

Summary of FERC Interconnection NOPR

June 2022

Executive Summary

On June 16, the Federal Energy Regulatory Commission (FERC or Commission) issued a Notice of Proposed Rulemaking (NOPR) focused on updating procedures for interconnecting large generating facilities (20MW and above) and small generating facilities (under 20MW).¹ The NOPR proposes significant updates to FERC's *pro forma* interconnection procedures, which were first established in the early 2000s. In the intervening years, however, the nation's generation fleet has evolved, new technologies have emerged, and interconnection wait-times have steadily increased. The NOPR proposes various reforms to help address growing interconnection queue backlogs and process delays. **Comments are due 100 days after the NOPR's publication in the *Federal Register*. Reply comments are due 130 days after publication in the *Federal Register*.**

Below is a summary of the primary reforms outlined in the NOPR, which fall into three broad categories: (1) implement a first-ready, first-served cluster study process; (2) increase the speed of interconnection queue processing; and (3) incorporate technological advancements into the interconnection process. The Commission's proposed reforms are discussed further in the subsections to follow this Executive Summary.

- **Transitioning from a First-Come-First-Served Serial Process to a First-Ready-First-Served Cluster Study Process.**²
 - Facilitating Interconnection Information Access: The NOPR proposes (i) to allow interconnection customers to request informational interconnection studies, and (ii) to require transmission providers to publicly-post an interactive visual representation of available interconnection capacity.
 - Cluster Study: The NOPR proposes to eliminate the Feasibility Study option and adopts annual cluster study process to be completed in 150 days, which includes individualized facilities studies. Relatedly, study deposits would be increased, and site control requirements would be enhanced.
 - Allocating Cluster Study Costs: FERC proposes to allocate 90% of cluster study costs to customers on a pro rata basis based on requested MWs, and the remaining 10% on a per capita basis based on number of requests in the cluster.
 - Allocating Cluster Network Upgrade Costs: FERC proposes to allocate network upgrade costs for each cluster based on the proportional impact method (which relies on a distribution factor analysis).
 - Shared Network Upgrades: The NOPR proposes to require later-queued interconnection customers to contribute to existing network upgrades if such later-queued customers benefit from the upgrades, based on certain proposed criteria and tests.
 - Increasing Financial Commitments and Readiness Requirements: The NOPR proposes more stringent site control requirements, a commercial readiness framework, and withdrawal penalties.
 - Transition Process: The Commission proposes a transition cluster process, which existing interconnection customers could join (subject to meeting certain readiness and other requirements), with later-stage customers having the additional option to proceed to a serial facilities study.
- **Increasing the Speed of Interconnection Queue Processing.**³
 - Eliminating the "Reasonable Efforts" Standard and Imposing Penalties for Delayed Studies: In a significant change for transmission providers, the NOPR proposes to eliminate previous flexibility enjoyed by transmission providers through the "reasonable efforts" standard, with penalties for late studies potentially amounting to \$500 per day, with some exceptions.

- Standardizing Affected Systems Procedures and Pro Forma Contracts: The NOPR proposes to formalize the previously informal and often time-consuming affected systems analysis, with a related proposed *pro forma* process, study agreement and *pro forma* construction agreement for affected systems.
- Optional Resource Solicitation Study: The NOPR proposes to allow resource planning entities (e.g., load-serving entities and state agencies) to request separate solicitation cluster studies so as to better facilitate state-mandated resource planning requirements.
- **Incorporating Technological Advancements into the Interconnection Process.**⁴
 - Resource Co-Location: The NOPR proposes to permit more than one resource to co-locate on a shared site behind a single point of interconnection and share a single interconnection request.
 - Material Modification Reforms: Requiring transmission providers to allow generation capacity increases as nonmaterial modifications, provided no increase in service level and non-materiality is supported by any necessary study.
 - Surplus Interconnection Service: Allowing interconnection customers to access available surplus interconnection service once the original interconnection customer has executed the LGIA (or requested an unexecuted LGIA be filed).
 - Alternative Technologies: Requiring transmission providers to (i) consider advanced power flow control, transmission switching, dynamic line ratings, static synchronous compensators, and static VAR compensators, as potential substitutes for network upgrades where appropriate, and (ii) submit annual information reports detailing what advanced technologies were considered in the past year.
 - Modeling and Performance Requirements: The NOPR proposes to require non-synchronous generating facilities to provide more granular and accurate modeling data and to maintain voltage ride-through capability to ensure system reliability.

Proposed Compliance Procedures:

FERC proposes to require that transmission providers submit compliance filings within 180 days of the effective date of a final order adopting the reforms. Transmission providers seeking deviations would be subject to the “independent entity” variation (for RTOs/ISO) and the “consistent with or superior to” standard for non-RTO/ISO transmission providers. For those transmission providers that have previously adopted reforms to their interconnection process, or certain such reforms where their respective tariff provisions would be modified by the final rule, “transmission providers must either comply with the final rule or demonstrate that these previously-approved variations continue to be consistent with or superior to the *pro forma* as modified by the final rule or continue to be permissible under the independent entity variation standard or regional reliability standard.”⁵

DISCLAIMER: THIS SUMMARY IS PROVIDED FOR INFORMATIONAL PURPOSES ONLY AND DOES NOT CONSTITUTE LEGAL ADVICE ON ANY PARTICULAR QUESTION, NOR SHOULD IT BE CONSTRUED TO CREATE AN ATTORNEY-CLIENT RELATIONSHIP.

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Background

The Commission first issued standard interconnection procedures and agreements for large and small generators in Order Nos. 2003 and 2006, respectively.⁶ The next set of significant revisions to the *pro forma* LGIP would not come for another fifteen years after Order No. 2003 was issued. Specifically, in 2018, the Commission issued Order No. 845 to revise the *pro forma* LGIP and *pro forma* LGIA to institute various reforms intended to enhance the interconnection process, account for changing technologies, and facilitate additional generator interconnections.⁷

As FERC explained in the NOPR, however, since the issuance of Order Nos. 2003, 2006, and 845, the electric sector has transformed, presenting difficult challenges interconnecting new resources to the transmission system, and contributing to significant interconnection queue backlogs. Indeed, as FERC noted, the average timeline to interconnect to the grid is around three years and, as of the end of 2021, more than 1,400GW in generation and storage projects were waiting in interconnection queues throughout the country.⁸

In an attempt to address these concerns, the NOPR proposes various reforms to the large and small generator interconnection procedures and agreements. Specifically, the Commission proposed reforms to: (1) implement a first-ready, first-served cluster study process; (2) increase the speed of interconnection queue processing; and (3) incorporate technological advancements into the interconnection process. For small generators, the Commission proposed reforms to incorporate alternative transmission technologies into the interconnection process and to provide modeling and performance requirements for non-synchronous generators.

Proposed Reforms

Reforms to Implement a First-Ready, First-Served Cluster Study Process

A key reform proposed in the NOPR is the Commission's proposal to require all transmission providers to transition from the first-come-first-served serial process to a first-ready-first-served cluster study process. As part of this core reform, the Commission proposes to require transmission providers to facilitate providing additional interconnection information through the form of optional interconnection studies and publicly posted information about available capacity. Also related to the cluster study reforms, the Commission proposes to impose more stringent financial commitments and readiness requirements on interconnection customers, including increased study deposits, more stringent site control requirements, a commercial readiness framework, and higher withdrawal penalties.

Interconnection Information Access

The Commission proposes two related reforms intended to facilitate additional transparency into the interconnection process and provide interconnection customers with a greater understanding of potential costs implicated by a proposed generation interconnection request.

Informational Interconnection Studies

First, FERC proposes to revise its *pro forma* LGIP to require transmission providers to offer an informational interconnection study to serve as additional information for prospective interconnection customers in deciding whether to submit an interconnection request.⁹ As FERC explained, such informational studies would identify potential interconnection facilities and network upgrades triggered by a proposed request, including a non-binding approximation of the costs of such interconnection facilities and network upgrades. The study itself would consist of a sensitivity analysis based on the assumptions specified in the proposed new *pro forma* informational interconnection study agreement. In addition to a new study agreement, to implement this reform, FERC proposes various new definitions and revisions to LGIP sections 6.1 – 6.3 regarding the informational interconnection study agreement (including requiring a \$10,000 study deposit), study scope, and study procedures. Interconnection customers would be limited to five requests pending at any given time, and each configuration of an interconnection request would require a separate informational interconnection study.¹⁰ The transmission provider would have 45 days to complete the study,¹¹ and must also coordinate with, and provide information about, affected systems potentially impacted by the request.¹²

In relation to this reform, the Commission seeks comment on the following:

- Whether the informational interconnection study, as proposed, would provide prospective interconnection customers with sufficient and timely information to inform decision-making prior to submitting an interconnection request;¹³
- Whether transmission providers should be required to establish a request window of a limited number of days each year in which potential interconnection customers can request an optional informational interconnection study;¹⁴ and
- The burdens on transmission providers of conducting informational studies and whether other options, such as the proposal below for public interconnection information, might strike a better balance of providing interconnection customers with useful information while making efficient use of transmission provider resources.¹⁵

Public Interconnection Information

In addition to proposing the optional informational interconnection study, the Commission also proposes to require transmission providers to maintain and make publicly available an interactive visual representation of available interconnection capacity as well as a table of relevant interconnection metrics that allows prospective interconnection customers to see certain estimates of a potential generating facility's effect on the transmission provider's transmission system.¹⁶ Specifically, the Commission proposes to require transmission providers to develop a heatmap of estimated incremental injection capacity (in MW) available at each bus in the transmission provider's footprint under N-1 conditions, and provide a table of results showing the estimated impact of the addition of a proposed project for each monitored facility impacted by the proposed project.¹⁷ Relatedly, FERC proposes to require that this information be updated within 30-days after each cluster study or restudy.

The Commission seeks comment on the following:

- Whether there are any security concerns with this proposed requirement; and
- Whether the assumptions specified for the analysis are the right set of assumptions.

Cluster Study

Under the current *pro forma* LGIP study process, interconnection requests are typically studied individually under a first-come-first-served serial process. As FERC described in the NOPR, this current serial process may result in a piecemeal identification of network upgrades, as well as delays and increased cost burdens prompted by cascading restudies triggered by higher-queued customer withdrawals. In contrast, the Commission found that a first-ready, first-served cluster study process, coupled with increased financial commitments and readiness requirements, will help address the delays and inefficiencies in the serial study process.

Accordingly, the Commission proposes to require that all jurisdictional transmission providers transition to a first-ready, first-served cluster study approach. Notably, the cluster study-related reforms would, among other things: (1) require customers to select a definitive point of interconnection when executing the cluster study agreement (with some allowance for mutually agreed-upon changes), (2) establish a 45-day cluster request window that would open up annually, followed by a 30-day customer engagement window; (3) require individual, customer-specific scoping meetings at the request of the customer (submitted no later than 15 business days after close of the request window); (4) clarify that all requests studied in a single cluster shall be considered equally queued; (5) permit a change in point of interconnection but only if the transmission provider deems such change to not be a "material modification"; (6) revise the "material modification" definition to include impacts to lower or equally-queued requests; (7) provide that the commercial operation date reflected in the initial request shall be used in calculating the permissible three-year extension of requests; (8) remove the Feasibility Study and clarify that the System Impact Study would be performed serially within 150 days of the customer engagement window closure; (9) require transmission providers to conduct cluster re-studies within 150 days of informing the cluster participants of the need for a restudy; (10) provide that facilities re-studies may be triggered upon a higher or equally-queued customer withdrawing; and (11) removes the \$250,000 security posting option at the LGIA execution stage and replaces it with a requirement to demonstrate continued site control (site control demonstration would be required at the outset of the process, see *infra* Part A(6)(2)(ii)).¹⁸

The Commission expressly seeks comment on the following:

- Whether transmission providers should be required to conduct cluster studies on subgroups of interconnection customers based on areas of geographic and electric relevance, and, if so, whether the Commission should adopt provisions governing how cluster areas should be formed to ensure that cluster areas are formed in a transparent and not unduly discriminatory manner;
- Whether the *pro forma* LGIP should specify how cluster studies must be rerun after re-study is triggered or whether there are provisions the Commission could adopt to improve the efficacy of the re-study process, such

as preventing excessive re-study by limiting the transmission provider to two re-studies per month within the 150-day cluster re-study period; and

- Whether the Commission should maintain an option in the *pro forma* LGIP for some interconnection requests to be processed outside of the annual cluster study process, and if so, in what circumstances and on what timeframe (for completion of the study), and on what priority compared to any active clusters.

Other reforms related to the proposed adoption of a first-ready-first-served cluster process, such as cost allocation, readiness criteria, and withdrawal penalties, are discussed in the following subsections.

Allocation of Cluster Study Costs

In relation to the Commission's overarching proposal to transition the industry to a first-ready-first served cluster process, FERC also proposes study cost allocation reforms. Specifically, the Commission proposes to require that 90% of applicable study costs be allocated to interconnection customers on a *pro rata* basis based on requested MWs included in the applicable cluster. The remaining 10% of the applicable study costs are proposed to be allocated to interconnection customers on a *per capita* basis based on the number of interconnection requests included in the applicable cluster. As FERC explains, this proposal recognizes two significant drivers of cluster study costs: (1) the MW size of a cluster, and (2) the number of interconnection requests included in the cluster.

The Commission expressly seeks comment on the following:

- Whether a different cost allocation methodology may be appropriate, or whether each transmission provider should be provided additional flexibility to propose a cost allocation approach on compliance with any final rule.

Allocation of Cluster Network Upgrade Costs

Similar to the need to allocate study costs, the Commission also recognizes the need to allocate other costs triggered in a cluster study process—specifically, network upgrade costs. The Commission noted that transmission providers utilizing a cluster first-ready, first-served study process currently allocate network upgrade costs in one of two ways: (1) proportional capacity (based on the proposed generating facility's MW capacity in proportion to the cluster's total MW capacity); or (2) proportional impact (determined based on a distribution factor analysis).

The Commission proposes to revise the *pro forma* LGIP by adopting a proportional impact method to allocate network upgrades costs among interconnection customers within a cluster. According to the Commission, a proportional impact method “will accurately reflect the level of contribution of an interconnection request to the need for the network upgrade.”¹⁹ Accordingly, the Commission proposes to define “Proportional Impact Method” in the *pro forma* LGIP and to require transmission providers to revise their LGIPs to include the specific technical parameters and thresholds of the method for cost allocation.

The Commission expressly seeks comment on the following:

- Whether the Commission should require transmission providers to use specific types of analyses to determine the proportional impact attributed to an interconnection request;
- Whether the Commission should prohibit specific types of analyses because they are known to be inaccurate, provide undue discretion to the transmission provider, or could otherwise be problematic;
- Alternative methods to allocate the cost of network upgrades within a cluster such as the proportional capacity method. Specifically, the Commission seeks comment on whether this method can be sufficiently accurate, in certain instances, in a manner consistent with or superior to the proposed method, such as, for example, for a transmission provider with a relatively small service territory that clusters projects by electrical relevance; and
- Conversely, the Commission also seeks comment on whether there are some circumstances where the proportional capacity method would not be appropriate, such as circumstances where there may be potential for discriminatory treatment.

Shared Network Upgrades

The Commission acknowledged that there are no existing provisions in the *pro forma* LGIP that require sharing network upgrade costs between earlier-in-time and later-in-time interconnection customers (e.g., customers studied in separate clusters). Some transmission providers, however, such as MISO and NYISO, do require cost sharing if later-queued customers benefit from network upgrades completed by prior customers under certain circumstances. FERC found the lack of such cost sharing provisions more broadly to pose a barrier to entry to generation development.²⁰ As a result, the Commission proposes a two-step analysis for when a later-queued interconnection customer could be required to contribute toward existing network upgrades. First, if a generating facility of an interconnection customer in a later cluster study directly connects either to (1) a network upgrade in-service for less than five years or (2) a substation where the network upgrade is in-service for less than five years terminates, then the transmission provider would be required to designate the network upgrade a “shared network upgrade,” and the interconnection customer in the later cluster study would be required to contribute a pro rata portion of the shared network upgrade’s remaining undepreciated capital cost based on the impact the interconnection customer in the later cluster study has on the network upgrade as measured using the same method the transmission provider used to determine the impact of the interconnection customer(s) in the earlier cluster study.²¹ Second, if the new generating facility does not directly connect to the network upgrade, then the transmission provider would perform a power flow analysis with a two-step test to measure the later-in-time interconnection customer’s use of and benefit from the network upgrade funded by interconnection customers from an earlier cluster study.

The Commission proposes to not require cost sharing for later-queued interconnection customers until the shared network upgrades are in service.²² In addition, the Commission proposes to require transmission providers provide a list of shared network upgrades to interconnection customers in subsequent cluster studies, and to list them in the LGIA.²³

Increased Study Deposits, LGIA Deposits, Site Control Requirements, and Readiness Requirements

While the bulk of the modifications the Commission proposes in the NOPR impact the transmission provider, the Commission does increase the requirements for the interconnection customers which are intended to facilitate the interconnection of non-speculative, commercially ready, generating facilities. To this end, the Commission proposes four related reforms: (i) increased study deposits, (ii) demonstration of site control, (iii) commercial readiness, and (iv) withdrawal penalties.

Increased Study Deposits, LGIA Deposits

First, the Commission proposes to increase study deposit and the LGIA deposit. Specifically, the Commission proposes the following:

| Size of Proposed Generating Facility Associated with Interconnection Request | Amount of Deposit |
|--|-----------------------|
| > 20 MW < 80 MW | \$35,000 + \$1,000/MW |
| ≥ 80 MW < 200 MW | \$150,000 |
| ≥ 200 MW | \$250,000 |

These study deposits would be paid in three tranches: prior to the cluster, within 20 days of receiving the study results, and upon execution of the facilities study agreement. The transmission provider would refund any portion of the study deposits above the applicable study costs and withdrawal penalties once the interconnection customer executes the LGIA, requests the filing of an unexecuted LGIA, or withdraws from the queue. The Commission also proposes requiring interconnection customers to submit a deposit nine times their study deposit when executing an LGIA, subject to refund upon achieving commercial operation or subject to a withdrawal penalty if the project is withdrawn from the queue.²⁴

The Commission expressly seeks comment on the following:

- Whether the proposed study deposit amounts accurately estimate the cost of conducting cluster studies, such that interconnection customers are not required to submit deposits that are likely to far exceed actual study costs; and
- Whether the Commission should adopt additional provisions or a different framework that would require larger proposed generating facilities to provide a higher deposit amount—such as a per MW framework.

More Stringent Site Control Requirements

Second, the Commission proposes more stringent site control requirements. Notably, the Commission proposes to, among other things: (1) require customers to demonstrate one hundred percent (100%) of site control when they submit their interconnection request, with the option to submit a deposit prior to the facilities study stage allowed only when regulatory limitations prohibit the customer from obtaining site control;²⁵ (2) require that transmission providers include in their tariff specific acreage requirements for each generating facility technology type; (3) require interconnection customers to demonstrate the exclusive land right (where the land rights are exclusive to the interconnection customer, not necessarily the individual project) to develop, construct, operate, and maintain its generating facility or, where facilities are co-located, to demonstrate a shared land use right to develop, construct, operate, and maintain co-located facilities; and (4) require interconnection customers demonstrate satisfaction with the applicable site control requirements after notifying the transmission provider of a change of their site control demonstration.²⁶

As FERC explained, more stringent site control requirements “will help prevent interconnection customers from submitting interconnection requests for speculative, non-commercially viable proposed generating facilities.”²⁷

The Commission expressly seeks comment on the following:

- Whether there are other specific situations in which the Commission should accept a deposit in lieu of site control;
- Whether the definition of “site control,” including the requirement to obtain an exclusive land right (or, for co-located resources, a shared land right), should be broadened or refined to account for circumstances that may arise in, for example, the siting and permitting of offshore resources in bodies of water and/or submerged land. For example, FERC questions whether the definition should be adjusted for interconnection customers (including both onshore and offshore) to account for any regulatory requirements they may have associated with proposed generating facilities developed on sites owned or physically controlled by a state governmental entity and/or a federal governmental entity;
- The appropriate stage in developing such sites when the Commission should view completion of such stage as indicative of an interconnection customer’s request being non-speculative and whether there are substantive differences among interconnection customers (including both onshore and offshore) developing sites owned or physically controlled by a state governmental entity and/or a federal governmental entity;
- Whether the Commission should allow transmission providers to accept demonstrations of less than 100% site control in the initial phases of the interconnection study process, outside of when regulatory limitations prohibit the interconnection customer from obtaining site control; and

- Whether the Commission should instead adopt site control provisions that allow a deposit in lieu of site control to enter the generator interconnection process and be evaluated under the first-ready, first-served cluster study process described above but require interconnection customers to demonstrate site control to enter the facilities study.

Commercial Readiness

Third, the Commission proposes to institute commercial readiness requirements as part of its overall efforts through the NOPR to reduce delays caused by speculative projects. Under this proposed new framework, interconnection customers would be required to meet certain readiness evidence of commercial readiness before entering a specific phase of the interconnection process. As outlined in the NOPR, the proposed requirements are as follows for each phase:

Cluster Study and Cluster Restudy:

- Executed term sheet (or comparable evidence) related to a contract, binding upon the parties to the contract, for sale of (1) the constructed generating facility, (2) the generating facility's energy or capacity, or (3) the generating facility's ancillary services; where the term of sale is not less than five years; or
- Reasonable evidence that the project has been selected in a resource plan or resource solicitation process by or for a load serving entity, is being developed by a load-serving entity (LSE), or is being developed for purposes of a sale to a commercial, industrial, or other large end-use customer; or
- Provisional LGIA which has been filed at the Commission (executed or unexecuted), which is not suspended and includes a commitment to construct the generating facility; or
- Deposit in lieu of Commercial Readiness:²⁸ Two times the study deposit amount to enter the initial cluster study phase; or Five times the study deposit amount after the initial cluster study phase and before the system impact re-study phase.

Facilities Study:

- Executed contract (as opposed to term sheet), binding upon the parties to the contract, for sale of (1) the constructed generating facility, (2) the generating facility's energy or capacity, or (3) the generating facility's ancillary services; where the term of sale is not less than five years; or
- (same as for the Cluster Study and Cluster Restudy) Reasonable evidence that the project has been selected in a resource plan or resource solicitation process by or for a load serving entity, is being developed by an LSE, or is being developed for purposes of a sale to a commercial, industrial, or other large end-use customer; or
- Provisional LGIA accepted for filing by the Commission, which is not suspended, with reasonable evidence that the generating facility and interconnection facilities have commenced design and engineering; or
- Deposit in lieu of Commercial Readiness: Seven times the study deposit after receipt of the facilities study agreement.²⁹

LGIA execution (LGIP 11.3), FERC clarifies the applicable development milestones:

- A contract for the supply or transportation of fuel and a contract for the supply of cooling water will not be accepted for wind, storage, or solar photovoltaic resources;
- Comparable evidence of a contract for the sale of energy or capacity will be accepted;
- Any of the commercial readiness demonstration options accepted to enter the facilities study will be accepted along with the executed LGIA or within 15 days of the Commission issuing an order on the unexecuted LGIA filing; and
- A commercial readiness deposit will not be accepted.

Interconnection customers would be required to inform the transmission provider of any material change to its commercial readiness demonstration and would be given 10 business days to demonstrate satisfaction with the applicable readiness requirements. Furthermore, FERC clarified that any commercial readiness deposit provided would be returned if the interconnection customer later makes a commercial readiness demonstration. If the interconnection customer withdraws from the interconnection queue, the commercial readiness deposit would be first applied toward any incurred withdrawal penalties.

The Commission expressly seeks comments on the following:

- Whether the Commission should also establish, as another alternative demonstration of commercial readiness, (1) evidence of a commitment to participate in RTO/ISO markets, or (2) a site specific purchase order for generating equipment specific to the interconnection request, or a statement signed by an officer or authorized agent of the interconnection customer attesting that the generating facility included is to be supplied with major electric generating components (such as wind turbines) with a manufacturer’s blanket purchase agreement to which the interconnection customer is a party.

Withdrawal Penalties

Finally, the Commission proposes to require penalties on projects that withdraw during the interconnection process, the amount of which escalates the later a project withdraws. As FERC preliminarily found, “withdrawal penalties are needed to account for the harms that can occur when interconnection customers withdraw from the interconnection queue, as detailed in the Need for Reform for this NOPR.”³⁰ According to the NOPR, the following penalties would be applied to withdrawing interconnection customers, with such funds being used to cover study costs for other clusters:

| Phase ³¹ of Withdrawal | Commercial Readiness Demonstration Provided? | Total Withdrawal Penalty (if greater than study deposit) | Withdrawal Penalty Cap |
|-----------------------------------|--|--|------------------------|
| 1 | Yes | 1 times study costs | No Cap |
| 2 | Yes | 1 times study costs | No Cap |
| 3 | Yes | 1 times study costs | No Cap |
| LGIA | Yes | 9 times study costs | No Cap |
| 1 | No (deposit paid) | 2 times study costs | \$1 million |
| 2 | No (deposit paid) | 3 times study costs | \$1.5 million |
| 3 | No (deposit paid) | 5 times study costs | \$2 million |
| LGIA | No (deposit paid) | 9 times study costs | No Cap |

Importantly, however, FERC proposes to not require any withdrawal penalties be imposed if: (1) withdrawal does not delay the timing of other facilities in the same cluster; (2) withdrawal does not increase the cost of network upgrades for other facilities in the same cluster; (3) withdrawal occurs after receiving a cluster study that increases the customer’s assigned costs 25% or more; or (4) withdrawal occurs after the customer receives a facility study that increases its assigned costs by more than 100% than the costs identified in the cluster study report.

The Commission expressly seeks comment on the following:

- How to define the circumstances in which a withdrawal is deemed to have delayed the timing or increased the cost of network upgrades for other proposed generating facilities in the same cluster, including what criteria should be used to determine whether the withdrawal caused the delay or increased cost, and whether to establish a threshold for when a delay or increase in cost will trigger a withdrawal penalty (and if so, what that threshold should be);
- Whether the Commission should consider exceptions to the proposed withdrawal penalties beyond those we propose in this NOPR;
- Whether withdrawal penalties that increase with proposed generating facility size (as measured by MW) would more effectively deter withdrawals that cause the greatest harm; and
- Whether a correlation exists between the size of a withdrawing proposed generating facility and the relative level of harm (in terms of delays and increased cost) to other interconnection customers as a result of the withdrawal.

Transition Process

In order to facilitate the existing backlog in most queues around the country, the Commission also proposes a transition process that will subject most projects already in queues to the new studies and requirements in the NOPR, while allowing certain late-stage projects to complete the interconnection process under existing rules.

Specifically, FERC proposes to require transmission providers to implement a transition process whereby later-stage interconnection customers can elect to enter a transitional serial study or transitional cluster study or withdraw from the interconnection queue without penalty.

Interconnection customers with a final system impact study report or an executed facilities study agreement would be permitted to proceed to join the transitional cluster study process described below or be permitted to continue with the facilities study process if they can meet certain criteria. Specifically, to proceed to the facilities study, such customers would be required to demonstrate (i) exclusive site control; (ii) certain commercial readiness standards; and (iii) a deposit equal to 100% of the interconnection facilities and network upgrades costs, which will be refundable less the study costs and the withdrawal penalty. However, the withdrawal penalty under this option would be nine times the study cost.

Interconnection customers that have not yet received a final system impact study report would be permitted to join the transitional cluster study. As FERC explains, among other features, the transitional cluster would be studied by an expedited combined system impact and interconnection facilities study. Additionally, to demonstrate their readiness to proceed, customers would be required to make a \$5 million deposit, subject to the refund provisions under the transitional serial approach. Similarly, the customer will need to demonstrate exclusive site control and commercial readiness as under the transitional serial approach.

The Commission expressly seeks comment on the following:

- Whether certain interconnection customers with a pending interconnection request prior to the issuance of a final rule should be allowed to proceed to LGIA execution without entering the transition process, for example, interconnection customers with an executed facilities study agreement;
- Whether the Commission should require transmission providers to accept any additional commercial readiness demonstrations for entry into the transition process;
- Whether existing interconnection customers should be permitted to enter the transitional cluster study process by posting a deposit in lieu of demonstrating commercial readiness; and
- Whether five million dollars is a reasonable estimate of the costs that would be allocated to the customer via the transitional cluster study.

Reforms to Increase the Speed of Interconnection Queue Processing

As discussed further below, the Commission also proposes three reforms intended to facilitate more expedient processing of interconnection requests: (1) elimination of the “Reasonable Efforts” standard for transmission providers; (2) standardizing the Affected System study process; and (3) establishing an Optional Resource Solicitation Study.

Elimination of the Reasonable Efforts Standard

The *pro forma* LGIP requires transmission providers to use a “Reasonable Efforts” standard to process interconnection requests in a timely manner, setting deadlines of 45 days for feasibility studies; 90 days for system impact studies; and 90 or 180 days for facilities studies depending on the requested accuracy of the cost estimates included within that study.³² In Order No. 845, FERC required transmission providers to post interconnection metrics on a quarterly basis, reasoning that this reporting requirement would improve interconnection queue management.³³

In the NOPR, FERC explains that the Order No. 845 reporting requirements showed that failure to complete timely interconnection studies is a significant problem nationwide and that nearly all transmission providers across the country regularly fail to meet interconnection study deadlines.³⁴ FERC also observed that it has never found a transmission provider to have violated the reasonable efforts standard despite wide-spread study delays. Accordingly, FERC preliminarily found that the use of the “reasonable efforts” standard results in rates that are unjust and unreasonable.³⁵

The Commission proposes to revise the LGIP to eliminate the “Reasonable Efforts” standard and instead impose firm study deadlines with penalties that will apply when transmission providers fail to meet those deadlines (except in *force majeure* situations).³⁶ Specifically, the NOPR proposes to require transmission providers that do not complete a cluster, cluster re-study, facilities, or affected system study by the LGIP deadline to pay a penalty of \$500 per day that the study is late. Penalties will be distributed to delayed interconnection customers on a pro rata basis to offset their study costs, and will not be recoverable in transmission rates.³⁷ The NOPR proposes to cap penalties at 100 percent of the total study deposit received for the late study.

In terms of timing, the Commission proposes that a transmission provider would not be subject to penalties until after the completion of (1) the transition process; and (2) the first cluster study cycle applying the first-ready, first-served cluster study process.³⁸ FERC also proposes a 10-day grace period such that no penalties will be assessed for a study that is delayed by 10 business days or less. However, for studies that are delayed by more than 10 business days, the penalty would be calculated based on the first business day the study was late.³⁹

FERC recognizes that application of penalties in RTOs/ISOs raises unique issues given these organizations’ status as not-for-profit entities, and that that tariff provisions are likely to be necessary to permit RTOs/ISOs to recover the costs of penalties they are obligated to pay for failing to meet interconnection study deadlines. FERC therefore proposes that RTOs/ISOs propose tariff provisions that would permit them to recover the costs of interconnection study penalties. FERC states that such filings may seek to allocate penalties to the appropriate transmission owner that is responsible for or contributed to the delay.⁴⁰

The Commission expressly seeks comment on the following:⁴¹

- Whether there is a more appropriate method for assigning penalties in RTOs/ISOs;
- Whether penalties will effectively incent more timely completion of interconnection studies in RTOs/ISOs and/or whether monetary penalties may have adverse consequences (e.g., inciting timeliness over accuracy or increased waiver requests);
- The proposed penalty structure, including whether the penalty amount for a cluster study should be \$500 per day or whether an approach that accounts for the number of interconnection customers affected, such as \$100 per day per customer in the delayed study, would be more appropriate;

- How and when FERC should require transmission providers to communicate to interconnection customers the status of specific studies that may be delayed;
- Whether to include exceptions to the penalty other than force majeure, and if so, what those exceptions should be; and
- Whether, to increase transparency, FERC staff should issue periodic reports summarizing the status of transmission providers' queues and timeliness of interconnection studies based on information collected through existing reporting requirements, and whether this report should be in addition or a substitute for the proposed monetary penalties.

Affected Systems

In the NOPR, the Commission noted that affected systems study processes lack consistency between transmission providers. The current *pro forma* LGIP requires transmission providers to simply “coordinate” with affected systems during the interconnection process, and does not bind affected system operators with any deadlines to complete their studies. As FERC explains, affected system operators may not often return study results in time for interconnection customers to make necessary decisions regarding their interconnection requests, which can contribute to the problem of late-stage withdrawals and cascading restudies. FERC proposes three affected systems-related reforms to address these concerns.

Affected Systems Study Process

FERC proposes a new affected systems study process that would, among other things, include initial notification, system scoping meeting, study process, cost allocation, study results and assessment, and financial penalties assessment.⁴² More specifically, under the proposed affected systems study process a transmission provider must notify an affected system within 10 business days after the close of the first event giving rise to the identification of an affected system impact. Upon receipt of any such notice, an affected system would then in turn notify the transmission provider within 15 business days as to whether they intend to perform an affected system study. Within seven days of any such notice of intent to conduct an affected system study, the transmission provider with the affected system would then schedule a system scoping meeting. Within 15 days after the meeting, the transmission provider would share a schedule to complete the affected system study. The affected system transmission provider will then tender an affected system agreement within five business days of sharing the schedule for the affected system study, which the interconnection customer must execute within 10 days. The transmission provider with the affected system would then have 90 days to provide the affected system study results, including cost and construction time estimates for any network upgrades needed. Then, an affected system facilities construction agreement must be provided within 30 days, which must be executed within five days, and if unexecuted, the affected system would have an additional five days to file the unexecuted agreement with FERC.

FERC seeks comment on the proposed affected systems study process.

Pro forma Agreements: Affected System Study Agreement and Affected System Facilities Construction Agreement

FERC also proposes to establish a *pro forma* affected system study agreement and a *pro forma* affected system facilities construction agreement to improve the efficiency and transparency of the interconnection customer's interactions with an affected system operator.⁴³ FERC expressed concern that the lack of *pro forma* agreements was causing increased litigation and leaving the door open to potentially unduly discriminatory behavior, and thus, determined there is a pressing need for standardized, uniformly applicable agreements.⁴⁴

FERC proposes to model the *pro forma* affected system study agreement on the existing *pro forma* system impact study agreement, and proposes to require the affected system study scope to: (i) identify any circuit breaker short circuit capability limits exceeded as a result of the interconnection; (ii) identify any thermal overload or voltage limit violations resulting from the interconnection; (iii) identify any instability or inadequately damped response to system disturbances resulting from the interconnection; and (iv) provide a non-binding, good faith cost estimates for facilities

to connect the Affected System Interconnection customer’s project to its host transmission provider’s system, as well as describe how such facilities will address the identified short circuit, instability, and power flow issues.⁴⁵

The proposed *pro forma* affected system facilities construction agreement will set the terms and conditions for the construction of network upgrades on affected systems. It is modeled after a similar agreement included in the Midcontinent Independent System Operator (“MISO”) tariff and contemplates that the affected system repay the interconnection customer for the full cost of network upgrades, plus interest, over a mutually agreed upon term not to exceed 20 years.

FERC expressly seeks comment on the following:

- Whether the information required for the affected system study report provides adequate information for the affected system study customer to understand the results of the study;
- The network upgrade funding and repayment provisions of its proposed affected system facilities construction agreement, and specifically whether the time frame for repayment is appropriate; and
- Whether any additional articles or provisions should be added to the *pro forma* affected system facilities construction agreement or whether the proposed provisions are sufficient.

Affected System Modeling and Study Assumptions

The NOPR proposes to require affected system transmission providers to study interconnection requests using energy resource interconnection service (“ERIS”) modeling standards.⁴⁶ Currently there is no requirement for transmission providers acting as affected system operators to apply either ERIS or network resource interconnection service (“NRIS”), the use of which can significantly impact an interconnection customer’s network upgrade costs (because the NRIS modeling standard is generally stricter).

Because an affected system has no obligation to continually ensure deliverability for a facility that has obtained NRIS on the host transmission provider’s system, FERC explained that requiring affected system transmission providers to utilize the less stringent ERIS modeling assumptions would allow interconnection queues to be processed more quickly, reduce the number of high-cost network upgrades, and in turn, the number of withdrawal and re-studies.⁴⁷ FERC noted, however, that if a transmission provider with an affected system believes it is necessary to study an interconnection request using NRIS modeling standards, a 205 filing could be made to allow FERC to make a case-by-case determination.

FERC expressly seeks comment on the following:

- How to align the possibility for case-by-case section 205 filings with the NOPR’s proposed affected system study deadlines;
- Whether the proposal to use ERIS study assumptions will adversely affect reliability on either the affected system or the host transmission system, including examples of such reliability impacts or of why an NRIS study is required to ensure reliability on the affected system;
- The potential impact of requiring transmission providers acting as the affected systems to use ERIS modeling standards when an interconnection customer seeks NRIS in the host transmission provider’s system; and
- Whether there are modifications to the NOPR proposal that would reduce the likelihood of curtailment or redispatch on the affected transmission provider’s system without requiring the interconnection customer to pay network upgrades that are not commensurate with the level of service it receives.

Optional Resource Solicitation Study

The Commission also proposes to require transmission providers to allow a resource planning entity (i.e., any entity required to develop a resource plan or conduct a resource solicitation process) to initiate an optional resource solicitation study to increase efficiencies in studying resources vying for selection in a qualifying resource solicitation process by grouping the resources together for studies.⁴⁸ In other words, this proposal would enable load-serving

entities or state agencies, for example,⁴⁹ to utilize a separate cluster study process to facilitate state-imposed resource solicitation processes. Such a study process, FERC reasons, would provide resource planning entities with more information about relative costs of different proposed resources.

Accordingly, the NOPR proposes a 135-day time limit on the optional resource solicitation study.⁵⁰ After the transmission provider completes the study, it will provide the results to the resource planning entity for use in the selection process and will also post results to its OASIS. Interconnection requests may proceed in the remainder of the transmission provider's interconnection study process regardless of whether they are selected by the resource planning entity for inclusion in the resource plan; those that are not selected may remain in the queue by submitting other forms of commercial readiness or providing a commercial readiness deposit.⁵¹

To limit opportunities for undue discrimination by transmission providers, FERC proposes to require that a resource plan or resource solicitation process either use competitive procurement techniques, or be substantively reviewed and approved or directly managed by a relevant state agency.⁵² Under FERC's proposal, interconnection customers would be responsible for the costs of these studies, and the resource planning entity would also be limited to submitting no more than five different combination of interconnection requests necessary to meet the planning entity's identified needs and solicitation assumptions.⁵³

FERC expressly seeks comment on:⁵⁴

- Its proposal to explicitly include state agencies that are required to develop a resource plan or conduct a resource solicitation process in the definition of a resource planning entity;
- Whether other entities should qualify as resource planning entities and therefore be able to request initiation of an optional resource solicitation study, and, if so, what impact, if any, their inclusion would have on the efficiency of the generator interconnection process and whether their inclusion would raise concerns of undue discrimination or preference;
- Whether the proposed optional resource solicitation study raises any confidentiality concerns, including whether the study report should be posted on the transmission provider's OASIS before the qualifying solicitation process has concluded; and
- What challenges multistate transmission providers and RTO/ISOs that serve large multistate areas may face offering an optional resource solicitation study, and proposes to mitigate such challenges (e.g., study timing, multiple concurrent studies or other issues).

Reforms to Incorporate Technological Advancements into the Interconnection Process

The final set of NOPR reforms pertain to incorporating technological advancements and interconnection configurations into the interconnection process. Specifically, the NOPR proposals aim to increase the flexibility of the process, such as allowing co-location of certain generation resources, incorporating different technologies into the study process, and enhancing modeling and performance requirements for non-synchronous generating facilities.

Increasing Flexibility in the Generator Interconnection Process

In the NOPR, the Commission proposes four reforms to increase the flexibility of the generator interconnection process.⁵⁵ First, the Commission proposes to require transmission providers to allow more than one resource to co-locate on a shared site behind a single point of interconnection and share a single interconnection request.⁵⁶ Second, the Commission proposes to revise the Material Modification process to require consideration of generating facility additions that do not increase the overall interconnection service level.⁵⁷ Third, the Commission proposes to require transmission providers allow access to a generating facility's surplus interconnection service once the generating facility has an executed LGIA or has requested the filing of an unexecuted LGIA.⁵⁸ Finally, the Commission proposes to require transmission providers to incorporate into its studies certain operating assumptions for electric storage resources or co-located resources containing electric storage resources (including hybrid resources).⁵⁹

Co-Located Generation Sites Behind One Point of Interconnection with Shared Interconnection Requests

With regard to the first such “flexibility” reform, the Commission acknowledges that the *pro forma* LGIP does not address interconnection requests made up of multiple generating facilities seeking to co-locate and to share a single point of interconnection. Such configurations are becoming increasingly popular, however, as FERC notes, and moreover, can benefit grid reliability and increase interconnection efficiencies.⁶⁰ Accordingly, the Commission proposes to require transmission providers to allow more than one resource to co-locate on a shared site behind a single point of interconnection and share a single interconnection request. For co-locating generating facilities with different terminal voltage levels, FERC will also require that such generating facilities incorporate technology to ensure that they have the same voltage level.⁶¹

Revisions to the Material Modification Process to Require Consideration of Generating Facility Additions

For the second “flexibility” reform, the Commission noted various comments in other proceedings indicating a lack of uniformity among transmission providers regarding whether the addition of a generating facility (such as energy storage) without an increase in interconnection service level is a *per se* Material Modification.⁶² To remedy this inconsistency, FERC proposes to require that transmission providers must evaluate any such generator addition requests (i.e., cannot reject them outright as a material modification without study) and incorporate them into the interconnection request provided there is no material impact on the cost or timing of a lower- or equally-queued customer.⁶³

FERC expressly requests comments on the following:

- Whether such generator addition requests should nonetheless require full interconnection studies;
- How transmission providers should perform studies to confirm that there is no material modification;
- Whether and how customers in a later cluster or same cluster could be adversely impacted;
- Whether the addition of electric storage when in charging mode (in terms of resistance, inductance, and capacitance) may adversely impact the reliable operation of the generating facility; and
- Whether further specifications are needed to assess the electrical characteristics of, as the Commission described it, a “complex load.”

Availability of Surplus Interconnection Service

The Commission’s third flexibility-related reform pertains to increasing the availability of surplus interconnection service. FERC acknowledges some general confusion as to when surplus interconnection service may become available for use by other generators.⁶⁴ As FERC found, limiting the use of surplus interconnection service to only those interconnection customers that have achieved commercial operation may unduly restrict access to potentially available capacity. Accordingly, FERC proposes to require 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. As FERC argues, this will enable interconnection customers to access surplus capacity earlier than otherwise expressly permitted under the LGIP.

Operating Assumptions for Interconnection Studies

The final flexibility-related reform relates to increasing the integration of electric storage resources. As FERC explains, with increasing integration of electric storage resources, there is also growing frustration that current interconnection study processes do not incorporate real-world operating assumptions. For example, FERC notes that some transmission providers assume that all generating facilities in a constrained area will seek to generate simultaneously during light load conditions or that all electric storage resources will seek to charge during peak load conditions.⁶⁵ Accordingly, the Commission proposes to require transmission providers, at the request of the interconnection customer, to use operating assumptions for interconnection studies that reflect the proposed operation of an electric storage resource or co-located resource containing an electric storage resource (including hybrid resources) – i.e., whether the interconnecting resource will or will not charge during peak load conditions,

unless good utility practice, including applicable reliability standards, otherwise require the use of different operating assumptions.⁶⁶ The Commission also proposes to require interconnection customers to clearly communicate how their electric storage resources (or co-located resources with electric storage component) would be operated, and to allow transmission providers to hold interconnection customers to these parameters.

FERC expressly requests comments on the following:

- Whether this reform should be expanded to address operating assumptions for additional generating facility technologies that may currently be inaccurately modeled (e.g. solar and wind resources);
- How the Commission should define the study parameters (e.g., should the Commission define the “peak load period” and/or “net peak load” during which transmission providers must not study a generating facility as withdrawing energy, and if so how); and
- Whether, and if so how, the Commission should define firm and non-firm charging for electric storage resources and require transmission providers to define study criteria and possible ways to interconnect related to both firm and non-firm charging.⁶⁷

Incorporating alternative transmission technologies into the generator interconnection process

The Commission also issued two proposals to better incorporate alternative transmission technologies into the interconnection process. First, FERC proposes to revise the *pro forma* LGIP and *pro forma* SGIP to require transmission providers to evaluate requested alternative transmission solution(s) during the LGIP cluster study and the SGIP system impact study and facilities study within the generator interconnection process. For purposes of this reform, FERC explains that “alternative transmission technologies” are advanced power flow control, transmission switching, dynamic line ratings, static synchronous compensators, and/or static VAR compensators. Under this reform, the interconnection customer could request at the scoping meeting, that the transmission provider consider one, multiple, or all such “alternative transmission technologies” for purposes of feasibility, cost, and time savings within the cluster study for the LGIP and the system impact study and facilities study for the SGIP, upon request of the interconnection customer.⁶⁸ Notably, however, transmission providers would retain discretion regarding whether to use such transmission technology.

With regard to this first technology-related reform, FERC expressly seeks comment on the following:

- Whether the list of alternative transmission technologies is sufficient and, in particular, whether storage that performs a transmission function, synchronous condensers, and voltage source converters should be included in the list of alternative transmission technologies;
- Whether there are software, operational, or other barriers to the use of these transmission technologies;
- Whether suing these alternative transmission technologies as supplements for, in the place of, traditional network upgrades is sufficient to guarantee a level of service to accommodate an interconnection customer seeking NRIS, or whether such a network upgrade can only relate to ERIS;
- Whether existing study processes and models in the interconnection process are suitable for considering alternative transmission technologies;
- How costs incurred for evaluating alternative transmission technology study requests would be allocated among interconnection customers in the cluster;
- What reasonable number of transmission technology study requests from each interconnection customer would be workable, the burden (in terms of both time and resources) on transmission providers required to evaluate such requests, and whether interconnection study deadlines may need to be extended to account for time needed to evaluate the alternative transmission technology study; and
- Whether provisional interconnection service consideration for transmission technologies should be mandatory.

As a second technology-related reform, FERC proposes that transmission providers submit annual informational reports to the Commission detailing whether, and if so how, advanced power flow control, transmission switching, dynamic line ratings, static synchronous compensators, and static VAR compensators were considered in interconnection requests over the previous year.⁶⁹ Under this proposal, FERC would create a new docket to collect all such annual information report filings.

FERC expressly seeks comment on:

- Whether transmission providers should include explanations for why certain proposed alternative technologies were not ultimately deployed;
- The scope of the annual information report; and
- Whether other information should be included.

Modeling and Performance Requirements for Non-Synchronous Generating Facilities

The Commission’s final set of reforms seek to address challenges posed by the increasing penetration of non-synchronous generating facilities, such as solar photovoltaics (“PV”), wind, fuel cell, and battery storage. According to FERC, present day non-synchronous generating facilities predominantly use grid-following inverters, which can react almost instantaneously (within milliseconds) to transmission system conditions. As a result, non-synchronous generating facilities are sensitive to even the smallest voltage and frequency changes, rendering them less able to “ride through” system disturbances and, thus, more likely to trip offline in response to a single fault on the transmission or sub-transmission system. Recognizing the real-world impact posed by the sensitivities of non-synchronous (sometimes called “inverter-based”) resources, NERC has issued numerous guidelines, technical reports, and whitepapers to address these risks.

In response to these concerns, FERC raises two proposals. First, FERC proposes to require non-synchronous generating facilities to provide “accurate and validated” models to transmission providers during the interconnection process.⁷⁰ Specifically, FERC proposes to revise the *pro forma* LGIP and SGIP to require each interconnection customer requesting to interconnect a non-synchronous generating facility to submit to the transmission provider:

- A validated user-defined root mean square (RMS) positive sequence dynamics model;
- An appropriately parameterized, generic library RMS positive sequence dynamics 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 WECC; and
- A validated EMT model, if the transmission provider performs an EMT study as part of the interconnection study process.

Failure by an interconnection customer to provide this information within the deadlines established in the *pro forma* LGIP and SGIP would make the interconnection request incomplete and considered invalid.⁷¹ If the interconnection customer does not cure the deficiency within the 10-day cure period, the interconnection will be considered withdrawn pursuant to sections 3.7 and 1.3 of the *pro forma* LGIP and SGIP, respectively.

The NOPR also proposes a modification to subsections 4.4.4 and 1.4 of the *pro forma* LGIP and SGIP, respectively, to require that any proposed modification of the interconnection request be accompanied by updated models of the proposed generating facility.⁷²

FERC’s second proposal directed at non-synchronous generating facilities pertains to enhancing existing voltage ride-through capabilities. Specifically, the Commission proposes to require newly interconnecting non-synchronous generating facilities to continue current injection inside the “no trip zone” of the frequency and voltage ride-through curves of Reliability Standard PRC-024-3 or its successor standards, in accordance with NERC’s IBR guidelines.⁷³

Additionally, the NOPR proposes to require that any newly interconnecting non-synchronous generating facility have the ability to maintain power production at pre-disturbance levels unless providing primary frequency or response or

fast frequency response, and must have the ability to provide sufficient dynamic reactive power to maintain system voltage in accordance with the generating facility's voltage schedule.

The NOPR also proposes revisions to article 9.7.3 of the *pro forma* LGIA to require that all newly interconnecting large generating facilities provide 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. The Commission explains that this proposal would address the gap in ride-through requirements for large generating facilities.

FERC expressly seeks comments on the following:

- Whether the proposed reforms to the *pro forma* LGIP and SGIP, to ensure that interconnection customers requesting an interconnection to a non-synchronous generating facility provide the transmission provider with sufficient models and information to accurately reflect the behavior of the proposed generating facility, are necessary;
- Whether the inclusion of the table based on NERC Guidelines that cite WECC-approved models is appropriate, and if not, how FERC could require interconnection customers to submit models that are well known in the industry to be accurate without listing specific models; and
- Whether adherence to the proposed ride-through requirements would be readily achievable through changes to control settings and whether such changes to control settings could be made at a relatively minor cost.

Compliance Procedures and Impacts on Previously-Approved Variations

FERC proposes to require each transmission provider to submit a compliance filing within 180 days of the effective date of the final rule in this proceeding revising its LGIP, LGIA, SGIP, and SGIA, as necessary, to demonstrate that it meets the requirements set forth in any final rule issued in this proceeding. RTOs and ISOs may seek “independent entity variations” from the proposed revisions to the *pro forma* LGIP and LGIA.

In addition, the Commission acknowledges that some transmission providers may have revised their existing LGIPs, LGIAs, SGIPs, and SGIAs to incorporate versions of these reforms. As FERC explains, “[w]here these provisions would be modified by the final rule, transmission providers must either comply with the final rule or demonstrate that these previously-approved variations continue to be consistent with or superior to the *pro forma* as modified by the final rule or continue to be permissible under the independent entity variation standard or regional reliability standard.”⁷⁴

¹ *Improvements to Generator Interconnection Procedures and Agreements*, Notice of Proposed Rulemaking, 179 FERC ¶ 61,194 (2022) (“NOPR”).

² Infra Part A.

³ Infra Part B.

⁴ Infra Part C.

⁵ NOPR at P 342.

⁶ *Standardization of Generator Interconnection Agreements & Proc.*, Order No. 2003, 68 FR 49845 (Aug. 19, 2003), 104 FERC ¶ 61,103 (2003), *order on reh’g*, Order No. 2003-A, 69 FR 15932 (Mar. 5, 2004), 106 FERC ¶ 61,220, *order on reh’g*, Order No. 2003-B, 70 FR 265 (Jan. 19, 2005), 109 FERC ¶ 61,287 (2004), *order on reh’g*, Order No. 2003-C, 70 FR 37661 (July 18, 2005), 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) (NARUC v. FERC); *Standardization of Small Generator Interconnection Agreements & Proc.*, Order No. 2006, 70 FR 34189 (June 13, 2005), 111 FERC ¶ 61,220, *order on reh’g*, Order No. 2006-A, 70 FR 71760 (Nov. 30, 2005), 113 FERC ¶ 61,195 (2005), *order granting clarification*, Order No. 2006-B, 71 FR 42587 (July 27, 2006), 116 FERC ¶ 61,046 (2006).

⁷ *Reform of Generator Interconnection Procs & Agreements*, Order No. 845, 83 FR 21342 (May 09, 2018), 163 FERC ¶ 61,043 (2018), *order on reh’g*, Order No. 845- A, 166 FERC ¶ 61,137, 84 FR 8156 (Mar. 06, 2019), *order on reh’g*, Order No. 845- B, 168 FERC ¶ 61,092 (2019).

⁸ NOPR at P 18.

⁹ *Id.* at P 42.

¹⁰ *Id.* at P 43.

¹¹ *Id.* at P 44.

¹² *Id.* at P 45.

¹³ *Id.* at P 47.

¹⁴ *Id.* at P 48.

¹⁵ *Id.* at P 48.

¹⁶ *Id.* at P 51.

¹⁷ *Id.* at P 51.

¹⁸ *Id.* at PP 65-76.

¹⁹ *Id.* at P 88.

²⁰ *Id.* at P 97.

²¹ *Id.* at P 98.

²² *Id.* at P 99.

²³ *Id.* at P 99.

²⁴ *Id.* at PP 106-108.

²⁵ *Id.* at P 118. As the Commission stated, “[i]n such instances, the interconnection customer would 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 \$2,000,000, which would be applied toward any interconnection studies or withdrawal penalty, if applicable. Such an interconnection customer must demonstrate 100% site control prior to the facilities study.” *Id.*

²⁶ *Id.* at P 119.

²⁷ *Id.* at P 115.

²⁸ *Id.* at P 133.

²⁹ *Id.* at P 133.

³⁰ *Id.* at P 140.

³¹ What the Commission means by “Phase” is not expressly clear in the NOPR.

32 NOPR at P 161. The *pro forma* LGIP defines “Reasonable Efforts” as “actions that are timely and consistent with Good Utility Practice and are substantially equivalent to those a Party would use to protect its own interests.”
Id.

33 *Id.* at P 164. Specifically, FERC required transmission providers that exceeded study deadlines for more than 25 percent of any study type for two consecutive quarters to file informational report. *Id.*

34 *Id.* at PP 165-166.

35 *Id.* at P 167.

36 *Id.* at P 169.

37 *Id.*

38 *Id.* at P 170.

39 *Id.*

40 *Id.* at P 172.

41 *Id.* at PP 172-173.

42 *Id.* at P 183.

43 *Id.* at PP 197, 200.

44 *Id.* at PP 194-96.

45 *Id.* at PP 198-199.

46 *Id.* at P 211.

47 *Id.* at P 212.

48 *Id.* at P 223.

49 *Id.* at P 226.

50 *Id.* at P 233.

51 *Id.* at P 234.

52 *Id.* at P 230.

53 *Id.* at P 232.

54 *Id.* at PP 236-237.

55 *Id.* at PP 238-288.

56 *Id.* at PP 242-45.

57 *Id.* at PP 255-57.

58 *Id.* at P 264.

59 *Id.* at PP 280-88.

60 *Id.* at P 239.

61 *Id.* at P 245.

62 *Id.* at PP 252-54.

63 *Id.* at P 255.

64 *Id.* at PP 262-63.

65 *Id.* at P 265.

66 *Id.* at P 280

67 *Id.* at PP 286-88.

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- 68 *Id.* at P 299.
69 *Id.* at P 302.
70 *Id.* at P 318.
71 *Id.* at P 333.
72 *Id.* at P 334.
73 *Id.* at P 336.
74 *Id.* at P 342.