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**CEC Commissioner Workshop on the Clean Energy Interconnection
Bulk Grid**

Additional submitted attachment is included below.



CEC Commissioner Workshop on the Clean Energy Interconnection- Bulk Grid

May 31, 2023

I. Introduction

NextEra Energy Resources, LLC (“NEER”) appreciates the opportunity to comment on the California Energy Commission’s (CEC) Bulk Grid Interconnection Workshop. These comments are intended to reinforce the May 4, 2023 workshop statements made by NEER’s Executive Director of Development for California, Jess Melin.

Since 1989, NEER has been helping fuel the state’s economic growth as its largest independent clean energy developer. To date, NEER subsidiaries have invested \$9 billion in California, owning and operating wind, solar, energy storage, and transmission facilities in more than 20 counties across the state. NEER will bring over 1 gigawatt (GW) of solar and storage online in California in 2023 alone. NEER also has a significant number of projects submitted in the California Independent System Operator’s (CAISO) Clusters 13, 14, and 15 interconnection process.

Interconnection reform is critical to realize California’s aggressive de-carbonization and electrification goals. Recently, the California Public Utilities Commission (CPUC) recommended an electric resource portfolio for use in the 2023-24 Transmission Planning Process (TPP) that would call for more than 85 GW of additional zero CO₂ resources by 2035¹ to meet a 30 million metric ton greenhouse gas (GHG) target. That means a tremendous number of new renewable projects requiring grid connection over the next decade.

The already-overwhelmed interconnection study process for interconnection to the high voltage, bulk grid is adding years of delay, project risk, and costs for the consumer. Recent submissions to the California Independent System Operator (CAISO) Cluster 15 interconnection queue represents seven times the volume of the CAISO’s current peak load. The chart below shows the magnitude of this increasing problem across the last three clusters.

¹ CPUC, D. 23-02-040 (Feb. 23, 2023), <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M502/K956/502956567.PDF>

Recent CAISO Interconnection Requests

Cluster #	# Projects	Total POI # MW ²
C13 Phase II	64	16,854
C14 Phase II	205	65,566
C15 (2023)	>500 estimated	>350,000 estimated

Reforming the rules governing the interconnection study process is necessary to filter the interconnection queue in a way that well-sited, financially healthy, viable projects can emerge through a streamlined process. Importantly, while interconnection reform can alleviate the problems associated with a lengthy study process and too many projects in the queue, interconnection reform alone is not sufficient without complementary reforms to streamline transmission permitting and siting processes. All of these elements will be required to bring new renewable energy projects to market cost-effectively and on a timeline that facilitates California's GHG reduction targets.

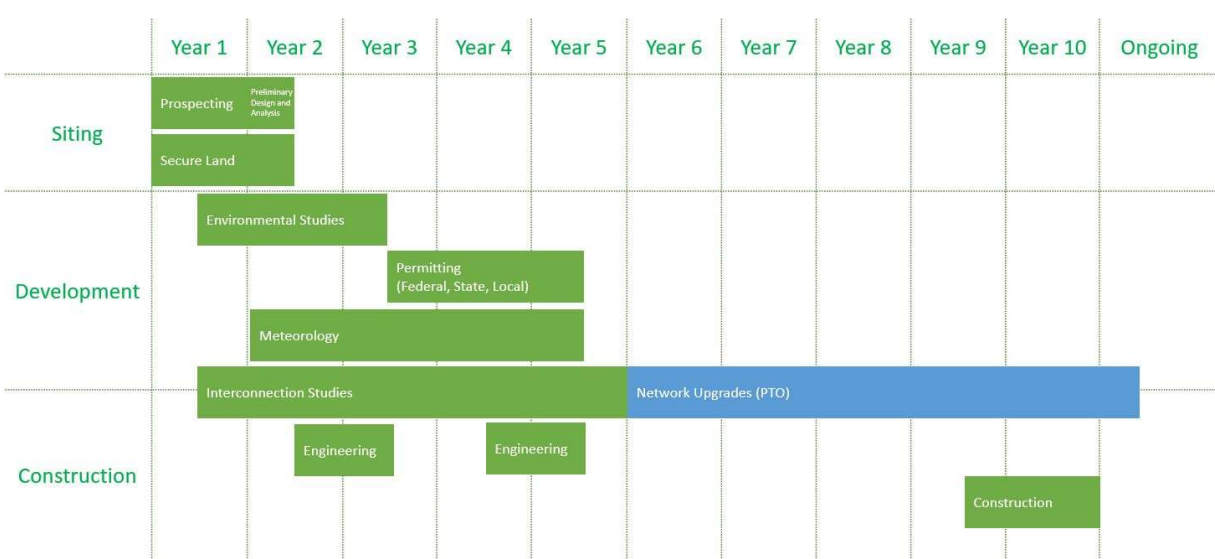
To accomplish this, it is necessary to revamp an interconnection process that was created under much different circumstances than exist today. As the nation's largest clean energy developer, NEER has extensive experience with interconnection processes throughout the country. Below we offer specific solutions that have been successful in alleviating interconnection issues in other markets.

II. Overview of the current interconnection process

The total timeline for renewables project development can take well over a decade with the interconnection study process alone taking four or more years. Subsequently, because the grid is currently overburdened, network upgrades identified in interconnection studies take an additional three to five years to complete, and these timelines are getting longer. The total interconnection process took about 9 years for Cluster 14 projects.

² CAISO 2023 Interconnection Process Enhancements Straw Proposal & Issue Paper (March 6, 2023), <http://www.caiso.com/InitiativeDocuments/Issue-Paper-and-Straw-Proposal-Interconnecton-Process-Enhancements-2023-Mar132023.pdf>

Expected Development Timeline for Cluster 15 Projects for CAISO Submissions in April 2023



This timeline for interconnection and associated network upgrades (e.g., upgrading substations) adds tremendous risk to renewable energy projects, since project developers commit to a commercial operation date for its customers, but are at the mercy of transmission owners to timely complete any required upgrades. The timeline for such upgrades is lengthy, caused by an overwhelmed process due to numerous speculative projects and by transmission owners expanding the scope of required transmission work beyond that contemplated in the original studies, which is largely due to the magnitude of the upgrades caused by the number of projects. Extension of the interconnection timeline creates significant financial risk to the project and undermines the ability of Load Serving Entities (“LSE”) to meet their procurement targets.

III. Solutions to reform and improve the interconnection process

NEER’s March CAISO interconnection comments³ proposed several fixes to both Cluster 14 and Cluster 15, including some of the key reforms proposed below. Increased study deposits should be similar to what is being proposed in the Federal Energy Regulatory Commission (FERC) Notice of Proposed Rulemaking⁴ – Improvements to Generator Interconnection Procedures and Agreements, and what is currently implemented by both the Mid-continent Independent System Operator (MISO) and the Southwest Power Pool (SPP).⁵ Recently, FERC approved SPP’s

³NextEra Energy Resources, Comments on CAISO Issue paper and Straw Proposal Interconnection Process Enhancements 2023 (March 27, 2023), <https://stakeholdercenter.caiso.com/Comments/AllComments/b6ed131c-ecaa-460d-8316-e0e0dcd0373f#org-fcced8a7-7420-43a6-bc0f-2b3248a3bb92>

⁴ U.S. Federal Energy Regulatory Commission, Docket No. RM22-14-000, Notice of Proposed Rulemaking, Improvements to Generator Interconnection Procedures and Agreements (June 16, 2022), <https://www.ferc.gov/media/rm22-14-000>

⁵ Southwest Power Pool , Open Access Transmission Tariff, Sixth Revised Volume No. 1 - Attachment V Generator Interconnection Procedures (December 1,2020),

updates to its Generation Interconnection Procedures to increase the study deposit for interconnection process entry based on the size of the project. Under these updates, the study deposit becomes increasingly non-refundable as the project proceeds through the study process. Similar mechanisms should be adopted by the CAISO.

NEER's recommended reform proposals include:

1. More stringent requirements for entry into the interconnection queue:
 - a. Implement a new, non-refundable entry fee
 - b. Higher Study Deposits based on project size with limits on refundability
 - c. Higher Site Exclusivity requirements by eliminating the ability to pay a fee in lieu of demonstrating exclusivity
2. More stringent requirements later in the process:
 - a. Higher Deliverability Deposits and more stringent commercial readiness requirements to obtain and retain deliverability
 - b. More stringent Site Control requirements at the Phase 2 Study milestone
 - c. More stringent Commercial Readiness requirements
3. Automation and standardization of the Phase 1 Study process
4. A one-time, cost-free ability to exit the Cluster 14 queue if new rules are applied
1. A more equitable deliverability allocation process in which there is equal treatment of deliverability allocation between Cluster 13 projects and Cluster 14 projects. The delays in the Cluster 14 process should hold earlier, more advanced projects harmless

1. More stringent requirements for entry into the queue

One major cause of delay in the interconnection process is that the barriers to enter the interconnection queue are undeniably low, thus creating nearly a free option to test interconnection costs and schedule at the expense of the entire process, explaining the overwhelmed queue. To that end, the timing of interconnection poses massive risks to both customers and developers, yet its costs remain only a fraction (typically less than 5%) of overall renewable energy project capital costs. Increasing the financial security that developers must put at risk to enter the queue will go a long way to reducing the number of projects entering the queue, forcing developers to assess and internalize the viability of their project relative to its costs. This will in turn lead to more meaningful study results sooner in the process, allowing developers to make more informed decisions to stay in the queue or withdraw at an earlier date.

- a. Implement a new, non-refundable entry fee

NEER proposes adopting a non-refundable \$100,000 fee that developers must pay to enter the queue. Presumably, this will deter more speculative projects as currently there is essentially a free option to enter the queue, provided that a project withdraws within 30-days following the scoping meeting.

<https://opsportal.spp.org/documents/studies/SPP%20Tariff%20Attachment%20V%20Generator%20Interconnection%20Procedures.pdf>

b. Higher study deposits based on project size with limits on refundability

Currently, the CAISO tariff requires developers to submit a \$150,000 study deposit when an application is submitted to enter the queue, which is 100% refundable.⁶ This is a very low threshold when compared to the overall project costs. Moreover, since interconnection customers are reimbursed for network upgrades, the CAISO market should have a higher tolerance for security deposits than other RTO markets. As such, NEER proposes adopting a model that has worked in SPP's interconnection process to cull the queue, whereby the developer must pay a per MW deposit.⁷

NEER proposes that the CAISO adopt an \$8,000/MW study deposit requirement, which is only 100% refundable until 30-days after the initial scoping meeting, or before the start of Phase 1 studies, whichever comes first. This allows the developer to withdraw a project a month after the initial scoping meeting should it receive information at the meeting that makes it clear the project is not viable. Otherwise, to stay in the process, the developer's non-refundable financial commitments will increase, forcing a more critical assessment of whether to remain in the queue.

c. Higher Site Exclusivity requirements by eliminating the ability to pay a fee in lieu of demonstrating exclusivity

Currently the CAISO tariff requires projects to show that they have Site Exclusivity for the project (e.g., they control at least 50% of the acreage necessary to accommodate the Generating Facility) to enter the queue. If the developer cannot meet that standard, it is able to pay a fee in lieu of demonstrating exclusivity - \$500,000 for large generation projects⁸. NEER proposes the CAISO eliminate the "payment in lieu of" provision and require a demonstration of site exclusivity in order to enter the queue. It is reasonable to expect that developers will have the land for projects largely secured before entering the queue, and eliminating the ability to pay one's way out of this requirement will deter less developed projects from clogging the queue.

NEER strongly advocates that the CAISO remove the in lieu of opportunity for Site Exclusivity in Cluster 14, as well as on a going forward basis. Cluster 14 has serious challenges due to its size. Developers will have Phase 2 study results by January 2024 and the posting will not be due until July 2024, giving developers ample time to prepare for these new rules. Moreover, NEER proposes that projects in Cluster 14 be provided a one-time, cost-free withdrawal opportunity considering the new rules.

2. More stringent requirements later in the process

Further establishing higher financial security levels throughout the interconnection process will incentivize developers to withdraw projects where commercial prospects are poor, permitting is

⁶ CAISO Tariff, Appendix A (2023)

⁷ SPP Tariff, Attachment V, 8.2 (2022)

⁸ CAISO Tariff, Appendix DD, 3.5.1 (2023)

troubled, site control is not available, or upgrade costs are too high. Such information should become available as soon as Phase 1 results are completed and become more evident by the time that Phase 2 results are provided.

- a. Higher deposits for network upgrades and interconnection facilities and more stringent commercial readiness requirements to obtain deliverability

Currently, projects must post a deposit reflecting 15% of upgrade costs as determined in Phase 1 and then 30% of such costs as determined by the Phase 2 study.⁹ Securing network upgrades are critical to ensuring that resources are able to deliver their output to meet system demands. These upgrade deposits should be increased and become increasingly non-refundable as the projects move through the study process. As such, NEER proposes increasing the Phase 1 posting to 25% of upgrade costs, and increasing the Phase 2 posting to 50% of upgrade costs. In both cases, 50% of the network upgrades would be refundable and 100% of the interconnection facilities deposit would be refundable, less any costs actually incurred by the transmission owner, if the developer later exits the queue. Increasing these posting amounts will ensure that developers are more committed at points when they have additional information from which to base such decisions. Steadily increasing one's financial risk throughout the process can be effective in ensuring only serious, viable projects remain in the queue.

Additionally, with respect to the criterion for applying for deliverability based on having executed a contract with an LSE, FERC recently approved a CAISO proposal which requires a minimum 5-year contract term for Resource Adequacy (RA) and allows for a \$10,000/MW fee in lieu of meeting the contract execution requirement¹⁰. It should be noted that new renewable generation projects require long-term contracts for financing. Therefore, to support new generation, developers should have an RA capacity contract of at least 10 years to apply to the CAISO for deliverability. Increasing the contract term to at least 10-years is consistent with the requirement that 65% of LSE RPS compliance must be met from contracts 10 years or longer¹¹. The minimum fee in lieu-of having an executed contract should also be increased to \$20,000/MW to reflect the significant value of deliverability.

NEER strongly advocates applying this to Cluster 14 projects on a going forward basis with the ability for projects to exit cost-free at any point in the process as outlined above.

- b. More stringent Site Control requirements at the Phase 2 Study milestone

Implementing stronger Site Control requirements, whereby a project will not be able to move along in the interconnection process unless it has met certain site control milestones, is another helpful mechanism to filter overwhelmed queues and prioritize mature projects. Under the current CAISO tariff, recently approved changes by FERC require that projects in Cluster 15 and

⁹ CAISO Tariff, Appendix DD, 11 (2023)

¹⁰ U.S. Federal Energy Regulatory Commission, Docket No. ER23-941-000, California Independent System Operator Corp., Tariff Amendment to Implement Interconnection Process Enhancements (March 27, 2023)

¹¹ CA Public Utilities Code § 399.13(b) (2015)

later must have full site control to enter Phase 2 of the study process, which is reasonable¹². This means that the developer has ownership, an option to purchase, an option to lease, or other exclusive rights to 100% of the generation site, excluding the gen-tie route. The CAISO should continue to not permit “Letters of Intent” to meet this standard. Further, NEER proposes that the CAISO adopt the minimum acreage requirements for the generating site that SPP uses in its Site Control determination¹³. Projects must meet the following minimum acreage requirements for acceptable Site Control sizing:

- Wind generation – 30 acres per MW
- Solar generation – 6 acres per MW
- Storage/battery – 0.1* acres per MW or manufacturer specifications

* SPP uses a 1.0 acre per MW of battery storage acreage metric, while the Midcontinent Independent System Operator (MISO) utilizes a much more reasonable figure, 0.1 acres per MW.¹⁴

NEER suggests that these changes also apply to Cluster 14 projects as well as on a going forward basis.

3. Automation and standardization of Phase 1 of the interconnection study process can also help reduce timelines

SPP is currently collaborating with Amazon Web Services to introduce automation of data validation, model development, study processing and use of cloud computing. For a relatively small cost, the CAISO could adopt such measures and trim months, if not years, off the interconnection process.¹⁵

4. A one-time, cost-free ability to exit the Cluster 14 queue if new rules are applied

NEER believes that many of the fixes herein can and should be applied to Phase 2 of the Cluster 14 queue. Those projects will have Phase 2 study results in January 2024 and will not have to make financial postings until 6 months later in July of 2024, more than a year from now. As such, this allows plenty of time for developers to plan to meet any applicable new requirements. Moreover, allowing developers to have a one-time, risk-free exit from the queue considering the new requirements strikes the right balance of clearing the queue with less risk to developers.

¹² CAISO Tariff, Appendix A (2023)

¹³ SPP Tariff, Attachment V (2022)

¹⁴ MISO Generator Interconnection and Retirement. “Site Control Evidence Documentation Checklist,” (September 02, 2022), <https://cdn.misoenergy.org/Site%20Control%20Submission%20Checklist625894.pdf>

¹⁵ American Council on Renewable Energy (ACORE), Comments on FERC Proposed Rule on Improvements to Generator Interconnection Procedures and Agreements (Oct. 13, 2022), <https://acore.org/acore-comments-on-ferc-proposed-rule-on-improvements-to-generator-interconnection-procedures-and-agreements/>

5. Equal treatment of Cluster 13 projects with regard to deliverability allocation as compared to Cluster 14 projects

Obtaining deliverability status within the interconnection process ensures that a project has the ability to be counted in a Supply Plan to provide Resource Adequacy Capacity. This is important to obtain because it ensures that a project remains economically viable. An Energy-Only resource means that you cannot be counted as a capacity resource. Under the current CAISO tariff,¹⁶ within the same deliverability allocation group, if a Cluster 13 project that converted to Energy-Only receives the same Table 2 affidavit score as a Cluster 14 project, then the tie goes to the Cluster 14 project. This undermines the objective of advancing and prioritizing deliverability allocation for more mature projects that are further along in both permitting and commercial milestones. Furthermore, this undermines the objective of bringing projects to market sooner given that the Cluster 13 projects are two years more advanced than Cluster 14 projects. Given the advancement of Cluster 13 projects within the interconnection process it is also likely that these projects will have more certain transmission upgrade requirements than Cluster 14 projects.

More advanced Cluster 13 projects should be held harmless for the delays in Cluster 14. NEER strongly encourages the CAISO to treat Cluster 13 projects fairly in terms of access to deliverability given that the majority of Cluster 13 projects were allocated 0% deliverability and were forced to convert to Energy-Only to remain in the queue, despite being further along in maturity.

IV. Conclusion

The interconnection study process reforms proposed by NEER are aimed at creating certainty for both cost and schedule and we appreciate the opportunity to provide these comments. We look forward to working with the CEC and other agencies to identify and implement the solutions necessary to fix the interconnection process so that the state is able to bring renewable projects online in a reasonable timeframe to meet its ambitious GHG reduction goals.

Respectfully,
Sarah Qureshi,



Sr. Director Reg. & Political Affairs
NextEra Energy Resources

¹⁶ CAISO Tariff, Appendix DD, 8.9 (2023)