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FERC Issues Notice of Proposed Rulemaking Reforming Generator Interconnection Procedures and Agreements

On June 16, the Federal Energy Regulatory Commission (FERC or the Commission) issued a Notice of Proposed Rulemaking (NOPR) on Improvements to Generator Interconnection Procedures and Agreements.[1] In the NOPR, the Commission proposes reforms to the *pro forma* Large Generator Interconnection Procedures (LGIP) and Agreement (LGIA) and the *pro forma* Small Generator Interconnection Procedures (SGIP) and Agreement (SGIA) to "address queue backlogs, improve certainty, and prevent undue discrimination for new technologies." The NOPR was adopted unanimously by all five Commissioners, with concurring statements from Commissioners Danly and Christie. Comments on the NOPR are due 100 days and reply comments are due 130 days after publication in the *Federal Register*, which as of the publication of this Advisory, has not yet occurred. If the NOPR proposals become requirements in a final rule, which seems likely, they will make major changes to generator interconnection procedures. Key proposals from the NOPR would:

- create an optional information interconnection study process that would include cost estimates;
- replace the serial interconnection study process with a first-ready, first-served cluster study process, with only a limited transition process;
- allocate network upgrade cluster costs based on a proportional impact method, a technical analysis conducted by the transmission provider to determine the degree to which each generating facility in the cluster contributes to the need for a specific network upgrade;
- require a cost allocation method for sharing network upgrade costs among all cluster participants for shared benefits;
- increase financial commitments and readiness requirements for interconnection customers, including more stringent requirements regarding deposits, site control, and commercial readiness demonstrations, and add withdrawal penalties;
- eliminate the reasonable efforts standard imposed on transmission providers for meeting study timelines and replace it with firm timing requirements and penalties for failure to meet deadlines;
- standardize and accelerate the affected system study process;
- allow for request of an optional resource solicitation interconnection study outside of the normal interconnection process for a resource planning entity (such as a state agency or load-serving entity implementing a state mandate);
- provide for co-location of generation at a shared site in a single interconnection request;
- revise the material modification standard to make it easier to add generation or storage to an interconnection request without requiring the request to lose its place in the queue;
- make surplus interconnection capacity available to others earlier (once the LGIA has been signed or filed unexecuted);
- require more accurate operating assumptions for electric storage;
- require consideration of alternative transmission technologies in the network upgrade analysis;
- increase modeling requirements for non-synchronous generators;
- increase ride-through requirements for non-synchronous generators; and

- require compliance filings within 180 days of the effective date of the final rule.

The need for the NOPR stems from the dramatic increase in the volume of new generating facilities (primarily renewable clean energy generation) seeking to interconnect, which has placed a stress on existing interconnection queues. While FERC has tried to address the queue backlog in previous rulemakings, the queues across the country have remain congested. The Commission reports in the NOPR that at the end of 2021, there were more than 8,100 active interconnection requests throughout the United States, representing more than 1,000 GW of generation and an estimated 420 GW of electric storage.[2] Interconnection queue backlogs create project uncertainty, inhibit developers' ability to interconnect, stifle competition, hinder timely development of new generation and severely limit states' abilities to satisfy renewable clean energy goals. Accordingly, the Commission preliminarily finds that "the *pro forma* LGIP, *pro forma* LGIA, *pro forma* SGIP, and *pro forma* SGIA result in rates, terms and conditions pursuant to which transmission providers provide generator interconnection service are unjust and unreasonable and unduly discriminatory or preferential."[3] FERC expresses particular concern about:

- the information (or lack thereof) available to prospective interconnection customers and the commitments required of them to enter and progress through the interconnection queue;
- the reliance on a serial first-come, first-served study process and the standard to which transmission providers are held for meeting interconnection study deadlines;
- the protocols for affected systems studies;
- the provisions for studying new or hybrid (co-located) generation technologies and considering alternative transmission technologies; and
- the performance requirements for inverter-based technologies, including wind, solar, and electric storage facilities.[4]

Thus, the NOPR seeks to address these concerns through reforms to the interconnection process. Notably, however, the Commission points out in the NOPR that it does not intend for any of the reforms therein to hinder or delay any of the important progress that certain regional transmission organization (RTO) and independent system operator (ISO) regions have been making to address the interconnection queue backlog to date.[5] The proposed reforms fall into three main 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 to the interconnection process. Within each of these categories, the Commission proposes several reforms, and requests comment.

A. Reforms Implementing a First-Ready, First-Served Cluster Study Process

To help eliminate backlogs and delays caused by projects dropping out of the queue and "cascading" re-studies, and to expedite interconnection of ready projects, FERC proposes to eliminate the serial first-come, first-served approach and move to a "first-ready, first-served" cluster study process as the predominant method of interconnection.[6] The Commission preliminarily finds that "a first-ready, first-served cluster study process, coupled with increased financial commitments and readiness requirements,"[7] will address interconnection queue issues, thereby remedying potentially unjust and unreasonable FERC-jurisdictional rates. The NOPR proposes only a limited transition process under which most existing interconnection customers would move into the cluster study process.[8]

1. Informational Interconnection Study

First, FERC proposes to require transmission providers to offer an alternative option for an informational interconnection study that would not require a project to enter the interconnection queue. This Informational Interconnection Study would be ideal for those developers that simply need to learn more about the viability of a project and the interconnection and network upgrade cost estimates and scheduling for various sites *before* they enter the interconnection queue.[9] This study would be similar to the existing feasibility study option. It would help developers and prospective interconnection customers decide whether they want to submit an interconnection request and would lower the number of projects entering the queue just to obtain more information, only to subsequently drop out and cause cascading re-studies. Further, the Commission proposes

to set minimum requirements for transmission providers to *publicly* post available information pertaining to generator interconnection through an interactive visual representation of available interconnection capacity, such as a heat map.[10]

2. First-Ready, First-Served Cluster Study and Allocation of Cluster Study Costs

FERC proposes to make cluster studies the required interconnection study method under the *pro forma* LGIP.[11] Under this cluster process, interconnection requests within a cluster would have equal interconnection priority; earlier clusters would have higher priority over later clusters.[12] Each cluster will entail a comprehensive study of the interconnection of the multiple proposed generators interconnections within that cluster.[13] The cluster process is intended to expedite interconnection. Within the shift to the cluster process, the Commission proposes a few revisions to the *pro forma* LGIP and LGIA, such as:

- modifying the definition of stand-alone network upgrade to clarify that, for a network upgrade to be eligible for treatment as a stand-alone network upgrade, the network upgrade must be required for *only one* interconnection customer
- requiring that interconnection customers select a definitive point of interconnection to be studied when executing the cluster study agreement; and
- providing that changing a point of interconnection will result in loss of queue position if the transmission provider deems the change to be a material modification.[14]

The Commission proposes to allocate the shared costs of the cluster studies so that 90 percent of the applicable study costs are allocated to interconnection customers pro rata based on the requested MWs included in the applicable cluster and 10 percent of the applicable study costs are allocated to interconnection customers per capita based on the number of interconnection requests in the applicable cluster.[15] FERC also proposes to require transmission providers to allocate network upgrade costs to interconnection customers within a cluster using a proportional impact method in which the transmission provider will determine the degree to which each generating facility in the cluster contributes to the need for a specific network upgrade.[16] Finally, the Commission proposes to allow interconnection customers in an earlier-in-time cluster to share the costs of network upgrades with interconnection customers that will significantly benefit from those upgrades but would not share the cost of the network upgrades solely by virtue of being in a later cluster.[17] The NOPR does not propose to allocate generator-interconnection related costs beyond the generator developers.

3. Financial Commitments and Readiness Requirements

As part of the first-ready reforms, FERC proposes to adopt more stringent financial commitments and readiness requirements for interconnection customers to remain in the interconnection queue in order to "discourage speculative interconnection requests and allow transmission providers to focus on processing viable interconnection requests and better approximate the costs of the interconnection study process."[18] First, the Commission proposes to increase study deposits. The proposed study deposits range, based on the size of the generating facility, from $35,000 to $250,000.[19] Second, it proposes more stringent site control requirements and to require an interconnection customer to demonstrate 100 percent site control for a proposed generating facility when it submits the interconnection request.[20] Third, FERC proposes a commercial readiness framework whereby interconnection customers must demonstrate achievement of milestones toward commercial readiness in order to enter the cluster, such as an executed term sheet related to a contract for sale of the facility's output, or selection in a resource procurement.[21] Finally, the Commission proposes to impose withdrawal penalties when the interconnection customer withdraws from the interconnection queue.[22]

B. Reforms to Increase the Speed of Interconnection Queue Processing

FERC proposes several reforms intended to increase the speed of interconnection queue processing. First, it proposes to replace the "reasonable efforts" standard for transmission providers completing interconnection studies with a requirement that would impose firm study deadlines and establish penalties that would apply when transmission providers fail to meet these deadlines.[23] Further, FERC proposes several reforms related to expediting and standardizing the affected system study and upgrade process. As part of the new uniform affected system study process, the Commission proposes two new

pro forma agreements, a *pro forma* Affected System Study Agreement (new Appendix 15) and a *pro forma* Affected Systems Facilities Construction Agreement (new Appendix 16).[24] Finally, the Commission proposes a new optional resource solicitation study that can be performed by entities required to conduct a resource plan or solicitation.[25] Under this proposed study process, a resource planning agency (such as a state agency or load-serving entity implementing a state mandate) would facilitate a study to group together interconnection requests associated with the qualifying resource solicitation process, and the resources vying for selection in a qualifying state resource solicitation process would be studied together for the purposes of informational interconnection studies. The Commission states that this arrangement can help resource planning entities make informed decisions about the resource solicitations and access concrete cost information about the relative costs of different combinations of interconnection requests. The process can also help interconnection customers gain the information they need to interconnect.

C. Reforms to Incorporate Technological Advancements into Interconnection Process

As the final area of reform, FERC proposes to incorporate technological advancements into the interconnection process.[26] Not only aimed at grid-enhancing technologies, these reforms could make it significantly less burdensome to incorporate storage resources into generation projects and to interconnect co-located resources. 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.[27] The Commission also proposes that the addition of a generating facility to an interconnection request, would not be considered an automatic material modification as long as the proposed change does not have a material impact on the cost or timing of any interconnection request that is lower or equally queued and will not cause reliability concerns. Further, the Commission proposes to enable customers with unused interconnection capacity to share that surplus capacity with other resources as soon as the original interconnection customer executes an LGIA or requests filing of an unexecuted LGIA.[28] FERC also proposes to require transmission providers, at the request of the interconnection customer, to use operating assumptions for interconnection studies that more accurately reflect the proposed operation of an electric storage resource or co-located storage resource.[29] In the area of grid-enhancing technologies, the Commission proposes to require transmission providers, upon the request of the interconnection customer, to evaluate the requested alternative transmission solutions during the study process.[30] The Commission also proposes to require transmission providers to file an annual informational report on their use of grid-enhancing technologies. The NOPR proposes reforms to modeling and performance requirements for non-synchronous generators, both large and small. Examples of non-synchronous generators include solar photovoltaics, wind, fuel cell and battery storage. As FERC describes, modeling is particularly important for non-synchronous resources because if these resources are not properly configured or programmed to respond to transmission system frequency and voltage fluctuations, they may fail to "ride through"[31] a system disturbance (e.g., a normally cleared transmission fault) by tripping or entering momentary cessation mode.[32] Thus, the Commission proposes to revise the *pro forma* LGIP and SGIP to ensure that all interconnection customers requesting to interconnect a non-synchronous generating facility provide the transmission provider with the sufficiently detailed models needed for accurate interconnection studies using a consistent approach among all generating facilities. The Commission also proposes to require newly interconnecting non-synchronous generating facilities to adhere to North American Electric Reliability Corporation standards regarding "ride-through" requirements.

D. Compliance Procedures

Regarding compliance, FERC proposes to require each transmission provider to submit a compliance filing within 180 days of the effective date of the final rule, revising its LGIP, LGIA, SGIP and SGIA as necessary. The Commission proposes to allow appropriate entities to seek "regional reliability variations" or "independent entity variations" from the revisions to the pro forma interconnection procedures and agreements.[33] A "regional reliability variation" is one based on established reliability requirements for a transmission provider's region. An "independent entity variation" allows an ISO or RTO to propose variations from the *pro forma* interconnection procedures and agreements by demonstrating that the variations are just and reasonable, are not unduly discriminatory or preferential, and would accomplish the purposes of the final rule.

E. Observations

- This NOPR is one significant additional piece of FERC's more comprehensive efforts to reform the transmission planning, interconnection and cost allocation processes, in part to enable transition to the future grid and the interconnection of diverse resources. The first piece was the NOPR released in April on transmission planning.[34] It is likely that a third piece of the puzzle, focusing on transmission oversight, will be issued in the relatively near future.
- While Commissioner Danly dissented in the April NOPR on the grounds that the Commission could not make the required Section 206 finding that the existing transmission planning regimes were so unjust and unreasonable so as to warrant change, he issued a concurring statement in response to this NOPR, stating that he believes "it is far more likely that the record evidence will support a section 206 step-one finding that at least some aspects of current interconnection rules are unjust and unreasonable."[35] Given the unanimous support for this NOPR and the developed proposals in it, these proposed changes may move quickly to a final rule, potentially early in 2023.
- The NOPR proposals, if reflected in a final rule, will make major changes to how generator interconnection is done from both the transmission provider and the generation developer sides of the process.
- The absence of any proposed reform to allocate generator interconnection-related network upgrade costs beyond the generation developers is a gap that will likely be addressed either through another rulemaking or complaint proceedings.
- RTO/ISO compliance discussions following the issuance of a final rule will be quite active as stakeholders consider the requirements and the potential for independent entity variations that best suit the needs of the region.
- The initial implementation phase of a final rule based on these proposals is likely to cause some pain for transmission providers and generation developers as the queue rules and composition changes substantially, but in the long run, many of the reforms should make interconnection faster and more efficient for viable, ready projects.
- The final rule would tend to facilitate transition to the future grid but will likely result in more discipline for renewable clean energy development in the FERC interconnection space.

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[1] *Improvements to Generator Interconnection Procedures and Agreements*, 179 FERC ¶ 61,194 (2022) (NOPR).

[2] NOPR at P 18.

[3] *Id.* at P 22.

[4] *Id.* at P 23.

[5] *Id.* at P 6.

[6] *Id.* at P 56.

[7] *Id.* at P 64. PJM Interconnection, L.L.C. recently filed in Docket No. ER22-2110-000 proposed revisions to its OATT representing a comprehensive reform of its interconnection process and transition from a serial first-come, first-served queue approach to a first-ready, first-served cycle approach.

[8] *Id.* at P 156.

[9] *Id.* at P 42.

[10] *Id.* at P 49.

[11] *Id.* at P 64.

[12] *Id.* at PP 67-69.

[13] *Id.* at P 67.

[14] *Id.* at PP 65-71.

[15] *Id.* at P 82.

[16] *Id.* at P 88.

[17] *Id.* at P 97.

[18] *Id.* at P 103.

[19] *Id.* at P 106.

[20] The Commission proposes to limit the option to provide a financial deposit in lieu of site control and would only allow this option when regulatory limitations prohibit the interconnection customer from obtaining site control. In such instances, the interconnection customer would submit a deposit of $10,000 per MW, subject to a floor of $500,000 and a ceiling of $2 million. *Id.* at P 114.

[21] *Id.* at P 128.

[22] The proposed withdrawal penalty will increase as the interconnection customer moves through the interconnection queue and proposes a chart demonstrating the possible penalties. *Id.* at P 144.

[23] *Id.* at P 168.

[24] *Id.* at PP 197, 200.

[25] *Id.* at P 238.

[26] *Id.* at P 242.

[27] *Id.* at P 255.

[28] *Id.* at P 264.

[29] *Id.* at P 280.

[30] *Id.* at P 297.

[31] Article 9.7.3 of the *pro forma* LGIP defines "ride through" as the ability of the large generating facility to stay connected to and synchronized with the transmission system during system disturbances within a range of under-frequency and over-frequency conditions.

[32] NOPR at P 309.

[33] *Id.* at P 342.

[34] *Building for the Future Through Electric Regional Transmission Planning and Cost Allocation and Generator Interconnection*, 179 FERC ¶ 61,028 (2022).

[35] NOPR, Comm'r Danly Concurrence at P 3.

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