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In Order No. 2023, FERC Takes Step in Reforming Transmission Grid Policies by Enacting Generator Interconnection Reforms

On July 28, 2023, the Federal Energy Regulatory Commission ("FERC" or the "Commission") unanimously approved Order No. 2023,[1] a Final Rule designed to streamline the process by which generation resources can connect to the interstate transmission grid.

At a high level, the Final Rule substantially revises the current *pro forma* large generator interconnection procedures ("LGIP") and agreement ("LGIA") with the following updates:

- Replacing the current first-come, first-served process with a first-***ready***, first-served interconnection cluster study process.
- Increasing the speed of interconnection queue processing by, among other things, imposing strict study deadlines and penalties on transmission providers.
- Incorporating technological advancements into the interconnection process.

Order No. 2023 also makes changes to the small generator interconnection procedures ("SGIP") and agreement ("SGIA").

The Final Rule will take effect *60 days* after publication in the Federal Register.

Transmission providers will have *90 calendar days* following publication in the Federal Register to submit a compliance filing implementing the requirements of the Final Rule.

With Order No. 2023, FERC hopes to clear the substantial backlog of generation—including wind, solar, and storage resources—currently waiting to connect to the interstate grid. However, the Final Rule does not tackle regional transmission planning, which is being addressed in a separate rulemaking.

BACKGROUND

The *pro forma* LGIP and LGIA were established 20 years ago in FERC Order No. 2003, which required all public utilities that own, control, or operate facilities used for transmitting electric energy in interstate commerce to have on file standard procedures and a standard agreement for interconnecting generating facilities larger than 20 megawatts ("MW") (*i.e., pro forma* LGIP and *pro forma* LGIA).[2] Two years later, the Commission issued Order No. 2006, adopting standard procedures and a standard agreement for interconnecting generating facilities no larger than 20 MW (*i.e., pro forma* SGIP and *pro forma* SGIA).[3] In 2018, the Commission revised the *pro forma* LGIP and *pro forma* LGIA in Order No. 845 to address systemic inefficiencies, discriminatory practices, and emerging developments, such as changes in the resource mix and new technologies.[4]

The power sector has changed dramatically since FERC developed its standard interconnection procedures and agreements two decades ago. As FERC has pointed out, there were more than 10,000 active requests in interconnection queues (totaling more than 2,000 gigawatts of potential generation and storage) across the country as of the end of 2022.[5] Interconnection requests have also experienced increasing

delays.[6] Order No. 2023 aims to ease these backlogs and uncertainties in the interconnection process by expediting the process for connecting new electric generation to the grid.

FERC's updates to the interconnection procedures form one part of its efforts to reform its transmission policies and regulations to address, among other things, reliability concerns and the clean energy transition. In a separate rulemaking initiated last year, FERC will be addressing regional transmission planning and cost allocation issues.[7]

SUMMARY OF REFORMS IN ORDER NO. 2023

1. First-Ready, First-Served Cluster Study Process

Order No. 2023 revises the *pro forma* LGIP and LGIA to replace the current process by which interconnection requests are reviewed individually on a first-come, first-served basis with a new first-ready, first-served "cluster study" process. This process is intended to enhance efficiency and reduce delays by requiring transmission providers to study a group of interconnection requests together rather than serially, and to process interconnection requests in the order in which they meet project milestones rather than the order in which they are submitted.

As part of the newly adopted process, Order No. 2023 establishes the following requirements.

(1) Transmission providers must publicly post available information regarding generator interconnection.

This includes a "heatmap" (*i.e.,* a visual representation of available transmission capacity), as well as certain interconnection metrics showing prospective customers the estimated impacts of a potential generating facility on the transmission provider's system.[8]

(2) Transmission providers must use cluster studies as the interconnection study method.

Transmission providers will perform annual cluster studies covering multiple generating facilities, rather than individual studies for each interconnection customer.[9] Interconnection customers will be required to pay a $5,000 non-refundable application fee and to submit requests during a 45-calendar day "cluster request window" to begin at a date determined by each transmission provider and set forth in its LGIP.[10] All customers that submit interconnection requests during the same cluster request window will be considered equally queued. Following the close of the cluster request window, transmission providers will begin a 60-day customer engagement window, during which time the transmission provider must hold a scoping meeting with all customers with valid requests. The transmission provider must complete the cluster study within 150 calendar days (starting from the close of the customer engagement window). Restudies may be triggered by withdrawal or modification of higher- or equally queued requests and must be completed within 150 calendar days.

(3) Transmission providers must allocate cluster study costs on a *pro rata* and *per capita* basis.

Transmission providers may propose their own study cost allocation ratio for allocating shared costs of cluster studies within the following parameters: (1) between 10–50 percent of study costs must be allocated on a per capita basis, and (2) the remainder (between 90–50 percent) must be allocated pro rata by MW.

(4) Transmission providers must allocate network upgrade costs based on a proportional impact method.

Network upgrade costs will no longer be allocated by queue position. As a general matter, network upgrade costs will instead be allocated among customers in a cluster through a "proportional impact method," which is based on the degree to which each generating facility in a cluster study contributes to the need for a specific system network upgrade. Costs of substation network upgrades will, however, be allocated only to those interconnection customers seeking to interconnect at the same substation.

(5) Customers must pay study and commercial readiness deposits as part of the cluster study process.

Interconnection customers will be required to pay study deposits to the transmission providers as part of the cluster study process, to be determined based on the size of the proposed generating facility.[11] Transmission providers will be required to collect a single study deposit only once upon entry into the cluster rather than requiring transmission providers to collect a study deposit at each phase of the cluster study process. Interconnection customers must also pay commercial readiness deposits at the initial, restudy, and facilities study phases.[12] Customers must also pay a deposit when executing an LGIA or requesting the filing of an unexecuted LGIA.[13]

(6) Customers must demonstrate site control at the time of submission of the interconnection request.

Order No. 2023 establishes more stringent site control requirements.[14] An interconnection customer will be required to demonstrate the exclusive land right 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. Site control for a generating facility that is co-located with one or more generating facilities on the same site and behind the same point of interconnection must be demonstrated by a contract or other agreement that allows for shared land use for all generating facilities that are co-located that meet the provisions of the site control definition. Interconnection customers are prohibited from submitting evidence of site control that uses the same land for multiple interconnection requests, unless the site is large enough to host multiple generating facilities.

At the time of submission of the interconnection request, interconnection customers must provide evidence of 90 percent site control and must provide evidence of 100 percent site control at the time of the facilities study agreement and when executing, or requesting the unexecuted filing of, the LGIA. Where an interconnection customer demonstrates a qualifying regulatory limitation to obtaining site control, the Final Rule allows the customer to submit an initial deposit of $10,000 per MW, subject to a floor of $500,000 and a ceiling of $2 million, in lieu of demonstrating site control.[15]

(7) Transmission providers must impose withdrawal penalties on interconnection customers for withdrawing from the interconnection queue, with certain exceptions.

Unless an exemption applies,[16] transmission providers will be required to assess withdrawal penalties on an interconnection customer if (1) the customer withdraws its request at any point in the interconnection process; (2) the customer's request has been deemed withdrawn by the transmission provider at any point in the interconnection process; or (3) the customer's generating facility does not reach commercial operation.[17]

In Order No. 2023, the Commission provides transmission providers three options to transition customers to the first-ready, first-served cluster study process. Transmission providers must offer customers up to three options depending on which phase of the current study process their requests are in: (1) a transitional serial study; (2) a transitional cluster study; or (3) withdrawal from the queue without penalty.

2. Increasing the Speed of Interconnection Queue Processing

To increase the speed of interconnection queue processing, Order No. 2023 eliminates the reasonable efforts standards for conducting interconnection studies, establishes penalties for transmission providers unable to meet study deadlines, and adopts an affected system study process.

A. Elimination of Reasonable Efforts Standard & Study Delay Penalties

Order No. 2023 eliminates the reasonable efforts standard governing the transmission provider's duty to timely conduct and complete interconnection studies. According to the Commission, this standard did not establish any consequences to the transmission providers for failing to meet study deadlines. The Final Rule will impose the following financial penalties on transmission providers who fail to meet tariff-specified study deadlines:

- Delays of cluster studies: $1,000 per business day
- Delays of cluster restudies: $2,000 per business day
- Delays of affected system studies: $2,000 per business day
- Delays of facilities studies: $2,500 per business day

Transmission providers must pay penalties for each late study on a pro rata per interconnection basis to all customers included in the study that did not withdraw before the missed deadline. In order to provide a transition period, no study delay penalties will be assessed until the third cluster cycle. Additionally, the Final Rules provides a 10-business-day grace period where no study delay penalties will be assessed. Deadlines may be extended by 30 business days by mutual agreement of the transmission provider and all applicable interconnection customers. Study delay penalties will be subject to caps of 100 percent of the applicable study deposit(s). Furthermore, transmission providers may appeal any study delay penalties with the Commission. With respect to cost recovery, non-RTO/ISO transmission providers and transmission-owning members of RTOs/ISOs may not recover study delay penalties through their transmission rates. RTOs/ISOs can, through a section 205 filing, submit filings to propose default structures for recovering study delay penalties or the costs of any specific penalties. Transmission providers will be required to publicly post certain information regarding penalties.

B. Affected System Study Process

The Final Rule implements an affected system study process in order to address electric systems other than the transmission provider's transmission system that may be affected by the proposed interconnection. The Commission will require the transmission provider to notify the affected system operator at the first instance of an identified potential affected system impact, which may occur at the completion of the cluster

study or cluster restudy. Affected system network upgrade costs will be allocated to interconnection customers using a proportional impact method. An affected system study is an evaluation of affected system interconnection customers' proposed interconnections to a transmission system other than the transmission provider's transmission system that have an impact on the transmission provider's transmission system. This process includes a maximum 60-calendar day potential restudy period for any affected system restudies. Affected system transmission providers will be required to study all affected system interconnection requests using the Energy Resource Interconnection Service ("ERIS") modeling standard.[18]

3. Incorporating Technological Advancements into the Interconnection Process

Order No. 2023 adopts revisions to the LGIA, LGIP, SGIP, and SGIA to incorporate alternative transmission technologies in the interconnection process and to establish modeling and ride-through requirements for non-synchronous generating facilities.

The Commission recognized the need to prevent undue discrimination for new technologies and has included several requirements to increase flexibility in the studies, which are intended to decrease costs and assist with addressing the backlog of interconnection requests. Transmission providers will be required to:

- Allow multiple generating facilities to co-locate on a shared site behind a point of interconnection and share a single interconnection request.
- Evaluate proposals to add a generating facility to a point of interconnection prior to deeming the proposed addition a material modification if the addition does not change the originally requested interconnection service level.
- Allow interconnection customers to access the surplus interconnection service process[19] once the original interconnection customer has an executed LGIA or requests the filing of an unexecuted LGIA.
- Use operating assumptions in interconnection studies that reflect the proposed charging behavior of an electric storage resource unless good utility practice requires otherwise.
- Evaluate an enumerated list of alternative transmission technologies[20] during the generator interconnection study process and determine whether it should be used consistent with good utility practice, applicable reliability standards, and other applicable regulatory requirements. An explanation of this evaluation must be included in the cluster study report.

Additionally, the Final Rule requires interconnection customers requesting to interconnect a non-synchronous generating facility to provide the transmission provider with the models needed for accurate interconnection studies. Such interconnection customers are also required to have the ability to maintain power production at pre-disturbance levels and provide dynamic reactive power to maintain system voltage during transmission system disturbances and within physical limits. Additionally, Order No. 2023 requires all newly interconnecting large generating facilities to provide ride-through capability consistent with the standards and guidelines applied to other generating facilities in the balancing authority area on a comparable basis.

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1. Improvements to Generator Interconnection Procedures and Agreements, 184 FERC ¶ 61,054 (2023) (Final Rule).
2. *Standardization of Generator Interconnection Agreements & Procs.,* Order No. 2003, 68 FR 49846 (Aug. 19, 2003), 104 FERC ¶ 61,103, at PP 1, 616 (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).*
3. *Standardization of Small Generator Interconnection Agreements & Procs.,* Order No. 2006, 111 FERC ¶ 61,220, at PP 15, 35-36, *order on reh'g,* Order No. 2006-A, 70 FR 71760 (Dec. 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).
4. *Reform of Generator Interconnection Procs. & Agreements,* Order No. 845, 83 FR 21342 (May 9, 2018), 163 FERC ¶ 61,043, at P 24 (2018), *order on reh'g,* Order No. 845-A, 84 FR 8156 (Mar. 6, 2019) 166 FERC ¶ 61,137, *order on reh'g,* Order No. 845-B, 168 FERC ¶ 61,092 (2019).
5. Final Rule at P 38.
6. *Id.* at P 39-40.
7. *Bldg. for the Future Through Elec. Reg'l Transmission Planning & Cost Allocation & Generator Interconnection,* Notice of Proposed Rulemaking, 87 FR 26504 (May 4, 2022), 179 FERC ¶ 61,028 (2022).
8. Transmission providers must update the heatmap within 30 calendar days after the completion of each cluster study and cluster restudy. The Commission eliminated the feasibility study process because the new requirements to publicly post information replaces the need for the feasibility studies.
9. Transmission providers with the ability to conduct multiple cluster studies at a time are permitted to do so.
10. 10 business days after the close of the window, transmission providers must post a list of interconnection requests for the cluster.
11. The study deposit will be: (1) $35,000 plus $1,000 per MW for proposed facilities greater than 20 MW but less than 80 MW; (2) $150,000 for facilities equal to or greater than 80 MW but less than 200 MW; (3) and $250,000 for facilities equal to or greater than 200 MW.
12. The initial commercial readiness deposit is equal to two times its study deposit to enter the cluster study. The commercial readiness deposit for the cluster restudy phase is the amount required to bring the total amount of the customer's commercial readiness deposit to 5 percent of the customer's network upgrade cost assignment identified in the cluster study. For the facilities study phase, the deposit is the amount required to bring the total amount of the customer's commercial readiness deposit to 10 percent of the customer's network upgrade cost assignment identified in the cluster study or restudy.
13. The LGIA deposit is in an amount that will increase the total commercial readiness deposit to be equal to 20 percent of the estimated network upgrade costs
14. The definition of site control states that it may be demonstrated by establishing "(1) ownership of, a leasehold interest in, or a right to develop a site of sufficient size to construct and operate the Generating Facility; (2) an option to purchase or acquire a leasehold site of sufficient size to construct and operate the Generating Facility; or (3) any other documentation that clearly demonstrates the right of Interconnection Customer to exclusively occupy a site of sufficient size to construct and operate the Generating Facility."
15. This deposit will be held until the customer can demonstrate 90 percent site control prior to execution of the facilities study agreement or 100 percent site control at execution of the facilities study agreement or thereafter. The customer must nonetheless demonstrate 100 percent site control within 180 calendar days of the LGIA's effective date, or the LGIA may be terminated.
16. Withdrawal penalties do not apply if the impact of the withdrawal is immaterial to other interconnection customers or if the withdrawal results from significant and unexpected increases in network upgrade cost estimates.
17. The amount of the penalty depends on the phase at which the customer withdrew, and is calculated as follows: the penalty will be the greater of the study deposit or: (1) two times the study cost if the interconnection customer withdraws during the cluster study or after receipt of a cluster study report; (2) 5 percent of the interconnection customer's identified network upgrade costs if the interconnection customer withdraws during the cluster restudy or after receipt of any applicable restudy reports; (3) 10 percent of the interconnection customer's identified network upgrade costs if the interconnection customer withdraws during the facilities study, after receipt of the individual facilities study report, or after receipt of the draft LGIA; or (4) 20 percent of the interconnection customer's identified network upgrade costs if, after executing, or requesting to file unexecuted, the LGIA, the interconnection customer's LGIA is terminated before its generating facility achieves commercial operation.
18. ERIS is an interconnection service that allows the interconnection customer to connect its generating facility to the transmission provider's transmission system to be eligible to deliver the generating facility's electric output using the existing firm or non-firm capacity of the transmission provider's transmission system on an as-available basis. ERIS in and of itself does not convey transmission service. The Commission rejected the possibility of continuing to use Network Resource Interconnection Service ("NRIS") standards on a case-by-case basis.
19. This refers to any unneeded portion of interconnection service established in LGIA, such that if surplus interconnection service is utilized, the total amount of interconnection service at the point of interconnection would remain the same.
20. These include static synchronous compensators, static VAR compensators, advanced power flow control devices, transmission switching, synchronous condensers, voltage source converters, advanced conductors, and tower lifting.