PJM's Tariff defines a Cycle as "that period of time between the start of an Application phase and conclusion of the corresponding Final Agreement Negotiation Phase. The Cycle consists of the Application Phase, Phase I, Decision Point I, Phase II, Decision Point II, Phase III, Decision Point III, and the Final Agreement Negotiation Phase." PJM Interconnection, L.L.C., Intra-PJM Tariffs, pt. VIII, subpt. A, § 400C (Definitions C) (1.0.0) (PJM Tariff).

[36] Filing at 16.

names of the contingencies and facility ratings that can be used to assess potential points of interconnection.[37]

30. PJM states that Queue Scope, in conjunction with publicly available planning models and study reports, is consistent with Order No. 2023 because it allows interconnection customers to identify favorable locations to interconnect, run their own studies using the models, and estimate costs of the facilities required to enable the potential interconnection.[38] PJM states that it will update the Cycle study datasets reflected in Queue Scope "on a routine basis as Phases I and II of each Cycle are completed."[39]

b. Commission Determination

31. We find that PJM's proposal partially complies with the public interconnection information requirements of Order Nos. 2023 and 2023-A. We grant PJM's requested independent entity variation to use its Queue Scope tool in lieu of an interactive heatmap of publicly available interconnection information because we find that PJM's proposal is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order No. 2023. Specifically, we agree with PJM that Queue Scope provides potential interconnection customers with both an interactive visual representation of available interconnection capacity in the geospatial user interface version, as well as tabular information containing the estimated impact of a proposed project on monitored elements with the tabular user interface version, as required by Order No. 2023.[40] We also note that the table in the Queue Scope tool contains four of the five required data points specified Order No. 2023;[41] the sole data point not included, the percentage impact on the monitored facility, can be calculated easily as the difference in pre- and post-project loading in percent.[42] Therefore, we find that Queue Scope will sufficiently

[37] *Id.*

[38] *Id.* at 16-17.

[39] *Id.* at 15; Data Request Response, attach. A at 75-76.

[40] *See pro forma* LGIP § 6.1.

[41] Specifically, PJM's Queue Scope includes (1) the distribution factor; (2) the MW impact (based on the proposed project size and the distribution factor); (3) the percentage of power flow on the monitored facility before the proposed project; and (4) the percentage power flow on the monitored facility after the injection of the proposed project, as required by Order No. 2023.

[42] *See* PJM Interconnection, L.L.C., *Queue Scope User Guide* 9 (Aug. 2024), https://www.pjm.com/-/media/DotCom/etools/planning-center/queue-scope-user-

provide transparency to prospective interconnection customers about potential points of interconnection and allow them to assess expected congestion, likely network upgrades, and the viability of a proposed generating facility before submitting an interconnection request.[43]

32. However, PJM does not assert that its existing Tariff references the Queue Scope tool or how it is utilized as part of its interconnection process. Nor does PJM propose revisions to add such reference. For example, PJM does not point to any provision in its Tariff that references the Queue Scope tool or details when, and how, Queue Scope is updated. Specifically, PJM does not explain how its proposal to update Queue Scope "on a routine basis as Phases I and II of each Cycle are completed" complies with the requirement in Order No. 2023 that heatmaps be updated within 30 calendar days of the completion of the cluster study and cluster restudy.[44] Accordingly, we direct PJM to submit a further compliance filing within 60 days of the date of this order that proposes Tariff revisions to incorporate the required public interconnection information requirements into the Tariff (i.e., Queue Scope), including how the Queue Scope tool is updated, as required under Order No. 2023.

3. Cluster Study Process

33. In Order No. 2023, the Commission revised the *pro forma* LGIP and *pro forma* LGIA to require transmission providers to study interconnection requests in clusters. The Commission added several new, and revised several existing, defined terms to facilitate this change.[45]

34. The Commission adopted several revisions to the *pro forma* LGIP related to the process by which an interconnection customer can make an interconnection request. The Commission revised section 4.1 (Queue Position) of the *pro forma* LGIP to provide that all interconnection requests within a cluster be considered equally queued and accordingly modified the definition of "queue position."[46] The Commission renamed and revised section 4.2 (General Study Process) of the *pro forma* LGIP to require

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guide.pdf.

[43] *See* Order No. 2023, 184 FERC ¶ 61,054 at PP 136-137 (describing the purpose of the public interconnection information requirements).

[44] *Id.* P 135.

[45] *See generally id.*; *see also pro forma* LGIP § 1; *pro forma* LGIA art. 1.

[46] Order No. 2023, 184 FERC ¶ 61,054 at PP 277, 283; *see also pro forma* LGIP § 4.1.

transmission providers to perform interconnection studies within the cluster study process.[47]

35. The Commission modified *pro forma* LGIP sections 7.3 and 8.1 (Interconnection Facilities Study Agreement) to remove the requirement for the transmission provider to tender an interconnection facilities study agreement simultaneously with the issuance of a cluster study (or restudy) report and instead add a requirement for the transmission provider to tender the interconnection facilities agreement within five business days after the transmission provider notifies the interconnection customers that no further restudies are required.[48]

36. Finally, the Commission also revised *pro forma* LGIP sections 3.4.6, 3.5.2.4 (Interconnection Service Requests Withdrawn from Interconnection Queue), and 7.5, as well as the *pro forma* LGIP definition of "interconnection study," to remove inadvertent errors and add minor clarifying edits.[49]

a. Existing Tariff Provisions

i. PJM's Compliance Filing

37. PJM asserts that its existing Tariff complies with the requirement in Order No. 2023 to study interconnection requests in clusters because PJM adopted a cluster Cycle process in its interconnection reforms in 2022.[50]

38. PJM argues that its Tariff satisfies the requirement in Order No. 2023 that all interconnection requests within a cluster be considered equally queued because its Tariff provides that, "[f]or projects submitted by [interconnection customers], the project's priority is defined by the Cycle in which the [interconnection customer] submitted its interconnection request."[51] PJM asserts that its Tariff also satisfies the requirement in

[47] Order No. 2023, 184 FERC ¶ 61,054 at P 278; *see also pro forma* LGIP § 4.2.

[48] Order No. 2023-A, 186 FERC ¶ 61,199 at P 163; *see also pro forma* LGIP §§ 7.3, 8.1.

[49] Order No. 2023-A, 186 FERC ¶ 61,199 at P 167; *see also pro forma* LGIP §§ 1, 3.4.6, 3.5.2.4, 7.5.

[50] Filing at 18.

[51] *Id.* at 28 (citing PJM Tariff, pt. VIII, subpt. A, § 401 (2.0.0), § 401(A); *id.* subpt. E, § 412 (0.1.0), § 412(A); Data Request Response, attach. A at 80-81. PJM also explains that a Project Identifier is the equivalent of a Queue Position number but does

Order No. 2023 that requires that interconnection requests in an earlier-in-time Cycle have higher priority than interconnection requests in a later-in-time Cycle.[52]

ii. Commission Determination

39. We find that PJM's Tariff provisions concerning the cluster study process partially comply with the requirements of Order Nos. 2023 and 2023-A. We grant PJM's requested independent entity variation to retain its existing clustered Cycle process because we find that PJM's proposal is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A. Order No. 2023 eliminated the serial first-come, first-served study process in the *pro forma* LGIP and instead required transmission providers to use a first-ready, first-served cluster study process. As PJM explains, its existing Cycle process, which includes a three-stage System Impact Study, already makes use of a first-ready, first-served cluster study.[53] We grant PJM's requested independent entity variation to retain its existing Cycle process in lieu of adopting the *pro forma* LGIP cluster study process, because it accomplishes the purposes of Order No. 2023's cluster study reforms, which make cluster studies the required interconnection study method.[54] We address specific aspects of PJM's proposed cluster study process below.

b. Application Window and Process

40. The Commission adopted section 3.4.1 (Cluster Request Window), section 3.4.4 (Deficiencies in Interconnection Request), and section 3.4.5 (Customer Engagement Window) of the *pro forma* LGIP to provide a process for interconnection customers to submit a cluster study interconnection request.[55] Specifically, these sections establish a 45-calendar day cluster window and a 10-business day period for an interconnection customer to cure any deficiencies in its interconnection request, and a 60-calendar day customer engagement window.

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not provide priority within a Cycle. Filing at 28 n.74.

[52] *Id.* at 28-29 (citing PJM Tariff, pt. VIII, subpt. A, § 401 (2.0.0), § 401(A)) ("A given Cycle has priority over Cycles that commence at a later date.").

[53] *Id.* at 4.

[54] Order No. 2023, 184 FERC ¶ 61,054 at P 177.

[55] Order No. 2023, 184 FERC ¶ 61,054 at P 223; *see also pro forma* LGIP §§ 3.4.1, 3.4.4, 3.4.5.

41. The Commission revised *pro forma* LGIP section 7.1 (Cluster Study Agreement) to provide that the transmission provider must tender to each interconnection customer that submitted a valid interconnection request a cluster study agreement no later than five business days after the close of the cluster request window.[56] The Commission revised *pro forma* LGIP section 7.2 (Execution of Cluster Study Agreement) to provide that, if the interconnection customer does not provide technical data when it delivers the cluster study agreement, the transmission provider must notify the interconnection customer of the deficiency within five business days, and the interconnection customer must cure the deficiency within 10 business days.[57]

i. PJM's Compliance Filing

42. PJM requests an independent entity variation to allow PJM to retain its 180-day notice period for submitting an interconnection request for a Cycle and 90-day period for PJM to review the interconnection requests.[58] PJM states that its Tariff provides for a rolling submission of interconnection requests and that PJM will announce the deadline for submitting applications for a Cycle 180 days prior to closing the application period.[59] PJM states that under its Tariff, the interconnection customer does not submit an interconnection request and an executed Application and Studies Agreement as separate steps in PJM's interconnection process and asserts that the Application and Studies Agreement is the equivalent of a cluster study agreement in Order Nos. 2023 and 2023-A.[60] PJM also states that after the application deadline passes, there is a 90-day period for PJM to review submissions and identify deficiencies so that interconnection customers can address those deficiencies. PJM acknowledges that the time periods of PJM's process are different from the *pro forma* LGIP, but PJM contends that PJM's timing and notice structure is consistent with Order No. 2023, provides greater flexibility to interconnection customers, and will better facilitate the submission of complete and accurate interconnection requests, particularly with the large volume of interconnection requests that PJM receives.[61] PJM explains that PJM's 180-day notice period enables interconnection customers to take greater care in confirming the accuracy and due

[56] Order No. 2023, 184 FERC ¶ 61,054 at P 317; *see also pro forma* LGIP § 7.1.

[57] Order No. 2023, 184 FERC ¶ 61,054 at P 317; *see also pro forma* LGIP § 7.2.

[58] Filing at 21-22; Data Request Response, attach. A at 77-79.

[59] Filing at 21.

[60] *Id.* at 20 n.48.

[61] *Id.* at 22-23.

diligence of the information in their applications than the 45-day period adopted in Order No. 2023.

43. PJM requests an independent entity variation to not adopt an annual cluster window in *pro forma* LGIP section 3.4.1, and instead gate each Cycle off from successive Cycles.[62] PJM explains that under its existing Tariff, PJM announces the 180-day application period at the beginning of Phase II of the prior Cycle.[63] PJM contends that for a large RTO/ISO, such as PJM, the use of an annual cluster window is infeasible and could cause significant disruption and delays due to the high volume of interconnection requests received. PJM argues that its Tariff's gating mechanism provides cost certainty by finalizing the studies and cost responsibility of one Cycle before the next Cycle begins. PJM asserts that starting a new Cycle while lacking certainty as to which network upgrades or impacts will be covered by the prior Cycle would result in unclear model parameters for the new Cycle, engender uncertainty for all projects still under study, and redirect significant skilled engineering resources away from the study of prior clusters in order to process new applications. PJM argues that its Tariff's gating mechanism meets the goals of Order No. 2023 of providing an efficient, transparent, and non-discriminatory interconnection process, and asserts that PJM's Tariff exceeds the *pro forma* LGIP provisions in creating an efficient process.[64]

44. PJM requests an independent entity variation to retain its deficiency review distinct from the customer request or application window.[65] First, PJM argues that its Tariff "substantially complies" with the requirement to allow interconnection customers 10 business days to correct identified deficiencies in their interconnection requests. PJM states that under its Tariff, PJM will use reasonable efforts to inform an interconnection customer of any deficiencies with its interconnection request within 15 business days after the application deadline, with the interconnection customer then having 10 business days to correct the deficiency.[66] PJM will then use reasonable efforts to review the interconnection customer's response within 15 business days and then will either validate or reject the Application and Studies Agreement.[67] Second, PJM states that, consistent with Order Nos. 2023 and 2023-A, PJM must complete its determination that an

[62] *Id.* at 6, 11, 23-24.

[63] *Id.* at 23 (citing PJM Tariff, pt. VIII, subpt. B, § 403 (0.1.0), § 403(A)).

[64] *Id.* at 23-24.

[65] *Id.* at 24-25.

[66] *Id.* at 24 (citing PJM Tariff, pt. VIII, subpt. B, § 403 (0.1.0), § 403(B)(1)).

[67] PJM Tariff, pt. VIII, subpt. B, § 403 (0.1.0), § 403(B)(1)(c).

interconnection request is valid by the close of the application request review period. PJM argues that it requires and uses the entire application window to review all interconnection requests and thus, to the extent that Order Nos. 2023 and 2023-A intend for each interconnection customer to receive the full length of the customer request window to cure a deficiency, PJM asserts that such a requirement is not compatible with PJM's process.[68] PJM asserts that given the large number of interconnection requests that PJM has received and expects to continue receiving, "it is not practical to have an extended deficiency review period that will allow non-ready and poorly prepared [interconnection customers] multiple attempts to submit a valid [i]nterconnection [r]equest."[69] PJM argues that a deficiency period that is co-extensive with PJM's 180-day request submission window would harm other interconnection customers because PJM asserts that it would effectively require PJM personnel to process multiple requests for the same projects, diverting resources from evaluating other more viable interconnection requests and developing studies.

ii. Commission Determination

45. We grant PJM's requested independent entity variation to retain its existing 180-day notice period for submitting an interconnection request for a Cycle and 90-day period for PJM to review the interconnection requests. We find that PJM's proposal is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A with regard to the cluster request window, as PJM's proposal provides clarity for both interconnection customers and transmission providers, provides adequate notice to prospective interconnection customers, and will not delay processing of the interconnection queue.[70] We are persuaded by PJM's argument that given the large volume of interconnection requests that PJM receives, the 180-day notice period and 90-day review period for interconnection requests is appropriate. Further, because PJM's 180-day application period opens at the beginning of Phase II of the prior Cycle and runs concurrently with the prior Cycle, we find that it will not delay processing of the interconnection queue. Also, consistent with the requirements of Order No. 2023-A, we accept PJM's proposal to notify interconnection customers that their requests are valid or, in cases in which the interconnection customer fails to address a deficiency, to withdraw the request at the close of the application review period.[71]

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[68] Filing at 24.

[69] *Id.* at 25.

[70] *See* Order No. 2023, 184 FERC ¶ 61,054 at P 223.

[71] Order No. 2023-A, 186 FERC ¶ 61,199 at P 159 ("We clarify that the transmission provider must complete its determination that an interconnection request is valid by the close of the cluster request window, and therefore, interconnection customers

46. Additionally, PJM requests an independent entity variation to retain its existing process to use reasonable efforts to inform an interconnection customer of any deficiencies in its interconnection request within 15 business days after the application deadline and for the interconnection customer to correct identified deficiencies within 10 business days. Order Nos. 2023 and 2023-A revised the *pro forma* LGIP to require transmission providers to notify the interconnection customer of any deficiencies, and the interconnection customer must cure the deficiency within 10 business days of receipt of the notice.[72] We accept PJM's proposal to maintain its existing requirement for interconnection customers to correct identified deficiencies within 10 business days because this is consistent with the *pro forma* LGIP.

47. However, with regard to PJM's proposal to use reasonable efforts to inform an interconnection customer of any deficiencies in its interconnection request within 15 business days after the *application deadline* instead of within five business days of receiving the executed cluster study agreement (here, the Application and Studies Agreement), PJM states only that its proposal "substantially complies" and that having a deficiency review period that is co-extensive with the request submission window would require PJM personnel to process multiple requests for the same projects. We find that PJM has failed to satisfy the requirements for an independent entity variation for its different timeline and for waiting until after the application deadline to notify interconnection customers of deficiencies in their interconnection requests because PJM has not explained how these provisions accomplish the purposes of Order Nos. 2023 and 2023-A. In addition, it is unclear why PJM concludes that the *pro forma* LGIP notification requirement would lead to PJM having to process multiple requests for the same projects. The Commission explained in Order No. 2023 that failure by the interconnection customer to provide the missing data or correct data errors will be treated as a withdrawal and dealt with under *pro forma* LGIP section 3.7 (Withdrawal).[73]

48. Further, we reject PJM's proposal to maintain its Tariff provision allowing it to use "reasonable efforts" to inform interconnection customers of any deficiencies in their interconnection requests within 15 business days after the application deadline. We note that the *pro forma* LGIP does not allow transmission providers to apply the reasonable efforts standard in their efforts to validate interconnection requests. In eliminating the reasonable efforts standard for conducting cluster studies, cluster restudies, facilities studies, and affected system studies in Order No. 2023, the Commission expressed that

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must also cure deficient interconnection requests by the close of the cluster request window.").

[72] Order No. 2023, 184 FERC ¶ 61,054 at P 317.

[73] *Id.* P 319.

"[t]he lengthy interconnection study delays and interconnection queue backlogs throughout the country support our conclusion that the reasonable efforts standard does not provide an adequate incentive for transmission providers to complete interconnection studies on time."[74] The Commission noted that "transmission providers have faced few, if any, consequences for failing to meet their tariff-imposed study deadlines under the reasonable efforts standard."[75] Similarly, allowing PJM to apply the reasonable efforts standard here would remove the incentive for PJM to complete its validation of interconnection requests in a timely manner. We are concerned that delays in the validation process under PJM's proposed reasonable efforts standard would lead to delays in the commencement of the cluster study process, which is counter to the purpose of Order Nos. 2023 and 2023-A of increasing the efficiency and timeliness of the interconnection process. Accordingly, we direct PJM to submit a further compliance filing within 60 days of the date of this order to: (1) remove the phrase "use reasonable efforts to" from section 403(B)(1)(c); and (2) either adopt the proposed length of time and point of notification in *pro forma* LGIP section 7.2 for informing interconnection customers of any deficiencies or justify the initial compliance proposal under the independent entity variation standard.

49. Further, we find that PJM has not demonstrated how its proposal to retain its existing Tariff's application review period complies with Order No. 2023's requirement that transmission providers post new cluster information on OASIS with details of each interconnection request for that cluster, including information on the amount of interconnection service and the location of the proposed generating facility, within the first 10 business days of the customer engagement window.[76] PJM does not explain whether or when it will post this information after the application review period begins. Accordingly, we direct PJM to submit a further compliance filing within 60 days of the date of this order to explain how PJM proposes to comply with the requirement in section 3.4.5 of the *pro forma* LGIP for the transmission provider to post new cluster information within 10 business days of the opening of the customer engagement window, or justify its proposal under the independent entity variation standard.

50. We also grant PJM's requested independent entity variation to not commence the cluster study on an annual basis and instead to gate each Cycle off from successive Cycles because PJM's cluster study requires more than one year to conduct, and PJM's proposal would avoid substantial disruption and study delays, which is a purpose of

[74] *Id.* P 966.

[75] *Id.* P 50.

[76] *Id.* P 232; *see also pro forma* LGIP § 3.4.5.

Order Nos. 2023 and 2023-A.[77] We further find that PJM's proposal to provide notice of the application deadline for a new Cycle at the beginning of Phase II of the prior Cycle is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A because it provides sufficient clarity and notice of when the next Cycle will start.

c. Cluster Study Process and Timeline

51. The Commission adopted revisions to the *pro forma* LGIP to implement several cluster study provisions. The Commission revised section 7 (Cluster Study) of the *pro forma* LGIP to set out the requirements and scope of the cluster study agreement, as well as the cluster study and restudy procedures.[78] The Commission modified *pro forma* LGIP section 7.3 (Scope of Cluster Study Agreement) to provide that the stability analysis, power flow analysis, and short circuit analysis will be conducted on a clustered basis.[79]

52. The Commission also modified *pro forma* LGIP section 7.4 (Cluster Study Procedures) to provide that the transmission provider shall complete the cluster study within 150 calendar days, using subgroups if it chooses. Within 10 business days of simultaneously furnishing a cluster study report and draft facilities study agreement to each interconnection customer and posting such report on its Open Access Same-Time Information System (OASIS), the transmission provider shall convene an open meeting to discuss the study results.[80] The Commission revised *pro forma* LGIP section 7.5 (Cluster Study Restudies) to require that the interconnection customer must provide, within 20 calendar days after the cluster study report meeting, a study deposit, demonstration of site control, and a commercial readiness deposit. The Commission also required the transmission provider to complete any cluster restudy within 150 calendar days.[81]

53. The Commission revised section 8.5 (Restudy) of the *pro forma* LGIP to make clear that restudies can be triggered by the withdrawal or modification by a higher- or

[77] Filing at 22.

[78] Order No. 2023, 184 FERC ¶ 61,054 at P 317; *see also pro forma* LGIP § 7.

[79] Order No. 2023, 184 FERC ¶ 61,054 at P 317; *see also pro forma* LGIP § 7.3.

[80] Order No. 2023, 184 FERC ¶ 61,054 at P 317; *see also pro forma* LGIP § 7.4.

[81] Order No. 2023, 184 FERC ¶ 61,054 at P 317; *see also pro forma* LGIP § 7.5.

equally-queued interconnection request.[82] The Commission revised sections 11.1 (Tender) and 11.3 (Execution and Filing) of the *pro forma* LGIP regarding the tendering, execution, and filing of the LGIA to incorporate the site control demonstrations and LGIA deposit requirements of Order No. 2023.[83]

54. The Commission revised section 3.5.2 (Requirement to Post Interconnection Study Metrics) of the *pro forma* LGIP to require transmission providers to post metrics for cluster study and restudy processing time.[84] Additionally, the Commission required the transmission provider to include the number of calendar days after the conclusion of the transition process that the initial cluster request window will open, as well as the month and date of the opening of the annual cluster request window, in *pro forma* LGIP section 3.4.1.

55. The Commission also revised Appendix 2 (formerly Appendix 3) (Cluster Study Agreement) from the *pro forma* interconnection system impact study agreement to the new *pro forma* cluster study agreement.[85]

56. The Commission also modified *pro forma* LGIP section 3.4.5 to clarify that any interconnection request for which the interconnection customer has not executed a cluster study agreement by the end of the customer engagement window will be deemed withdrawn from the interconnection queue.[86] The Commission also modified *pro forma* LGIP section 3.4.4 to clarify that all items in *pro forma* LGIP section 3.4.2 (Initiating an Interconnection Request) must be received during the cluster request window and, if they are not, the interconnection request will be deemed withdrawn.[87]

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[82] Order No. 2023, 184 FERC ¶ 61,054 at P 335; *see also pro forma* LGIP § 8.5.

[83] Order No. 2023, 184 FERC ¶ 61,054 at P 344; *see also pro forma* LGIP §§ 11.1, 11.3.

[84] Order No. 2023, 184 FERC ¶ 61,054 at P 259; *see also pro forma* LGIP § 3.5.2.

[85] *See also pro forma* LGIP app. 2.

[86] Order No. 2023-A, 186 FERC ¶ 61,199 at P 159; *see also pro forma* LGIP § 3.4.5.

[87] Order No. 2023-A, 186 FERC ¶ 61,199 at P 161; *see also pro forma* LGIP § 3.4.4.

i. PJM's Compliance Filing

57. PJM asserts that its existing three-stage System Impact Study process is consistent with Order Nos. 2023 and 2023-A.[88] PJM's three-stage System Impact Study process consists of a Phase I System Impact Study to be completed within 120 days of the start of Phase I, the Phase II System Impact Study to be completed within 180 days of the start of Phase II, and the Phase III System Impact Study to be completed within 180 days of the start of Phase III; PJM states it will exercise reasonable efforts to meet the given study timelines per its existing Tariff.[89] Decision Point I, Decision Point II, and Decision Point III commence on the first business day following the end of the respective phase and span 30 days.[90] PJM asserts that its timeframes are longer, but are appropriate for a large RTO/ISO such as PJM, given the large volume and complexity of interconnection requests PJM receives and the number of transmission owners with which PJM must coordinate. PJM explains that although PJM's three-phase study structure differs from the 150-day cluster study in Order Nos. 2023 and 2023-A, "it is a sequenced study process that is generally consistent with the [f]inal [r]ule."[91] PJM asserts that the three-phase System Impact Study process facilitates efficient use of PJM's resources and

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[88] Filing at 33-34.

[89] *Id.* at 33 (citing PJM Tariff, pt. VIII (0.1.0)).

[90] *See* PJM Tariff, pt. VIII, subpt. A, § 400D (Definitions D) (0.1.0).

> "Decision Point I" shall mean the time period that commences on the first Business Day immediately following Phase I of a Cycle, and shall end within 30 calendar days; however, if the 30th does not fall on a Business Day, this time period shall conclude on the next Business Day.
>
> "Decision Point II" shall mean the time period that commences on the first Business Day immediately following Phase II of a Cycle, and shall end within 30 calendar days; however, if the 30th does not fall on a Business Day, this time period shall conclude on the next Business Day.
>
> "Decision Point III" shall mean the time period that commences on the first Business Day immediately following Phase III of a Cycle, and shall end within 30 calendar days; however, if the 30th does not fall on a Business Day, this time period shall conclude on the next Business Day.".

Id.

[91] Data Request Response, attach. A at 82-83.

allows interconnection customers to better assess the viability of their projects at set stages and make a decision whether or not to move forward at those times.[92]

58. PJM explains that the Phase I System Impact Study is a limited duration load flow screen that provides interconnection customers with the expected impacts of its interconnection and the ability to make an informed decision prior to having to provide at-risk deposits to move forward to the next phase of the process.[93] PJM explains that screening out projects through the simpler load flow study in the Phase I System Impact Study is an efficient use of engineering resources to advance fewer projects to the more labor-intensive and costly short circuit and stability studies.[94] PJM argues that its three-part study and phase timeframes are consistent with Order No. 2023 because they "reflect the expected but aggressive timeline to complete each phase, based on PJM's experience and particular circumstances PJM faces…"[95]

59. PJM argues that its Tariff complies with the requirement in Order No. 2023 that restudies can be triggered by higher- or equally-queued projects withdrawing from the queue or making a permissible modification.[96] PJM explains that its three-part study process coupled with the decision points accounts for withdrawals and allows for permissible modifications to occur on a structured basis. PJM states that the Phases II and III System Impact Studies will restudy the load flow analyses using updated assumptions, including withdrawals or permissible modifications of other projects in the same Cycle, and include the more time consuming short circuit and stability analyses and facilities studies.[97]

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[92] Filing at 34.

[93] *Id.* at 35; *see also* PJM Tariff, pt. VIII, subpt. C, § 405 (0.1.0), § 405(A)(1)(a) ("The Phase I System Impact Study is conducted on an aggregate basis within a New Services Request's Cycle, and results are provided in a single Cycle format. The Phase I System Impact Study Results will be publicly available on Transmission Provider's website; Project Developers must obtain the results from the website.").

[94] Filing at 35.

[95] *Id.* at 35-36.

[96] *Id.* at 36; Data Request Response, attach. A at 83.

[97] Filing at 36 (citing PJM Tariff, pt. VIII, subpt. C, § 405 (0.1.0), § 405(A)(1)(a); *id.* § 407 (0.1.0), § 407(A)(1)(a); *id.* § 409 (0.1.0), § 409(A)(1)(a)) ("The Phase II System Impact Study analysis will retool load flow results based on decisions made during Decision Point I, and perform short circuit and stability analyses as required" … "The Phase III System Impact Study analysis will retool load flow, short circuit, and stability

60. PJM asserts that its Tariff, Part VIII, Subpart E, section 431 "substantially complies" with the requirement for transmission providers to post metrics for cluster study and cluster restudy processing times, but that its Tariff appropriately reflects the terminology and study deadlines in its Tariff, which differ from the *pro forma* 150-day cluster study processing time and cluster restudy processing time.[98] PJM Tariff, Part VIII, Subpart E, section 431 provides that for each six-month reporting period, PJM will provide metrics on the Phase I, II, and III System Impact Studies processing time, including the number of incomplete System Impact Studies at each phase that exceeded the processing time, as well as the withdrawn interconnection requests within 30 days of the end of the reporting period.[99]

61. PJM argues that its Tariff "generally complies" with the requirements to allow an interconnection customer to invoke a 60-day negotiation period for the execution of a LGIA, demonstrate site control, and provide security. PJM's Tariff provides that PJM shall use reasonable efforts to complete the Final Agreement Negotiation Phase, which runs concurrently with Decision Point III, within 60 days.[100] Both Decision Point III and the Final Agreement Negotiation Phase begin the first business day following the end of Phase III, and Decision Point III spans 30 calendar days. The purpose of the Final Agreement Negotiation Phase is to negotiate, execute, and enter into a final interconnection agreement, adjust the security obligation, and conduct any remaining analyses based on interconnection requests withdrawn during Decision Point III.[101] PJM explains that its Tariff requires interconnection customers to provide evidence of site control and provide security during this time (Decision Point III).[102] PJM states that its Tariff also allows an interconnection customer to direct that its Generation Interconnection Agreement (GIA) be filed on an unexecuted basis if the parties reach an impasse in their negotiations[103] and similar to the *pro forma* LGIP provisions, requires

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results based on decisions made in Decision Point II").

[98] *Id.* at 27-28; Data Request Response, attach. A at 80.

[99] PJM Tariff, pt. VIII, subpt. E, § 431 (0.1.0).

[100] Filing at 36-37; Data Request Response, attach. A at 83-84.

[101] PJM Tariff, pt. VIII, subpt. D, § 411 (0.1.0).

[102] PJM Tariff, pt. VIII, subpt. C, § 410 (1.0.0), § 410(A)(1)(a), (c) (requiring that PJM must receive security and evidence of site control before the close of Decision Point III).

[103] Filing at 37 (citing PJM Tariff, pt. VIII, subpt. D, § 411 (0.1.0), § 411(B)(3)).

the interconnection customers to meet milestones, such as entering into fuel supply contracts, within 60 days of PJM providing the Phase III System Impact Study report.[104]

ii. Protests

62. Clean Energy Associations and Public Interest Organizations protest PJM's proposal to deviate from Order No. 2023's cluster study timeline requirements and retain its three-stage system impact study process.[105] Clean Energy Associations assert that PJM has not demonstrated why PJM's proposed deviation to retain its study timeline of 480 days, more than three times the length of the study process set forth in the *pro forma* LGIP, meets the independent entity variation standard.[106] Clean Energy Associations aver that PJM's proposal undermines Order No. 2023's intent to address "significant interconnection queue backlogs [that] create uncertainty and risk in bringing new generating facilities online."[107] Public Interest Organizations similarly argue that PJM's request for an independent entity variation for its study timeline is not just or reasonable and fails to achieve Order No. 2023's purposes.[108]

63. Public Interest Organizations assert that PJM fails to provide any specific explanation that justifies its requested independent entity variation and assert that PJM makes vague, generalized statements that the Commission already found unpersuasive.[109] Clean Energy Associations and Public Interest Organizations note that, in Order Nos. 2023 and 2023-A, the Commission explained its finding that 150 days is a sufficient timeline for interconnection cluster studies.[110]

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[104] *Id.* (citing PJM Tariff, pt. VIII, subpt. D, § 411 (0.1.0), § 411(A)).

[105] Clean Energy Associations Protest at 6; Public Interest Organizations Protest at at 25.

[106] Clean Energy Associations Protest at 6-7; Clean Energy Associations Protest to Data Request Response at 2-3.

[107] Clean Energy Associations Protest at 7 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 326).

[108] Public Interest Organizations Protest at 25; Public Interest Organizations Protest to Data Request Response at 3.

[109] Public Interest Organizations Protest at 25 (citing Order No. 2023-A, 186 FERC ¶ 61,199 at PP 288, 292).

[110] Clean Energy Associations Protest at 7 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 326); Public Interest Organizations Protest at 25-26 (citing Order No. 2023,

64. Public Interest Organizations argue that PJM's citing Lawrence Berkeley National Laboratory's Queued Up Study to justify that it receives more interconnection requests than other RTOs is unpersuasive because PJM is not currently reviewing any new interconnection requests, as it has paused accepting new interconnection requests.[111] Public Interest Organizations state that PJM does not provide specific reasons or concrete evidence why it cannot attain the efficiency that Public Interest Organizations assert was demonstrated by the majority of transmission providers that the Commission reviewed.[112]

iii. Answers

65. PJM asserts that its study timeline is appropriate for a large RTO/ISO such as PJM, given the complexity and number of interconnection requests PJM receives and the number of transmission owners with which PJM must coordinate to study interconnection requests.[113] PJM notes that its interconnection queue timelines are the product of stakeholder negotiations and appropriately balance the need for faster queue processing with realistic completion deadlines.

iv. Commission Determination

66. We grant PJM's requested independent entity variation to retain its current clustered Cycle process, which consists of three-stage System Impact Study process, with decision periods following each study phase, in place of the cluster study, cluster restudy, and individual facilities study structure adopted in Order No. 2023.[114] PJM already makes use of a "first-ready, first-served," cluster study process developed with stakeholders, taking into account the complexity and number of interconnection requests PJM receives as well as the number of transmission owners with which PJM must coordinate. We find that PJM's proposed three-phase Cycle, which encompasses both the system impact and facilities study analyses and will evaluate the cumulative impact of

184 FERC ¶ 61,054 at PP 326, 331; Order No. 2023-A, 186 FERC ¶ 61,199 at PP 315, 318).

[111] Public Interest Organizations Protest at 28 (citing Joseph Rand et al., *Queued Up: 2024 Edition, Characteristics of Power Plants Seeking Transmission Interconnection as of the End of 2023*, Lawrence Berkeley National Laboratory slide 50 (Apr. 2024), https:// emp.lbl.gov/publications/queued-2024-edition-characteristics (Queued Up Study)).

[112] *Id.* at 29.

[113] PJM July 12 Answer at 26-27; PJM December 4 Answer at 5-6.

[114] Filing at 33-34.

a group of projects, is just and reasonable and not unduly discriminatory or preferential and accomplishes the purpose of the cluster study reform in Order No. 2023 to increase efficiency by allowing transmission providers to perform larger interconnection studies encompassing many proposed generating facilities, rather than separate studies.[115]

67. We grant PJM's request for an independent entity variation from Order No. 2023's cluster study timeframe requirements to retain the timeframes in its existing Tariff. PJM asserts that its existing timeframes are appropriate for PJM given the complexity and number of interconnection requests that PJM receives, as well as the number of transmission owners with which PJM must coordinate. PJM's three-phase System Impact Study process, including the 30-day Decision Periods I and II between the phases of the System Impact Study, runs approximately 540 days.

68. The Commission's *pro forma* LGIP rules require that the interconnection study work be performed over a time range between 390 and 480 days, which is divided between a cluster study (150 days), cluster restudy (150 days), and an individual facilities study (90 or 180 days), and could be further extended by restudies. While the *pro forma* LGIP, as modified in Order No. 2023, requires transmission providers to complete cluster studies in 150 calendar days, Order No. 2023-A granted clarification that "Order No. 2023 does not preempt transmission providers from proposing tariff-defined study deadlines that may differ from the *pro forma* LGIP's 150-day schedule."[116] We find that the duration of PJM's cluster study process broadly aligns with the overall interconnection process timeframe adopted by the Commission in Order No. 2023. We note that PJM's cluster study process has a unique study structure and requirements due to its three-phase study process, which already incorporates restudies and does not have a separate facilities study. Thus, PJM's timeline for its three-phase cluster study process is appropriate when compared to the timeline of the *pro forma* LGIP study process, including the *pro forma* LGIP facilities study timing, and we disagree with the contentions of Clean Energy Associations and Public Interest Organizations that PJM three-phase cluster study process is too long compared to the *pro forma* LGIP 150-day cluster study.[117] When comparing PJM's proposal to the *pro forma* LGIP cluster study, the total time is similar. We therefore find that PJM's cluster study timeline is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A to increase efficiency and provide greater certainty to

[115] *See* Order No. 2023, 184 FERC ¶ 61,054 at P 316.

[116] Order No. 2023-A, 186 FERC ¶ 61,199 at P 156.

[117] Clean Energy Associations Protest at 6; Public Interest Organizations Protest at 25.

interconnection customers regarding the timing of studies.[118] With regard to PJM's proposal to retain its current Tariff provisions stating that it will exercise reasonable efforts to meet the study timelines, we separately address PJM's proposal on the reasonable efforts standard further below.[119]

69. Although PJM's three-phase cluster study process differs from that set out in the *pro forma* LGIP, we find that PJM's proposal to align its study metrics and informational reporting requirements to its three-phase study process is just and reasonable.[120] In particular, we find that PJM's metrics appropriately reflect the unique terminology and study phases in its Tariff.

70. As required by Order No. 2023, PJM's Tariff provides that PJM will post metrics for cluster study processing time within six months following the end of the Decision Period of each study phase. We find that PJM's proposal to post such metrics following the completion of each Phase I, Phase II, and Phase III System Impact Study is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of the study metrics and informational reporting requirements in Order Nos. 2023 and 2023-A: to ensure transparency into PJM's study completion metrics while implementing the change to the cluster study process.[121]

d. Scoping Meetings

71. The Commission adopted section 3.4.6 (Cluster Study Scoping Meetings) of the *pro forma* LGIP to require transmission providers to hold a scoping meeting with interconnection customers in the cluster.[122]

i. PJM's Compliance Filing

72. PJM requests an independent entity variation with respect to Order No. 2023's requirement for transmission providers to hold a scoping meeting with the

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[118] Order No. 2023, 184 FERC ¶ 61,054 at P 177.

[119] *See e.g.* PJM Tariff, pt. VIII, subpt. C, § 405(A)(b)(i) (0.1.0); *id.* § 407(A)(1)(e)(ii) (0.1.0); *id.* § 409(A)(1)(e)(ii) (0.1.0); PJM Tariff, pt. VIII, subpt. D, § 411(A) (0.1.0).

[120] Filing at 28.

[121] Order No. 2023, 184 FERC ¶ 61,054 at P 259.

[122] *Id.* P 245; *see also pro forma* LGIP § 3.4.6.

interconnection customers in the cluster.[123] PJM asserts that its Tariff substantially complies with the requirement because it provides that PJM may hold scoping meetings for projects in each transmission owner zone, which can be waived by the interconnection customers or transmission owners. PJM argues that in the RTO/ISO context, it is reasonable to hold scoping meetings on a transmission owner zone basis, because holding meetings on an RTO-wide basis would be unwieldy.[124] PJM also argues that it is appropriate to allow meetings to be waived by interconnection customers or transmission owners, as they are the interested parties, and because PJM asserts that all information needed for the initial study has been garnered from the initial application or through email communications.[125]

73. PJM further argues that the requirement for non-disclosure agreements for scoping meetings is not necessary in PJM because its Tariff contains comprehensive confidentiality provisions that cover information related to interconnection requests, which PJM asserts provides protection equivalent to the non-disclosure agreements required by Order No. 2023.[126] PJM asserts that in the event that PJM needs to discuss confidential information related to a project, PJM can redirect that discussion to an individual setting to ensure confidentiality.[127] PJM argues that it would be overly burdensome for PJM to process hundreds of non-disclosure agreements for the sole purpose of scoping meetings.

ii. Protests

74. Clean Energy Associations and Shell Companies argue that PJM's proposal for scoping meetings does not comply with Order No. 2023 and does not meet the Commission's standards for an independent entity variation.[128] Shell Companies also argue that PJM's current Tariff does not comply with Order No. 2023, because section

[123] Filing at 27 (citing PJM Tariff, pt. VIII, subpt. E, § 425 (0.1.0); PJM Tariff, pt. IX, subpt. A (Form of Application and Studies Agreement) (1.0.0), § 6; PJM Tariff, pt. VIII, subpt. A, § 400C (Definitions C) (1.0.0)).

[124] Filing at 26 (citing PJM Tariff, pt. VIII, subpt. B, § 403 (0.1.0), § 403(C)); Data Request Response, attach. A at 79-80.

[125] Filing at 26.

[126] *Id.* (citing PJM Tariff, pt. VIII, subpt. E, § 425 (0.1.0)).

[127] *Id.* at 27.

[128] Clean Energy Associations Protest at 16; Shell Companies Protest at 19.

403(C)(1) of PJM's Tariff states only that PJM "may" hold scoping meetings.[129] Clean Energy Associations and Shell Companies argue that PJM's proposal undermines the Commission's intent under Order No. 2023, which was for the scoping meetings to be a forum where all interconnection customers can direct questions to transmission providers in an efficient manner.[130]

75. Clean Energy Associations and Shell Companies oppose PJM's proposal to allow transmission owners to continue to unilaterally waive scoping meetings.[131] Clean Energy Associations contend that by permitting transmission owners to waive the scoping meeting, PJM restricts opportunities for interconnection customers to access key information that may materially affect the interconnection customer's decision, which could lead to additional delays.[132] Clean Energy Associations assert that PJM's proposal will create uncertainty for interconnection customers and create inefficiencies within the interconnection study process generally, which would undermine the purpose of the customer engagement window reforms proposed by the Commission.[133] Shell Companies state that it would not oppose a provision that allowed for waiver of a scoping meeting if all affected and interested parties agree that the meeting is not necessary, but argues PJM's Tariff presently allows the meeting to be waived for all affected and interested parties if only one party chooses to waive a meeting.[134]

iii. Answers

76. In its July 12 Answer, PJM reiterates its argument that it is appropriate to allow a scoping meeting to be waived by either the interconnection customers or the transmission owner for efficiency purposes as they are the interested parties.[135] In its December 4

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[129] Shell Companies Protest at 18-19 (citing PJM Tariff, pt. VIII, subpt. B, § 403 (0.1.0), § 403(C)(1)).

[130] Clean Energy Associations Protest to Data Request Response at 8-9; Shell Companies Protest to Data Request Response at 6-7.

[131] Shell Companies Protest at 18.

[132] Clean Energy Associations Protest at 17; Shell Companies Protest at 19; Clean Energy Associations Protest to Data Request Response at 8-9; Shell Companies Protest to Data Request Response at 7.

[133] Clean Energy Associations Protest at 17.

[134] Shell Companies Protest at 18-19.

[135] PJM July 12 Answer at 28.

Answer, PJM asserts that it fully addressed Clean Energy Associations and Shell Companies regarding scoping meetings in its July 12 Answer and, therefore, requests the Commission disregard protesters' concerns.[136]

iv. Commission Determination

77. We partially grant PJM's requested independent entity variation to retain its existing scoping meeting process. There are three elements of PJM's proposal that differ from the *pro forma* LGIP: (1) that the scoping meetings be bounded by the projects within a particular transmission owner's zone; (2) the use of PJM's existing confidentiality provisions in lieu of a non-disclosure agreement; and (3) the unilateral ability of a transmission owner to waive a scoping meeting and that PJM's Tariff only specifies that PJM "may" hold scoping meetings.

78. First, we find that PJM's proposal to hold scoping meetings for projects in each transmission owner zone is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A. We are persuaded by PJM's argument that holding scoping meetings on an RTO-wide basis would be unwieldy given the size of the PJM region. Using the transmission owner's zone as the boundary for the scoping meeting accomplishes the purpose of Order Nos. 2023 and 2023-A to enable the relevant interconnection customers within a given cluster to participate in a meeting to direct questions to PJM and the relevant transmission owner in an efficient manner without delaying the cluster process with unnecessarily time-consuming individual scoping meetings.[137] Therefore, we grant PJM's requested independent entity variation on this element.

79. Second, we grant PJM's requested independent entity variation to apply its existing Tariff's confidentially provisions to scoping meetings in lieu of non-disclosure agreements because we find that PJM's confidentially provisions are just and reasonable and not unduly discriminatory or preferential and accomplish the purpose of Order Nos. 2023 and 2023-A. We find that PJM's confidentiality provisions provide adequate protection for confidential information that is comparable to the protection provided by the non-disclosure agreements contemplated by the final rule.[138]

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[136] PJM December 4 Answer at 6.

[137] Order No. 2023, 184 FERC ¶ 61,054 at P 245.

[138] Specifically, we note that section 425 of PJM Tariff, pt. VIII, Subpart E disallows disclosure of confidential information related to interconnection requests with limited exceptions for affiliates and parties that may be or may be considering financial involvement in an interconnection project, which maintains confidentiality of identifying or commercially sensitive information for all other interconnection customers in a group

80. However, on the third element, we find that PJM's proposal to allow scoping meetings to be waived by transmission owners is not just and reasonable and does not accomplish the purposes of Order No. 2023. We further agree with Shell Companies' protest that PJM's tariff language that PJM "may" hold scoping meetings does not comply with Order No. 2023, because in Order No. 2023, the Commission required transmission providers to hold a scoping meeting with interconnection customers in the cluster.[139] The Commission further stated that the scoping meeting is an appropriate forum in which all interconnection customers can direct questions to transmission providers in an efficient manner without delaying the cluster process with unnecessarily time-consuming individual scoping meetings.[140] Here, PJM proposes that a transmission owner can unilaterally choose to waive the scoping meeting. We agree with protesters that allowing transmission owners to waive scoping meetings may unnecessarily burden the process for interconnection customers, limit interconnection customers' opportunities to participate in the study process and may restrict opportunities for interconnection customers to access key information that may materially affect the interconnection customer's decision. Therefore, we decline to grant PJM's requested independent entity variation on this element of PJM's proposal on scoping meetings. Accordingly, we direct PJM to submit a further compliance filing within 60 days of the issuance of this order with Tariff revisions to remove the provisions that permit transmission owners to waive scoping meetings and require PJM to hold scoping meetings.

e. Commercial Operation Date Extension

81. The Commission revised section 4.4.5 of the *pro forma* LGIP to require that an interconnection customer receive an extension of fewer than three cumulative years of the generating facility's commercial operation date without requiring it to request such an extension from the transmission provider.[141] Specifically, the Commission clarified that (1) the commercial operation date reflected in the initial interconnection request shall be used in calculating the permissible fewer than three-year extension until the interconnection customer executes, or requests the unexecuted filing of, an LGIA, but (2) once the interconnection customer has executed an LGIA or requested that the LGIA be filed unexecuted, the commercial operation date established in the LGIA shall be the date from which the up to three cumulative years is calculated.

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scoping meeting, as required by Order No. 2023.

[139] Order No. 2023, 184 FERC ¶ 61,054 at P 245.

[140] *Id.* P 246.

[141] *Id.* P 293; *see also pro forma* LGIP § 4.4.5.

i. PJM's Compliance Filing

82. PJM requests an independent entity variation to retain its current Tariff provisions regarding an extension of a generating facility's commercial operation date, which allow for a unilateral one-year extension of the commercial operation date in its GIA.[142] Under PJM's Tariff, once an interconnection customer has executed a GIA, the interconnection customer has the unilateral right to extend the commercial operation date and associated milestone dates (other than milestones to provide demonstration of site control) by one year for any reason. PJM does not permit interconnection customers to unilaterally extend milestones for providing site control demonstrations. PJM further explains that under PJM's Tariff, an interconnection customer "still may be able to extend the commercial operation date and associated milestone dates in the event of delays it did not cause and could not have remedied through the exercise of due diligence."143

83. PJM argues that the automatic three-year extension of the commercial operation date provided in the *pro forma* LGIP would be harmful to its interconnection study process.[144] PJM points to the 40 GW of interconnection projects in its interconnection queue that have been studied and have service agreements but are not proceeding to construction and commercial operation.[145] PJM explains that because the projects have effective service agreements, PJM models the projects in its Regional Transmission Expansion Plan (RTEP) as though they are in service as of their proposed commercial operation date. PJM asserts that when the projects are not in service as proposed, reliability issues may be masked in the RTEP analysis, which ultimately results in increased network costs for some interconnection customers.

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[142] Filing at 32; Data Request Response, attach. A at 81-82. The milestones in PJM's GIA include the commercial operation date.

[143] Filing at 31 (citing PJM Tariff, pt. VIII, subpt. E, § 429(B)(3) ("The Transmission Provider may reasonably extend any such milestone dates (including those required in order to proceed with an Generation Interconnection Agreement) in the event of delays not caused by the Project Developer, such as unforeseen regulatory or construction delays that could not be remedied by the Project Developer through the exercise of due diligence") (0.1.0); PJM Tariff, pt. IX, subpt. B (Form of GIA), § 6.4 (1.0.0)).

[144] *Id*. at 32.

[145] *Id*.

ii. Protests

84. Clean Energy Associations, EDF Renewables, Leeward and RWE Clean Energy, and Shell Companies protest PJM's proposal to limit commercial operation date extensions to one year.[146] Protesters assert that PJM has not sufficiently justified its request for an independent entity variation to limit commercial operation date extensions.[147] EDF Renewables and Leeward and RWE Clean Energy contend that PJM's use of its queue backlog as justification for an independent entity variation is insufficient, arguing that interconnection queue backlog issues are not unique to PJM,[148] and there are many reasons other than the commercial operation date extension that contribute to PJM's queue backlog.[149] EDF Renewables further argues that allowing a three-year extension of commercial operation dates for projects in the PJM region imposes no greater burden or uncertainty than it does for projects in other transmission provider regions and states that other transmission providers, such as MISO, continue to implement a three-year commercial operation date extension despite facing substantial interconnection queue backlogs.[150] Shell Companies argue that PJM has not provided any evidence beyond anecdotal statements that extending an interconnection request's proposed commercial operation date causes uncertainty or delays in PJM's reformed interconnection process.[151]

85. Clean Energy Associations state that it would be prudent and in the interest of both PJM and interconnection customers to ensure that PJM has a way to unilaterally extend a milestone for delays outside of the control of an interconnection customer.[152] EDF Renewables argues that, "given the multitude of new requirements of Order No. 2023 that will be implemented in PJM, as well as the many changed dynamics since the acceptance of PJM's 2022 [interconnection] queue reform proposal (e.g., escalating and changing supply chain issues, transmission owner procurement delays), PJM's claim that the prior tariff was already accepted by [the Commission] in 2022 is not sufficient to

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[146] Clean Energy Associations Protest at 19; EDF Renewables Protest at 2, 3; Leeward and RWE Clean Energy Protest at 4, 24; Shell Companies Protest at 13.

[147] EDF Renewables Protest at 3; Shell Companies Protest at 13-14.

[148] EDF Renewables Protest at 3.

[149] Leeward and RWE Clean Energy Protest at 25.

[150] EDF Renewables Protest at 6.

[151] Shell Companies Protest at 14.

[152] Clean Energy Associations Protest at 20.

show that the PJM [c]ompliance [f]iling is just and reasonable or consistent with the objectives of Order No. 2023."[153] Leeward and RWE Clean Energy also argue that after the 2022 Interconnection Reforms Order was issued, new factors have arisen that further demonstrate the need for the three year commercial operation date extension.[154]

86. EDF Renewables asserts that PJM has increasingly narrowed the types of issues and events that it considers to be beyond a developer's control, limiting the ability of projects to extend the commercial operation date. EDF Renewables argues that this, combined with PJM's proposal to limit commercial operation date extensions to one year, can cause projects that are otherwise viable to terminate their GIAs and never achieve commercial operation.[155] EDF Renewables argues that PJM's proposal to deviate from the requirements of Order No. 2023 on commercial operation date extensions, plus its narrow interpretation of uncontrollable events, creates additional and unnecessary obstacles for interconnection customers.[156] Protesters request that the Commission reject PJM's proposal and require PJM to adopt the three-year commercial operation date extension in Order Nos. 2023 and 2023-A.[157]

iii. Answers

87. PJM requests that the Commission reject protesters' arguments seeking to maintain the three-year commercial operation date extension.[158] PJM argues that its elimination of the three-year commercial operation date extension was accepted by the Commission as part of its 2022 Interconnection Reforms Filing and was designed, in negotiation with stakeholders, to prevent non-ready projects from languishing in the queue. PJM states that its interconnection queue currently contains roughly 38.7 GW of generating facilities that have been studied and have service agreements in effect, but are not proceeding to construction and commercial operation.[159] PJM reiterates that it models those generating facilities in its RTEP as though they are in service, which results

[153] EDF Renewables Protest at 4.

[154] Leeward and RWE Clean Energy Protest at 26.

[155] EDF Renewables Protest at 6-7.

[156] *Id.* at 7.

[157] Clean Energy Associations Protest at 20; EDF Renewables Protest at 3; Leeward and RWE Clean Energy Protest at 24-26.

[158] PJM July 12 Answer at 19.

[159] *Id.*

in increased network upgrade costs for customers even when those facilities are not actually on the system.[160]

88. PJM disagrees with EDF Renewables' assertion that the three-year extension of the commercial operation date "creates no more burden or uncertainty" for PJM, asserting that other transmission providers have different size interconnection queues with different resource mixes than PJM.[161] PJM also argues that, unlike a number of other regions, PJM has an annual forward capacity market in which it needs to establish specific planning parameters that drive capacity procurement targets, and that the three-year extension will add uncertainty to the level of capacity needed and can lead to either over-procurement or under-procurement.[162] PJM argues that EDF Renewables provides no support for its assertion that PJM has increasingly narrowed the types of issues and events it considers to be beyond an interconnection customer's control or a basis for reinstating the extension periods.[163]

89. In its answer, EDF Renewables argues that PJM's proposed one-year commercial operation date extension is an unnecessary and unjustified independent entity variation from Order No. 2023's three-year extension provision. Additionally, EDF Renewables argues that PJM's reliance on the approval of its Tariff is "outdated" and does not meet the Order No. 2023 requirement, especially given the significant changes in the project landscape, such as supply chain delays and permitting challenges, that have emerged since PJM's interconnection reforms were developed nearly four years ago.[164]

90. EDF Renewables argues that PJM's claim that a three-year extension would raise reliability concerns related to the difficulty in forecasting future capacity is not supported. Specifically, EDF Renewables argues that PJM's recent tariff revisions require binding notices of intent from capacity resources committing those resources to participate in the PJM Reliability Pricing Model (RPM) auction, and thereby establish certainty about which resources will participate in the RPM for each deliverability year, which, in turn, means that PJM does not need to establish this certainty by limiting GIA extensions from three years to one year.[165] Additionally, EDF Renewables notes that MISO has more

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[160] *Id*. at 19-20.

[161] *Id*. at 20 (citing EDF Renewables Protest at 6).

[162] *Id*. at 20-21.

[163] *Id*. at 21.

[164] EDF Renewables Answer at 5, 7.

[165] *Id*. at 6 (citing *PJM Interconnection, L.L.C.*, 186 FERC ¶ 61,080 at P 263 (accepting PJM's proposed notice of intent requirements), *order on reh'g*, 189 FERC

capacity in its interconnection queue than PJM and is proposing to adopt Order No. 2023's three-year extension.[166]

91. In its August 12 answer, PJM challenges EDF Renewables' argument that granting three-year commercial operation date extensions would not raise PJM's previously stated reliability concerns, given the recently adopted rule that requires capacity market sellers of any planned generation capacity resource to provide a binding notice of intent to be offered into the capacity market auctions. Despite this change, PJM asserts that allowing for a three-year commercial operation date extension could still adversely affect the planning parameters for the capacity auctions.[167] PJM contends that while a planned generation capacity resource that is the subject of a binding notice of intent to offer is expected to be offered, the market rules only discourage capacity market sellers from prematurely submitting a binding notice of intent to offer, and there is no ability for PJM to correct the planning parameters based on the offers that are actually received during capacity market auctions.[168] PJM requests that the Commission reject EDF Renewables' arguments, because PJM asserts that the one-year commercial operation extension will help to establish planning parameters that are as accurate as possible so that the capacity market clearing prices can accurately reflect actual demand and supply fundamentals.[169]

iv. Commission Determination

92. We find that PJM does not address how it complies with the requirement in section 4.4.5 of the *pro forma* LGIP that permits extension of the commercial operation date set forth in the initial interconnection request before the interconnection customer executes, or requests the unexecuted filing of, an LGIA. PJM's Tariff does not appear to permit extensions of the commercial operation date before the interconnection customer executes, or requests the unexecuted filing of a GIA, and PJM does not justify its omission under the independent entity variation standard. Accordingly, we direct PJM to submit a further compliance filing, within 60 days of the date of this order, to explain how PJM proposes to comply with the requirement in section 4.4.5 of the *pro forma* LGIP for the commercial operation date in the initial interconnection request to be used in calculating the permissible extension of the commercial operation date until the

¶ 61,043 (2024)).

[166] *Id.* at 7.

[167] PJM August 12 Answer at 3.

[168] *Id.* at 3-4.

[169] *Id.* at 5.

interconnection customer executes, or requests the unexecuted filing of, an LGIA, or justify its proposal under the independent entity variation standard.

93. We grant PJM's requested independent entity variation to retain its existing commercial operation date extension process once an interconnection customer has executed a GIA or requested that the GIA be filed unexecuted. PJM's Tariff provides that once the interconnection customer has executed a GIA or requested that the GIA be filed unexecuted, the interconnection customer may unilaterally extend the commercial operation date and associated milestones in the GIA by one year.[170] We find that PJM has demonstrated that it is reasonable to retain its existing one-year extension of the commercial operation date in the GIA, rather than adopt the three-year extension in the *pro forma* LGIP, due to PJM's experience in its region and the unique needs of its forward capacity market. As PJM explains, unlike a number of other regions, PJM has an annual forward capacity market in which it needs to establish specific planning parameters that drive capacity procurement targets.[171] PJM states that a three-year extension would add uncertainty to the level of capacity needed and could lead to either over-procurement or under-procurement. We find that PJM's approach to limit the suspension provision to one year in their region represents a reasonable balance between flexibility for interconnection customers and certainty for PJM.

94. We disagree with protesters' assertions that PJM's justification of its proposal to retain the one-year unilateral extension of the commercial operation date in the GIA is insufficient. Contrary to EDF Renewables' assertion that a three-year commercial operation date extension would create no more uncertainty or burden on PJM than other transmission providers, as noted above, PJM states that such an extension is more burdensome on PJM due to the relationship of the interconnection queue and the forward capacity market. Regarding protesters' assertion that PJM's proposal causes unnecessary obstacles for interconnection customers, we note that PJM explains that maintaining its existing one-year commercial operation extension is necessary, because allowing three-year extensions would exacerbate the challenges PJM presently has in forecasting capacity needs to ensure reliability.[172] We therefore find that PJM's proposal balances flexibility for interconnection customers through the one-year extension provision with the need for certainty related to its need to accurately forecast capacity.

[170] PJM Tariff, pt. VIII, subpt. E, § 429 (0.1.0), § 429(B)(3).

[171] PJM July 12 Answer at 20-21.

[172] Filing at 32-33.

f. Point of Interconnection and Modifications

95. The Commission adopted section 3.1.2 (Submission) of the *pro forma* LGIP to require an interconnection customer to select a definitive point of interconnection when executing the cluster study agreement.[173]

96. The Commission revised section 4.4 (Modifications) of the *pro forma* LGIP to provide that moving a point of interconnection shall result in the loss of a queue position if it is deemed a material modification by the transmission provider.[174] The Commission also revised section 4.4.1 of the *pro forma* LGIP to incorporate the material modification process as part of the cluster study process.[175]

i. PJM's Compliance Filing

97. PJM requests an independent entity variation from the requirement in the *pro forma* LGIP for an interconnection customer to select a definitive point of interconnection when executing the cluster study agreement to retain its current Tariff provisions.[176] PJM states that its Tariff requires an interconnection customer to specify the point of interconnection in its completed Application and Studies Agreement.[177] PJM explains that its Tariff permits an interconnection customer to finalize its point of interconnection at Decision Point I.[178] PJM explains that in PJM's interconnection process, the interconnection customer does not submit an interconnection request and study agreement as separate steps, and that the Application and Studies Agreement is equivalent to a cluster study agreement in Order Nos. 2023 and 2023-A. PJM asserts that its Tariff requires designation of the point of interconnection at "essentially the same time as required by [Order Nos. 2023 and 2023-A]."[179] PJM argues that the flexibility in its Tariff for the interconnection customer to change a project's point of interconnection

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[173] Order No. 2023, 184 FERC ¶ 61,054 at P 200; *see pro forma* LGIP § 3.1.2.

[174] Order No. 2023, 184 FERC ¶ 61,054 at P 283; *see also pro forma* LGIP § 4.4.

[175] Order No. 2023, 184 FERC ¶ 61,054 at P 285; *see also pro forma* LGIP § 4.4.1.

[176] Filing at 20; Data Request Response, attach. A at 76.

[177] Filing at 20 (citing PJM Tariff, pt. VIII, subpt. B, § 403(A)(1) (0.1.0); *id.*, pt. IX, subpt. A (Form of Application and Studies Agreement) (1.0.0), § 9).

[178] Filing at 21 (citing PJM Tariff, pt. VIII, subpt. C, § 406(B)(4) (0.2.0)).

[179] *Id*. at 20-21.

after the application stage strikes an appropriate balance between flexibility for interconnection customers and certainty to what PJM is studying so that speed and efficiency of processing are not sacrificed, and thus meets the goals of Order Nos. 2023 and 2023-A.[180]

98. PJM requests an independent entity variation to retain its existing material modification restrictions on moving a point of interconnection that allow interconnection customers to retain their queue position even under a limited set of changes to their point of interconnection.[181] Under PJM's existing Tariff, changes to the point of interconnection may only be made at Decision Point I and an interconnection customer can only change the location of its point of interconnection along the same segment of transmission line or move the location to a different breaker position within the same substation – otherwise the interconnection customer must submit a new interconnection request.[182] PJM argues that Order No. 2023's requirement to allow changes to points of interconnection at any time, so long as transmission provider determines that the changes are not material modifications, could undermine the efficiencies of PJM's Cycle process, as individual projects could modify their point of interconnection outside of the defined phase study timeframes and PJM would need to conduct multiple one-off material modification analyses.[183] PJM asserts that its Tariff provisions are better suited for the large number of interconnection requests in the PJM region because they do not redirect skilled engineers to assess a "virtually unbounded" number of point of interconnection modification requests.[184] PJM states that its Tariff restrictions for modifying points of interconnection enable PJM to move forward without being diverted into ad hoc studies, and provide interconnection customers notice in advance as to what changes to their points of interconnection are acceptable and when they are acceptable. PJM asks the Commission to grant an independent entity variation to allow PJM to maintain its Tariff's restrictions on point of interconnection changes, asserting that its Tariff's restrictions will promote a more efficient use of limited engineering resources and a more timely study process, which is consistent with the goal of Order No. 2023.[185]

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[180] *Id*. at 21.

[181] *Id*. at 31.

[182] *Id*. at 29 n.77 (citing PJM Tariff, pt. VIII, subpt. C, § 408 (1.0.0), § 408(B)(4)).

[183] *Id*. at 29.

[184] *Id*. at 29-30.

[185] *Id*. at 30-31.

99. PJM contends that its Tariff provisions for material modification are consistent with the Commission's intent in the *pro forma* LGIA and *pro forma* LGIP definition of material modification. PJM asserts that its Tariff provisions for material modifications exceed the objectives of the *pro forma* definition of material modification, because its Tariff does not permit material modifications that would affect interconnection requests within the same Cycle, and further, its Tariff only allows a defined set of limited changes to an interconnection request at Decision Points I and II.[186] PJM argues that its material modification provisions provide certainty and advance notice to interconnection customers of the permissible changes and provide for more efficient use of PJM's processing resources.[187]

100. PJM asserts that its Tariff provisions regarding points of interconnection, including PJM's definition of the term "definitive point of interconnection," substantially comply with Order No. 2023's requirements. More specifically, PJM explains that, consistent with Order No. 2023, its Tariff requires an interconnection customer to select a definitive point of interconnection when executing a cluster study agreement but that its Tariff also includes appropriate variances for the PJM region and PJM's interconnection process.[188] PJM notes that its Tariff requires the designation of the point of interconnection by the interconnection customer at the same time as Order No. 2023 and that its Tariff provides flexibility for interconnection customers to make limited revisions to that point of interconnection at Decision Point I.

101. PJM also requests an independent entity variation to maintain its existing definition of "material modification." PJM asserts that its Tariff's definition of "material modification" substantially complies with the *pro forma* LGIP.[189] PJM states that, like the *pro forma* definition, its Tariff's definition specifies that all modifications that have a material impact on cost or timing of any interconnection studies related to, or upgrades needed to accommodate, interconnection requests constitute a material modification. PJM states, however, that its definition provides that material modifications are

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[186] *Id*. at 19-20 (citing PJM Tariff, pt. VIII, subpt. C, § 406 (0.2.0), § 406(B); *id.* § 408 (1.0.0), § 408(B)(4)). The list of permitted modifications for interconnection requests at Decision Point I set out in section 406(B) include: reductions in maximum facility output and/or capability interconnection rights, removal of a fuel type for a resource with multiple fuel types, move of the point of interconnection along the same segment of the transmission line or to a different breaker within the same substation, change in the site to an adjacent parcel, and updates to equipment data.

[187] *Id*. at 20.

[188] Data Request Response, attach. A at 76.

[189] Filing at 19; Data Request Response, attach. A at 47-48.

determined through a necessary study and are based on a later Cycle rather than an equal or later queue position.

ii. Protests

102. Leeward and RWE Clean Energy oppose PJM's requested independent entity variation, disputing PJM's assertion that PJM does not need to conduct a study to determine whether a change in a project's point of interconnection is a material modification.[190] Leeward and RWE Clean Energy argue that PJM repeats the same arguments it made in its request for rehearing of Order No. 2023, namely, that it has limited resources to conduct studies and does not want to divert its engineers away from completing the cluster study process, and that the Commission already decided against these arguments during Order No. 2023's rulemaking process.[191] Leeward and RWE Clean Energy request that the Commission require PJM to include in its LGIP an acknowledgement of the Commission's statements in Order No. 2023-A regarding PJM's and future interconnection customers' responsibilities and rights with respect to requests for changes to points of interconnection.

103. Shell Companies argue that PJM's proposed definition of "material modification" improperly limits the concept to modifications affecting the terms of a GIA, whereas Order No. 2023's *pro forma* LGIP and LGIA apply more broadly to modifications impacting the cost or timing of interconnection requests.[192] Shell Companies assert that PJM's unjustified temporal limitation is inconsistent with Order No. 2023, as it excludes customers' rights to request a material modification assessment prior to executing a GIA. Shell Companies request that the Commission reject PJM's proposed definition as unjust, unreasonable, and potentially discriminatory.[193]

iii. Answers

104. PJM argues that its proposal to retain its existing rules, which only permit changes to a project's point of interconnection at Decision Point I, provides interconnection customers with clear guidance as to what types of changes to a project's point of interconnection are permissible, and asserts that Order Nos. 2023 and 2023-A's point of

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[190] Leeward and RWE Clean Energy Protest at 27 (citing *PJM Interconnection, L.L.C.*, Request for Clarification and Rehearing, Docket No. RM22-14-001, at 44 (filed Aug. 28, 2023)).

[191] *Id*. at 29 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 1007).

[192] Shell Companies Protest to Data Request Response at 11-12.

[193] *Id*.

interconnection change provisions lack clarity and could undermine the efficiencies of PJM's interconnection process.[194] PJM requests the Commission reject Leeward Renewable's protest and approve PJM's requested independent entity variation to limit point of interconnection changes.[195] PJM argues that the PJM region is continuing to face an extraordinary number of interconnection requests and if it were to receive a material modification request during the study phase of a Cycle, PJM would need up to two months to determine if a project's proposed point of interconnection change would be material to the Cycle, and if the project withdraws due to a material modification, it could take another two months to rerun Cycle studies. PJM asserts that a specific time window for consideration of project modifications will ensure that limited staff resources can maintain their focus on completing Cycle studies.[196] PJM argues that its Tariff is consistent with Order Nos. 2023 and 2023-A's objectives of promoting more efficient interconnection and clarity in queue processing.[197]

105. PJM states that it receives a high number of requests to perform material modification analyses of project changes and approximately a quarter of those projects subsequently withdraw from the interconnection process. PJM provides data from January 1, 2022 through May 5, 2023 during which 175 projects requested a material modification analysis and 42 of those projects withdrew from the interconnection process, and only six of those projects are now fully in service.[198] PJM asserts that diverting resources to determine whether requested changes constitute a material modification, when a substantial portion of projects requesting this analysis withdraw, and so few of these projects are in service, is an uneconomic use of resources.[199]

iv. Commission Determination

106. We grant PJM's requested independent entity variation to retain its current Tariff provisions on the interconnection customer's selection of a point of interconnection in the cluster study process.[200] Order Nos. 2023 and 2023-A required an interconnection

[194] PJM July 12 Answer at 12.

[195] *Id*.

[196] *Id*. at 13-14.

[197] *Id*. at 14.

[198] *Id*.

[199] *Id*. at 15.

[200] PJM Tariff, pt. VIII, subpt. B, § 403 (0.1.0), § 403 (A)(1) (0.1.0); *id.*, subpt. C, § 406 (0.2.0), § 406 (B)(4) (0.2.0); *id.*, pt. IX, subpt. A (Form of Application and Studies

customer to select a definitive point of interconnection to be studied when executing the cluster study agreement.[201] Similarly, PJM's proposal requires an interconnection customer to submit a completed Application and Studies Agreement that designates a proposed point of interconnection, but PJM also allows an interconnection customer to *finalize* that point of interconnection before the close of the Decision Point I Phase of the interconnection process. While PJM proposes to require interconnection customers to designate a *proposed* point of interconnection at essentially the same time in the interconnection process as required by Order Nos. 2023 and 2023-A, PJM also proposes to allow interconnection customers to modify (within certain boundaries), and *finalize*, their point of interconnection by the close of the Decision Point I Phase. We find PJM's proposal is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A: to provide balance between allowing flexibility for potential adjustments to the point of interconnection and providing transmission providers with the information necessary to conduct the cluster study.[202]

107. We also grant PJM's requested independent entity variation to allow PJM to maintain its existing material modification provisions that allow interconnection customers to retain their queue position under a limited set of permissible changes to points of interconnection at Decision Point I.[203] PJM's proposal allows interconnection customers to move the location of their point of interconnection only: (1) along the same segment of the transmission line; or (2) to a different breaker position within the same substation. We find that PJM's proposal affords interconnection customers sufficient flexibility because PJM is allowing a limited set of changes to points of interconnection that might otherwise constitute a material modification to interconnection requests and thus require interconnection customers to submit a new interconnection request. Accordingly, we find that PJM's proposal to allow interconnection customers flexibility to move their point of interconnection, within the two limitations, before the close of Decision Point I is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A, as noted above.

108. We disagree with Leeward and RWE Clean Energy's arguments that PJM must conduct a study to determine whether a change in a project's point of interconnection is a material modification. We note that the Commission declined to opine on what types of

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Agreement) (1.0.0), § 9.

[201] Order No. 2023, 184 FERC ¶ 61,054 at P 200; *see also pro forma* LGIP § 3.1.2.

[202] Order No. 2023, 184 FERC ¶ 61,054 at P 201.

[203] PJM Tariff, pt. VIII, subpt. C, § 408 (1.0.0), § 408(B)(4).

changes to an interconnection customer's point of interconnection would result in a material modification and left that determination to transmission providers' existing processes.[204] Order No. 2023 expressly allows and permits PJM to re-purpose its existing Tariff provisions regarding permissible types and timing for changes to an interconnection customer's point of interconnection.[205] We therefore find that PJM's material modification proposal complies with the requirements of Order No. 2023. While we acknowledge Leeward and RWE Clean Energy's concerns, we note that, under PJM's proposal, any changes to an interconnection customer's point of interconnection beyond PJM's two stated options at Decision Point I (moving to a new point along the same segment of transmission line or to a different breaker position within the same substation) would constitute a material modification.[206] We find that PJM's proposal on modifications to points of interconnection strikes a reasonable balance between the use of engineering labor to advance feasible projects and reducing late-stage interconnection request modifications or withdrawals that could slow down the study process. Moreover, we disagree with Leeward and RWE Clean Energy's arguments that the Commission already decided against PJM's arguments regarding changes to points of interconnection and ad hoc studies. In Order No. 2023-A, the Commission disagreed with PJM's request for clarification of the final rule, and did not prejudge its compliance proposal.[207]

109. However, we find that PJM has not sufficiently supported its proposal to maintain its existing definition of "material modification." We agree with Shell Companies' arguments that PJM's Tariff definition of "material modification" is limited to modifications to an executed GIA. While PJM explains that its Tariff includes a defined list of permissible changes to an interconnection request at Decision Points I and II prior to executing a GIA, PJM does not reflect these modifications in its definition of material modification or otherwise explain how its definition of material modification accomplishes the purpose of Order No. 2023's *pro forma* LGIP to allow modification

[204] Order No. 2023, 184 FERC ¶ 61,054 at PP 281, 283; *see also pro forma* LGIP § 4.4.

[205] Order No. 2023, 184 FERC ¶ 61,054 at P 281.

[206] PJM Tariff, pt. VIII, subpt. C, § 408 (1.0.0), § 408(B)(4).

[207] *See* Order No. 2023-A, 186 FERC ¶ 61,199 at P 155. PJM requested clarification that transmission providers did not need to evaluate whether every request to change a point of interconnection is a material modification. The Commission found that no clarification or rehearing was necessary because existing *pro forma* LGIP provisions make clear that changes to a point of interconnection after execution of the cluster study agreement are material modifications.

requests to be submitted during any point of the interconnection study process.[208] Therefore, we direct PJM to submit a further compliance filing, within 60 days of the date of this order, to revise its definition of "material modification," or justify its proposal under the independent entity variation standard.

g. Surety Bonds

110. The Commission modified sections 3.4.2, 5.1.1.1 (Transitional Serial Study), 5.1.1.2 (Transitional Cluster Study), 7.5, and 8.1 of the *pro forma* LGIP to reflect that acceptable forms of security for the commercial readiness deposit and deposits prior to the transitional serial study, the transitional cluster study, the cluster restudy, and the interconnection facilities study should include not only cash or an irrevocable letter of credit, but also surety bonds or other forms of financial security that are reasonably acceptable to the transmission provider.[209]

i. PJM's Compliance Filing

111. PJM requests an independent entity variation to limit the acceptable forms of security for the commercial readiness deposit and other deposits.[210] PJM states that its Tariff requires study deposits to be paid by wire transfer and commercial readiness deposits to be paid by wire transfer or letter of credit.[211] PJM contends that its approach has worked successfully in PJM, asserting that its existing Tariff facilitates the processing of applications, allows sufficient opportunity for interconnection customers to submit deposits within the required timeframes, and provides clear guidelines. PJM asserts that limiting the acceptable forms of security is appropriate in PJM in light of the large number of interconnection requests that it expects to receive and "the rare circumstances in which a surety bond has been acceptable."[212] PJM states that most interconnection customers in PJM provide security in the forms of cash, letters of credit, or parental guarantees, in the case of vertically integrated utilities. PJM argues that surety bonds can

[208] See *pro forma* LGIP § 4.4

[209] Order No. 2023-A, 186 FERC ¶ 61,199 at P 185; *see also pro forma* LGIP §§ 3.4.2, 5.1.1.1, 5.1.1.2, 7.5, 8.1.

[210] Filing at 43; Data Request Response, attach. A at 86-87.

[211] Filing at 43 (citing PJM Tariff, pt. VIII, subpt. B, § 403 (0.1.0), § 403 (A)(5)(a)–(b) (0.1.0) (requiring that PJM receive the required study deposit by wire transfer and the readiness deposit by wire transfer or letter of credit for PJM to consider an interconnection request as complete)).

[212] *Id*.

be more difficult to work with, particularly for commercial readiness deposits, because they have to be converted to cash when needed.[213]

ii. Protests

112. Clean Energy Associations and Longroad Energy contend that PJM has not provided sufficient justification for its requested deviation from the requirement in Order No. 2023 to allow the use of surety bonds for the purposes of satisfying deposits to meet the independent entity variation standard.[214] Clean Energy Associations and Longroad Energy argue that, although PJM indicates that restricting financial security to wire transfers or letters of credit has worked successfully in PJM, consistency with current RTO/ISO practices is not sufficient justification for an independent entity variation.[215] Longroad Energy asserts that PJM's proposal does not meet the purposes of Order No. 2023-A, as PJM proposes to bar the use of surety bonds as financial security, the use of which Longroad Energy asserts is expressly provided by Order No. 2023-A.[216]

113. Clean Energy Associations argue that PJM has not demonstrated that its unique circumstances would justify deviating from the requirement to allow surety bonds as a means of satisfying deposit requirements and that PJM's characterizations of surety bonds, even if correct, are simply features inherent in surety bonds themselves, which the Commission already approved as being acceptable forms of security in Order No. 2023-A.[217] Clean Energy Associations contend that PJM's assertion that most interconnection customers in PJM provide security in the form of cash, letters of credit, or parental guarantees is irrelevant, as compliance with the order requires offering additional flexibility, not maintaining the status quo. Clean Energy Associations assert that PJM has not demonstrated any unique circumstances that would warrant a deviation from Order No. 2023-A's requirements and request that the Commission reject PJM's

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[213] *Id.* at 43-44.

[214] Clean Energy Associations Protest at 19; Longroad Energy Protest at 6; Clean Energy Associations Protest to Data Request Response at 8-9.

[215] Clean Energy Associations Protest at 18; Longroad Energy Protest at 6.

[216] Longroad Energy Protest at 6.

[217] Clean Energy Associations Protest at 19 (quoting Order No. 2023-A, 186 FERC ¶ 61,199 at P 185) ("We find that acceptable forms of security for the commercial readiness deposit and deposits prior to the transitional serial study, transitional cluster study, cluster restudy and the interconnection facilities study should include not only cash or an irrevocable letter of credit, but also surety bonds or other forms of financial security that are reasonably acceptable to the transmission provider.").

proposal and require it to allow surety bonds as a deposit option.[218] Longroad Energy similarly asserts that there is nothing commercially unusual in using surety bonds as an acceptable form of financial security.[219] Longroad Energy notes that PJM already accepts surety bonds as collateral for other purposes in its Tariff, and imposes requirements applicable to the issuers of surety bonds that protect against the risk of non-payment.[220] Longroad Energy asserts that the requirements regarding the corporate debt rating and minimum insurer rating provide sufficient indicia of creditworthiness to ensure that PJM will be able to collect payment from a surety bond accepted as financial security.[221]

114. Longroad Energy contends that PJM's practical concerns with respect to surety bonds, in which PJM argues that not accepting surety bonds "facilitates the processing of applications, allows sufficient opportunity for Project Developers to submit deposits within the required timeframes, and provides clear guidelines as to what is acceptable," only exist because PJM is seeking to make no changes to its Tariff.[222] Longroad Energy asserts that if PJM revised its Tariff to accept surety bonds for the commercial readiness deposit and study deposit, as required by Order Nos. 2023 and 2023-A, the timeframes would work and the guidelines would be just as clear as to what is acceptable. Additionally, Longroad Energy requests that the Commission direct PJM to remove the requirement that a surety bond must be payable immediately upon demand from existing PJM Tariff, Attachment Q, Section V.D because Longroad Energy asserts that surety bonds are generally not payable immediately upon demand and that this restriction would effectively prevent the use of surety bonds in the cluster study process.[223]

iii. Answers

115. PJM contends that, despite Longroad Energy's arguments that a surety bond will be paid, the issue for PJM is the speed and ease by which security can be collected if necessary.[224] PJM argues that, contrary to Longroad Energy's assertion that surety bonds

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[218] Clean Energy Associations Protest to Data Request Response at 10.

[219] Longroad Energy Protest at 7.

[220] *Id*. at 8.

[221] *Id*.

[222] *Id*. at 7 (quoting Filing at 43).

[223] *Id*. at 9.

[224] PJM July 12 Answer at 29.

should be an accepted form of collateral for interconnection agreements because it is acceptable under PJM's Tariff for other circumstances, the rationale for the use of surety bonds in those circumstances is inapplicable in the interconnection context. Specifically, PJM explains that the circumstances in which surety bonds are accepted are limited and generally available to PJM members who are obligated to comply with the requirements of the Amended and Restated Operating Agreement of PJM (Operating Agreement) and are subject to suspension or termination for failing to comply with its terms, unlike interconnection customers who are not required to be signatories to the Operating Agreement.[225] PJM requests that the Commission find that Longroad Energy's request regarding surety bonds is beyond the scope of this proceeding.[226]

iv. Commission Determination

116. We reject PJM's proposal to prohibit the use of surety bonds as financial security for commercial readiness deposit and deposits prior to the cluster restudy and the interconnection facilities study.[227] Order Nos. 2023 and 2023-A required transmission providers to accept letters of credit and surety bonds for certain commercial readiness deposits and deposits required prior to the transitional serial study and transitional cluster study. In Order No. 2023-A, the Commission explained that the purpose of requiring the use of surety bonds and letters of credit was to ensure that interconnection customers do not face unjust and unreasonable or unduly discriminatory hurdles to the interconnection of new generation through limitations on acceptable forms of financial security.[228] PJM argues that its approach of requiring commercial readiness deposits to be paid by wire transfer or letter of credit has worked successfully in PJM and that surety bonds would be more difficult to work with because they have to be converted to cash when needed. We are not persuaded that PJM's rationale justifies the hurdles to interconnection that would be created by prohibiting surety bonds as an acceptable form of financial security, and therefore find that PJM has not met its burden to demonstrate that its requested independent entity variation accomplishes the purpose of Order No. 2023. Accordingly, we direct PJM to submit a further compliance filing within 60 days of the date of this

[225] *Id*. at 29-30.

[226] *Id*. at 30.

[227] As discussed below in section IV.B.11, PJM does not propose a transition process in compliance with Order Nos. 2023 and 2023-A and thus, the use of surety bonds for deposits prior to the transitional serial study and transitional cluster study are not applicable.

[228] Order No. 2023-A, 186 FERC ¶ 61,199 at P 185.

order that revises its Tariff to allow the use of surety bonds as financial security for commercial readiness deposits.

4. Allocation of Cluster Study Costs

117. In Order No. 2023, the Commission revised section 13.3 (Obligation for Study Cost) of the *pro forma* LGIP to allow each transmission provider to propose its own ratio for allocating the shared costs of cluster studies, provided that between 10% and 50% of study costs must be allocated on a per capita basis, with the remainder (between 50% and 90%) allocated pro rata by MW.[229]

a. PJM's Compliance Filing

118. PJM requests an independent entity variation from the cluster study cost allocation requirements of Order Nos. 2023 and 2023-A.[230] PJM requests to retain its existing Tariff, which allocates 100% of cluster study costs on a per capita basis among interconnection customers in the cluster or cluster area, as applicable.[231]

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[229] Order No. 2023, 184 FERC ¶ 61,054 at P 416; *see also pro forma* LGIP § 13.3.

[230] Filing at 38.

[231] *Id.*; *see* PJM Tariff, pt. VI, subpt. A, § 206.4 (1.0.0). This provision states that:

> In the event more than one New Service Request is being evaluated in a single Facilities Study, the cost of such study shall be allocated among the participating New Service Customers such that (i) each Interconnection Customer pays 100 percent of the study costs associated with evaluating the Attachment Facilities necessary to accommodate its Interconnection Request; (ii) each Eligible Customer pays 100 percent of the study costs associated with evaluating the Direct Assignment Facilities necessary to accommodate its Completed Application for new transmission service; and (iii) each New Service Customer pays the study costs associated with evaluating the Local Upgrades and/or Network Upgrades necessary to accommodate its New Service Request in proportion to its projected cost responsibility (as determined in the System Impact Study) for such upgrades. Each New Service Customer's cost responsibility shall equal its estimated cost responsibility for the work on the Facilities Study scheduled to be completed during each three-month period after such work commences. Transmission Provider's

119. PJM requests to continue allocating shared load flow study costs solely on a per capita basis.[232] PJM argues that allocating the shared load flow study solely on a per capita basis is appropriate for a large RTO/ISO and that there are significant initialization efforts and steps that must be taken to study any project, regardless of its size, which make per capita allocation just and reasonable. PJM argues that per capita allocation does not lead to an unfair, unreasonable, or unduly discriminatory allocation of costs. PJM argues that in Order No. 2023, the Commission recognized that there is not necessarily a linear relationship between the size of a project and the time and costs associated with studying a project.[233] PJM explains that, in its experience, due to the nature of the studies and the size of PJM's Cycles, the process results in similar study costs regardless of project size because the time required to model generators, build cases, run analyses, and create a study report is generally the same across all sizes of projects.[234] PJM argues that partially allocating cluster study costs on a per-MW basis, as adopted in Order No. 2023, would require additional administration but would provide little benefit in return, and its current per capita approach results in a fair balance between cost causality and administrative overhead.[235]

b. Protest

120. Public Interest Organizations oppose PJM's proposed allocation of costs on a per-capita basis and argue that PJM has not provided a persuasive reason for the difference between its size-based study deposits and its entirely per capita allocation of study costs.[236] Public Interest Organizations argue that PJM, in justifying its proposal, focuses on its own administrative benefit and disregards the Commission's reasons for limiting per capita costs to between 10% and 50% of study costs and the balance set by Order No. 2023.[237] Public Interest Organizations argue that PJM's size-based approach

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> estimates of the required quarterly payments will be stated in the Facilities Study Agreement.

PJM Tariff, pt. VI, subpt. A, § 206.4 (1.0.0).

[232] Filing at 38; Data Request Response, attach. A at 84-85.

[233] Filing at 38 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 418).

[234] *Id*.

[235] *Id*.

[236] Public Interest Organizations Protest at 5-6.

[237] *Id.* at 5; Public Interest Organizations Protest to Data Request Response at 5.

to study deposits contradicts its position about study cost allocation by recognizing that a "tiered study deposit amount based on the MW-size of an Interconnection Request . . . represents a reasonable proxy for the cost of all three studies."[238]

c. Commission Determination

121. We find that PJM's proposal to retain its current Tariff approach of allocating cluster study costs on a 100% per capita basis does not comply with the requirement of Order Nos. 2023 and 2023-A to allocate between 10% and 50% of study costs on a per capita basis, with the remainder (between 50% and 90%) allocated on a pro rata basis. Accordingly, we deny PJM's requested independent entity variation to continue allocating cluster study costs on a 100% per capita basis because PJM has not demonstrated that its existing Tariff is just and reasonable and not unduly discriminatory or preferential and accomplishes the purpose of Order No. 2023's requirement. Although Order No. 2023 gave transmission providers some flexibility in deciding on the balance between per capita and pro rata study cost allocation appropriate to their region, the Order No. 2023 requirement "recognize[d] that cluster study costs are impacted by both the number of interconnection requests in a cluster and the size of the proposed generating facilities in each cluster."[239] In adopting the per capita allocation requirement, the Commission did note that not all study costs track linearly with generating facility size. However, the Commission also required allocation of between 50% and 90% of study costs on a pro rata basis "to prevent a disproportionate amount of study costs from being allocated to interconnection customers that propose smaller generating facilities in the cluster" and to ensure consistency with cost causation because "to a significant extent, study costs correlate to the total MW size of the cluster."[240] We find that PJM's assertion that its process results in *similar* study costs regardless of project size[241] is not sufficiently precise to justify how PJM's proposal accomplishes the purpose of Order Nos. 2023 and 2023-A to ensure study costs are allocated consistently with cost causation. PJM does not provide support that its study costs are not impacted by MW-size of the cluster and whether its proposed cluster study cost allocation accomplishes the purposes of Order Nos. 2023 and 2023-A to prevent a disproportionate amount of study costs from being allocated to interconnection customers that propose smaller generating facilities in the cluster. We further find that PJM's explanation that its proposal improves administrative efficiency does not address how 100% per capita

[238] Public Interest Organizations Protest to Data Request Response at 6 (citing Data Request Response, attach. A at 86).

[239] Order No. 2023, 184 FERC ¶ 61,054 at P 418.

[240] *Id.*

[241] Filing at 38 (emphasis added).

allocation of cluster study costs accomplishes the purposes of Order No. 2023.[242] We therefore direct PJM to submit a further compliance filing within 60 days of the date of this order that either adopts *pro forma* LGIP section 13.3 (Obligation for Study Costs) in its LGIP or justifies the proposal under the independent entity variation standard.

5. Allocation of Cluster Network Upgrade Costs

122. In Order No. 2023, the Commission required transmission providers to allocate system network upgrade[243] costs based on a proportional impact method.[244] Specifically, the Commission added *pro forma* LGIP section 4.2.1 (Cost Allocation for Interconnection Facilities and Network Upgrades) to require a transmission provider to: (1) allocate the costs of network upgrades located at substations equally among each generating facility interconnecting to the same substation (i.e., on a per capita basis); and (2) direct the transmission provider on compliance to provide tariff provisions that describe, for each type of system network upgrade that a transmission provider would identify in the cluster study process, how the costs of each system network upgrade type will be allocated among the interconnection customers within the cluster.[245] The Commission added to the *pro forma* LGIP and *pro forma* LGIA definitions for "proportional impact method," "substation network upgrades," and "system network upgrades" and modified the existing definition of "stand alone network upgrades."[246] The Commission required the transmission provider's revisions on compliance to provide that costs for a discrete network upgrade identified in the cluster study process are

[242] We note that in Order No. 2023 the Commission rejected an argument that splitting cost allocation between pro rata and per capita cost allocation was "not worth the administrative burden," in order to ensure consistency with cost causation and because the record did not demonstrate that the administrative costs were significant. Order No. 2023, 184 FERC ¶ 61,054 at P 419.

[243] The *pro forma* LGIP defines system network upgrades as "Network Upgrades that are required beyond the substation located at the Point of Interconnection." *Pro forma* LGIP § 1.

[244] The *pro forma* LGIP defines proportional impact method as "a technical analysis conducted by Transmission Provider to determine the degree to which each Generating Facility in the Cluster Study contributes to the need for a specific System Network Upgrade." *Id.*

[245] Order No. 2023, 184 FERC ¶ 61,054 at PP 453, 461; *see also pro forma* LGIP § 4.2.1.

[246] Order No. 2023, 184 FERC ¶ 61,054 at PP 458, 460; *see also pro forma* LGIP § 1; *pro forma* LGIA art. 1.

allocated to only the interconnection customers in the cluster that are shown through technical analyses to contribute to the need for that discrete network upgrade.[247] The Commission also required transmission providers to directly allocate the costs of interconnection facilities (i.e., both the interconnection customer's interconnection facilities and transmission provider's interconnection facilities). The Commission further provided that, if interconnection customers agree to share interconnection facilities, a per capita cost allocation applies, and that interconnection customers may choose a different cost sharing arrangement upon mutual agreement.[248] Finally, the Commission revised Appendix A (Interconnection Facilities, Network Upgrades and Distribution Upgrades) of the *pro forma* LGIA to include substation network upgrades and system network upgrades.[249]

123. In Order No. 2023-A, the Commission clarified that cost allocation for substation network upgrades is based on the number of interconnection facilities connecting to the substation at the point of interconnection. The transmission provider must first allocate the costs of substation network upgrades on a per capita basis for each interconnection facility connecting to the substation, and then allocate those costs on a per capita basis between each generating facility using the interconnection facility. In conjunction, the Commission revised *pro forma* LGIP section 4.2.1.1.a to clarify that substation network upgrade costs shall be allocated first to interconnection facilities interconnecting to the substation at the same voltage level, and then per capita to each generating facility sharing the interconnection facility.[250]

124. In Order No. 2023-A, the Commission also modified the *pro forma* LGIP and *pro forma* LGIA definitions of "stand alone network upgrades" and *pro forma* LGIA article 5.1.3 (Option to Build) to allow an interconnection customer to exercise the option to build whether the stand alone network upgrade is attributable to a single interconnection customer, or multiple interconnection customers in a single cluster study that agree to exercise this option.[251]

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[247] Order No. 2023, 184 FERC ¶ 61,054 at P 461.

[248] *Id.* P 454.

[249] *Pro forma* LGIA app. A.

[250] Order No. 2023-A, 186 FERC ¶ 61,199 at PP 177-178; *see also pro forma* LGIP § 4.2.1.1.a.

[251] Order No. 2023-A, 186 FERC ¶ 61,199 at PP 141-143; *see also pro forma* LGIP § 1; *see also pro forma* LGIA arts. 1, 5.1.3.

a. PJM's Compliance Filing

125. PJM requests an independent entity variation from the cluster network upgrade cost allocation requirements of Order Nos. 2023 and 2023-A.[252] PJM's current Tariff requires an interconnection customer to pay for 100% of the network upgrades necessary to accommodate its interconnection request, as well as 100% of the costs of the interconnection facilities.[253] PJM explains that further cost allocation information is found in PJM's Manual 14H, which explains that the costs of a network upgrade needed by more than one interconnection customer are shared based on each interconnection request's proportional impact, measured as its MW contribution to the reliability violation.[254] PJM argues that its Tariff achieves the same results as Order Nos. 2023 and 2023-A require, as PJM will also use the proportional impact (or a per capita allocation, as appropriate) to determine whether one or more interconnection customers are subject to cost allocation for a network upgrade.[255]

126. PJM argues that it is consistent with Order No. 2023-A for PJM's Tariff to explain how the costs will be allocated but for PJM's manual to contain more detailed mechanics of the proportional impact method.[256] PJM argues that requiring the cost allocation details to be included in the Tariff would require a Federal Power Act (FPA) section 205 filing every time the implementation details changed, which would be inefficient and burdensome.

127. PJM also states that its *pro forma* GIA meets Order No. 2023 and 2023-A's requirement for stand alone network upgrades. Specifically, PJM's *pro forma* GIA provides that if "there are multiple Project Developers that wish to exercise an Option to Build with respect to . . . Stand Alone Network Upgrades . . . the Transmission Provider

[252] Filing at 39.

[253] *Id*. (citing PJM Tariff, pt. VIII, subpt. C, § 404 (1.0.0), § 404(A)(5)-(6)).

[254] *Id*. at 39-40 (citing PJM Tariff, pt. IX, subpt. H (Network Upgrade Cost Responsibility Agreement) (1.0.0), § 6 (Common Use Upgrade Cost Responsibility); *id.*, subpt. H app. 2 (Standard Terms & Conditions) (0.0.0), § 2 (Common Use Upgrade Cost Responsibility)).

[255] *Id*. at 40.

[256] *Id*. at 41 (citing Order No. 2023-A, 186 FERC ¶ 61,199 at P 175).

shall determine how to allocate construction responsibility among them unless they reach agreement among themselves."[257]

b. Data Request Response

128. In its response to Commission staff's data request regarding revised definitions for network upgrades, PJM explains that it does not use separate definitions for substation network upgrades and system network upgrades.[258] PJM reiterates that its initial compliance filing addressed this issue by stating that PJM's existing Tariff substantially complies with these requirements. Specifically, PJM explains that its Tariff requires an interconnection customer to pay 100% of network upgrades and interconnection facilities necessary to accommodate its interconnection request.[259] Further, PJM reiterates that its Tariff includes a form of a Network Upgrade Construction Responsibility Agreement and that more information regarding cost allocation is provided in PJM's manuals.[260] Moreover, PJM explains that because it runs a wide variety of analyses as part of its study process, PJM applies different cost allocation methodologies.[261]

129. PJM explains that its existing network upgrade definitions are aligned with PJM's methodology for allocating network upgrade costs in its Tariff, as well as PJM's use of these definitions to inform interconnection customers which facilities are eligible for option to build treatment.[262] PJM asserts that this element of its interconnection process complies with Order No. 2023's requirement that the cost of network upgrades be allocated based on the technical analyses to be specified under the transmission provider's proportional impact method. PJM argues that any remaining differences related to the definition of network upgrades, including the lack of separate definitions for substation network upgrades and system network upgrades, should be permitted as an independent entity variation because it will provide PJM greater flexibility and is also

[257] *Id*. (citing PJM Tariff, pt. IX, subpt. B, Schedule L (1.0.0), § 11.2.3.6).

[258] Data Request Response at 24.

[259] *Id*. (citing PJM Tariff, pt. VIII, subpt. C, § 404 (1.0.0), § 404(A)(5), (6)).

[260] *Id.* at 24-25 (citing PJM Tariff, pt. IX, subpt. H, app. 2 (Standard Terms and Conditions) (0.0.0), § 2 (Common Use Upgrade Cost Responsibility); *see also* PJM Interconnection, L.L.C., *PJM Manual 14H: New Service Requests Cycle Process, PJM Interconnection, L.L.C.* (July 26, 2023), https://pjm.com/-/media/documents/manuals/m14h.ashx (PJM Manual 14H)).

[261] *Id.* at 25 (citing PJM Manual 14H, attach. B, §§ B.3.1-B.3.5).

[262] *Id*.

consistent with Order No. 2023's objective to have network upgrade costs allocated based on the technical analyses specified under the transmission provider's proportional impact method.[263]

c. Commission Determination

130. We find that PJM's proposal regarding allocation of cluster network upgrade costs partially complies with the requirements of Order Nos. 2023 and 2023-A and direct further compliance. We accept PJM's independent entity variation to maintain the existing provisions in its *pro forma* GIA regarding stand alone network upgrades as just and reasonable and not unduly discriminatory or preferential. We find that PJM's existing provisions accomplish the purposes of Order Nos. 2023 and 2023-A by allowing interconnection customers to exercise the option to build whether the stand alone network upgrade is attributable to a single interconnection customer or a shared network upgrade shared by multiple interconnection customers and avoiding potentially lengthy disputes between interconnection customers.[264]

131. However, we find that PJM's proposal to retain its existing Tariff[265] definition of network upgrade does not comply with the requirement in Order Nos. 2023 and 2023-A to adopt definitions of "system network upgrades" and "substation network upgrades," because PJM's existing Tariff definition does not distinguish between types of network upgrades nor does its Tariff distinguish the cost allocation of substation network upgrades and system network upgrades. PJM also does not address how its Tariff complies with the requirement to adopt the definition of "proportional impact method." We also find that PJM does not address how it complies with the requirements in Order Nos. 2023 and 2023-A to provide how the costs of shared interconnection facilities will be allocated,[266] and to revise Appendix A (Interconnection Facilities, Network Upgrades and Distribution Upgrades) of the *pro forma* LGIA to include substation network upgrades and system network upgrades.[267] Accordingly, we direct PJM to submit a further compliance filing within 60 days of the date of this order to adopt the definitions of "system network upgrades," "substation network upgrades," and "proportional impact method," provisions for allocating the cost of shared interconnection facilities, and revisions to Appendix A of

[263] *Id*. at 25-26 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 458).

[264] Order No. 2023-A, 186 FERC ¶ 61,199 at P 143.

[265] PJM Tariff, pt. VIII, subpt. A, § 400N (Definitions N) (1.0.0).

[266] Order No. 2023, 184 FERC ¶ 61,054 at P 454; *see also pro forma* LGIP § 4.2.1.2.

[267] *Pro forma* LGIA app. A.

the *pro forma* LGIA to include substation network upgrades and system network upgrades required by Order Nos. 2023 and 2023-A or justify its variations under the independent entity variation standard.

132. We deny PJM's requested independent entity variation to retain its existing Tariff provisions regarding, and omit description of, how the costs of each system network upgrade type will be allocated among the interconnection customers within the cluster. Currently, PJM's Tariff requires an interconnection customer to pay for 100% of the network upgrades necessary to accommodate its interconnection request, as well as 100% of the costs of the interconnection facilities, but PJM's Tariff does not describe how the costs of each type of system network upgrade will be allocated among the interconnection customers within the cluster. PJM states in its transmittal that PJM Manual 14H provides further information regarding how network upgrade costs needed by more than one interconnection customer are shared based on each interconnection request's proportional impact, and asserts that including cost allocation details in the Tariff would be inefficient and burdensome. In Order No. 2023, the Commission directed transmission providers on compliance to "provide tariff provisions that describe, for each type of system network upgrade that a transmission provider would identify in the cluster study process (e.g., voltage support network upgrades or short circuit network upgrades), how the costs of each system network upgrade type will be allocated among the interconnection customers within the cluster."[268] We find that PJM's proposal to omit the cost allocation method for system network upgrades from its Tariff does not accomplish the purposes of Order Nos. 2023 and 2023-A because PJM's Tariff does not describe how the costs of system network upgrades will be allocated among the interconnection customers within the cluster. Accordingly, we direct PJM to submit a further compliance filing within 60 days of the date of this order to revise the Tariff to describe the method transmission providers will use for allocating costs of each type of system network upgrade, consistent with the Commission's rule of reason.[269]

133. PJM does not address in its transmittal how it complies with the requirement in Orders No. 2023 and 2023-A to allocate the costs of network upgrades located at substations. Accordingly, we direct PJM to submit a further compliance filing within 60 days of the date of this order to revise the Tariff to describe that PJM will first allocate the costs of substation network upgrades on a per capita basis for each interconnection facility connecting to the substation at the same voltage level, and then allocate those

[268] Order No. 2023, 184 FERC ¶ 61,054 at P 461.

[269] *Id.*; *see also* Order No. 2023-A, 186 FERC ¶ 61,199 at P 176.

costs on a per capita basis between each generating facility using the interconnection facility.[270]

6. Study Deposits

134. In Order Nos. 2023 and 2023-A, the Commission adopted the following study deposit framework in section 3.1.1.1 (Study Deposit) of the *pro forma* LGIP:[271]

Size of Proposed Generating Facility Associated with Interconnection Request under the *pro forma* LGIP	Amount of Deposit
< 80 MW	$35,000 + $1,000/MW
≥ 80 MW < 200 MW	$150,000
≥ 200 MW	$250,000

135. The Commission required the interconnection customer to submit a non-refundable application fee of $5,000 and a refundable study deposit upon the interconnection customer's entry into the cluster.[272]

136. In Order No. 2023, the Commission deleted section 8.1.1 of the *pro forma* LGIP to remove the requirement for the transmission provider to invoice interconnection customers on a monthly basis for the work conducted on the interconnection facilities study. Accordingly, the Commission also deleted from article 5.0 of Appendix 3 (Interconnection Facilities Study Agreement) to the *pro forma* LGIP language including the monthly invoicing requirement.[273]

137. In Order No. 2023-A, the Commission modified section 13.3 of the *pro forma* LGIP to remove language pertaining to using previous study deposits to offset the cost of a subsequent study because Order No. 2023 established only an initial study deposit at

[270] Order No. 2023-A, 186 FERC ¶ 61,199 at PP 177-178.

[271] Order No. 2023, 184 FERC ¶ 61,054 at PP 502-503; Order No. 2023-A, 186 FERC ¶ 61,199 at P 188; *see also pro forma* LGIP § 3.1.1.1.

[272] Order No. 2023, 184 FERC ¶ 61,054 at P 505; Order No. 2023-A, 186 FERC ¶ 61,199 at P 189; *see also pro forma* LGIP § 3.1.1.1.

[273] Order No. 2023, 184 FERC ¶ 61,054 at P 506; *see also pro forma* LGIP app. 3, art. 5.0.

the beginning of the study process to be used for all studies under the cluster study process.[274]

a. PJM's Compliance Filing

138. PJM requests an independent entity variation to retain its Tariff's tiered study deposit framework based on the MW size of an interconnection request and wherein the study deposit is a one-time deposit to be provided upon entry to the cluster. PJM's proposed study deposit framework has the following tiers based on the size of the generating facility: (a) up to 20 MW: $75,000; (b) over 20 MW up to 50 MW: $200,000; (c) over 50 MW up to 100 MW: $250,000; (d) over 100 MW up to 250 MW: $300,000; (e) over 250 MW up to 750 MW: $350,000; and (f) over 750 MW: $400,000.[275] PJM argues that its proposed framework is appropriate under the independent entity variation standard because it is just and reasonable and aligned with the goals of the final rule. PJM explains that, like the *pro forma* study deposit framework, PJM's proposed framework requires a study deposit that is eventually trued up to actual study costs, protecting all parties from any under- or over-recovery of costs.[276]

139. PJM proposes to retain its existing Tariff provision, which provides that 10% of the study deposit is at-risk (i.e., non-refundable) and can be used by PJM to fund any restudies that are required if the interconnection customer withdraws its interconnection request and that the remaining amount after payment of actual study costs is refundable.[277] PJM asserts that the at-risk portion of the study deposit protects other interconnection customers from the cost shifts resulting from another interconnection customer's withdrawal. PJM states that, if the project reaches commercial operation, the interconnection customer is refunded the 10% portion of the study deposit.

140. PJM also requests, to the extent necessary, an independent entity variation for its lack of an application fee. PJM explains that an interconnection customer must submit an Application and Studies Agreement and the required study deposit and readiness deposits when it submits its interconnection request to PJM. PJM asserts that it may reevaluate

[274] Order No. 2023-A, 186 FERC ¶ 61,199 at P 189; *see also pro forma* LGIP § 13.3.

[275] PJM Tariff, pt. VIII, subpt. B, § 403 (0.1.0), § 403(A)(5)(a)(iv).

[276] Filing at 42; Data Request Response, attach. A at 86.

[277] Filing at 43 n.116.

collecting an application fee at a later date, but at this time does not view it as necessary.[278]

b. Commission Determination

141. We grant PJM's requested independent entity variation concerning study deposits because we find that PJM's proposal is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A. Specifically, we find that PJM's proposed tiered study deposit framework accomplishes the purposes of Order No. 2023 to: (1) establish one-time study deposits to be provided with the interconnection request based on the size of the proposed facility in order to account for the fact that larger proposed generating facilities within a cluster generally cost more to study than smaller proposed generating facilities within a cluster;[279] and (2) provide transmission providers with funds to cover the costs of studies performed for interconnection customers.[280]

142. We also find that PJM's independent entity variation regarding the 10% portion of the deposit that will be non-refundable is just and reasonable and not unduly discriminatory or preferential because the non-refundable portion of the study deposit will help protect other interconnection customers from cost shifts from any restudies that are required from another interconnection customer's withdrawal. Further, we find that the non-refundable portion of the study deposit will discourage speculative interconnection requests from entering the queue and therefore accomplishes the purposes of Order Nos. 2023 and 2023-A by ensuring that interconnection customers are able to interconnect their generating facilities to the transmission system in an efficient and timely manner.[281] We find that PJM's proposal to require that the refundable portion (i.e., 90%) of the study deposit to be trued up to actual study costs accomplishes the purpose of Orders No. 2023 and 2023-A to true up to actual study costs and protect all parties from any under- or over- recovery of costs.[282]

143. We also grant PJM's requested independent entity variation regarding its lack of application fee. We find that PJM's proposal is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and

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[278] *Id*. at 22 n.53 (citing PJM Tariff, pt. VIII, subpt. B, § 403 (0.1.0), § 403(A)).

[279] Order No. 2023, 184 FERC ¶ 61,054 at P 503.

[280] *Id.* P 505.

[281] Order No. 2023, 184 FERC ¶ 61,054 at P 59.

[282] *Id.* PP 503-504.

2023-A because PJM is voluntarily waiving its ability to collect a non-refundable application fee and PJM explains that it does not view the application fee as necessary at this time.

7. Site Control

144. In Order No. 2023, the Commission revised the definition of "site control" in section 1 (Definitions) of the *pro forma* LGIP and article 1 (Definitions) of the *pro forma* LGIA.[283] The definition, as modified, states that site control may be demonstrated by documentation establishing: (1) ownership of, a leasehold interest in, or a right to develop a site of sufficient size to construct and operate the generating facility; (2) an option to purchase or acquire a leasehold site of sufficient size to construct and operate the generating facility; or (3) any other documentation that clearly demonstrates the right of an interconnection customer to exclusively occupy a site of sufficient size to construct and operate the generating facility.

145. The Commission revised section 3.4.2 of the *pro forma* LGIP to require interconnection customers to demonstrate 90% site control at the time of submission of the interconnection request.[284] The Commission further revised sections 8.1 and 11.3 of the *pro forma* LGIP to require interconnection customers to provide evidence of 100% site control for the generating facility at the time of execution of the facilities study agreement and when executing, or requesting the unexecuted filing of, the LGIA.[285] The Commission also revised sections 3.4.2 and 11.3 of the *pro forma* LGIP to state that, if an interconnection customer cannot demonstrate the requisite level of site control at the relevant milestone of the interconnection process, its interconnection request will be deemed withdrawn and it could be subject to withdrawal penalties under certain circumstances.[286]

146. The Commission modified section 3.4.2 of the *pro forma* LGIP to provide that site control for a generating facility that is co-located with one or more generating facilities on the same site and behind the same point of interconnection must be demonstrated by a

[283] *Id.* P 584; *see also pro forma* LGIP § 1; *pro forma* LGIA art. 1.

[284] Order No. 2023, 184 FERC ¶ 61,054 at P 594; *see also pro forma* LGIP § 3.4.2.

[285] Order No. 2023, 184 FERC ¶ 61,054 at P 594; *see also pro forma* LGIP §§ 8.1, 11.3.

[286] *See infra* P 176.

contract or other agreement that allows for shared land use for all generating facilities that are co-located that meets the provisions of the site control definition.[287]

147. The Commission required a transmission provider to establish per-MW acreage requirements for each generating facility technology type and to publicly post these acreage requirements.[288] The Commission modified the *pro forma* LGIP and *pro forma* LGIA definitions of "generating facility" and "generating facility capacity" to clarify that these definitions include hybrid generating facilities, and stated that a transmission provider's per-MW acreage requirements for each generating facility technology-type must include specific requirements for hybrid generating facilities.[289] The Commission further clarified that generating facilities that are co-located on the same site and behind the same point of interconnection are subject to the technology-specific acreage requirements based on the generating facilities' technology-type.

148. The Commission eliminated the interconnection customer's options to: (1) provide a deposit in lieu of site control demonstration, except in limited circumstances where an interconnection customer demonstrates a regulatory limitation to obtaining site control; and (2) post $250,000 of non-refundable security in lieu of site control at LGIA execution. The Commission revised section 3.4.2 of the *pro forma* LGIP to provide that interconnection customers with regulatory limitations may submit an initial deposit in lieu of site control of $10,000 per MW, subject to a floor of $500,000 and a ceiling of $2 million, which shall be refundable but may not be applied toward interconnection studies or withdrawal penalties, if applicable. The Commission stated that, when an interconnection customer facing regulatory limitations provides a deposit in lieu of site control, the deposit will be accepted and held by the transmission provider until the interconnection customer can demonstrate 90% site control prior to execution of the facilities study agreement or 100% site control at execution of the facilities study agreement or thereafter. The Commission also modified Appendix B (Milestones) of the *pro forma* LGIA to clarify that an interconnection customer facing qualifying regulatory limitations must demonstrate 100% site control within 180 calendar days of the effective date of the LGIA; if it cannot, the LGIA may be terminated per article 17 (Default) of the

[287] Order No. 2023, 184 FERC ¶ 61,054 at P 586; *see also pro forma* LGIP § 3.4.2.

[288] Order No. 2023, 184 FERC ¶ 61,054 at P 595; *see also pro forma* LGIP §§ 3.4.2, 11.3.

[289] Order No. 2023, 184 FERC ¶ 61,054 at P 603; *see also pro forma* LGIP § 1; *pro forma* LGIA art. 1.

pro forma LGIA and the interconnection customer may be subject to withdrawal penalties.[290]

149. The Commission required each transmission provider to define regulatory limitations relevant to its service territory, to publicly post the definition, and to provide a narrative description of how it defines regulatory limitations as part of its compliance filing.[291] The Commission did not require a uniform definition of regulatory limitations for all transmission providers, but clarified that a regulatory limitation is generally a federal, state, Tribal, or local law that makes it practically infeasible to obtain site control within the time frame detailed in the *pro forma* LGIP.

a. PJM's Compliance Filing

150. PJM requests an independent entity variation to retain its existing site control requirements, arguing that they were negotiated by its stakeholders, approved by the Commission in the 2022 Interconnection Reforms Order, and substantially comply with and achieve the Commission's goals in Order No. 2023.[292] Specifically, PJM's existing Tariff requires the interconnection customer to demonstrate 100% site control for the generating facility at the time of the interconnection request and throughout the interconnection process, without any deposit in lieu of site control provisions. Similar to Order No. 2023, PJM states that its site control provisions require a showing of exclusive access to and control of the land that can be met through a deed, lease, option agreement, or other documentation demonstrating the interconnection customer's right to possess, occupy, and control the site.[293] PJM's definition of "site control" is as follows:[294]

> "Site Control" shall mean the evidentiary documentation

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[290] Order No. 2023, 184 FERC ¶ 61,054 at P 605; *see also pro forma* LGIA app. B.

[291] Order No. 2023, 184 FERC ¶ 61,054 at P 607.

[292] Filing at 44 (citing Order No. 2023, 184 FERC ¶ 61,054 at PP 584-585), 46-47 (citing the 2022 Interconnection Reforms Order, 181 FERC ¶ 61,162 at P 99); Data Request Response, attach. A at 87-88.

[293] Data Request Response, attach. A at 60-61.

[294] PJM Tariff, pt. VIII, subpt. A, § 400S (Definitions S) (2.0.0). Further, PJM notes the Tariff includes provisions that, if there are multiple interconnection customers on the same site behind the same point of interconnection, interconnection customers must control adequate land for all their generating facilities. Data Request Response, attach. A at 60-61.

> provided by Project Developer in relation to a New Service Request demonstrating the requirements as set forth in the following Tariff, Part VIII, Subpart A, section 402, and Tariff, Part VIII, Subpart B, section 403, and Subpart C, sections 406 and 410.

151. PJM explains that, while it and its stakeholders debated alternative site control requirements, it ultimately did not adopt provisions that would have allowed interconnection customers to provide additional deposits in lieu of site control. According to PJM, one concern was that, absent a full site control requirement, highly capitalized organizations might have been able to make multiple interconnection requests within a Cycle and pay or post additional money rather than securing site control. PJM further asserts that strong site control requirements ensure that interconnection customers have proved their readiness to construct and prevent them from proposing multiple projects at the same site with the intention of developing only one project. Additionally, according to PJM, stronger site control requirements simplify the study process, particularly the facilities studies, and thereby expedite these studies.[295]

152. Regarding the provisions in the *pro forma* LGIP sections 3.4.2 and 11.3, which provide interconnection customers facing certain regulatory limitations flexibility from the site control requirements, PJM proposes to maintain its existing Tariff provisions, asserting that, for interconnection customers requesting an interconnection on public land, its site control provisions provide appropriate flexibility.[296] Specifically, PJM explains that, in its provisions, if an interconnection customer fails to provide the required site control evidence at Decision Point III, it must provide acceptable evidence demonstrating that it is negotiating with appropriate entities to meet the site control requirements. PJM explains that, in such situations, it will add a milestone to the interconnection customer's interconnection-related agreement requiring the interconnection customer to satisfy the site control requirements 180 days after execution of such an agreement. PJM states that this requirement provides some flexibility to projects interconnecting on public lands, but also requires them to move forward, preventing non-ready projects impacting other projects in the cluster by unreasonably hoarding system headroom.[297]

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[295] Filing at 44-45.

[296] *Id*. at 47.

[297] *Id*. (citing PJM Tariff, pt. VIII, subpt. C, § 410 (1.0.0), § 410(A)(1)(c)(iv)).

153. Regarding the *pro forma* LGIP and *pro forma* LGIA definitions of "generating facility," PJM states that its definition of "generating facility" is as follows:[298]

> "Generating Facility" shall mean Project Developer's device for the production and/or storage for later injection of electricity identified in the New Service Request, but shall not include the Project Developer's Interconnection Facilities. A Generating Facility consists of one or more generating unit(s) and/or storage device(s) which usually can operate independently and be brought online or taken offline individually.

154. PJM requests an independent entity variation from the *pro forma* LGIP and *pro forma* LGIA definitions of a "generating facility," arguing that, by defining generating facility as the customer's device for the production or storage of electricity, specified in the interconnection request, it substantially complies with the requirement. PJM further clarifies that PJM's existing definition of generating facility deviates from the *pro forma* LGIP and *pro forma* LGIA definition by stipulating that a generating facility consists of one or more generating units and/or storage devices, which can operate independently and can be brought online or taken offline individually.[299]

155. Regarding the *pro forma* LGIP and *pro forma* LGIA definitions of "generating facility capacity," PJM states that its definition of "Capacity Interconnection Rights" is as follows:[300]

> "Capacity Interconnection Rights" shall mean the rights to input generation as a Generation Capacity Resource into the Transmission System at the Point of Interconnection.

156. PJM argues that its definition of "Capacity Interconnection Rights" merits an independent entity variation from the *pro forma* LGIP and *pro forma* LGIA definitions of "generating facility capacity." PJM claims that by defining "Capacity Interconnection Rights" as the rights to input or inject generation, it substantially complies with the *pro forma* LGIP and *pro forma* LGIA definitions, which define "generating facility capacity" as the net capacity of the generating facility or the aggregate net capacity of the

[298] PJM Tariff, pt. VIII, subpt. A, § 400G (Definitions G) (0.1.0).

[299] Data Request Response, attach. A at 33-34.

[300] PJM Tariff, pt. VIII, subpt. A, § 400C (Definitions C) (1.0.0).

generating facility where it includes more than one device for the production and/or storage for later injection of electricity.[301]

b. Protests

157. Leeward and RWE Clean Energy and Shell Companies argue that PJM's site control requirements are too stringent. They contend that PJM's requirements are more stringent than Order No. 2023's requirements, creating unnecessary obstacles for interconnection customers that impede their ability to adapt to changing dynamics and timelines of the project development cycle.[302] Leeward and RWE Clean Energy argue that PJM's proposed rules on site control inhibit developers' ability to optimize their projects, resulting in a loss of queue position when developers make needed modifications to their site control, and PJM fails to satisfy its burden under section 205 of the FPA.[303] Leeward and RWE Clean Energy also argue that PJM's proposal to require interconnection customers to re-demonstrate 100% site control at Decision Point I imposes an additional burden on interconnection customers and does not permit sufficient flexibility for interconnection customers, who may need to adjust their site control parcels as they progress through the various stages of the interconnection process.[304] Shell Companies argue this requirement is unjust and unreasonable because it does not allow an interconnection customer to modify its site control evidence in the event of an authorized change to its project size, regulatory requirements to revise a site's boundaries, or other factors that could require some modification of a project site, even if the interconnection customer continues to meet other site control criteria.[305]

c. Answer

158. PJM asserts that protesters' concerns appear to be about the interpretation of existing tariff provisions, rather than about whether new or additional provisions are needed in the Tariff to comply with Order No. 2023. PJM asserts that these tariff interpretations are out-of-scope. PJM contends that while lesser showings of site control might be appropriate in other regions, PJM's experience has shown that a project that has less than 100% site control may not be a viable project. PJM argues that allowing such a

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[301] Data Request Response, attach. A, at 34.

[302] Leeward and RWE Clean Energy Protest at 4, 16-19; Shell Companies Protest at 15.

[303] Leeward and RWE Clean Energy Protest at 16-17.

[304] *Id*. at 18-19.

[305] Shell Companies Protest at 15.

project a position in the interconnection queue would tie up existing capacity in the transmission system and thereby harm other projects that have done their due diligence to procure the necessary land to build their facility.[306] PJM contends that Shell Companies' arguments regarding the ability to add or drop parcels for which it has demonstrated site control is an issue of interpretation being addressed in the stakeholder process, and notes that PJM's Tariff allows changes at Decision Point I.[307]

d. Commission Determination

159. We find that PJM partially complies with the site control requirements of Order Nos. 2023 and 2023-A.

160. We grant PJM's request for an independent entity variation to retain its existing Tariff provisions concerning the demonstration of site control, including the 100% site control requirement. We find that PJM's site control requirements help to ensure that only commercially viable interconnection requests with demonstrated site control will be able to enter the interconnection queue, thereby reducing the negative impacts of speculative interconnection requests.[308] We accept PJM's proposal to require interconnection customers to demonstrate 100% site control, rather than 90% site control, when submitting an interconnection request, because this requirement may help ensure that interconnection customers have proven their readiness to construct. As a result, we find that PJM's proposal is just, reasonable, not unduly discriminatory or preferential, and accomplishes the purposes of Order Nos. 2023 and 2023-A.[309]

161. We also grant PJM's requested independent entity variation to define site control as the "evidentiary documentation" needed to demonstrate that the interconnection customer meets site control requirements set forth in the Tariff because we find PJM's proposal is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A.[310] Specifically, we find that PJM's definition of "site control" together with the references in PJM's definition of "site control" to site control demonstration requirements outlined elsewhere in the Tariff accomplishes the purpose of Order No. 2023 to clarify that an interconnection customer must demonstrate the right to exclusively occupy the site to develop, construct, operate,

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[306] PJM July 12 Answer at 23.

[307] *Id*. at 24.

[308] Order No. 2023, 184 FERC ¶ 61,054 at P 583.

[309] *Id*. P 584.

[310] PJM Tariff, pt. VIII, subpt. A, § 400S (Definitions S) (2.0.0).

or maintain a generating facility, and provide enumerated options to demonstrate site control.[311] Specifically, consistent with the *pro forma* LGIP and *pro forma* LGIA definitions of site control, PJM's Tariff provides that for site control, "for the Term, that the Project Developer has exclusive use of the Site for the purpose of constructing a Generating Facility"[312] and provides the following enumerated options to demonstrate site control, including (1) deed, (2) lease, (3) option to lease or purchase, or (4) as deemed acceptable by the transmission provider, any other contractual or legal right to possess, occupy, and control the site.[313]

162. We accept PJM's proposal to retain its existing Tariff definition of "Generating Facility" in lieu of the *pro forma* LGIP and *pro forma* LGIA term "generating facility" under the independent entity variation standard. We find that PJM's definition for "Generating Facility" is just and reasonable and not unduly discriminatory or preferential and accomplishes the Commission's purposes in Order Nos. 2023 and 2023-A because PJM's existing definition of "Generating Facility" is consistent with the *pro forma* LGIP and *pro forma* LGIA definitions with only PJM-specific modifications.

163. We deny PJM's requested independent entity variation to retain its existing Tariff definition of "Capacity Interconnection Rights" in lieu of the *pro forma* LGIP and *pro forma* LGIA term "generating facility capacity." PJM asserts that by defining "Capacity Interconnection Rights" as the rights to input or inject generation, it substantially complies with the *pro forma* LGIP and *pro forma* LGIA definitions of "generating facility capacity." However, the *pro forma* definition of "generating facility capacity," refers to the net capacity of a generating facility and PJM has not sufficiently explained how the term "Capacity Interconnection Rights" relates to the net capacity of a generating facility. Without further explanation, PJM's definition appears to attempt to capture an interconnection customer's level of interconnection service, whereas the Commission's definition of "generating facility capacity" is meant to capture the aggregate net capacity of the generating facility, which could be a higher MW amount than the interconnection customer's "Capacity Interconnection Rights" or level of interconnection service. Accordingly, we direct PJM to adopt the *pro forma* LGIP and *pro forma* LGIA definitions of "generating facility capacity" or further justify its proposal under the independent entity variation standard.

164. We accept PJM's proposal to retain its existing Tariff provisions concerning regulatory limitations under the independent entity variation standard. In place of Order No. 2023's requirements for a limited option for interconnection customers to submit a

[311] Order No. 2023, 184 FERC ¶ 61,054 at PP 584-585.

[312] PJM Tariff, pt. VIII, subpt. A, § 402 (1.0.0), § 402(A)(8)(b).

[313] *Id.* § 402(A)(2) (1.0.0).

deposit in lieu of site control,[314] PJM proposes to allow interconnection customers facing permitting constraints on state or federal lands to add a milestone to its GIA to extend the deadline to satisfy the site control requirements until 180 days after execution of its GIA.[315] We find that is just and reasonable and not unduly discriminatory or preferential and accomplishes the purpose of Order Nos. 2023 and 2023-A. Specifically, we find that by providing flexibility to interconnection customers siting on state and federal lands, PJM's Tariff provisions accomplish the purpose in Order Nos. 2023 and 2023-A to ensure a transparent, consistent, and orderly process to facilitate demonstration of regulatory limitations by interconnection customers.[316]

165. PJM does not address the requirement in Order No. 2023[317] to establish specific acreage requirements for each generating facility technology type and post those requirements on its OASIS, nor justified why it should be exempted from doing so. Therefore, we direct PJM to submit a further compliance filing within 60 days of the date of this order to incorporate the requirement in Order No. 2023 for PJM to publicly post acreage requirements for each generating facility technology type or justify the omission of these requirements under the independent entity variation standard.

8. Commercial Readiness

166. In Order No. 2023, the Commission revised section 1 of the *pro forma* LGIP to define "commercial readiness deposit" and sections 3.4.2, 7.5, 8.1, and 11.3 of the *pro forma* LGIP to require interconnection customers to submit commercial readiness deposits to help reduce the submission of speculative, commercially non-viable interconnection requests into interconnection queues.[318] For the initial commercial readiness deposit submitted with its interconnection request, the interconnection customer must pay a deposit of two times its study deposit to enter the cluster study.[319] The commercial readiness deposit to enter the cluster restudy is the amount required to bring the total amount of the interconnection customer's commercial readiness deposit to 5% of the interconnection customer's network upgrade cost assignment identified in the cluster

[314] Order No. 2023, 184 FERC ¶ 61,054 at P 605.

[315] PJM Tariff, pt. VIII, subpt. A, § 402 (1.0.0), § 402(A)(2)(d).

[316] Order No. 2023, 184 FERC ¶ 61,054 at P 608.

[317] *Id.* P 595.

[318] *Id.* P 690; *see also pro forma* LGIP §§ 1, 3.4.2, 7.5, 8.1, 11.3.

[319] Order No. 2023, 184 FERC ¶ 61,054 at P 692; *see also pro forma* LGIP § 3.4.2.

study,[320] and the commercial readiness deposit to enter the facilities study is the amount required to bring the total amount of the interconnection customer's commercial readiness deposit to 10% of the interconnection customer's network upgrade cost assignment identified in the cluster study or restudy, as applicable.[321]

a. PJM's Compliance Filing

167. PJM requests an independent entity variation from the *pro forma* LGIP commercial readiness requirement to continue using the readiness deposit structure outlined in its Tariff. Specifically, PJM proposes a three-tiered commercial readiness deposit, arguing that this approach will achieve the same objectives as Order No. 2023 by reducing the number of speculative, commercially non-viable interconnection requests into the PJM interconnection process.[322] PJM contends that its proposed approach aligns with the goals of Order No. 2023, with differences that are appropriate for the PJM region. PJM also asserts that this approach is consistent with the Order No. 2023 requirement that the initial deposit should be based on the project's size, with subsequent deposits determined by the network upgrade costs associated with the project.[323]

168. PJM's Tariff requires the interconnection customer to pay a Readiness Deposit No. 1 of $4,000 per MW of energy (Maximum Facility Output) or capacity (interconnection rights), whichever is greater, at the time of submitting the interconnection request.[324]

169. PJM's Tariff requires the interconnection customer to pay Readiness Deposit No. 2 at Decision Point I to proceed to Phase II.[325] PJM calculates Readiness Deposit No. 2 as: (1) equal to the greater of 10% of the cost allocation for network upgrades calculated in Phase I or the amount of Readiness Deposit No. 1, (2) minus the previously paid

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[320] Order No. 2023, 184 FERC ¶ 61,054 at P 693; *see also pro forma* LGIP § 7.5.

[321] Order No. 2023, 184 FERC ¶ 61,054 at P 693; *see also pro forma* LGIP § 8.1.

[322] Filing at 50-51; Data Request Response, attach. A at 88-89.

[323] Filing at 51.

[324] *Id.* at 49 (citing PJM Tariff, pt. VIII, subpt. B, § 403 (0.1.0), § 403(A)(5)(b)).

[325] *Id.* at 49-50 (citing PJM Tariff, pt. VIII, subpt. C, § 406 (0.2.0), § 406(A)(1)(a)(i)). PJM also notes that the deposit amount can be zero, but it cannot be less than zero. Filing at 50 n.133 (citing PJM Tariff, pt. VIII, subpt. C, § 406 (0.2.0), § 406(A)(1)(a)(i)(c)).

Readiness Deposit No. 1 submitted with the interconnection request.[326] In other words, if Readiness Deposit No. 1 is greater than 10% of network upgrade costs, then Readiness Deposit No. 2 would be zero.

170. PJM's Tariff requires the interconnection customer to pay the third deposit, Readiness Deposit No. 3, at Decision Point II to proceed to Phase III. Readiness Deposit No. 3 is equal to the greater of: (1) 20% of the cost allocation for network upgrades calculated in Phase II, or the total of Readiness Deposit Nos. 1 and 2, (2) minus the total Readiness Deposits already paid. In other words, if the total paid deposit amount is greater than the calculated amount of 20% of network upgrade costs, Readiness Deposit No. 3 would be zero.

b. Commission Determination

171. We find that PJM's proposal, including the requested independent entity variations, complies with the commercial readiness requirements of Order Nos. 2023 and 2023-A to require an interconnection customer to submit an initial commercial readiness deposit with its interconnection request to enter the cluster study, and commercial readiness deposits to enter the cluster restudy and facilities study. We grant PJM's requested independent entity variation concerning commercial readiness deposits because we find that PJM's proposal is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A. Specifically, we find that these provisions establish stringent deposit requirements to minimize speculative, commercially non-viable projects while aligning the deposits to PJM's distinct three-phase Cycle study structure.[327] We find that PJM's requested independent entity variation to retain its existing Tariff's three commercial readiness deposits during the study process aligns with the structure of its distinct three-phase Cycle process. In particular, PJM's proposal to retain its existing Tariff's Readiness Deposit No. 1, which is required to enter Phase I study, is consistent with Order No. 2023's determination that the initial commercial readiness deposit be based on the size of the generating facility.[328] PJM's proposal to retain its existing Tariff's Readiness Deposit Nos. 2 and 3, which are required to enter the Phase II and Phase III studies, respectively, is consistent with the Order No. 2023 determination that the subsequent deposits be based on estimated network upgrade costs and serve to incentivize interconnection customers to make informed decisions about commercial viability early in the interconnection process,

[326] *Id.* at 51; Data Request Response, attach. A at 88-89.

[327] *See* Order No. 2023, 184 FERC ¶ 61,054 at P 691 (finding that the commercial readiness deposit reforms will help "reduce the submission of speculative, commercially non-viable interconnection requests into interconnection queues").

[328] *Id.* P 692.

avoid costly project withdrawals, and facilitate interconnection to the transmission system in a reliable, efficient, transparent, and timely manner.[329]

9. LGIA Deposit

172. In Order No. 2023, the Commission added the new term "LGIA deposit" to section 1 of the *pro forma* LGIP and article 1 of the *pro forma* LGIA and revised section 11.3 of the *pro forma* LGIP to require an interconnection customer to submit a deposit when executing the LGIA, or requesting the filing of an unexecuted LGIA, that will increase the total commercial readiness deposit paid to be equal to 20% of the estimated network upgrade costs identified in the LGIA (excluding the study deposit and site control deposit submitted when an interconnection customer faces a regulatory limitation).[330] Additionally, the Commission revised section 11.3 of the *pro forma* LGIP to require that an interconnection customer submit the LGIA deposit when returning the executed LGIA to the transmission provider, or within 10 business days of the interconnection customer requesting that the LGIA be filed unexecuted at the Commission.

173. The Commission also revised the *pro forma* LGIP and *pro forma* LGIA to treat the LGIA deposit as part of the security the interconnection customer must provide for the construction of network upgrades and transmission provider's interconnection facilities.[331] Finally, the Commission revised article 11.5 (Provision of Security) of the *pro forma* LGIA to require the transmission provider to draft Appendix B of the interconnection customer's LGIA to clearly explain and estimate at which point of construction the interconnection customer's LGIA deposit will be depleted, and the interconnection customer must provide additional financial security.[332]

a. PJM's Compliance Filing

174. PJM requests an independent entity variation from the *pro forma* LGIA deposit requirement to retain its Tariff provisions to require an interconnection customer to provide security equal to 100% of its allocated network upgrade costs at Decision Point III, which is the time period following PJM's tender of a final System Upgrades Facilities

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[329] *Id.*

[330] *Id.* P 714; *see also pro forma* LGIP §§ 1, 11.3; *pro forma* LGIA art. 1.

[331] Order No. 2023, 184 FERC ¶ 61,054 at P 717; *see also pro forma* LGIP § 11.3; *pro forma* LGIA art. 11.5.

[332] Order No. 2023, 184 FERC ¶ 61,054 at P 693; *see also pro forma* LGIA art. 11.5.

Study.[333] Under PJM's existing Tariff, Decision Point III runs concurrently with the negotiation of a final interconnection agreement between PJM and the interconnection customer.[334] PJM claims that its proposed GIA deposit aligns with the intent and goals of Order Nos. 2023 and 2023-A and should be deemed permissible under the independent entity variation standard.[335] To justify this claim, PJM explains that its proposed approach "properly ties the Security amount to the estimated costs of the required Network Upgrades, which sends an accurate cost signal to and aligns the Security that is provided with its function of ensuring that the necessary Network Upgrades are paid for and constructed."[336] PJM also notes that its approach of requiring a deposit equal to 100% of assessed network upgrade costs ensures that funds will be available to construct identified upgrades if an interconnection customer withdraws or its project is terminated. PJM argues that this structure protects other non-withdrawing interconnection customers from any cost shift resulting from the withdrawal or termination of other projects.[337]

b. Commission Determination

175. We grant PJM's requested independent entity variation to retain its existing Tariff provisions that require an interconnection customer to provide security equal to 100% of its allocated network upgrade costs at Decision Point III. We find that PJM's GIA deposit proposal is just and reasonable and not unduly discriminatory or preferential and accomplishes the purposes of Order Nos. 2023 and 2023-A because it encourages speculative interconnection requests to withdraw from PJM's interconnection queue and serves to protect non-withdrawing interconnection customers from any cost shift that would result from the late withdrawal of other projects.[338] We further find that PJM's

[333] Filing at 51 (citing PJM Tariff, pt. VIII, subpt. A, § 400S (Definitions S) (2.0.0), Security; PJM Tariff, pt. VIII, subpt. C, § 410 (1.0.0), § 410(A)(1)(a)).

[334] *See* PJM Tariff, pt. VIII, subpt. C, § 410 (1.0.0), § 410(A).

[335] Filing at 52.

[336] *Id.*; Data Request Response, attach. A at 89.

[337] *Id*.

[338] Order No. 2023, 184 FERC ¶ 61,054 at PP 47-49, 59 (finding that the legacy interconnection study process is unjust and unreasonable because it encourages the submission of speculative interconnection requests, the withdrawal of which trigger restudies that delay other queued interconnection customers, and explaining that the reforms in Order No. 2023 are designed to produce efficiencies by reducing these speculative interconnection requests and subsequent withdrawals).

proposal accomplishes the purpose of the Order No. 2023 LGIA deposit by ensuring that interconnection facilities and network upgrades are paid for and constructed.[339]

10. Withdrawal Penalties

176. In Order No. 2023, the Commission added the term "withdrawal penalty" to section 1 of the *pro forma* LGIP and article 1 of the *pro forma* LGIA.[340] The Commission revised section 3.7 (Withdrawal) of the *pro forma* LGIP and added sections 3.7.1 (Withdrawal Penalty), 3.7.1.1 (Calculation of the Withdrawal Penalty), and 3.7.1.2 (Distribution of the Withdrawal Penalty) related to withdrawal penalties to the *pro forma* LGIP.[341] The Commission required transmission providers to apply withdrawal penalties to an interconnection customer if: (1) the interconnection customer withdraws its interconnection request at any point in the interconnection process; (2) the interconnection customer's interconnection request has been deemed withdrawn by the transmission provider at any point in the interconnection process; or (3) the interconnection customer's generating facility does not reach commercial operation (such as when an interconnection customer's LGIA is terminated prior to reaching commercial operation).[342]

177. However, a withdrawal penalty must only be assessed if the withdrawal has a material impact on the cost or timing of any interconnection request with an equal or lower queue position. The Commission stated that the interconnection customer will also be exempt from paying a withdrawal penalty if: (1) the interconnection customer withdraws its interconnection request after receiving the most recent cluster study report and the network upgrade costs assigned to the interconnection customer's request have increased 25% compared to the previous cluster study report; or (2) the interconnection customer withdraws its interconnection request after receiving the individual facilities study report and the network upgrade costs assigned to the interconnection customer's request have increased by more than 100% compared to costs identified in the cluster study report.[343]

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[339] *Id.* P 715.

[340] *Id.* P 780; *see also pro forma* LGIP § 1; *pro forma* LGIA art. 1.

[341] Order No. 2023, 184 FERC ¶ 61,054 at P 780; *see also pro forma* LGIP §§ 3.7, 3.7.1, 3.7.1.1, 3.7.1.2.

[342] Order No. 2023, 184 FERC ¶ 61,054 at P 783.

[343] *Id.* P 784.

178. The Commission added *pro forma* LGIP section 3.7.1.1 to require a transmission provider to assess a withdrawal penalty on an interconnection customer with a proposed generating facility that does not reach commercial operation based either on the actual study costs or on a percentage of the interconnection customer's assigned network upgrade costs, depending on in which phase the interconnection customer withdraws its interconnection request.[344] Thus, the withdrawal penalty for an interconnection customer will be calculated as the greater of the study deposit or: (1) two times the study cost if the interconnection customer withdraws during the cluster study or after receipt of a cluster study report; (2) 5% of the interconnection customer's identified network upgrade costs if the interconnection customer withdraws during the cluster restudy or after receipt of any applicable restudy reports; (3) 10% of the interconnection customer's identified network upgrade costs if the interconnection customer withdraws during the facilities study, after receipt of the individual facilities study report, or after receipt of the draft LGIA; or (4) 20% of the interconnection customer's identified network upgrade costs if, after executing, or requesting to file unexecuted, the LGIA, the interconnection customer's LGIA is terminated before its generating facility achieves commercial operation.

179. The Commission also added *pro forma* LGIP section 3.7.1.2 to require a transmission provider to use the withdrawal penalty funds as follows: (1) to fund studies and restudies in the same cluster; (2) if withdrawal penalty funds remain, to offset net increases in costs borne by other remaining interconnection customers from the same cluster for network upgrades shared by both the withdrawing and non-withdrawing interconnection customers prior to the withdrawal; and (3) if any withdrawal penalty funds remain, they will be returned to the withdrawing interconnection customer.[345]

180. In Order No. 2023-A, the Commission modified *pro forma* LGIP section 3.7.1.2.1 (Initial Distribution of Withdrawal Penalties Prior to Assessment of Network Upgrade Costs Previously Shared with Withdrawn Interconnection Customers in the Same Cluster) to clarify that withdrawal penalties dispersed to remaining interconnection customers cannot exceed the total amount of withdrawal penalties collected from the cluster.[346] The Commission also revised *pro forma* LGIP section 3.7.1 to state that there will be no withdrawal penalty assessed if the withdrawal does not have a material impact on any interconnection request in the same cluster, as well as to add clarifying edits to

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[344] *Id.* P 791; *see also pro forma* LGIP § 3.7.1.

[345] Order No. 2023, 184 FERC ¶ 61,054 at P 798; *see also pro forma* LGIP § 3.7.1.2.

[346] Order No. 2023-A, 186 FERC ¶ 61,199 at P 231; *see also pro forma* LGIP § 3.7.1.2.1.

reference cluster restudies.[347] The Commission modified *pro forma* LGIP section 3.7.1.2.1 to clarify that the interconnection studies referenced in that section include cluster restudies and interconnection facilities studies.[348]

181. Finally, the Commission defined "transitional withdrawal penalty" in *pro forma* LGIP section 1 and modified *pro forma* LGIP sections 5.1.1, 5.1.1.1, and 5.1.1.2 to reference the transitional withdrawal penalty.[349]

a. PJM's Compliance Filing

182. PJM requests an independent entity variation from the *pro forma* LGIP and *pro forma* LGIA requirements for withdrawal penalties to retain its existing Tariff provisions.[350] PJM explains that under its Tariff, the study deposit and commercial readiness deposits are subject to forfeiture in the event of a project withdrawal, or if a project is terminated or otherwise does not achieve commercial operation, thereby serving the same functions as the withdrawal penalties adopted in Order No. 2023.[351] According to PJM, the withdrawal penalty amount depends on when the interconnection customer withdraws its project. If a project is withdrawn prior to Phase I, 10% of its study deposit is at risk of forfeiture. If a project is withdrawn during Phase I, 50% of its Readiness Deposit No. 1 and 10% of the study deposit are at risk. During Phase II, 100% of Readiness Deposit No. 1 and 10% of the study deposit are at risk. In Phase III and later stages, 100% of all readiness deposits (Nos. 1, 2, and 3) and 10% of the study deposit are subject to forfeiture. PJM explains that it will identify underfunded network upgrades where one or more withdrawn interconnection projects were identified as having a cost allocation in the Phase III analysis results.[352] PJM states that under its Tariff, the readiness deposits will be handled as follows: (1) all readiness deposits will be refunded if there are no underfunded network upgrades; (2) readiness deposits will be applied to underfunded network upgrades on a *pro rata* basis to replace amounts in the

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[347] Order No. 2023-A, 186 FERC ¶ 61,199 at PP 233, 243; *see also pro forma* LGIP §§ 3.7.1, 3.7.1.1(a).

[348] Order No. 2023-A, 186 FERC ¶ 61,199 at P 237; *see also pro forma* LGIP § 3.7.1.2.1.

[349] Order No. 2023-A, 186 FERC ¶ 61,199 at P 240; *see also pro forma* LGIP §§ 1, 5.1.1, 5.1.1.1, 5.1.1.2.

[350] Filing at 55.

[351] *Id.* at 52-53; Data Request Response, attach. A at 90-91.

[352] Filing at 53.

Phase III cost allocations attributable to withdrawn interconnection requests; and (3) remaining readiness deposits will be refunded to interconnection projects on a pro rata basis.[353]

183. PJM argues that readiness deposit forfeiture under its Tariff is consistent with Order No. 2023's requirement that the withdrawal penalty funds serve to reduce network upgrade cost shifts caused by withdrawals, which will reduce the risk that shifted costs are so large as to cause cascading withdrawals.[354] PJM also asserts that in accordance with Order No. 2023, the forfeiture of readiness deposits applies when an interconnection customer actively decides to withdraw its project or its project is terminated or otherwise does not achieve commercial operation.[355]

184. PJM states that the forfeiture of readiness deposits does not apply in the event of certain adverse study results.[356] PJM explains that an interconnection customer can receive a refund of all of its readiness deposits if its network upgrade costs increase from Phase I to Phase II by 25% or more, and by more than $10,000 per MW, or its network upgrade costs increase from Phase I to Phase III by 35% or more, and by more than $25,000 per MW.[357] PJM asserts that, as directed by Order No. 2023, its Tariff's adverse study result thresholds are "set at an amount that provides sufficient room for estimates to change as the cluster evolves while limiting interconnection customer exposure to withdrawal penalties when such estimates change by a significant amount."[358]

185. PJM also asserts that its Tariff's adverse study result rules are consistent with the Commission's recognition in Order No. 2023-A that it is reasonable for thresholds for penalty-free withdrawal to be higher at later stages of the interconnection study process.[359] PJM explains that 50% of Readiness Deposit No. 1 is at risk during Phase I and Decision Point I, 100% of Readiness Deposit No. 1 is at risk during Phase II and Decision Point II, and 100% of Readiness Deposit Nos. 1, 2, and 3 are at risk during

[353] *Id.* (citing PJM Tariff, pt. VIII, subpt. A, § 401 (2.0.0), § 401(D)(2)(c)).

[354] *Id.* (citing Order No. 2023, 184 FERC ¶ 61,054 at PP 783-784).

[355] *Id.* at 53-54.

[356] *Id.* at 54.

[357] *Id.* at 54 n.146.

[358] *Id.* at 54 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 786).

[359] *Id.* (citing Order No. 2023-A, 186 FERC ¶ 61,199 at P 232).

Phase III and later stages.[360] PJM states that the determination of whether the readiness deposits amounts are refunded or forfeited is made after Decision III and after all interconnection customers have entered into final interconnection-related agreements or withdrawn from the interconnection process.[361] PJM asserts that the holding of the readiness deposits aligns with Order No. 2023, which states that the transmission provider is to hold all withdrawal penalty funds for a cluster until all interconnection requests have been terminated or withdrawn or all interconnection customers have an executed LGIA or requested an LGIA be filed unexecuted.[362]

186. PJM states that it does not apply materiality tests to withdrawals; instead, it treats all withdrawals as having material impacts.[363] PJM argues that this bright line standard reduces disputes and uncertainty around whether a withdrawal has a material impact and more consistently accomplishes Order No. 2023's goal of preventing late-stage withdrawals.[364] However, PJM notes that if there are no underfunded network upgrades as a result of withdrawals, PJM will refund readiness deposits to withdrawn interconnection customers.

187. Because PJM is not conducting a transition, it does not propose a definition for "transitional withdrawal penalty," nor does it propose to revise sections 5.1.1, 5.1.1.1, and 5.1.1.2 of its LGIP to reference a transitional withdrawal penalty.

b. Protests

188. Clean Energy Associations, EDF Renewables, and Leeward and RWE Clean Energy protest PJM's proposal to avoid performing a materiality or harms review for withdrawal penalty exemptions, asserting that PJM's requested variation does not comport with the independent entity variation standard.[365] Leeward and RWE Clean Energy argue that PJM's proposal to treat all withdrawals as having a material impact without conducting any analysis violates the intent of Order No. 2023 to strike a balance between discouraging speculative projects and acknowledging that customers lack perfect

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[360] *Id.* at 54; Filing at 50, fig.2.

[361] Filing at 54.

[362] *Id.* (citing Order No. 2023, 184 FERC ¶ 61,054 at P 801).

[363] *Id.* at 55.

[364] *Id*.

[365] Clean Energy Associations Protest at 12; EDF Renewables Protest at 13-14; Leeward and RWE Clean Energy Protest at 19-20.

information.[366] Clean Energy Associations and Shell Companies argue that PJM's reliance on administrative convenience as a justification for eliminating the materiality review fails to align with the balance struck by Order No. 2023.[367] Leeward and RWE Clean Energy and EDF Renewables further assert that PJM's blanket treatment of all withdrawals as materially impactful creates undue hardships for developers and undermines the Commission's intent to discourage speculative projects while protecting legitimate interconnection customers.[368]

c. Answers

189. PJM defends its decision to eliminate the "no-harm" test for withdrawal penalties, asserting that its bright-line standard reduces disputes and uncertainty.[369] PJM argues that because there is no standard of what constitutes a material impact, the no-harm test likely will lead to disputes regarding whether a withdrawal has a material impact on other projects.[370] PJM also states that using a bright-line standard is consistent with the Commission's recent decision approving such a mechanism in MISO.[371] Additionally, PJM disputes Leeward and RWE Clean Energy's claim that PJM failed to demonstrate the effectiveness of its penalty system, asserting that the direct financial consequences of automatic penalties provide a strong incentive for developers to carefully evaluate their readiness before entering the queue.

190. EDF Renewables further requests that the Commission direct PJM to clarify in its Tariff that GIA security will be released when a project's termination does not directly impact other interconnection projects, per the "no-harm" test outlined in Order No. 2023-A.[372]

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[366] Leeward and RWE Clean Energy Protest at 21.

[367] Clean Energy Associations Protest at 13; Shell Companies Protest at 3.

[368] Leeward and RWE Clean Energy Protest at 3-4; EDF Renewables Protest at 13.

[369] PJM July 12 Answer at 16-17.

[370] *Id.* at 17.

[371] *Id.*

[372] EDF Renewables Answer at 10.

d. Commission Determination

191. We accept PJM's proposed withdrawal penalty structure because we find that the proposal is just, reasonable, not unduly discriminatory or preferential, and accomplishes the purposes of Order Nos. 2023 and 2023-A. We find that PJM's proposal for forfeiture of readiness deposits that increase in amount as interconnection customers proceed through the interconnection process, with larger portions of the readiness deposits placed at risk at each successive decision point, accomplishes the purpose of Order No. 2023 to reduce late-stage withdrawals and accompanying restudies.[373] PJM's proposal differs from the *pro forma* LGIP in that it does not apply a materiality test to withdrawals, and instead treats all withdrawals resulting in underfunded network upgrades as having a material impact. We agree with PJM that this bright-line standard reduces disputes and uncertainty about whether a withdrawal has a material impact and accomplishes Order No. 2023's purpose of discouraging late-stage withdrawals.

192. Order No. 2023-A requires that withdrawal penalties only be assessed where a withdrawal has a material impact on the cost or timing of equal- or lower-queued interconnection customers. Notably, the Commission left the determination of what constitutes material impact to the transmission provider. This discretion allows a transmission provider to use underfunded network upgrades as a basis for assessing whether a withdrawal is materially harmful; that underfunding indicates material harm. Under PJM's Tariff, PJM identifies underfunded network upgrades based on whether a withdrawn interconnection project was assigned cost responsibility for the network upgrade in PJM's final determination of network upgrade cost allocations in Phase III. In the place of a distinct withdrawal penalty, PJM applies readiness deposits from withdrawn projects on a pro-rata basis to cover missing funds and refunds any remaining readiness deposits once those underfunded network upgrades are fully funded. PJM's approach ensures that withdrawal penalties are only imposed when an interconnection customer's withdrawal results in the underfunding of network upgrades and cost shifts to other interconnection customers. Further, PJM's approach ensures that the amount of the withdrawal penalties, i.e., forfeited readiness deposits, is based on a pro-rata share of the funds missing for the network upgrades due to the interconnection customer's withdrawal. By imposing a withdrawal penalty only when the withdrawal results in underfunding of network upgrades, PJM in effect is assessing whether the withdrawal has "a material impact on the cost or timing of any interconnection request with an equal queue position," as required under Order No. 2023-A.[374]

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[373] Order No. 2023, 184 FERC ¶ 61,054 at P 781.

[374] Order No. 2023-A, 186 FERC ¶ 61,199 at P 233; *see also pro forma* LGIP § 3.7.1.

193. Protesters argue that PJM's approach fails to comply with Order No. 2023 because it lacks a materiality exemption for non-material withdrawals and treats all withdrawals as having a material impact. We disagree. PJM's proposal only imposes withdrawal penalties when a withdrawal results in a cost shift due to underfunded network upgrades.[375] If there are no underfunded network upgrades, PJM refunds the readiness deposits to the withdrawn interconnection customer in full.

11. Transition Process

194. In Order No. 2023, the Commission established a transition process from a first-come, first-served serial study process to the first-ready, first-served cluster study process in *pro forma* LGIP section 5 (Procedures for Interconnection Requests Submitted Prior to Effective Date of the Cluster Study Revisions).[376] The Commission required transmission providers to offer existing interconnection customers up to three transition options, depending on which phase of the serial study process their interconnection requests are in: (1) a transitional serial study, (2) a transitional cluster study, and (3) withdrawal from the interconnection queue without penalty.[377] The Commission added several new terms related to the transition process to the *pro forma* LGIP, as well as a *pro forma* transitional cluster study agreement in new Appendix 7 (Transitional Cluster Study Agreement) of the *pro forma* LGIP and a *pro forma* Transitional Serial Interconnection Facilities Study Agreement in new Appendix 8 (Transitional Serial Interconnection Facilities Study Agreement) of the *pro forma* LGIP.[378]

195. The Commission required transmission providers to offer the transitional serial study option to interconnection customers that have been tendered a facilities study agreement, even if they have not yet executed the agreement, as of 30 calendar days after the filing date of the transmission provider's initial filing to comply with Order No. 2023.[379] Similarly, the Commission required transmission providers to offer the transitional cluster study option to interconnection customers with an assigned queue position as of 30 calendar days after the filing date of the transmission provider's initial

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[375] Filing at 53.

[376] Order No. 2023, 184 FERC ¶ 61,054 at P 855; *see also pro forma* LGIP §§ 1, 5.

[377] Order No. 2023, 184 FERC ¶ 61,054 at P 855; *see also pro forma* LGIP § 5.1.1.

[378] *See pro forma* LGIP § 1, apps. 7, 8.

[379] Order No. 2023, 184 FERC ¶ 61,054 at P 855; *see also pro forma* LGIP §§ 5.1.1.1, 5.1.1.2.

filing to comply with Order No. 2023. The Commission required the transmission provider to include the filing date for its compliance in *pro forma* LGIP sections 5.1.1, 5.1.1.1, and 5.1.1.2.[380]

196. The Commission also required the transmission provider to tender the appropriate transitional study agreements to eligible interconnection customers no later than the Commission-approved effective date of the transmission provider's compliance filing with Order No. 2023.[381] The Commission adopted a deadline—60 calendar days after the Commission-approved effective date—for an interconnection customer to either exit the queue without penalty or choose a transition option and meet the relevant site control and deposit requirements.[382] Furthermore, the Commission clarified that transmission providers that have already adopted a cluster study process or are currently undergoing a transition to a cluster study process will not be required to implement a new transition process.[383]

197. The Commission also adopted transition process deposits, withdrawal penalties, and deadlines.[384] The Commission required that: (1) interconnection customers electing the transitional serial study must provide a deposit equal to 100% of the interconnection facility and network upgrade costs allocated to the interconnection customer in the system impact study; and (2) interconnection customers electing the transitional cluster study must provide a deposit equal to $5 million.[385]

198. In Order No. 2023-A, the Commission added definitions to the *pro forma* LGIP for the terms "transitional cluster study agreement" and "transitional serial interconnection facilities study agreement."[386] The Commission clarified that withdrawals occurring after the 60-day deadline will be subject to the new withdrawal penalties, with certain exceptions. To reflect these clarifications, the Commission also added new *pro forma* LGIP section 5.1.2 (Transmission Providers with Existing Cluster Study Processes or Currently in Transition) establishing that interconnection customers in

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[380] *See also pro forma* LGIP §§ 5.1.1, 5.1.1.1, 5.1.1.2.

[381] Order No. 2023, 184 FERC ¶ 61,054 at P 867.

[382] *Id.* P 864; *see also pro forma* LGIP §§ 5.1.1, 5.1.1.1, 5.1.1.2.

[383] Order No. 2023, 184 FERC ¶ 61,054 at P 861.

[384] *Id.* P 855.

[385] *Id.* P 859.

[386] Order No. 2023-A, 186 FERC ¶ 61,199 at P 263; *see also pro forma* LGIP § 1.

the queue of a transmission provider not conducting a transition process under *pro forma* LGIP section 5.1.1 must comply with the new readiness requirements proposed by the transmission provider within 60 days of the Commission-approved effective date of the transmission provider's compliance filing.[387]

a. PJM's Compliance Filing

199. PJM states that it has begun the "Transition Period" under its Tariff, and PJM has been working to clear the backlog of interconnection requests in accordance with the interconnection reforms accepted in the 2022 Interconnection Reforms Order.[388] PJM explains that it commenced Transition Cycle #1 in January 2024, in accordance with its Tariff.[389] In its data request response, PJM explains that there are no equivalent Tariff provisions to the *pro forma* LGIP terms for "transitional cluster study," "transitional cluster study agreement," "transitional cluster study report," or any terms relating to a transitional serial study, explaining that PJM's Transition Period rules under its Tariff, Part VII, include only a cluster study process (or Cycle), so there are no terms distinguishing transitional cluster concepts from transitional serial concepts.[390] PJM also asserts that there is no equivalent Tariff provision regarding transitional withdrawal penalties, explaining that PJM's Transition Period rules under Tariff, Part VII, do not include withdrawal penalties.[391]

b. Protests

200. Public Interest Organizations and Shell Companies argue that PJM fails to justify why its existing transition plan satisfies Order No. 2023.[392] Specifically, Public Interest Organizations assert that PJM's current interconnection process is unjust and unreasonable due to the length of the pause on new interconnection requests, along with

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[387] Order No. 2023-A, 186 FERC ¶ 61,199 at P 75; *see also pro forma* LGIP § 5.1.2.

[388] Filing at 9.

[389] *Id.* at 10 n.20. PJM's Tariff requires that PJM start Transition Cycle #1 no later than six months after the Transition Date, which was July 10, 2023. *See* PJM Tariff, pt. VII, subpt. B, § 304 (0.0.0), § 304(C)(2)(a).

[390] Data Request Response, attach. A at 66-68.

[391] *Id.* at 68-69.

[392] Public Interest Organizations Protest at 16; Shell Companies Protest at 4.

the lack of any binding deadlines for clearing the queue by 2026.[393] Similarly, Shell Companies argue that PJM's transition requirements should be revised to include Order No. 2023's requirements for the interconnection customer to demonstrate site control for 90% of its proposed generation facility at the time of submission of the interconnection request, and 100% site control for the generation facility at the time of execution of the facilities study agreement and LGIA.[394] Shell Companies argue that requiring PJM to make this addition would not be disruptive to the current transition interconnection process but would clarify the interconnection customer obligation to maintain sufficient land while being studied and processed.[395]

c. Commission Determination

201. We find that PJM's proposal complies with the transition process requirements of Order Nos. 2023 and 2023-A. We find that protesters' assertions regarding PJM's transition process are misplaced because the Commission stated in Order No. 2023 that transmission providers that have already adopted a cluster study process, or are currently undergoing a transition to a cluster study process, will not be required to implement a new transition process.[396] Because PJM has an existing cluster study process, we find that PJM does not need to propose a new transition process to comply with Order Nos. 2023 and 2023-A.

12. Elimination of Reasonable Efforts

202. In Order No. 2023, the Commission revised sections 2.2 (Comparability), 3.5.4, 7.4, 8.3 (Interconnection Facilities Study Procedures), and Attachment A to Appendix 3 (formerly Appendix 4) of the *pro forma* LGIP to eliminate the reasonable efforts standard for conducting cluster studies, cluster restudies, facilities studies, and affected system studies by the tariff-specified deadlines.[397] The Commission added new section 3.9 (Penalties for Failure to Meet Study Deadlines) to the *pro forma* LGIP to implement a

[393] Public Interest Organizations Protest at 17.

[394] Shell Companies Protest at 8 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 594; *pro forma* LGIP § 3.4.2(iii)).

[395] *Id.*

[396] Order No. 2023, 184 FERC ¶ 61,054 at PP 861, 1765.

[397] *Id.* P 962; *see also pro forma* LGIP §§ 2.2, 3.5.4, 7.4, 8.3; *pro forma* LGIP app. 3, attach. A.

structure of study delay penalties.[398] Specifically, delays of cluster studies beyond the tariff-specified deadline will incur a penalty of $1,000 per business day; delays of cluster restudies beyond the tariff-specified deadline will incur a penalty of $2,000 per business day; delays of affected system studies beyond the tariff-specified deadline will incur a penalty of $2,000 per business day; and delays of facilities studies beyond the tariff-specified deadline will incur a penalty of $2,500 per business day. The Commission explained that, among other things, these penalty amounts are intended to incentivize transmission providers to meet study deadlines and that the structure of increasing penalties reflects the progressively greater harm caused by delayed studies at later interconnection stages.[399]

203. The Commission also specified that the study delay penalty regime contains the following safeguards for transmission providers: (1) no study delay penalties will be assessed until the third cluster study cycle (including any transitional cluster study cycle, but not transitional serial studies) after the Commission-approved effective date of the transmission provider's filing in compliance with Order No. 2023; (2) there will be a 10-business day grace period, such that no study delay penalties will be assessed for a study that is delayed by 10 business days or fewer; (3) deadlines may be extended for a particular study by 30 business days by mutual agreement of the transmission provider and all interconnection customers with interconnection requests in the relevant study; (4) study delay penalties will be capped at 100% of the initial study deposits received for all of the interconnection requests in the relevant study; and (5) transmission providers will have the ability to appeal any study delay penalties to the Commission, with the Commission determining whether good cause exists to grant the relief requested on appeal.[400]

204. The Commission further provided the following features to the study delay penalty structure: (1) transmission providers must distribute study delay penalties to interconnection customers in the relevant study that did not withdraw, or were not deemed withdrawn, from the interconnection queue before the missed study deadline on a pro rata per interconnection request basis to offset their study costs; (2) non-RTO/ISO transmission providers and transmission-owning members of RTOs/ISOs may not recover study delay penalties through transmission rates; (3) RTOs/ISOs may submit an FPA section 205 filing to propose a default structure for recovering study delay penalties and/or to recover the costs of any specific study delay penalties;[401] and (4) transmission

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[398] Order No. 2023, 184 FERC ¶ 61,054 at P 962; *see also pro forma* LGIP § 3.9.

[399] Order No. 2023, 184 FERC ¶ 61,054 at PP 974-978.

[400] *Id.* P 972.

[401] The typical standard of review under FPA section 205 would apply to these

providers must post quarterly on their OASIS or other publicly accessible website (a) the total amount of study delay penalties from the previous reporting quarter and (b) the highest study delay penalty paid to a single interconnection customer in the previous reporting quarter.[402] In Order No. 2023-A, the Commission clarified that study delay penalties would be allocated to interconnection customers on a pro rata basis proportionate to each interconnection customer's final study cost in the relevant study.[403]

a. PJM's Compliance Filing

205. PJM requests an independent entity variation from Order No. 2023's directive to eliminate the reasonable efforts standard and instead implement a just and reasonable tailored alternative to the penalty regime adopted in Order Nos. 2023 and 2023-A.[404] PJM argues that Order No. 2023 indicated that no study delay penalties will be assessed until the third cluster study cycle after the effective date established by the Commission for a transmission provider's compliance filing, thus giving PJM time to determine whether PJM's existing Tariff is successful or whether a penalty regime is necessary.[405]

206. PJM does not provide Tariff revisions but describes in its transmittal letter a conceptual proposal for an alternate structure. According to PJM's conceptual proposal, for each Cycle, PJM will first work with its transmission owners to perform an assessment before commencing Phase I, and then PJM will develop a targeted completion date for all three phases of studies based on a number of factors. Afterwards, depending on the variance between the actual number of days for completion of the studies for a given cluster and the established deadline for that cluster, PJM will: (1) take no action; (2) file a joint report with transmission owners as to the situation that caused the study deadline to be missed; or (3) rebate to the interconnection customers affected by the delay a portion of the study deposits they provided to PJM.[406]

207. PJM states that it expects to implement these revisions by the beginning of its first Cycle under its existing Tariff, Part VIII. Upon Commission approval in principle of its

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filings, i.e., the filer must show that any proposal to recover study delay penalties is just, reasonable, and not unduly discriminatory or preferential. *See* 16 U.S.C. § 824d.

[402] Order No. 2023, 184 FERC ¶ 61,054 at P 963.

[403] Order No. 2023-A, 186 FERC ¶ 61,199 at P 439.

[404] Filing at 57-58.

[405] *Id.* at 57 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 979).

[406] *Id.* at 59-60.

conceptual proposal, PJM states that it will consult with its stakeholders with the goal of providing revised and new Tariff sections in its phase two compliance filing.[407] PJM argues that while the Commission declined to adopt a similar model on a nation-wide basis in Order No. 2023, it left open the opportunity for adoption based on the independent entity variation standard.[408]

b. Protests

208. Clean Energy Associations, Leeward and RWE Clean Energy, and Public Interest Organizations protest that PJM's proposal to address the elimination of the reasonable efforts standard in a later compliance filing does not comply with Order No. 2023.[409] Clean Energy Associations assert that PJM cannot be permitted to disregard the Commission's compliance directives and instead, propose a conceptual approval without proposing specific tariff language and that, at a minimum, PJM must seek leave from the Commission to postpone this aspect of its tariff compliance filing beyond the deadline ordered by the Commission.[410] Leeward and RWE Clean Energy state that PJM fails to propose actual tariff revisions or to propose an effective date for such revisions.411

209. Leeward and RWE Clean Energy and Public Interest Organizations protest PJM's proposal regarding study delay penalties, arguing that PJM's proposal for a belated and lax penalty structure does not comply with Order No. 2023 and assert that the Commission already rejected PJM's proposed alternative process.[412]

c. Data Request Response

210. In its response to Commission staff's data request, PJM reiterates that it is proposing a phased compliance process in which PJM will address specific elements, including the elimination of reasonable efforts, after PJM receives additional

[407] *Id.* at 60.

[408] *Id.* (citing Order No. 2023, 184 FERC ¶ 61,054 at PP 952, 1017).

[409] Clean Energy Associations Protest at 13; Leeward and RWE Clean Energy Protest at 8, 12-13; Public Interest Organizations Protest at 18-19.

[410] Clean Energy Associations Protest at 15.

[411] Leeward and RWE Clean Energy Protest at 8.

[412] Public Interest Organizations Protest at 18-19; Leeward and RWE Clean Energy Protest at 14 (citing Order No. 2023, 184 FERC ¶ 61,054 at PP 952, 1017).

Commission guidance in an order on its compliance filing.[413] PJM provides what it refers to as "illustrative Tariff provisions" with further details regarding PJM's conceptual proposal for study delay penalties.[414] PJM requests an independent entity variation to use the illustrative Tariff provisions and states that it will file such provisions upon Commission direction. PJM argues that the illustrative Tariff provisions will accomplish Order No. 2023's goal of promoting faster interconnection studies while not imposing the full administrative burden of the order's penalties regime. PJM avers that its requested independent entity variation would provide PJM greater flexibility to establish consequences for study delays that are consistent with the existing provisions of PJM's Tariff, PJM's and the transmission owners' study processes, and the considerable volume of interconnection requests submitted to PJM.

211. PJM's illustrative Tariff provisions provide that PJM would, in each Cycle, work with transmission owners and stakeholders to assess a series of factors before commencing Phase I. Such factors, according to PJM, would include the number of projects in a Cycle, the complexity and dominant location of the requested points of interconnection, historic trends as to interconnection withdrawal rates, and the interrelationship of queue processing to baseline upgrades. Afterwards, PJM would develop a targeted completion date for Phase I and Decision Point I, and Phase III and Decision Point III based on those factors.[415] PJM states that the targeted completion dates for a particular Cycle will be posted and reviewed with stakeholders before work commences on the Cycle's studies.[416] In its illustrative Tariff provisions, PJM proposes to adopt the grace period in Order No. 2023 of 10 business days. PJM also proposes that, if mutually agreed upon by all interconnection customers in a particular study, PJM can extend the targeted completion date for that study by up to 60 days without a penalty being assessed.

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[413] Data Request Response at 7.

[414] *Id.* at 27, attach. C (Illustrative Revisions to Tariff, Pt. VIII, Subpt. E, Sec. 431), § 431(G)(2).

[415] *Id.* attach. C (Illustrative Revisions to Tariff, Pt. VIII, Subpt. E, Sec. 431), § 431(G)(2). We note that PJM proposes to retain its cluster study timeline in its Tariff. PJM's cluster study timeline consists of a 120-day Phase I System Impact Study, 180-day Phase II System Impact Study, and 180-day Phase III System Impact Study, in which the study timelines are under the reasonable efforts standard. At the end of each study phase, PJM's cluster study timeline also includes Decision Points I, II, and III, which are 30 days.

[416] *Id*.

212. PJM's illustrative Tariff provisions do not impose any study delay penalties if the number of days for the completion of studies exceeds the targeted completion date by 25% or less. Specifically, if there is less than a 10% variance between the actual number of days for completion of the studies for a given cluster and the established deadline for that cluster, PJM proposes to take no action other than publicly posting the occurrence of delay.[417] If the study completion date is between 10% and 25% longer than study timeline established in the targeted completion date, PJM proposes to consult with transmission owners and file a report to the Commission to explain the situation that caused the study deadline. The illustrative Tariff provisions provide that PJM will detail proposed reforms to be implemented going forward to resolve any identified causes for study completion delays. If the study completion date is more than 25% longer than the study timeline established in the targeted completion date, PJM will, subject to Order Nos. 2023 and 2023-A's procedure for appeal of study delay penalties to the Commission, rebate up to 50% of the study deposits to the affected interconnection customers.

213. PJM argues that its conceptual proposal is a reasonable alternative to Order No. 2023's penalty regime and meets the goals of incenting timely completion of interconnection studies, while avoiding an excessive administrative burden to determine fault and allocate penalties between PJM and its transmission owners in an interconnection study process as tightly integrated as PJM's.[418] As noted above, PJM seeks Commission approval, or in the alternative, Commission guidance regarding its conceptual proposal and states that it will consult with its stakeholders following Commission guidance. PJM adds that its conceptual proposal tailors the deadlines for each Cycle and will not be arbitrary, one-size-fits-all deadlines. PJM argues that its proposal also provides opportunities for PJM and its transmission owners to identify areas of improvement and reduce study delays, which PJM asserts is superior to the punitive penalty regime adopted in Order Nos. 2023 and 2023-A.

214. PJM asserts that its definition of "Reasonable Efforts" complies with the *pro forma* LGIP.[419] PJM argues that like the *pro forma* LGIP definition, PJM's term defines "Reasonable Efforts" as an attempt, or actions taken by an interconnection party under the relevant agreement or Tariff section.

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[417] *Id.* attach. C (Illustrative Revisions to Tariff, Pt. VIII, Subpt. E, Sec. 431), § 431(G)(5).

[418] Filing at 57, 61.

[419] Data Request Response, attach. A at 59.

d. Protest to Data Request Response

215. Clean Energy Associations, Public Interest Organizations, and Shell Companies each oppose PJM's request for an independent entity variation and request that the Commission reject it.[420] Clean Energy Associations contend that PJM's lack of specific Tariff language and adherence to the penalty structure undermines the intent of Order No. 2023 to incentivize transmission providers to process interconnection requests efficiently and fairly.[421] Clean Energy Associations argue that PJM fails to comply with Order No. 2023's directive to eliminate the reasonable efforts standard and adopt a penalty structure to ensure timely interconnection studies. Instead of proposing firm deadlines and penalties, Clean Energy Associations argue that PJM provides a conceptual framework and illustrative Tariff revisions that lack specificity and fail to address accountability.[422] Similarly, Public Interest Organizations reiterate that PJM presents a problematic approach to consequences for study delays and that PJM provides proposed Tariff revisions reflecting its lax approach to transmission providers that fail to conduct timely interconnection studies.[423]

216. Further, Clean Energy Associations and Shell Companies argue that PJM's proposed study delay penalty mechanism fails to align with the clear, standardized deadlines and per-day penalties established in Order No. 2023, which were intended to incentivize timely interconnection study completion.[424] Shell Companies argue that PJM's proposal lacks clear, standardized deadlines for interconnection studies, instead relying on subjective factors like project complexity and historic trends to establish unique deadlines for each Cycle. Shell Companies also contend that this approach provides no certainty and leaves full authority over deadline-setting with PJM, despite nominal stakeholder involvement.[425] Both Clean Energy Associations and Shell Companies state that PJM's "graduated consequences" approach would only impose

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[420] Clean Energy Associations Protest to Data Request Response at 10-13; Public Interest Organizations Protest to Data Request at 3; Shell Companies Protest to Data Request Response at 7 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 964).

[421] Clean Energy Associations Protest to Data Request Response at 10-13.

[422] *Id.* at 10.

[423] Public Interest Organizations Protest to Data Request at 3.

[424] Clean Energy Associations Protest to Data Request Response at 11-12, Shell Companies Protest to Data Request Response at 7 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 964).

[425] Shell Companies Protest to Data Request Response at 7, 10.

penalties if study delays exceed 25% of the established timeline, and even then, penalties are limited to partial rebates of study deposits, capped at 50% of the total deposit amount, which does not align with the 100% cap mandated by the Commission.[426] Clean Energy Associations contend that PJM's claim that its approach aligns with its three-phase study process and offers "flexibility" is insufficient, as it fails to provide clear measures or timelines to ensure timely study completion.[427]

217. Additionally, Shell Companies highlight that in the Order No. 2023 rulemaking process, PJM proposed something similar and that the Commission rejected it, emphasizing that PJM's approach fails to align with the Commission's intention to establish clear and consistent study deadlines. Shell Companies argue that PJM's proposal contradicts Order No. 2023-A, which allowed transmission providers to propose study deadlines differing from the *pro forma* LGIP's 150-day schedule but explicitly rejected the flexibility for *ad hoc* deadlines beyond standard, tariff-defined ones. Shell Companies state that PJM's proposal introduces *ad hoc* deadlines, contrary to the Commission's guidance.[428] Shell Companies assert that PJM's justification to avoid the administrative burden of penalties by using subjective factors to set deadlines for each cluster is more administratively burdensome than establishing clear, tariff-defined study deadlines, as required by Order No. 2023.[429]

e. Answers to Data Request Response

218. In its answer, PJM reiterates that its requested guidance from the Commission on study delay penalty requirements is just and reasonable, contrary to Public Interest Organization's protest. PJM asserts, again, that implementation of a study delay penalty will be a complex effort that will require reconciling the penalty process with PJM's three-phase study process.[430] PJM reiterates that an independent entity variation is appropriate because it would provide PJM greater flexibility to establish consequences for study delays that are consistent with existing provisions of PJM's Tariff.[431]

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[426] Clean Energy Associations Protest to Data Request Response at 11-12, Shell Companies Protest to Data Request Response at 9-10.

[427] Clean Energy Associations Protest to Data Request Response at 12.

[428] Shell Companies Protest to Data Request Response at 8-9 (citing Order No. 2023-A, 186 FERC ¶ 61,199 at PP 126, 132, 156).

[429] *Id.* at 9.

[430] PJM December 4 Answer at 2-3.

[431] *Id.* at 3-4.

Additionally, in response to Clean Energy Associations, PJM asserts that its proposed graduated consequences provisions will more closely tie to and support PJM's existing Tariff provisions because they will be based on timelines for study competition that PJM developed with its stakeholders for PJM's Cycle process.[432]

f. Commission Determination

219. We find that PJM's proposal does not comply with the elimination of the reasonable efforts requirement of Order Nos. 2023 and 2023-A because it fails to remove the reasonable efforts standard from its Tariff. In Order No. 2023, the Commission revised the *pro forma* LGIP to eliminate the reasonable efforts standard for conducting cluster studies, cluster restudies, facilities studies, and affected system studies by the tariff-specified deadlines.[433] PJM does not justify how its proposal to retain the reasonable efforts standard in its Tariff is just and reasonable and accomplishes the purposes of Order No. 2023 to increase the speed of interconnection queue processing.[434] In Order No. 2023, the Commission found that the reasonable efforts standard does not provide an adequate incentive for transmission providers to complete interconnection studies on time and "that it is just, reasonable, and not unduly discriminatory or preferential to eliminate the reasonable efforts standard."[435] We therefore find that PJM's proposal to maintain the reasonable efforts standard represents a collateral attack on the final rule.[436]

220. We also find that PJM's proposal does not comply with the Order Nos. 2023 and 2023-A requirement to implement study delay penalties because PJM does not propose Tariff revisions that implement such penalties, but instead provides a conceptual proposal in its compliance filing for study delay penalties in the form of illustrative Tariff provisions.[437] In Order No. 2023, the Commission added section 3.9 to the *pro forma*

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[432] *Id.* at 4.

[433] Order No. 2023, 184 FERC ¶ 61,054 at P 962; *see pro forma* LGIP §§ 2.2, 3.5.4, 7.4, 8.3; *see also pro forma* LGIP, app. 3, attach. A.

[434] Order No. 2023, 184 FERC ¶ 61,054 at P 6.

[435] *Id.* P 966.

[436] *Louisville Gas & Elec. Co.*, 144 FERC ¶ 61,054, at P 12 (2013) (citing *Wall v. Kholi*, 131 S.Ct. 1278, 1284 (2011) (noting that a collateral attack is "[a]n attack on a judgment in a proceeding other than a direct appeal" and is generally prohibited).

[437] While PJM notes that it and other interested parties require time to determine "whether a penalty regime is even necessary," it also recognizes that "it nevertheless is required to provide Tariff revisions now to implement consequences for study delays."

LGIP to implement study delay penalties, which specifies penalty amounts per business day for delays of interconnection studies beyond the tariff-specified deadline,[438] and concluded that study delay penalties are required to incentivize transmission providers to meet study deadlines.[439] Therefore, we find that PJM has failed to comply with Order No. 2023 because it has failed to provide revisions to its Tariff beyond a "conceptual proposal."

221. We nonetheless provide certain guidance on PJM's conceptual proposal to aid PJM in its compliance with Order No. 2023. For example, we note that PJM's conceptual proposal features "targeted completion dates" to be agreed upon with transmission owners "and other stakeholders" and a structure of study delay penalties that does not provide the necessary transparency and certainty required by Order No. 2023 with regard to timing and penalty amounts. We further note that PJM concedes that the Commission declined to adopt its proposal in Order No. 2023.[440] In addition, the conceptual proposal does not specify whether the penalty amounts will increase with study delays at later interconnection stages. Finally, while PJM notes the study delay penalties regime adopted in Order Nos. 2023 and 2023-A creates an excessive administrative burden, as noted above, in Order No. 2023, the Commission found that, "[t]he study delay penalty structure adopted in this final rule balances the harm to interconnection customers of interconnection study delays and the associated need to incentivize transmission providers to timely complete interconnection studies with the burden on transmission providers to conduct interconnection studies and potentially face penalties for delays, including those that may be caused or exacerbated by factors beyond their control."[441] Therefore, PJM's conceptual proposal does not appear to accomplish the purposes of Order No. 2023.

222. Accordingly, we direct PJM to submit a further compliance filing within 60 days of the date of this order that eliminates the reasonable efforts standard and proposes study delay penalties in accordance with Order Nos. 2023 and 2023-A in PJM's Tariff.

Filing at 57.

[438] Order No. 2023, 184 FERC ¶ 61,054 at P 962; *see pro forma* LGIP § 3.9.

[439] Order No. 2023, 184 FERC ¶ 61,054 at PP 974-978.

[440] Filing at 60 (citing Order No. 2023, 184 FERC ¶ 61,054 at PP 952, 1017).

[441] Order No. 2023, 184 FERC ¶ 61,054 at P 972.

13. Affected System Study Process and Modeling Requirements

223. In Order No. 2023, the Commission adopted an affected system study process and added several related definitions to the *pro forma* LGIP.[442]

224. The Commission revised section 3.6 (Coordination with Affected Systems) and adopted section 3.6.1 (Initial Notification) of the *pro forma* LGIP, which requires the transmission provider to notify the affected system operator within 10 business days of the first instance of an identified potential affected system impact, which may occur at the completion of either the cluster study or the cluster restudy.[443]

225. The Commission also adopted several requirements to establish an affected system process under *pro forma* LGIP section 9 (Affected System Study), which pursuant to *pro forma* LGIP section 9.1 (Applicability) applies to the transmission provider when it is acting as the affected system transmission provider (i.e., when the transmission provider is studying the impacts on its own transmission system of proposed interconnections to other transmission providers' transmission systems).[444] First, the Commission adopted section 9.2 (Response to Initial Notification) of the *pro forma* LGIP, which requires the affected system transmission provider to respond to notification of a potential affected system impact in writing within 20 business days, indicating whether it intends to conduct an affected system study.[445] Section 9.2 also requires that, within 15 business days of the affected system transmission provider's affirmative response of its intent to conduct an affected system study, the affected system transmission provider must share a non-binding good faith estimate of the cost and schedule to complete the affected system study.

226. The Commission next adopted section 9.3 (Affected System Queue Position) of the *pro forma* LGIP.[446] Under section 9.3, the interconnection requests of affected system interconnection customers that have executed an affected system study agreement will be higher-queued than the interconnection requests of those host system interconnection customers that have not yet received their cluster study results, and lower-queued than those interconnection customers that have already received their

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[442] *Id.* PP 1110, 1112; *see also pro forma* LGIP § 1.

[443] Order No. 2023, 184 FERC ¶ 61,054 at P 1119; *see also pro forma* LGIP §§ 3.6, 3.6.1.

[444] Order No. 2023, 184 FERC ¶ 61,054 at P 1113; *see also pro forma* LGIP § 9.1.

[445] Order No. 2023, 184 FERC ¶ 61,054 at P 1120; *see also pro forma* LGIP § 9.2.

[446] Order No. 2023, 184 FERC ¶ 61,054 at P 1138; *see also pro forma* LGIP § 9.3.

cluster study results. All affected system interconnection requests studied within the same affected system cluster will be equally queued.

227. The Commission next adopted section 9.4 (Affected System Study Agreement/Multiparty Affected System Study Agreement) of the *pro forma* LGIP to require that the transmission provider tender the affected system study agreement within 10 business days of sharing the schedule for the study with the affected system interconnection customers.[447] Section 9.4 also requires the affected system interconnection customer to compensate the affected system transmission provider for the actual costs of the affected system study, and the difference between the affected system study deposit and actual cost of the affected system study will be detailed in an invoice and paid by or refunded to the affected system interconnection customer within 30 calendar days of the receipt of such invoice.[448] An affected system interconnection customer's failure to pay the difference between these amounts will result in loss of that affected system interconnection customer's affected system queue position. Section 9.4 also requires that the affected system transmission provider notify the host transmission provider of the affected system interconnection customer's breach of its obligations under this section, should such breach occur.[449]

228. The Commission next adopted section 9.5 (Execution of Affected System Study Agreement/Multiparty Affected System Study Agreement) of the *pro forma* LGIP, which provides the affected system interconnection customer with 10 business days from the date of receipt of the affected system study agreement to execute and deliver it to the affected system transmission provider.[450] Section 9.5 also provides that, if the affected system interconnection customer does not provide all required technical data when it delivers the affected system study agreement, the affected system transmission provider shall notify the affected system interconnection customer of the deficiency within five business days of the receipt of the affected system study agreement, and the affected system interconnection customer has 10 business days to cure the deficiency after receipt of such notice (provided that the deficiency does not include failure to deliver the executed affected system study agreement or deposit).

229. The Commission next adopted section 9.6 (Scope of Affected System Study) of the *pro forma* LGIP, which requires the affected system study to consider the base case, as well as all higher-queued generating facilities on the affected system transmission

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[447] Order No. 2023, 184 FERC ¶ 61,054 at P 1154; *see also pro forma* LGIP § 9.4.

[448] Order No. 2023, 184 FERC ¶ 61,054 at P 1157.

[449] *Id.* P 1159.

[450] *Id.* P 1158; *see also pro forma* LGIP § 9.5.

provider's transmission system, and to consist of a power flow, stability, and short circuit analysis.[451] Section 9.6 also requires the affected system study to provide a list of affected system network upgrades that are required because of the affected system interconnection customer's proposed interconnection, a non-binding good faith estimate of cost responsibility, and a non-binding good faith estimated time to construct. The affected system study may consist of a system impact study, a facilities study, or some combination thereof.

230. The Commission next adopted section 9.7 (Affected System Study Procedures) of the *pro forma* LGIP, which requires clustering of affected system interconnection requests for study purposes where multiple interconnection requests that are part of a single cluster in the host system's cluster study process cause the need for an affected system study.[452] Section 9.7 also requires the affected system transmission provider to complete the affected system study and provide the affected system interconnection customer with affected system study results within 150 calendar days after receipt of the affected system study agreement. Section 9.7 also requires the affected system transmission provider to provide the affected system study report to the host transmission provider at the same time it provides the report to the affected system interconnection customer. The affected system transmission provider must notify the affected system interconnection customer that an affected system study will be late.[453] Lastly, *pro forma* LGIP section 9.7 requires affected system transmission providers to study all affected system interconnection requests using Energy Resource Interconnection Service (ERIS)[454] modeling standards.[455]

231. The Commission added a new section 11.2.1 (Delay in LGIA Execution, or Filing Unexecuted, to Await Affected System Study Report) to the *pro forma* LGIP.[456] Under this section, if the interconnection customer does not receive its affected system study

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[451] Order No. 2023, 184 FERC ¶ 61,054 at P 1160; *see also pro forma* LGIP § 9.6.

[452] Order No. 2023, 184 FERC ¶ 61,054 at P 1133; *see also pro forma* LGIP § 9.7.

[453] Order No. 2023, 184 FERC ¶ 61,054 at P 1135.

[454] ERIS is an interconnection service that allows the interconnection customer to connect its generating facility to the transmission provider's transmission system to be eligible to deliver the generating facility's electric output using the existing firm or non-firm capacity of the transmission provider's transmission system on an as available basis. ERIS in and of itself does not convey transmission service. *Pro forma* LGIP § 1.

[455] Order No. 2023, 184 FERC ¶ 61,054 at P 1276.

[456] *Id.* P 1123; *see also pro forma* LGIP § 11.2.1.

results before the deadline in its host system for LGIA execution, or the deadline to request that the LGIA be filed unexecuted, the host transmission provider must, at the interconnection customer's request, delay the deadline for the interconnection customer to finalize its LGIA. The interconnection customer will have 30 calendar days after receipt of the affected system study report to execute the LGIA, or request that the LGIA be filed unexecuted. Additionally, if the interconnection customer prefers to proceed to the execution of its LGIA, or request that the LGIA be filed unexecuted, before it has received its affected system study results, it may notify the host transmission provider of its intent to proceed with the execution of the LGIA, or request that the LGIA be filed unexecuted.[457] If the host transmission provider determines that further delay to the LGIA execution date would cause a material impact on the cost or timing of an equal- or lower-queued interconnection customer, the transmission provider must notify the relevant interconnection customer of such impact and establish that the new deadline is 30 calendar days after such notice is provided.

232. The Commission adopted section 9.8 (Meeting with Transmission Provider) of the *pro forma* LGIP, which requires the affected system transmission provider and the affected system interconnection customer to meet within 10 business days of the affected system transmission provider tendering the affected system study report to the affected system interconnection customer.[458]

233. The Commission adopted section 9.9 (Affected System Cost Allocation) of the *pro forma* LGIP, which requires the allocation of affected system network upgrade costs using a proportional impact method in accordance with *pro forma* LGIP section 4.2.1(1)(b).[459]

234. The Commission adopted section 9.10 (Tender of Affected System Facilities Construction Agreement/Multiparty Affected System Facilities Construction Agreement) of the *pro forma* LGIP.[460] Under section 9.10, an affected system transmission provider must tender an affected system facilities construction agreement to the affected system interconnection customer within 30 calendar days of providing the affected system study report. The affected system transmission provider must provide 10 business days after receipt of the affected system facilities construction agreement for the affected system

[457] Order No. 2023, 184 FERC ¶ 61,054 at P 1124.

[458] *Id.* P 1169; *see also pro forma* LGIP § 9.8.

[459] Order No. 2023, 184 FERC ¶ 61,054 at P 1149; *see also pro forma* LGIP § 9.9.

[460] Order No. 2023, 184 FERC ¶ 61,054 at P 1165; *see also pro forma* LGIP § 9.10.

interconnection customer to execute the agreement or have the affected system transmission provider file it unexecuted with the Commission.

235. The Commission adopted section 9.11 (Restudy) of the *pro forma* LGIP to include a maximum 60-calendar day restudy period for any affected system restudies.[461] Section 9.11 also adopts a 30-calendar day notification requirement for the affected system transmission provider to notify the affected system interconnection customer of the need for affected system restudy upon discovery of such need.[462]

236. In Order No. 2023-A, the Commission clarified that an affected system transmission provider may pause an affected system study that is planned or in progress if the relevant host transmission provider decides to conduct a cluster restudy. The Commission added *pro forma* LGIP: (1) section 3.6.2 (Notification of Cluster Restudy) to require the host transmission provider to notify any relevant affected system operators of a cluster restudy at the same time it notifies the interconnection customers in the cluster restudy; and (2) section 3.6.3 (Notification of Cluster Restudy Completion) to require the host transmission provider to notify the affected system operator of the completion of the cluster restudy and of a potential affected system impact caused by an interconnection request within 10 business days of the completion of the cluster restudy.[463]

237. The Commission also added *pro forma* LGIP section 9.2.2 (Response to Notification of Cluster Restudy) to allow the affected system transmission provider five business days from receiving notification of the cluster restudy to send a written notification to the relevant affected system interconnection customers and the host transmission provider if it intends to delay commencement or completion of a planned or in-progress affected system study until after the completion of the cluster restudy.[464] The Commission revised *pro forma* LGIP section 9.5 to remove the requirement for an affected system interconnection customer to execute and return its previously received affected system study agreement and submit its affected system study deposit if the

[461] Order No. 2023, 184 FERC ¶ 61,054 at P 1170; *see also pro forma* LGIP § 9.11.

[462] Order No. 2023, 184 FERC ¶ 61,054 at P 1171.

[463] Order No. 2023-A, 186 FERC ¶ 61,199 at PP 498, 500; *see also pro forma* LGIP §§ 3.6.2, 3.6.3.

[464] Order No. 2023-A, 186 FERC ¶ 61,199 at P 498; *see also pro forma* LGIP § 9.2.2.

affected system transmission provider decides to delay the affected system study, pursuant to *pro forma* LGIP section 9.2.2.[465]

a. PJM's Compliance Filing

238. PJM proposes to include new and revised sections in its Tariff to incorporate Order No. 2023's more rigorous affected system coordination requirements in a second phase compliance filing.[466] PJM explains that it will need to work with its neighbors through both Tariff revisions and Joint Operating Agreement revisions. PJM adds that the development of necessary revisions was not complete by the submission deadline for PJM's Order No. 2023 compliance filing. Accordingly, PJM commits to provide a detailed compliance schedule on affected system issues within 30 days of the Commission's order on the instant compliance filing. PJM notes that its future compliance actions will be informed by the guidance the Commission provides in response to this instant compliance filing.[467]

239. PJM further explains that, while its Tariff's affected system coordination procedures "generally comply" with Order No. 2023 when evaluated under the independent entity variation standard, PJM is evaluating additional revisions to align its Tariff more closely with the goals of Order No. 2023.[468] PJM clarifies that affected system interconnection customers that have executed an Affected System Impact Study Agreement will be higher-queued than interconnection customers in the PJM Cycle that have not received their Phase I System Impact Study results and lower-queued than interconnection customers in the PJM Cycle that have already received their Phase I System Impact Study Results.[469]

240. As part of PJM's consideration of additional revisions, PJM is also proposing to study affected system interconnection requests using ERIS modeling standards.[470] PJM explains that in order to support PJM's Cycle timeline, any PJM interconnection customer that needs an affected system study to be performed by a neighboring RTO/ISO

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[465] Order No. 2023-A, 186 FERC ¶ 61,199 at P 499; *see also pro forma* LGIP § 9.5.

[466] Filing at 56.

[467] *Id.*

[468] *Id.* at 61.

[469] *Id.* at 62.

[470] *Id.*

would need to sign the Affected System Impact Study Agreement (if applicable) with that neighboring RTO/ISO within 30 days of the close of Decision Point I to ensure that the neighboring RTO/ISO that is the affected system will have sufficient time during Phase II of the relevant PJM Cycle to perform the study and that PJM will have the results to include in its Phase II System Impact Study at the end of Phase II.[471] PJM is also considering proposing revisions requiring that interconnection projects will be withdrawn if the interconnection customers do not execute the Affected System Impact Study Agreement by the required time.[472]

241. PJM states it expects to be able to implement these revisions at the beginning of its second Transition Period Cycle, which PJM anticipates commencing in the second quarter of 2025.

b. Protests

242. Clean Energy Associations and Shell Companies argue that PJM fails to provide revised Tariff provisions as required by Order No. 2023 and that PJM has not demonstrated that an independent entity variation for affected system requirements is appropriate.[473] Clean Energy Associations argue that PJM ignores the Commission's directives in Order Nos. 2023 and 2023-A and instead, proposes a "conceptual approval" without proposing specific tariff language and that, at a minimum, PJM must seek leave from the Commission to postpone this aspect of its Tariff compliance filing beyond the deadline ordered by the Commission.[474] Shell Companies argue that it is unclear whether PJM intends to comply with Order No. 2023's affected system network upgrades requirement in a future filing.[475] Shell Companies request that the Commission require PJM to revise its current filing for completeness, and address those issues PJM indicates it intends to include in a second compliance filing.[476]

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[471] *Id.* at 62-63.

[472] *Id.* at 63.

[473] Clean Energy Associations Protest at 13; Shell Companies Protest at 20.

[474] Clean Energy Associations Protest at 15.

[475] Shell Companies Protest at 20 (citing Filing at 61-63).

[476] *Id.* at 19-20.

c. Answer

243. In its July 12 answer, PJM reasserts that PJM's Tariff's affected system coordination procedures "generally comply with [Order Nos. 2023 and 2023-A] when evaluated under the independent entity standard."[477] PJM also states that it is considering additional revisions to the affected system coordination procedures, as discussed in its initial compliance filing.[478]

d. Data Request Response

244. PJM reiterates that it is proposing a phased compliance process wherein PJM would address, among other items, affected system requirements. PJM asserts that the support it includes in its response to the data request demonstrates that PJM's requested independent entity variations allow for greater flexibility to customize PJM's interconnection procedures to meet PJM's regional needs while also accomplishing the purposes of Order No. 2023.[479]

245. PJM notes that its Tariff already includes several provisions that address affected system issues.[480] PJM reiterates that its proposed phased compliance process will include affected system coordination provisions, based on the Commission's order on compliance. PJM reiterates that affected system interconnection customers that have executed an Affected System Impact Study Agreement will be higher-queued than interconnection customers in the PJM Cycle that have not received their Phase I System Impact Study results and lower-queued than interconnection customers in the PJM Cycle that have already received their Phase I System Impact Study results.[481]

246. Additionally, PJM explains that consistent with Order Nos. 2023 and 2023-A, PJM will study affected system interconnection requests using ERIS modeling standards. However, to align PJM's Cycle, PJM will require all PJM interconnection customers that need an affected system study to be performed by a neighboring region to sign the Affected System Impact Study Agreement or similar agreement (if applicable) with that neighboring region within 60 days of the close of Decision Point I, otherwise, projects

[477] PJM July 12 Answer at 11.

[478] *Id.*

[479] Data Request Response at 7.

[480] *Id.* at 8-9.

[481] *Id.* at 9-10.

will be withdrawn if the Affected System Impact Study Agreement is not executed by the required time.[482]

247. Regarding affected system study processes, PJM requests an independent entity variation to allow it to continue following the existing affected system procedures set forth in PJM's Joint Operating Agreements with MISO, New York Independent System Operator, Inc. (NYISO), Duke Energy Progress, LLC, Tennessee Valley Authority, Louisville Gas and Electric Company, and Kentucky Utilities Company.[483] PJM states that to implement this requested independent entity variation, PJM proposes to revise language in its Tariff, Part VIII, Subpart G, section 434 stating that affected system procedures set forth in the Tariff apply unless a different procedure exists in a Commission-approved Joint Operating Agreement or seams agreement. PJM notes that MISO made a similar request in its Order No. 2023 compliance filing.[484]

248. In support of its proposal, PJM explains that the procedures included in Joint Operating Agreements are highly effective mechanisms for coordinating affected system studies that should be continued on a bilateral basis.[485] PJM adds that, because generator interconnection procedures in PJM, MISO, and other regions adjacent to PJM have been tailored to the PJM region and neighboring regions, the affected system study procedures should reflect the needs and requirements of those RTOs/ISOs' regions as well as existing Joint Operating Agreements and other seams agreements. As such, PJM reiterates its request for an independent entity variation to allow PJM greater flexibility to adapt Order No. 2023's requirements for affected systems to PJM's existing Joint Operating Agreements.[486]

249. PJM highlights that the Commission in Order No. 2023 stated that it encourages "voluntary coordination between transmission providers who share transmission system seams and whose interconnection customers frequently impact each other's systems" and that "such transmission providers may file seams agreements under FPA section 205."[487] Given the Commission's findings in Order No. 2023, PJM argues its requested

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[482] *Id.* at 10.

[483] *Id.* at 18.

[484] *Id.* at 18-19 (citing *Midcontinent Indep. Sys. Operator, Inc.*, Filing, Docket No. ER24-2046-000 (filed May 16, 2024)).

[485] *Id.* at 19.

[486] *Id.* at 19-20.

[487] *Id.* at 20 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 1172).

independent entity variation is consistent with the Commission's precedent and meets the requirements for independent entity variations. PJM further explains that Joint Operating Agreements are a preferred approach for coordination among PJM and its neighbors as well as non-jurisdictional transmission providers.[488] PJM also notes that the Commission made specific findings in directing PJM, MISO, and SPP to improve their affected system coordination procedures, which included memorializing their current affected system coordination procedures and providing more detailed timelines for coordinating affected system studies. PJM requests that, if the Commission grants relief to MISO on this issue, it should also grant relief to PJM to ensure that PJM's seams agreements, especially the PJM-MISO Joint Operating Agreement, work as intended.[489] PJM affirms its position that, consistent with the Commission's acknowledgement in Order No. 2023-A that individual seams agreements may need to be updated to reflect Order No. 2023 requirements, it has commenced the process of negotiating revisions to those agreements but such revisions are more properly developed through bilateral filings outside of an Order No. 2023 compliance proceeding.[490]

250. Regarding affected system interconnection request priority, queue position, and timing, PJM proposes that interconnection requests of affected system interconnection customers that have successfully passed Decision Point I or the equivalent on their host transmission provider's transmission system will be higher-queued than the interconnection requests of those in the PJM Cycle that have not passed Decision Point I but lower-queued than those PJM interconnection customers that passed Decision Point I at an earlier date.[491] PJM adds that all affected system interconnection requests within the same affected system cluster will be equally studied and that, consistent with Order No. 2023, PJM will study affected system interconnection requests using ERIS standards.

251. PJM states that it proposes to implement strict timing limits for an interconnection customer interconnecting with the PJM transmission system to execute Affected System Impact Study Agreements with neighboring regions. PJM explains that to support its Cycle timeline, interconnection customers that need an affected system study to be performed by the affected system transmission provider must sign the applicable Affected System Interconnection Study Agreement with that affected system operator within 60 days after the close of Decision Point I to allow the neighboring region

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[488] *Id.*

[489] *Id.* at 20-21 (citing *Midcontinent Indep. Sys. Operator, Inc.*, 171 FERC ¶ 61,275, at P 11, *order on reh'g*, 173 FERC ¶ 61,036 (2020)).

[490] *Id.* at 21 (citing Order No. 2023-A, 186 FERC ¶ 61,199 at P 538).

[491] *Id.* at 16.

sufficient time to perform the study.[492] PJM states that, if the information is not available at the time of the Phase I System Impact Study, interconnection customers will be expected to sign the Affected System Interconnection Study Agreement or the neighboring system's equivalent within 60 days after being notified by PJM. PJM asserts that its goal is to have the affected system study results in time to include them in PJM's Phase II System Impact Study at the end of Phase II.[493]

252. PJM highlights that if an interconnection customer does not execute the Affected System Interconnection Study Agreement with the neighboring region within the allotted time period, PJM will withdraw the project from the PJM Cycle because such withdrawals will be necessary to ensure that PJM has received the study results and cost estimates from the affected system transmission provider in time for that information to be included in PJM's Phase II System Impact Study report.[494] PJM explains that this approach avoids risking delays of all Cycle studies or providing results that do not accurately reflect the costs of network upgrades. Additionally, PJM notes if an affected system interconnection customer on an adjacent system that affects PJM does not sign an Affected System Interconnection Study Agreement within the required time specified by the affected system transmission provider, that affected system interconnection customer should be removed from that adjacent system's interconnection queue.[495]

253. As relevant to affected system issues, in its supplemental chart, PJM delineates how its Tariff differs from the *pro forma* LGIP and *pro forma* LGIA. For the term "affected system," PJM argues its term and definition substantially comply with the *pro forma* LGIP. However, PJM notes that its definition also includes transmissions systems that may require upgrades because of the proposed interconnection. PJM notes it requests an independent entity variation for this term.[496]

254. For the term "affected system interconnection customer," PJM argues that its term "affected system customer" substantially complies with the *pro forma* LGIP because both terms refer to any entity whose interconnection request causes an affected system facility

[492] *Id*.

[493] *Id.* at 16-17.

[494] *Id.* at 17-18.

[495] *Id.* at 18.

[496] Data Request Response, attach. A at 3.

to require network upgrades to the transmission provider's system as an affected system interconnection customer.[497]

255. For the term "affected system network upgrades," PJM argues that its term "affected system facility" substantially complies with the *pro forma* LGIP because PJM's term encompasses additions, modifications, and upgrades to the transmission provider's transmission system that cause network upgrades to be required. However, PJM notes its definition does not specify whether such upgrades are associated with or needed to accommodate a customer's proposed interconnection. PJM requests an independent entity variation for this term.[498]

256. For the term "affected system operator," PJM argues that PJM's term and definition substantially comply with the *pro forma* LGIP. However, PJM notes that its definition also covers affected systems under the operational control of RTOs/ISOs.[499]

257. For the term "affected system queue position," PJM argues that, for study purposes, the affected system interconnection customer will use an affected system operator identifier for both the affected system operator and affected system interconnection request number. PJM explains it will assign the same project identification or reference number used by the affected system operator to the affected system customer's project. PJM notes it requests an independent entity variation for this term.[500]

258. For the term "affected system study," PJM explains its Tariff does not contain such a defined term, but its Tariff does contain the term "affected system rules." PJM notes this term specifies that affected system studies are "any studies required to determine the impact of a New Service Request on any Affected System" and clarifies that an affected system is an electric system other than the transmission provider's transmission system. PJM notes it requests an independent entity variation for this term.[501]

259. For the term "affected system study report," PJM explains its Tariff does not contain such a defined term or a similar term. However, PJM notes its affected system

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[497] *Id.* at 4.

[498] *Id.* at 4-5.

[499] *Id.* at 5.

[500] *Id.*

[501] *Id.* at 5-6.

study rules indicate that PJM releases affected system study reports after completing such studies and posts them on the PJM website. PJM notes it requests an independent entity variation for this term.[502]

e. Protests to Data Request Response

260. Swift Current asserts that PJM proposes to only apply the affected system procedures that it adopts to the extent that PJM does not have a Joint Operating Agreement in place with a neighboring transmission system.[503] Swift Current argues that it would be unduly discriminatory for a single transmission provider to subject interconnection customers to different affected system study processes and modeling standards based on an interconnection customer's location. Accordingly, Swift Current requests that the Commission only permit transmission providers to maintain separate affected system study procedures in their Joint Operating Agreements if the transmission provider demonstrates that the procedures do not conflict with Order No. 2023.[504] For example, Swift Current highlights that PJM's Joint Operating Agreement with MISO provides that PJM will study all MISO interconnection projects that have requested NRIS under the MISO Tariff as capacity resources under the PJM Tariff, which conflicts with Order No. 2023's requirement that all affected system studies be conducted using (ERIS) modeling standards.[505]

261. Swift Current also argues that PJM's requested independent entity variation has the potential to undermine Order No. 2023's objective to eliminate undue discrimination by subjecting interconnection customers to disparate affected system study procedures. Swift Current offers, as an example, how differing modeling standards amongst PJM, NYISO, and MISO would result in interconnection customers paying more in network upgrades costs for the same levels of service.[506] Swift Current asserts that, until PJM revises its Joint Operating Agreements to eliminate rates, terms, and conditions of service that conflict with Order No. 2023, including the use of capacity resource standards, granting PJM's requested independent entity variation would be unjust, unreasonable,

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[502] *Id.* at 6-7.

[503] Swift Current Protest to Data Request Response at 4-5.

[504] *Id.* at 5.

[505] *Id.* at 6 (citing PJM Interconnection, L.L.C., Interregional Agreements, MISO-JOA, art. IX, § 9.3 (7.1.0), § 9.3.3(g)(v)).

[506] *Id.* at 6-7.

and unduly discriminatory or preferential.[507] Accordingly, Swift Current requests that the Commission reject PJM's proposal and request for an independent entity variation without prejudice to PJM refiling its proposal along with revisions to its Joint Operating Agreements. Alternatively, Swift Current requests that if the Commission does not reject PJM's proposal, the Commission should clarify that granting PJM's independent entity variation request does not constitute a determination that the terms and conditions contained in PJM's Joint Operating Agreements are consistent with the requirements of Order No. 2023 or are otherwise just and reasonable.[508]

f. Answers to Data Request Response

262. Swift Current reiterates that the Commission should reject PJM's requested independent entity variation to allow PJM to maintain separate affected system study processes in its Joint Operating Agreements with neighboring transmission providers. Swift Current also reiterates that PJM's Joint Operating Agreement with MISO provides that PJM will study affected system interconnection customers interconnecting with MISO's system as "capacity resources," which is inconsistent with the requirements of Order No. 2023.[509] Furthermore, Swift Current argues that PJM has not demonstrated its proposal to study the deliverability of projects on MISO's system is just, reasonable, or consistent with Order No. 2023.[510]

g. Commission Determination

263. We find that PJM's proposal does not comply with the affected system study process and modeling requirements of Order Nos. 2023 and 2023-A. We find that PJM's proposal to develop, in its second phase compliance filing, new and revised sections in its Tariff to incorporate Order No. 2023's more rigorous affected system coordination requirements does not comply with the requirements of Order Nos. 2023 and 2023-A. Specifically, Order Nos. 2023 and 2023-A required transmission providers to adopt a variety of requirements, including sections 9.4 (Affected System Study Agreement/Multiparty Affected System Study Agreement), section 9.5 (Execution of Affected System Study Agreement/Multiparty Affected System Study Agreement), section 9.6 (Scope of Affected System Study), and section 9.7 (Affected System Study Procedures) of the *pro forma* LGIP. In its compliance filing, PJM has not adopted the requirements under Order No. 2023 and Order No. 2023-A, explaining that it needs to

[507] *Id.* at 7.

[508] *Id.* at 7-8.

[509] Swift Current Answer at 3.

[510] *Id.* at 3 (citing Data Request Response at 16 n.53).

work with its neighbors through both Tariff revisions and Joint Operating Agreement revisions because the development of necessary revisions was not complete by the submission deadline for PJM's compliance filing. While we recognize that PJM is coordinating with its neighboring transmission providers to develop revisions to Joint Operating Agreements and has offered additional details in its data request response,[511] PJM has not proposed revisions adopting the requirements of Order Nos. 2023 and 2023- A.

264. We also find that PJM has not satisfied the burden required for an independent entity variation. PJM has only provided arguments that its existing Tariff provisions generally comply with the requirements of Order Nos. 2023 and 2023-A; we find that such a justification is insufficient to meet the burden. As discussed herein, the Commission has granted independent entity variations from interconnection-related rulemakings where the RTO/ISO demonstrates that the proposed variation: (1) is just and reasonable and not unduly discriminatory or preferential; and (2) accomplishes the purposes of the order.[512] Here, PJM has not provided such an explanation in its compliance filing. Accordingly, we direct PJM to submit a compliance filing within 60 days that includes Tariff revisions adopting the affected system study process and modeling requirements of Order Nos. 2023 and 2023-A. We decline to offer PJM guidance on its conceptual proposal that it states will be further developed and submitted in a future compliance filing because, as PJM acknowledges, it has not yet filed any proposed Tariff revisions. Because PJM's efforts are ongoing and there are not proposed Tariff revisions before the Commission, we believe it is premature to address any potential, future Tariff provisions.

14. Affected System *Pro Forma* Agreements

265. In Order No. 2023, the Commission adopted several *pro forma* agreements to improve the efficiency and transparency of the interactions among the parties during the affected system study process. The Commission first adopted a *pro forma* affected system study agreement in new Appendix 9 (Two-Party Affected System Study Agreement) of the *pro forma* LGIP and a *pro forma* multiparty affected system study agreement in new Appendix 10 (Multiparty Affected System Study Agreement) of the *pro forma* LGIP.[513] These *pro forma* affected system study agreements stipulate how to

[511] Order No. 2023-A, 186 FERC ¶ 61,199 at P 538.

[512] *See, e.g.*, *ISO New England, Inc.*, 164 FERC ¶ 61,222 at P 9 (citing Order No. 2003, 104 FERC ¶ 61,103 at PP 26, 827; *Midcontinent Indep. Sys. Operator, Inc.*, 154 FERC ¶ 61,247 at P 20; *Cal. Indep. Sys. Operator Corp.*, 140 FERC ¶ 61,070 at P 44).

[513] Order No. 2023, 184 FERC ¶ 61,054 at PP 1171, 1232; *see also pro forma* LGIP, apps. 9, 10.

study the impact of interconnecting generating facilities on an affected system to identify network upgrades needed to accommodate the interconnection request. The Commission next adopted a *pro forma* affected system facilities construction agreement in new Appendix 11 (Two-Party Affected System Facilities Construction Agreement) of the *pro forma* LGIP and a *pro forma* multiparty affected system facilities construction agreement in new Appendix 12 (Multiparty Affected System Facilities Construction Agreement) of the *pro forma* LGIP.[514] These *pro forma* affected system facilities construction agreements standardize the terms and conditions regarding construction of affected system network upgrades.

266. In Order No. 2023-A, the Commission removed articles 3.1.2.2 (Recommencing of Work) and 3.1.2.3 (Right to Suspend Due to Default) from the Two-Party and Multiparty Affected System Facilities Construction Agreement (*pro forma* LGIP appendices 11 and 12, respectively) to ensure consistency between the *pro forma* affected system facilities construction agreements and the *pro forma* LGIA.[515]

a. PJM's Compliance Filing

267. As summarized above, PJM states that its affected systems coordination procedures "generally comply" with Order Nos. 2023 and 2023-A under the independent entity variation standard, but that PJM is considering additional revisions to align more closely with Order Nos. 2023 and 2023-A.[516] PJM states that one of the Tariff revisions it contemplates is a newly created agreement, based on the *pro forma* Affected System Study Agreement, along with a requisite fixed $30,000 study deposit to cover PJM's incurred costs in performing the study.[517] PJM explains that its Affected System Impact Study Agreement would need to be signed by any customer interconnecting a project that is located outside the PJM footprint that PJM has determined needs to be studied for impacts on PJM transmission owner facilities. PJM states that the Affected System Impact Study Agreement would impose timelines and structure on the affected system customer in order to support PJM's Cycle timeline. PJM proposes to provide the revised

[514] Order No. 2023, 184 FERC ¶ 61,054 at P 1233; *see also pro forma* LGIP, apps. 10, 11.

[515] Order No. 2023-A, 186 FERC ¶ 61,199 at P 533; *see also pro forma* LGIP, apps. 10, 11.

[516] Filing at 61.

[517] *Id.* at 62.

Tariff sections in its phase two compliance filing, for which PJM proposes to provide a schedule within 30 days of a Commission order on the instant compliance filing.[518]

b. Protest/Comment

268. As summarized above, protesters requested that PJM be required to submit its proposed Tariff revisions for affected systems coordination.

c. Data Request Response

269. In the Data Request Response, PJM states that in its compliance filing, PJM proposed to adopt in its second phase compliance filing two new agreements in its Tariff, Part IX: the Affected System Impact Study Agreement, and the Affected System Facilities Construction Agreement, along with a $30,000 study deposit to cover PJM's incurred costs in performing the study.[519]

270. PJM explains that it is developing further Tariff revisions it intends to submit as its proposed *pro forma* Affected System Impact Study Agreement, which will allow affected system interconnection customers to know the scope and terms of the affected system study process prior to entering into an agreement with PJM and will set forth a detailed structure that will provide greater certainty regarding expectations throughout the interconnection process.[520] PJM states that, consistent with Order Nos. 2023 and 2023-A, the Affected System Impact Study Agreement will be entered between PJM and the affected system interconnection customer to study the impacts of a non-PJM interconnection request. PJM also states that it plans to tender the Affected System Impact Study Agreement within 30 days of identifying the affected system interconnection customer's impact on the PJM transmission system and will require the affected system interconnection customer to execute the Affected System Impact Study Agreement and post the required security within 30 calendar days of PJM tendering the agreement.

271. PJM also explains that its proposed *pro forma* Affected System Impact Study Agreement will be based on the information provided by the affected system interconnection customer and the affected system transmission provider.[521] PJM asserts that consistent with the *pro forma* LGIP section 9.5, PJM reserves the right to request

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[518] *Id.* at 63.

[519] Data Request Response at 9.

[520] *Id.* at 10.

[521] *Id.* at 11.

additional information, which is to be provided within 10 business days of PJM's request.[522] PJM states that its proposed *pro forma* Affected System Impact Study Agreement will state that PJM will undertake reasonable efforts to complete the Affected System Impact Study by the first business day 120 days after the execution of the agreement, and that PJM may undertake a restudy if it determines that there has been a change in the underlying case assumptions.[523] PJM asserts that, while Order Nos. 2023 and 2023-A requires an attachment listing the assumptions used in conducting the study, requiring PJM to list specific study assumptions for each project would be difficult to manage.[524] PJM proposes to reference the scope of the impact study in the Purpose and Scope section of the study agreement, which PJM argues will provide the affected system interconnection customer with information as to the scope of the study. PJM contends that, "[t]hese procedures provide affected system interconnection customers with clear and transparent timelines for the provision of the affected system study and restudies, consistent with the objectives of the [f]inal [r]ule, and the Commission should accept the proposed Affected System Impact Study Agreement."

272. PJM requests an independent entity variation for an affected system interconnection customer to enter into Construction Service Agreement in its Tariff, and a Network Upgrade Cost Responsibility Agreement in its Tariff, in lieu of a *pro forma* Affected System Facilities Construction Agreement.[525] PJM explains that the requirement for an affected system interconnection customer to enter into a Construction Service Agreement has worked well in PJM and that using a Construction Service Agreement to govern the construction of facilities on PJM's transmission system needed to accommodate impacts on PJM (as an affected system) is consistent with Order No. 2023's requirement that an Affected System Facilities Construction Agreement provide for the terms and conditions for which the affected system transmission provider will be responsible regarding an interconnection request.[526] PJM also explains that in instances where more than one affected system interconnection customer is responsible for a network upgrade on the PJM transmission system, the affected system interconnection customer must enter into both a Construction Service Agreement and a Network Upgrade Cost Responsibility Agreement. PJM states that a Network Upgrade Cost Responsibility Agreement is consistent with the approach used when common use network upgrades are necessary to accommodate multiple interconnection customers while also eliminating the

[522] *Id.*

[523] *Id.* at 12.

[524] *Id.*

[525] *Id.* at 13.

[526] *Id.* at 13-14.

need for a separate multiparty Affected System Facilities Construction Agreement.[527] PJM asserts that the requested independent entity variation provides PJM greater flexibility to align the final rule's forms of agreement to PJM's previously-approved forms of agreement to meet PJM's regional needs, and accomplishes the purposes of Order Nos. 2023 and 2023-A with respect to affected systems coordination.

273. PJM also explains that Part IX of its currently-effective Tariff includes an Affected System Customer Facilities Study Application and Agreement, which is a facilities study agreement between PJM and an affected system interconnection customer that applies when an interconnection on an adjacent transmission system causes an impact on the PJM transmission system.[528] PJM explains that the Affected System Customer Facilities Study provides an assessment of project-related system reliability issues as well as conceptual engineering, designs, cost estimates, and project schedules needed to implement the conclusions of the Affected System Customer Facilities Study regarding the network upgrades necessary to accommodate the affected system interconnection request.[529] PJM states that the Affected System Customer Facilities Study will be completed within a time frame specified in each Affected System Customer Facilities Study Agreement. PJM explains that if the Affected System Customer Facilities Study identifies any network upgrades needed to accommodate the affected system interconnection request, PJM and the affected system interconnection customer will enter into a Construction Service Agreement and, if needed, a Network Upgrade Cost Responsibility Agreement.[530] As noted above, PJM reiterates its request for an independent entity variation because it asserts that its proposal aligns with Order No. 2023's requirements and furthers the objectives of the final rule.

274. With respect to the term "Affected System Facilities Construction Agreement," PJM explains it does not have an Affected System Facilities Construction Agreement. However, PJM notes its Tariff includes a "Construction Service Agreement" that serves the same purpose because it is an agreement by and among PJM, an interconnection customer (including affected system interconnection customers), and a transmission owner for the construction of network upgrades necessary to provide the transmission service requested by the interconnection customer.[531]

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[527] *Id.* at 14.

[528] *Id.* at 14-15.

[529] *Id.* at 15 (citing PJM Tariff, pt. IX, subpt. L (1.0.0), § 7(A)).

[530] *Id.* (citing PJM Tariff, pt. IX, subpt. L (1.0.0), §§ 3, 7(B), 7(C)).

[531] Data Request Response, attach. A at 3.

275. Regarding the term "Affected System Study Agreement," PJM argues that its "Affected System Customer Facilities Study Application and Agreement" is based on Order No. 2023's *pro forma* Affected System Impact Study Application and Agreement. PJM further notes that its Affected System Customer Facilities Study Application and Agreement substantially complies with the *pro forma* LGIA because it identifies the study to be used. PJM notes it requests an independent entity variation for this term.[532]

276. Regarding the term "Multiparty Affected System Study Agreement," PJM explains that it expects to send each of the affected system interconnection customers a study agreement for each execution. PJM explains that if the affected system interconnection customer executes the agreement, it will begin studies in the next affected systems cluster study for that region. PJM explains that having to coordinate a study agreement among multiple affected systems is too burdensome for PJM and could hold PJM responsible for reaching out to each of the affected system interconnection customers to ensure the agreement is signed. PJM notes it requests an independent entity variation for this term.[533]

d. Answers to Data Request Response

277. Swift Current argues that PJM's request that the Commission accept other proposals without describing how they deviate from Order No. 2023 should be rejected.[534] Specifically, Swift Current highlights that PJM does not plan to adopt the Commission's *pro forma* Affected System Facilities Construction Agreement. Instead, Swift Current argues that PJM will require affected system interconnection customers to execute PJM's *pro forma* Construction Service Agreement or *pro forma* Network Upgrade Cost Responsibility Agreement. Swift Current asserts that while PJM maintains that these agreements are consistent with the purpose of the *pro forma* Affected System Facilities Construction Agreement, a cursory review of PJM's *pro forma* Construction Service Agreement departs in multiple respects.[535] Swift Current argues that the Commission should issue an order directing PJM to revise its Tariff to comply with the affected system study reforms adopted in Order No. 2023 or justify PJM's proposed deviations from the final rule.[536]

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[532] *Id.* at 6.

[533] *Id.* at 50-51.

[534] Swift Current Answer at 4.

[535] *Id.* at 5.

[536] *Id.* at 6.

e. Commission Determination

278. We find that PJM's proposal partially complies with the requirement of Order Nos. 2023 and 2023-A to propose *pro forma* agreements for affected systems. We grant PJM's requested independent entity variations to use its existing *pro forma* Construction Service Agreement and *pro forma* Network Upgrade Cost Responsibility Agreements, if necessary, in place of the *pro forma* Affected System Facilities Construction Agreement. We find that these proposed substitutions are just and reasonable and not unduly discriminatory or preferential and accomplish the purpose of the *pro forma* agreement revisions in Order Nos. 2023 and 2023-A by providing transparent timelines and processes and eliminating the need to negotiate individual non-standard agreements.[537] Specifically, we find that PJM's Construction Service Agreement contains instructions to conform the agreement for an affected system interconnection customer and accomplishes the purposes of Order Nos. 2023 and 2023-A to set forth the terms and conditions by which PJM, as the affected system transmission provider, will be responsible for the identification and assignment of affected system network upgrades, the transmission owner will be responsible for the design, procurement, construction, and installation of all network upgrades, and the affected system interconnection customer will initially fund, and be reimbursed for, the cost of any assigned affected system network upgrades.[538] We find just and reasonable PJM's request, under an independent entity variation, to include the transmission owner as a party in the Construction Service Agreement and clarify the responsibilities of PJM and the transmission owner in an RTO/ISO context and to permit an option to build for the affected system interconnection customer. We also grant PJM's proposed independent entity variation to allow it to use its *pro forma* Network Upgrade Cost Responsibility Agreement with Construction Service Agreements when necessary to accommodate multiple affected system interconnection customers because the Network Upgrade Cost Responsibility Agreement contains terms and conditions to establish that the default by one affected system interconnection customer does not allow the non-defaulting affected system interconnection customer(s) the right to terminate the agreement.[539]

279. We find that PJM has not demonstrated compliance with the *pro forma* Affected System Study Agreement, however, because PJM has not yet submitted Tariff sheets with its proposed *pro forma* Affected System Impact Study Agreement. We decline PJM's request to accept its proposal to use its *pro forma* Affected System Impact Study Agreement prior to reviewing the actual Tariff revisions. Accordingly, we direct PJM to

[537] Order No. 2023, 184 FERC ¶ 61,054 at P 1183.

[538] *Id.* P 1231.

[539] Data Request Response at 14.

submit a compliance filing within 60 days of the date of this order that includes Tariff revisions for the *pro forma* Affected System Impact Study Agreement in compliance with the requirements of Order Nos. 2023 and 2023-A.

15. Co-Located Generating Facilities

280. In Order No. 2023, the Commission revised *pro forma* LGIP section 3.1.2 to require transmission providers to allow more than one generating facility to co-locate on a shared site behind a single point of interconnection and share a single interconnection request.[540] The Commission clarified that interconnection customers have the choice to structure their interconnection requests for co-located generating facilities according to their preference (i.e., as separate interconnection requests or as a shared interconnection request) and that Order No. 2023 does not require interconnection customers to share a single interconnection request for multiple generating facilities located on the same site.[541] The Commission also clarified that co-located generating facilities can be owned by a single interconnection customer with multiple generating facilities sharing a site, or by multiple interconnection customers that have a contract or other agreement that allows for shared land use.[542]

a. PJM's Compliance Filing

281. PJM asserts that its existing Tariff fully complies with the reforms adopted in Order Nos. 2023 and 2023-A regarding co-located generating facilities with shared interconnection requests.[543] PJM asserts that its existing Tariff complies with the final rule because it allows for co-location of multiple resources behind a single point of interconnection, allows for multiple fuel types behind the same point of interconnection, and allows for interconnection rights that involve multiple fuel types.[544]

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[540] Order No. 2023, 184 FERC ¶ 61,054 at P 1346; *see also pro forma* LGIP § 3.1.2.

[541] Order No. 2023, 184 FERC ¶ 61,054 at PP 1351-1352.

[542] *Id.* P 1355.

[543] Filing at 63–64 (citing PJM Tariff, pt. VIII, subpt. A, § 402 (1.0.0), § 402(A)(6)).

[544] *Id*. PJM's existing Tariff provides that multiple projects may share Project Developer Interconnection Facilities and that a shared facilities agreement is required if jointly owned common Interconnection Facilities are proposed. PJM Tariff, pt. VIII, subpt. A (1.0.0), § 402(A)(6).

b. Protest

282. Shell Companies rebut PJM's statement that its Tariff fully complies with the final rule's co-location requirements. Shell Companies argue that, although PJM allows interconnection customers the flexibility to request that more than one generating facility be located on a shared site, the PJM Tariff is unclear as to whether it would permit a customer with multiple generation facilities or generation types behind the same point of interconnection to execute multiple interconnection agreements and that allowing such an arrangement would create additional efficiencies.[545] Shell Companies ask the Commission to require PJM to revise its Tariff to specify that a single interconnection customer will be afforded the flexibility to choose to execute either a single interconnection agreement or multiple interconnection agreements for the interconnection of multiple generation facilities at a single point of interconnection.[546] Additionally, Shell Companies argue that PJM's Tariff reflects a policy to allow multiple projects located behind the same point of interconnection only if a shared facilities agreement has been executed, counter to the reform set out in Order Nos. 2023 and 2023-A.[547]

c. Commission Determination

283. We find that PJM's proposal to retain its existing Tariff provisions concerning co-located generating facilities does not comply with the requirements of Order Nos. 2023 and 2023-A. Order No. 2023 provides interconnection customers with the option, when multiple resources are located behind the same point of interconnection, either to submit a single interconnection request or to submit multiple interconnection requests. PJM does not explain how it complies with Order Nos. 2023 and 2023-A, which explicitly permits interconnection customers to structure their interconnection requests for co-located generating facilities as separate interconnection requests or as a shared interconnection request, and we agree with Shell Companies that PJM's Tariff is unclear.[548]

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[545] Shell Companies Protest at 16 (citing PJM Tariff, pt. VIII, subpt. A, § 402 (1.0.0), § 402(A)(6)); PJM Tariff, pt. IX, subpt. A (Form of Application and Studies Agreement) (1.0.0), § 2(13)(e) (Section 2: Generating Facility Specifications)).

[546] *Id.* at 17-18.

[547] *Id.* at 4 n.70 (citing PJM Tariff, pt. VIII, subpt. A, § 402 (1.0.0), § 402(A)(6); PJM Tariff, pt. IX, subpt. A (Form of Application and Studies Agreement) (1.0.0), § 2(13)(e) (Section 2: Generating Facility Specifications)).

[548] *See* Order No. 2023, 184 FERC ¶ 61,054 at PP 1351-1352.

284. Therefore, we direct PJM to submit a further compliance filing within 60 days of the date of this order to include proposed Tariff revisions that provide interconnection customers with the flexibility to submit either a single interconnection request or multiple interconnection requests for multiple generation facilities that are proposed to be located at a single point of interconnection as required by Order No. 2023.

16. Revisions to the Modification Process to Require Consideration of Generating Facility Additions

285. In Order No. 2023, the Commission revised section 4.4.3 of the *pro forma* LGIP to require transmission providers to evaluate the proposed addition of a generating facility at the same point of interconnection prior to deeming such an addition a material modification, if the addition does not change the originally requested interconnection service level.[549] The Commission found that automatically deeming a request to add a generating facility to an existing interconnection request to be a material modification without such evaluation creates a significant barrier to access to the transmission system and renders existing interconnection processes unjust and unreasonable.[550]

286. The Commission clarified that interconnection customers may continue to request changes to proposed generating facilities at any time in the interconnection process; however, transmission providers are only required to evaluate whether a request to add a generating facility to an existing interconnection request is material if the request is submitted before the interconnection customer returns the executed facilities study agreement to the transmission provider. Once the executed facilities study agreement is returned, the transmission provider may decide to automatically treat requests to add a generating facility to an existing interconnection request as material modifications without review.[551] The Commission also created an exception from these requirements for transmission providers that employ fuel-based dispatch assumptions.[552]

[549] *Id*. at P 1406; *see also pro forma* LGIP § 4.4.3.

[550] Order No. 2023, 184 FERC ¶ 61,054 at P 1407.

[551] *Id.* PP 1409-1410.

[552] *Id.* P 1411.

a. PJM's Compliance Filing

287. PJM states that, because it uses fuel-based dispatch assumptions in its interconnection studies, no revisions to its Tariff are required for this requirement of Order Nos. 2023 and 2023-A.[553]

b. Commission Determination

288. We find that PJM's proposal concerning the modification process complies with the requirements of Order Nos. 2023 and 2023-A.[554] In Order No. 2023, the Commission revised section 4.4.3 of the *pro forma* LGIP to require transmission providers to evaluate the proposed addition of a generating facility at the same point of interconnection prior to deeming such an addition a material modification, if the addition does not change the originally requested interconnection service level.[555] However, the Commission also stated that for transmission providers that employ fuel-based dispatch assumptions, "a request to add a generating facility of a different fuel type to an existing interconnection request would always constitute a modification that would require study."[556] The Commission therefore provided such transmission providers with an exception to the requirement, reflected in *pro forma* LGIP section 4.4.3.1, that transmission providers evaluate whether a request to add a generating facility to an existing interconnection request is material if it is submitted before the interconnection customer returns the executed facilities study agreement to the transmission provider.[557] Accordingly, based on PJM's representation that it employs fuel-based dispatch assumptions, we find that PJM's proposal concerning the modification process complies with the requirements of Order Nos. 2023 and 2023-A without incorporating section 4.4.3.1 of the *pro forma* LGIP.

17. Availability of Surplus Interconnection Service

289. In Order No. 2023, the Commission revised section 3.3.1 (Surplus Interconnection Service Request) of the *pro forma* LGIP to require transmission providers to allow interconnection customers to access the surplus interconnection service process once the

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[553] Filing at 64-65 (citing *see* PJM Manual 14B, attach. C.3.1.3).

[554] Order No. 2023, 184 FERC ¶ 61,054 at P 1358.

[555] Order No. 2023, 184 FERC ¶ 61,054 at P 1406; *see also pro forma* LGIP § 4.4.3.

[556] *Id.* P 1411.

[557] *Id.*

original interconnection customer has an executed LGIA or requests the filing of an unexecuted LGIA.[558] The Commission found that this reform will enable interconnection customers with unused interconnection service to let other generating facilities use that interconnection service earlier than is currently allowed and, therefore, increase overall efficiency of the interconnection queue and in turn ensure just and reasonable rates.[559] The Commission clarified that this reform does not modify how the surplus interconnection service process is conducted, but rather addresses when a request for surplus interconnection service may be submitted.[560] The Commission further clarified that the original interconnection customer must have an LGIA in place, either executed or requested to be filed unexecuted with the Commission, prior to the transmission provider tendering any LGIA for surplus interconnection service.[561]

a. PJM's Compliance Filing

290. PJM states that its Tariff already offers surplus interconnection service in accordance with the requirements of Order No. 845.[562] PJM states that it will submit tariff revisions in phase two of its compliance to modify its Tariff to make clear that surplus interconnection service is available to interconnection customers with an executed GIA or that have requested filing of an unexecuted GIA, in addition to interconnection customers with projects already in service.[563]

291. PJM provides illustrative Tariff provisions with further details regarding PJM's proposal to expand the availability of surplus interconnection service to interconnection customers once the original interconnection customer either has an executed GIA or has requested that PJM file its GIA unexecuted.[564] Specifically, PJM proposes to supplement its compliance filing with a revision to its Tariff in Part VIII, section 414(A), which is the functional equivalent of section 3.3.1 of the LGIP, to expand the availability of surplus interconnection service to interconnection customers once the original interconnection

[558] *Id.* P 1436; *see also pro forma* LGIP § 3.3.1.

[559] Order No. 2023, 184 FERC ¶ 61,054 at P 1437.

[560] *Id.* P 1447.

[561] *Id.* P 1445.

[562] Filing at 65.

[563] *Id.*; PJM July 12 Answer at 11.

[564] Data Request Response at 21; Data Request Response, attach. B (Illustrative Revisions to Tariff, Pt. VIII, Subpt. E, Sec. 414(A)).

customer either has an executed GIA or has requested that PJM file its GIA unexecuted.[565] PJM states that the proposed revision is compliant with Order No. 2023.[566]

b. Protests

292. EDP Renewables and Shell Companies argue that PJM's proposal for surplus interconnection service is inconsistent with the requirements of Order No. 2023.[567] EDP Renewables asserts that PJM's delay in implementing the Commission's surplus interconnection service requirements is not justified and that PJM has acknowledged its surplus interconnection service process is inconsistent with Order Nos. 2023 and 2023-A.[568] Shell Companies request that the Commission require PJM to comply with the superseding requirements and direct PJM to implement surplus interconnection service in a manner consistent with the Commission's *pro forma* LGIP in Order No. 2023.[569]

c. Commission Determination

293. We find that PJM's illustrative Tariff provision concerning surplus interconnection service does not comply with the requirements of Order Nos. 2023 and 2023-A because PJM has neither filed Tariff revisions nor explained how its existing Tariff complies with Order Nos. 2023 and 2023-A. We note, however, that the Commission recently accepted PJM's Tariff revisions to expand the availability of surplus interconnection service to interconnection customers once the original interconnection customer either has an executed GIA or has requested that PJM file its GIA unexecuted, and the Commission noted that PJM should include, in any future filing it makes to comply with Order No. 2023, an explanation of how its Tariff complies with this Order No. 2023 requirement.[570] We direct PJM to submit a further compliance filing within 60 days of the date of this order that justifies how its existing Tariff provision

[565] Data Request Response at 21.

[566] *Id.* at 22.

[567] EDP Renewables Protest at 2 (citing *PJM Interconnection, L.L.C.*, Request for Clarification and Rehearing, Docket No. RM22-14-001, at 37 (filed Aug. 28, 2023)); Shell Companies Protest at 9.

[568] EDP Renewables Protest at 2.

[569] Shell Companies Protest at 12.

[570] *PJM Interconnection, L.L.C.*, 190 FERC ¶ 61,083, at PP 31, 34 n.60 (2025).

concerning surplus interconnection service complies with the requirement in Order No. 2023.[571]

18. Operating Assumptions for Interconnection Studies

294. In Order No. 2023, the Commission revised sections 3.1.2, 3.2.1.2 (The Study), 3.2.2.2 (The Study), 3.3.1, 3.4.2, 4.4.3, 7.3, 8.2 (Scope of Interconnection Facilities Study), and Appendix 1 (Interconnection Request for a Large Generating Facility) of the *pro forma* LGIP and article 17.2 (Violation of Operating Assumptions for Generating Facilities) and Appendix H (Operating Assumptions for Generating Facility) of the *pro forma* LGIA to require transmission providers, at the request of the interconnection customer, to use operating assumptions in interconnection studies that reflect the proposed charging behavior of electric storage resources (whether standalone, co-located generating facilities, or part of a hybrid generating facility)—i.e., whether the interconnecting generating facility will or will not charge during peak load conditions—unless good utility practice, including applicable reliability standards, otherwise requires the use of different operating assumptions.[572] The Commission required interconnection customers to provide the proposed operating assumptions in the initial interconnection request.[573] The Commission also required that, if a transmission provider finds the interconnection customer's proposed operating assumptions in conflict with good utility practice, the transmission provider must provide the interconnection customer with a written explanation of why the operating assumptions are insufficient or inappropriate no later than 30 calendar days before the end of the customer engagement window and allow the interconnection customer to resubmit the operating assumptions at least 10 calendar days before the end of the customer engagement window.[574] Finally, the Commission added article 17.2 to the *pro forma* LGIA to describe a violation of operating assumptions and Appendix H to the *pro forma* LGIA as the location for the interconnection customer to memorialize its operating assumptions.[575]

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[571] Order No. 2023, 184 FERC ¶ 61,054 at P 1437.

[572] *Id.* P 1509; *see also pro forma* LGIP §§ 3.1.2, 3.2.1.2, 3.2.2.2, 3.3.1, 3.4.2, 4.4.3, 7.3, 8.2, app.1; *pro forma* LGIA art. 17.2 app. H.

[573] Order No. 2023, 184 FERC ¶ 61,054 at P 1520; *see also pro forma* LGIP § 3.4.2(v).

[574] Order No. 2023, 184 FERC ¶ 61,054 at P 1511.

[575] *Id.* P 1521; *see also pro forma* LGIA art. 17.2 app. H.

a. PJM's Compliance Filing

295. PJM does not propose Tariff revisions relating to the requirement set forth in Order Nos. 2023 and 2023-A that transmission providers use operating assumptions in their interconnection studies that reflect the proposed charging behavior of energy storage resources.[576] PJM "acknowledges that the Commission rejected its request for rehearing of this aspect of the [f]inal [r]ule," and now "requests that the Commission grant PJM an independent entity variation to allow PJM to deviate from this aspect of the [f]inal [r]ule."[577] PJM advances several arguments in support of its request, as explained below.

296. First, PJM states that use of interconnection customer-provided operating assumptions is "not consistent with how PJM performs its planning studies for its annual RTEP process and the manner in which PJM operates its system in real time."[578] PJM argues that "in order to plan reliably and in accordance with Good Utility Practice,"[579] its current practice of "making conservative assumptions" is "more reliable" and more consistent with its existing planning requirements than complying with Order Nos. 2023 and 2023-A would be.[580]

297. Second, PJM advances a hypothetical argument that interconnection customers might change their bidding behavior, and therefore their operating parameters, based on signals provided by PJM's markets. PJM continues its own hypothetical by arguing that if interconnection customers changed their behavior, PJM would be required to perform "multiple operating parameter restudies every time the markets change," calling this imagined outcome "untenable."[581] In a third layer of its hypothetical, PJM opines that to the extent the Commission would suggest that PJM monitor battery storage projects to ensure that they operate in accordance with their specified parameters, this theoretical compliance requirement would "constitute an extraordinary administrative burden."[582]

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[576] Filing at 66.

[577] *Id*.

[578] *Id.*; Data Request Response, attach. A at 92.

[579] Filing at 66.

[580] *Id*. at 66-67.

[581] *Id*. at 67.

[582] *Id*.

298. Third, PJM argues that because PJM's interconnection process is resource-neutral, complying with the requirements of Order Nos. 2023 and 2023-A to modify its modeling of battery storage projects would be "incompatible with PJM's resource-neutral process" and would "slow down interconnection studies for all Project Developers."[583]

299. Fourth, PJM cites back to Order Nos. 2023 and 2023-A's "stated goal of facilitating the prompt completion of interconnection studies" in arguing that PJM "will not be able to readily integrate real-time operating assumptions into its interconnection studies because interconnection studies are planning studies and, as such, they analyze conditions over a longer time frame."[584]

300. Fifth, PJM argues that strict adherence to Order Nos. 2023 and 2023-A would "require PJM to include a special interconnection study within the larger cluster study for each storage project whose owner submits operating parameters."[585] PJM opines that strict adherence to Order No. 2023 would, therefore, "add more time to the interconnection study process, contrary to [f]inal [r]ule's [sic] stated goal of facilitating the prompt completion of interconnection studies."[586] PJM also characterizes the operating parameter requirement as requiring it to integrate real-time operating assumptions into its interconnection studies, creating further potentials for delays. PJM argues that its interconnection studies are not designed to predict or incorporate the real-time dispatch of resources and that PJM's interconnection studies might mistakenly assign costs of necessary network upgrades to load as a result.[587]

301. Sixth, PJM protests Order Nos. 2023 and 2023-A's requirement that transmission providers provide interconnection customers with a clear explanation in writing of why the submitted operating assumptions are insufficient or inappropriate, should a transmission provider find a submitted assumption deficient. PJM argues that "there is little justification for allowing only one class of [interconnection] customers to keep presenting individualized operating instructions" when PJM has already presented its overall assumptions and approach to stakeholders.[588]

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[583] *Id*. at 67-68.

[584] *Id*. at 68.

[585] *Id*.

[586] *Id*.

[587] *Id*.

[588] *Id*. at 69.

302. Seventh and lastly, PJM requests that the Commission grant it an independent entity variation "so that PJM is not required to change its modeling assumption requirements."[589]

b. Protests

303. Clean Energy Associations, the New Jersey Commission, and Public Interest Organizations protest PJM's proposal not to use operating assumptions when studying the interconnection of electric storage resources.[590]

304. Clean Energy Associations emphasize that Order No. 2023 directs transmission providers to use operating assumptions in interconnection studies that reflect the proposed charging behavior of energy storage resources, unless good utility practice requires the use of different operating assumptions.[591] Public Interest Organizations highlight that the Commission clarified in Order No. 2023 that it intends transmission owners to consider one specific operating parameter—"whether the interconnecting generating facility will or will not charge during peak load conditions"—in studying each storage interconnection request.[592] Public Interest Organizations also criticize PJM's proposal to treat electric storage resources as "adding to peak load rather than resources capable of meeting peak load" as "inaccurate and directly contrary to Order No. 2023."[593]

305. All three protesters conclude that PJM's arguments for an independent entity variation are legally deficient and lack merit.[594] Public Interest Organizations argue that PJM's arguments were already rejected by the Commission on rehearing, are unsupported by PJM's own procedures, and ignore the economic incentives and technical

[589] *Id.*; Data Request Response, attach. A at 91-92.

[590] Clean Energy Associations Protest at 10; New Jersey Commission Protest at 1-5; Public Interest Organizations Protest at 35 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 1509).

[591] Clean Energy Associations Protest at 10.

[592] Public Interest Organizations Protest at 35 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 1509).

[593] *Id.*

[594] *Id.*; *see also* New Jersey Commission Protest at 1-5, Protest of Clean Energy Associations at 12.

characteristics that inspired Order No. 2023's inclusion of this reform.[595] Clean Energy Associations agree, and characterize PJM's argument that it should not be required to comply with this directive of the final rule as a collateral attack on Order Nos. 2023 and 2023-A.[596]

306. The New Jersey Commission adds that granting the variation "would needlessly increase electricity costs for New Jersey ratepayers and unduly burden New Jersey's interest in achieving its preferred resource mix" because "treating every megawatt of electric storage resource capacity as a megawatt increase in peak load" not only could result in "interconnection studies identifying a fictitious need for major new transmission lines," but also would prevent storage resources from "fulfilling their envisioned role as non-wires solutions" during peak load conditions.[597]

c. Commission Determination

307. We find that PJM's proposal does not comply with the operating assumption requirements of Order Nos. 2023 and 2023-A. We find that PJM has not met its burden in showing that its proposal to retain its existing Tariff provisions satisfies the standard for an independent entity variation. Nowhere in its compliance filing does PJM assert that its proposal not to implement the operating assumption requirements of Order Nos. 2023 and 2023-A achieves the purpose of the final rule, aside from noting that requiring PJM to change its modeling assumptions might delay PJM's completion of interconnection studies and that the final rule is designed to speed overall interconnection queue processing. The Commission found that the lack of realistic operating assumptions used in interconnection studies results in unjust and unreasonable rates[598] and in Order No. 2023, the Commission adopted the operating assumption requirements to remedy this deficiency.[599] We acknowledge that an independent entity variation may allow RTOs/ISOs to achieve the purpose of this reform while also accommodating their unique characteristics.[600] However, PJM does not explain how its proposal not to implement this required operating assumption reform could be just and reasonable, aside from alluding

[595] Protest of Public Interest Organizations at 35-36.

[596] Clean Energy Associations Protest at 11.

[597] New Jersey Commission Protest at 5-6.

[598] *Improvements to Generator Interconnection Procs. & Agreements*, 179 FERC ¶ 61,194, at P 279 (2022); Order No. 2023, 184 FERC ¶ 61,054 at P 1448.

[599] Order No. 2023, 184 FERC ¶ 61,054 at PP 1509-1511.

[600] *Id.* PP 1764-1765; *see also* Order No. 2023-A, 186 FERC ¶ 61,199 at P 79.

to the potential for greater delays and stating that PJM's own modeling, if required to account for this parameter, could inaccurately assign network upgrades to the wrong interconnection customers.

308. Much of PJM's compliance filing, furthermore, represents an impermissible collateral attack on the final rule.[601] The Commission determined in Order No. 2023, and declined to find otherwise in Order No. 2023-A, that transmission providers must use operating assumptions in interconnection studies that reflect the proposed charging behavior of electric storage resources unless good utility practice, including applicable reliability standards, otherwise requires the use of different operating assumptions.[602] PJM in essence argues that this requirement is inconsistent with its existing practices, an argument the Commission already rejected. As discussed above, we are not persuaded by PJM's arguments that its proposal not to consider the operating assumptions required by Order No. 2023 is just and reasonable and not unduly discriminatory or preferential or accomplishes the purposes of the Order No. 2023. We direct PJM, therefore, to submit a further compliance filing within 60 days of the date of this order to propose Tariff revisions that incorporate this requirement of Order No. 2023.

19. Incorporating the Enumerated Alternative Transmission Technologies

309. In Order No. 2023, the Commission revised section 7.3 of the *pro forma* LGIP, and sections 3.3.6 and 3.4.10 of the *pro forma* SGIP.[603] The Commission required transmission providers to evaluate the following enumerated list of alternative transmission technologies: static synchronous compensators, static VAR compensators, advanced power flow control devices, transmission switching, synchronous condensers, voltage source converters, advanced conductors, and tower lifting.[604] The Commission revised *pro forma* LGIP section 7.3 to require transmission providers to evaluate the list of alternative transmission technologies enumerated in Order No. 2023 during the cluster study, including any restudies, of the generator interconnection process in all instances

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[601] *Louisville Gas & Elec. Co.*, 144 FERC ¶ 61,054 at P 12 (citing *Wall v. Kholi*, 131 S. Ct. at 1284 (noting that a collateral attack is "[a]n attack on a judgment in a proceeding other than a direct appeal" and is generally prohibited)).

[602] Order No. 2023, 184 FERC ¶ 61,054 at P 1509; *see also pro forma* LGIP §§ 3.1.2, 3.2.1.2, 3.2.2.2, 3.3.1, 3.4.2, 4.4.3, 7.3, 8.2, app.1; *pro forma* LGIA art. 17.2, app. H.

[603] Order No. 2023, 184 FERC ¶ 61,054 at P 1578; *see also pro forma* LGIP § 7.3; *pro forma* SGIP §§ 3.3.6, 3.4.10.

[604] Order No. 2023, 184 FERC ¶ 61,054 at P 1578.

(i.e., for all interconnection customers in a cluster), without the need for a request from an interconnection customer. The Commission required transmission providers to evaluate each alternative transmission technology listed in *pro forma* LGIP section 7.3 and to determine, in the transmission provider's sole discretion, whether it should be used, consistent with good utility practice, applicable reliability standards, and other applicable regulatory requirements. Finally, the Commission required transmission providers to include, in the *pro forma* LGIP cluster study report, an explanation of the results of the evaluation of the enumerated alternative transmission technologies for feasibility, cost, and time savings as an alternative to a traditional network upgrade.

310. The Commission revised sections 3.3.6 and 3.4.10 of the *pro forma* SGIP, consistent with the *pro forma* LGIP requirement, to require transmission providers to evaluate the enumerated alternative transmission technologies when performing interconnection studies for small generating facilities, without the need for a request from an interconnection customer.[605] The Commission required such evaluations to occur during the *pro forma* SGIP feasibility study and system impact study of the generator interconnection process. The Commission found that it is appropriate for these evaluations to occur during the relevant *pro forma* SGIP studies where network upgrades are identified, consistent with the *pro forma* LGIP requirement. The Commission required transmission providers to evaluate each alternative transmission technology listed in *pro forma* SGIP sections 3.3.6 and 3.4.10 and determine, in the transmission provider's sole discretion, whether it should be used, consistent with good utility practice, applicable reliability standards, and other applicable regulatory requirements.

311. In Order No. 2023-A, the Commission added the definitions of "applicable reliability standards" and "applicable laws and regulations" to the *pro forma* SGIP, added the term "applicable reliability standards" to the performance standards in *pro forma* LGIP section 7.3 and *pro forma* SGIP sections 3.3.6 and 3.4.10, and replaced "other applicable regulatory requirements" with the term "applicable laws and regulations" in *pro forma* LGIP section 7.3 and *pro forma* SGIP sections 3.3.6 and 3.4.10.[606] Additionally, the Commission revised *pro forma* LGIP section 7.3 and *pro forma* SGIP sections 3.3.6 and 3.4.10 to clarify that good utility practice, applicable reliability standards, and applicable laws and regulations apply to both the transmission provider's evaluation of the enumerated alternative transmission technologies and the determination to use the technology.[607]

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[605] *Id.* P 1580.

[606] Order No. 2023-A, 186 FERC ¶ 61,199 at PP 623-624; *see also pro forma* LGIP § 7.3; *pro forma* SGIP §§ 3.3.6, 3.4.10, attach. 1.

[607] Order No. 2023-A, 186 FERC ¶ 61,199 at PP 625-627; *see also pro forma*

a. PJM's Compliance Filing

312. PJM explains that all of the enumerated alternative transmission technologies in Order No. 2023 are already considered and studied as necessary in the course of interconnection studies in the PJM region, although not stated in its Tariff. PJM explains that its incorporation of new and emerging technology is consistent with the objectives of Order No. 2023, which requires transmission providers to evaluate certain alternative transmission technologies in each of its interconnection studies.[608] PJM adds that it plans to provide additional transparency on the use of alternative transmission technologies in PJM by the end of 2024 because, by that time, PJM's Technical Reference Guide will be publicly available. PJM notes its Technical Reference Guide will catalogue alternative transmission technologies and describe the conditions under which specific technologies may be considered as a reinforcement option.[609]

313. However, PJM explains it is seeking an independent entity variation from Order No. 2023's requirement that transmission providers include the results of their evaluation of the feasibility, cost, and time savings of alternative transmission technologies as an alternative to traditional transmission technologies in interconnection study reports.[610] PJM explains that a broad spectrum of alternative transmission technologies are already considered as part of PJM's interconnection study process. PJM states it commits to providing more detail, relying on parameters set forth in the Technical Reference Guide, because the Technical Reference Guide satisfies Order No. 2023's requirements for transparency and stakeholder understanding of where alternative transmission technologies would prove useful.[611]

b. Protests

314. Clean Energy Associations, Public Interest Organizations, and WATT Coalition all argue that PJM fails to comply with the requirements of Order No. 2023.[612] Clean

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LGIP § 7.3; *pro forma* SGIP §§ 3.3.6, 3.4.10.

[608] Filing at 69-70 (citing Order No. 2023, 184 FERC ¶ 61,054 at P 1581); Data Request Response, attach. A at 92-93.

[609] Filing at 70.

[610] *Id.* (citing Order No. 2023,184 FERC ¶ 61,054 at P 1581).

[611] *Id.* at 70-71.

[612] Clean Energy Associations Protest at 9; Public Interest Organizations Protest at 30 (citing Filing at 69); WATT Coalition Protest at 2.

Energy Associations argue that, in the absence of tariff language or a complete Technical Reference Guide to evaluate, PJM's existing practices do not include meaningful disclosure to stakeholders of which technologies were considered, and why they were or were not ultimately adopted, contravening Order No. 2023 and running counter to the purpose of these provisions.[613] WATT Coalition states that PJM's proposed upcoming technical reference guide does not comply with Order No. 2023, as it does not explicitly describe how and when the enumerated technologies are studied and against what criteria for feasibility, cost, and time-savings, with results that should be understandable by stakeholders.[614]

315. Similarly, Clean Energy Associations, Public Interest Organizations, and WATT Coalition argue that PJM's request for an independent entity variation fails to achieve the Commission's purposes in Order No. 2023.[615] Public Interest Organizations argue that it is unclear why PJM believes its requested independent entity variation to use its forthcoming Technical Reference Guide meets the requirement in Order No. 2023 that transmission providers share and explain the results of evaluations for each enumerated alternative transmission technology in each study.[616] WATT Coalition states that PJM should not be granted an independent entity variation to excuse PJM from complying with Order No. 2023 requirements that RTO/ISO business practice manuals transparently describe advanced transmission technology decision criteria and that the outcome of advanced transmission technology evaluations should reflect the requirements of Order No. 2023 for each study.[617] Additionally, Public Interest Organizations and WATT Coalition both raise examples that they argue demonstrate PJM is not seriously considering alternative transmission technologies.[618]

c. Answer

316. In its July 12 Answer, PJM argues the Commission should reject the protests of Clean Energy Associations, Public Interest Organizations, and WATT coalition. PJM reiterates that a broad spectrum of potential solutions, including alternative transmission

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[613] Clean Energy Associations Protest at 9.

[614] WATT Coalition Protest at 2.

[615] Clean Energy Associations Protest at 7; Public Interest Organizations Protest at 33; WATT Coalition Protest at 3.

[616] Public Interest Organizations Protest at 33.

[617] WATT Coalition Protest at 3.

[618] Public Interest Organizations Protest at 31-32; WATT Coalition Protest at 2.

technologies, are already considered in PJM's interconnection study process.[619] PJM again commits to providing a summary of the alternative transmission technologies evaluations that are components of its study process and states that it will address its evaluation in the study reports relying on the Technical Reference Guide. However, PJM explains that requiring it to report separately on its evaluation of alternative transmission technologies at the conclusion of each cluster study is burdensome and offers little benefit.[620]

317. PJM proposes, as an alternative, to develop, with stakeholder review, an "application guide" that would catalog alternative transmission technologies and their applications where they would clearly benefit the grid. PJM clarifies that the guide would be a living document that would be updated for new technologies. PJM argues that it believes this approach is more transparent while also avoiding "one-off" analyses for each interconnection request. Accordingly, PJM reiterates its request for an independent entity variation.[621]

d. Commission Determination

318. We find that PJM's proposal does not comply with the alternative transmission technology requirements of Order Nos. 2023 and 2023-A. We deny PJM's requested independent entity variation to deviate from Order No. 2023's requirement that transmission providers include the results of their evaluation of the feasibility, cost, and time savings of alternative transmission technologies as an alternative to traditional transmission technologies in interconnection study reports. More specifically, we agree with protesters and find that PJM has not demonstrated its claims that it already considers alternative transmission technologies as part of the interconnection process or that its newly developed Technical Reference Guides accomplishes the purposes of Order No. 2023.[622] Order No. 2023 required transmission providers to evaluate the list of alternative transmission technologies enumerated in Order No. 2023 during the cluster study, including any restudies, of the generator interconnection process in all instances (i.e., for all interconnection customers in a cluster) and for transmission providers to include, in the *pro forma* LGIP cluster study report, an explanation of the results of the

[619] PJM July 12 Answer at 24-25.

[620] *Id.* at 25.

[621] *Id.* at 25-26.

[622] *See, e.g.*, *ISO New England Inc.*, 164 FERC ¶ 61,222 at P 9 (citing Order No. 2003, 104 FERC ¶ 61,103 at PP 26, 827; *Midcontinent Indep. Sys. Operator, Inc.*, 154 FERC ¶ 61,247 at P 20; *Cal. Indep. Sys. Operator Corp.*, 140 FERC ¶ 61,070 at P 44).

evaluation of the enumerated alternative transmission technologies for feasibility, cost, and time savings as an alternative to a traditional network upgrade.[623] PJM's forthcoming technical reference guides, while informative, do not satisfy the requirements of Order No. 2023. Accordingly, we direct PJM to submit a further compliance filing within 60 days of the date of this order to revise its Tariff to adopt the requirement that transmission providers must evaluate the list of alternative transmission technologies enumerated in Order No. 2023 during the cluster study, including any restudies, of the generator interconnection process in all instances.

20. Modeling and Ride-Through Requirements for Non-Synchronous Generating Facilities

319. In Order No. 2023, the Commission revised Attachment A (Large Generating Facility Data) to Appendix 1 of the *pro forma* LGIP and Attachment 2 (Small Generator Interconnection Request) of the *pro forma* SGIP to require each interconnection customer requesting to interconnect a non-synchronous generating facility to submit to the transmission provider: (1) a validated user-defined root mean square (RMS) positive sequence dynamic model; (2) an appropriately parameterized generic library RMS positive sequence dynamic model, including a model block diagram of the inverter control system and plant control system, that corresponds to a model listed in a new table of acceptable models or a model otherwise approved by the Western Electricity Coordinating Council (WECC); and (3) a validated electromagnetic transient (EMT) model, if the transmission provider performs an EMT study as part of the interconnection study process.[624]

320. The Commission also: (1) defined a user-defined model as any set of programming code created by equipment manufacturers or developers that captures the latest features of controllers that are mainly software-based and represent the entities' control strategies but does not necessarily correspond to any particular generic library model, as contained in Attachment A to Appendix 1 of the *pro forma* LGIP and Attachment 2 of the *pro forma* SGIP; (2) revised Attachment A to Appendix 1 of the *pro forma* LGIP and Attachment 2 of the *pro forma* SGIP to add a table of acceptable generic library models, based on the current WECC list of approved dynamic models for renewable energy generating facilities; and (3) revised section 4.4.4 of the *pro forma* LGIP and section 1.4 (Modification of the Interconnection Request) of the *pro forma*

[623] Order No. 2023, 184 FERC ¶ 61,054 at P 1578.

[624] *Id.* P 1659; *see also pro forma* LGIP app. 1, attach. A; *pro forma* SGIP, attach. 2.

SGIP to require that any proposed modification of the interconnection request be accompanied by updated models of the proposed generating facility.[625]

321. The Commission revised article 9.7.3 (Ride Through Capability and Performance) of the *pro forma* LGIA and article 1.5.7 of the *pro forma* SGIA to require that, during abnormal frequency conditions and voltage conditions within the "no trip zone" defined by Reliability Standard PRC-024-3 or successor mandatory ride through reliability standards, the non-synchronous generating facility must ensure that, within any physical limitations of the generating facility, its control and protection settings are configured or set to: (1) continue active power production during disturbance and post disturbance periods at pre-disturbance levels unless providing primary frequency response or fast frequency response; (2) minimize reductions in active power and remain within dynamic voltage and current limits, if reactive power priority mode is enabled, unless providing primary frequency response or fast frequency response; (3) not artificially limit dynamic reactive power capability during disturbances; and (4) return to pre-disturbance active power levels without artificial ramp rate limits if active power is reduced, unless providing primary frequency response or fast frequency response.[626]

322. The Commission further revised the *pro forma* LGIA to require that all newly interconnecting large generating facilities provide frequency and voltage ride through capability consistent with any standards and guidelines that are applied to other generating facilities in the balancing authority area on a comparable basis.[627] The Commission also replaced the term "applicable reliability council" with "electric reliability organization," revised the definition of "applicable reliability standards," replaced the term "control area" with "balancing authority area" throughout the *pro forma* LGIP, *pro forma* LGIA, and *pro forma* SGIA, and added the term "balancing authority."[628]

323. In Order No. 2023-A, the Commission revised *pro forma* LGIA article 9.7.3 and *pro forma* SGIA article 1.5.7 to state that a non-synchronous generating facility must ensure that, within any physical limitations of the generating facility, its control and protection settings are configured or set to continue active power production during disturbance and post disturbance periods at pre-disturbance levels, unless reactive power

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[625] Order No. 2023, 184 FERC ¶ 61,054 at P 1660; *see also pro forma* LGIP § 4.4.4, app. 1, attach. A; *pro forma* SGIP § 1.4, attach. 2.

[626] Order No. 2023, 184 FERC ¶ 61,054 at P 1715.

[627] *Id.* P 1733; *see also pro forma* LGIA art. 9.7.3.

[628] Order No. 2023, 184 FERC ¶ 61,054 at P 1735; *see also pro forma* LGIP § 1; *pro forma* LGIA art. 1.

priority mode is enabled or unless providing primary frequency response or fast frequency response.[629]

a. PJM's Compliance Filing

324. PJM states that its Dynamic Model Development Guidelines, which are publicly available to all developers seeking to interconnect, fully comply with the requirement in Order Nos. 2023 and 2023-A for interconnection customers to provide modeling information along with the submission of their interconnection request and at other stages of the interconnection process.[630]

325. With regard to ride-through requirements, PJM states that its Tariff includes ride-through requirements for abnormal frequency conditions and voltage conditions.[631] Specifically, PJM states that Schedule H of the GIA in its Tariff requires non-synchronous generating facilities be designed to remain in service (not trip) for frequencies and times as specified in Attachment 2 of North American Electric Reliability Corporation (NERC) Reliability Standard PRC-024-1, and successor Reliability Standards, for both high and low frequency conditions, irrespective of generator size, subject to the permissive trip exceptions established in NERC Reliability Standard PRC-024-1.[632]

b. Commission Determination

326. We find that PJM's proposal does not comply with the modeling and ride through requirements of Order Nos. 2023 and 2023-A.[633]

327. We reject PJM's proposal to rely solely on its Dynamic Model Development Guidelines, which is publicly posted on its website. PJM notes that the Dynamic Model Development Guidelines contain requirements to submit models consistent with the final

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[629] Order No. 2023-A, 186 FERC ¶ 61,199 at P 661; *see also pro forma* LGIA art. 9.7.3; *pro forma* SGIA art. 1.5.7.

[630] Filing at 71-72 (citing PJM, *Dynamic Model Development Guidelines for Interconnection Analysis*, (Oct. 8, 2024), https://www.pjm.com/-/media/DotCom/planning/services-requests/pjm-dynamic-model-development-guidelines.ashx).

[631] *Id.* at 72.

[632] *Id.* (citing PJM Tariff, pt. IX, subpt. B, Schedule H (0.0.0)).

[633] Order No. 2023, 184 FERC ¶ 61,054 at PP 1662, 1713.

rule. However, in Order Nos. 2023 and 2023-A, the Commission revised Attachment A to Appendix 1 of the *pro forma* LGIP and Attachment 2 of the *pro forma* SGIP to reference a defined selection of acceptable models in Table 1 or a model otherwise approved by WECC.[634] Regardless of the suitability of the Dynamic Model Development Guidelines, PJM's Tariff does not contain the reference to a defined selection of acceptable models in Table 1 of the *pro forma* LGIP and *pro forma* SGIP or a model otherwise approved by WECC nor does PJM justify their omission under the independent entity variation standard. We direct PJM to submit a further compliance filing within 60 days of the date of this order that incorporates the required language to Attachment A to Appendix 1 of the PJM *pro forma* LGIP and Attachment 2 of the PJM *pro forma* SGIP, or justifies the proposal under the independent entity variation standard.

328. We disagree with PJM that its existing Tariff complies with the ride-through requirements adopted in Order Nos. 2023 and 2023-A. The language in PJM's Tariff is substantively the same as the language found unjust and unreasonable in Order Nos. 2023 and 2023-A, and therefore does not comply.[635] We direct PJM to submit proposed revisions to its Tariff, GIA, Schedule H to incorporate the performance requirements adopted in Order Nos. 2023 and 2023-A, or to provide further justification for the Commission's acceptance of its proposal under the independent entity variation standard.

21. Other Compliance Directive

329. On August 20, 2024, the Commission issued an Errata Notice, which contained additional revisions to the Commission's *pro forma* LGIP, *pro forma* LGIA, and *pro forma* SGIA.[636] We direct PJM to incorporate the revisions made in the Errata Notice when it submits its further compliance filing within 60 days of the date of this order.

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[634] *Id.* PP 1659-1660.

[635] *See id.* P 1713 ("[W]e find that the lack of comparable requirements for non-synchronous generating facilities to have the capability to remain "connected to and synchronized with the [t]ransmission [s]ystem" in the *pro forma* LGIA and *pro forma* SGIA results in rates that are unjust, unreasonable, and unduly discriminatory or preferential.").

[636] *Improvements to Generator Interconnection Procs. & Agreements, errata notice*, 188 FERC ¶ 61,134.

The Commission orders:

(A) PJM's compliance filing is hereby accepted in part, subject to a further compliance filing, as discussed in the body of this order.

(B) PJM is hereby directed to submit a compliance filing that addresses the directives in this order within 60 days of the date of this order, as discussed in the body of this order.

By the Commission.

(S E A L)

Debbie-Anne A. Reese,
Secretary.