July 27, 2021

The Honorable Kimberly D. Bose
Secretary
Federal Energy Regulatory Commission
888 First Street, NE
Washington, DC 20426

Re: California Independent System Operator Corporation
Docket No. ER21-___-000

Tariff Amendment to Establish Interconnection Procedures for Cluster 14

Dear Secretary Bose:

The California Independent System Operator Corporation ("CAISO") submits this tariff amendment to amend its generator interconnection procedures for cluster 14—the 2021 "supercluster" of interconnection requests.[1] Over the last ten years, the CAISO has received between 64 and 155 interconnection requests during its annual request window.[2] This year the CAISO received 373. As a result, the CAISO is unable to study cluster 14 under its current tariff procedures. Rather than rely on the CAISO's tariff authority to extend interconnection study deadlines on an *ad-hoc* basis, the CAISO conducted an expedited stakeholder initiative to establish unique timelines and procedures for cluster 14. Through this filing the CAISO proposes to revise its tariff to implement those timelines and procedures.[3] The CAISO will conduct another interconnection process enhancement ("IPE") stakeholder initiative this Fall to address interconnection procedure enhancements long-term.

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1 The CAISO submits this filing pursuant to section 205 of the Federal Power Act, 16 U.S.C. § 824d. Capitalized terms not otherwise defined herein have the meanings set forth in the CAISO tariff, and references to specific sections, articles, and appendices in the current CAISO tariff or revised and proposed in this filing, unless otherwise indicated.

To the extent the CAISO's proposed revisions diverge from the generator interconnection procedures in Order Nos. 2003 and 845, the CAISO believes that they represent needed, just and reasonable improvements to existing provisions of the CAISO's current tariff. The tariff revisions are extensions of, and otherwise support independent entity variations already found just and reasonable by the Commission.

2 All public generator interconnection queue data is available on the CAISO's website at https://rimspub.caiso.com/rims5/logon.do under the Reporting tab.

3 Although this filing contains multiple tariff revisions, the CAISO submits them as a single, non-severable set. *NRG Power Mktg., LLC v. FERC*, 862 F.3d 108 (D.C. Cir. 2017).

The CAISO respectfully requests that the Commission approve these revisions as just and reasonable, effective September 26, 2021, 61 days from this filing.

I. Executive Summary

Ensuring the safe and reliable interconnection of new resources is an integral function the CAISO performs. In the last decade, the CAISO has received an average annual number of queue cluster interconnection requests of 113. This year the CAISO received 373. To accommodate the unique and challenging circumstances posed by this cluster 14[4] and ensure meaningful study results, the CAISO must expand its study timelines and alter its study processes. The CAISO proposes three principal revisions to its timelines and processes:

1. Completing both the Phase I and Phase II interconnection studies will take approximately one year longer than typical.[5] As a result, the CAISO will open the next queue cluster window in April 2023, and not April 2022 as contemplated under the existing tariff.

2. Estimated costs in the Phase I interconnection study will be advisory. Only the Phase II interconnection study will set cost caps.

3. Interconnection customers will be eligible for a 100 percent refund of their first interconnection financial security posting for network upgrades if their Phase II interconnection study increases their maximum cost responsibility by 25 percent or more, or extends the longest-duration reliability network upgrade by one year or more.[6]

In consultation with its participating transmission owners, the CAISO considered preserving all current interconnection rules and procedures; however, doing so would have required more than 30 months to complete the necessary interconnection studies, thereby delaying the next opportunity for a queue cluster window indefinitely. The CAISO did not believe such a delay was tenable. The CAISO's proposal allows interconnection customers to receive their study results as soon as possible, while preserving the intent of the interconnection rules the CAISO has worked with stakeholders to develop.

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[4] Since the CAISO established the group cluster study process, the CAISO has numbered each cluster. Interconnection requests received this year are cluster 14.

[5] *I.e.*, it will take approximately three years to study an interconnection request instead of two.

[6] The interconnection customer must withdraw the interconnection request prior to the second interconnection financial security posting date to be eligible for the 100 percent refund.

II. Background

A. CAISO Interconnection Studies

The CAISO currently begins a new interconnection cluster study each April.[7] The purpose of cluster studies is to identify the interconnection facilities and network upgrades necessary to integrate the new resource seeking interconnection to the transmission system, to estimate the costs of those upgrades, and to allocate those costs among interconnection customers sharing upgrades. The cluster study approach has proved an effective way to manage a large number of simultaneous interconnection requests. The CAISO also allows independent study interconnection requests at any time provided the proposed resource can be studied alone and the cluster study process is insufficient to meet the resource's proposed commercial operation date.[8] The cluster study methodology used to assess network upgrades necessary to support each cluster of generation layers the new cluster of generation upon all existing generation and all previous interconnection requests that remain active, as well as the network upgrades associated with the active previous interconnection requests or approved through the CAISO's transmission planning process.

The CAISO's interconnection study process is unique among ISO/RTOs in (1) identifying all contingent facilities that could affect an interconnection customer's costs or timing, (2) providing cost estimates for these facilities, and, most critically, (3) creating binding cost caps based on those estimates.[9] Today, the interconnection customer's maximum cost responsibility is the lower sum of the interconnection customer's (1) full cost of assigned interconnection reliability network upgrades and (2) allocated costs for all other assigned network upgrades, from its Phase I or Phase II interconnection studies.[10] Moreover, under the CAISO tariff, interconnection customers only *finance* network upgrades; they do not pay for them.[11] Upon commercial operation, the transmission owner reimburses the interconnection customer for all network

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[7] Section 3.3.1 of Appendix DD to the CAISO tariff. Section 25 of the CAISO tariff establishes who must submit interconnection requests. Appendix DD to the CAISO tariff contains the CAISO's interconnection procedures, and Appendix EE to the CAISO tariff is the CAISO's *pro forma* large generator interconnection agreement.

[8] The CAISO is not proposing any changes to the independent study process or the fast track process. The CAISO will continue to process both during cluster 14 studies. *See* Sections 4 and 5 of Appendix DD to the CAISO tariff.

[9] *See* Sections 6.3 and 14.2.2 of Appendix DD to the CAISO tariff.

[10] "Maximum Cost Responsibility," Appendix A to the CAISO tariff.

[11] *See* Section 14.3.2 of Appendix DD to the CAISO tariff. Transmission owners also pay interest to the interconnection customer for its financing costs.

upgrade financing costs, and then includes those costs in its transmission revenue requirement.[12]

If upgrade assignments or cost allocations change after study of the interconnection customer is completed, the interconnection customer cannot inherit any new costs exceeding the cost caps provided in its interconnection studies. The interconnecting transmission owner would "cover" any cost exceeding the amount resulting from the study and any non-refundable portion of interconnection financial security of withdrawn interconnection customers allocated to the relevant upgrade.[13] Although to date transmission owners rarely have had to cover such costs, interconnection customers' binding cost caps provide crucial transparency to interconnection customers as they develop, market, and finance their projects. The cost caps also obviate any need to conduct serial restudies based on changes in upgrade cost responsibility. Interconnection customers can rely on their interconnection studies without fear of changes late in their projects' development. In the Commission's Order No. 845 proceeding, the American Wind Energy Association, NextEra, and several developers identified the CAISO processes as best practices.[14] NextEra, for example, advocated that the Commission adopt the CAISO's processes nationally "to break endless start and stop restudy cycles" elsewhere.[15]

The CAISO's cluster interconnection study consists of a Phase I interconnection study and a Phase II interconnection study, with annual reassessments that account for changes in the interconnection queue.[16] Following the publication of the Phase I and Phase II study, CAISO staff and transmission owner staff meet with the interconnection customer and its consultants to go over the study results.[17] Under the CAISO tariff, these results meetings must occur within 30 days of study publication, a deadline barely achievable with approximately 100 interconnection customers, and impossible with 373. Results meetings require significant preparation and follow-up, and the CAISO tariff requires a detailed exchange of meeting minutes after the meeting.[18]

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12 To prevent unwarranted expenditure, there are some limitations for reliability network upgrades based on the capacity of the proposed generating facility. *See* Section 14.3.2.1 of Appendix DD to the CAISO tariff.

13 Section 14.2.2 of Appendix DD to the CAISO tariff.

14 *See, e.g.*, AWEA Petition, p. 24, Docket No. RM15-21-000 (June 19, 2015).

15 NextEra Comments, p. 9, Docket No. RM15-21-000 (Sep. 8, 2015).

16 *See* Section 2.4.3 of Appendix DD to the CAISO tariff, "Interconnection Study," Appendix A to the CAISO tariff.

17 Sections 6.7 and 8.7 of Appendix DD to the CAISO tariff.

18 *Id*.

Unlike in other ISO/RTOs, the CAISO's Phase I and Phase II interconnection studies are very similar in determining the interconnection facilities, reliability network upgrades, and delivery network upgrades each interconnection customer needs.[19] This allows both the Phase I and Phase II interconnection studies to provide similar results. The Phase II interconnection study refines the cost estimates provided in Phase I based upon changes in queue and deliverability allocation results. Because the most common change in queue is an interconnection customer's withdrawal, both the Phase II interconnection study and the annual reassessment typically remove no-longer needed upgrades from interconnection customers' studies and cost responsibilities, thereby reducing costs.[20] In very rare cases, however, an interconnection customer's cost responsibility can rise while in queue where the costs are still under the interconnection customer's cost caps.[21] The CAISO's cluster study process takes approximately two years. After the interconnection customer receives its Phase II interconnection study, it negotiates and executes a generator interconnection agreement ("GIA") with the CAISO and the interconnecting transmission owner.[22]

Interconnection study results also provide a cost responsibility estimate used to establish the initial interconnection financial security ("IFS") posting requirements. The IFS postings are critical to the CAISO because they help ensure that only financially viable projects continue in queue. Today, interconnection customers post IFS at three queue milestones: 15 percent of their allocated costs after Phase I study results, 30 percent after their Phase II study results, and 100 percent upon the commencement of construction activities.[23] Equally important in the IFS calculus is the percentage of posted IFS eligible for refund to the interconnection customer if it withdraws from queue. Generally, the interconnection customer is eligible to receive a 50 percent refund of its posted IFS until the final IFS posting, at which time 100 percent of the IFS is non-refundable.[24] The non-refundable portion of IFS postings offsets any costs that fall to the participating transmission owners that inherit financing costs when interconnection customers withdraw, other customers still need their shared network upgrades, and those customers cannot receive additional cost allocations because of their cost caps.[25]

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[19] *See* Section 2.4.3 *et seq.*

[20] *See* Section 7.4.3 of Appendix DD to the CAISO tariff.

[21] For example, if four interconnection customers share a network upgrade and one withdraws, and the upgrade is still required, the remaining three interconnection customers will see an increase in allocated costs because they are sharing the costs among three interconnection customers instead of four. *See also* Section 6.8.1 of Appendix DD to the CAISO tariff.

[22] Section 13 of Appendix DD to the CAISO tariff.

[23] Section 11 of Appendix DD to the CAISO tariff.

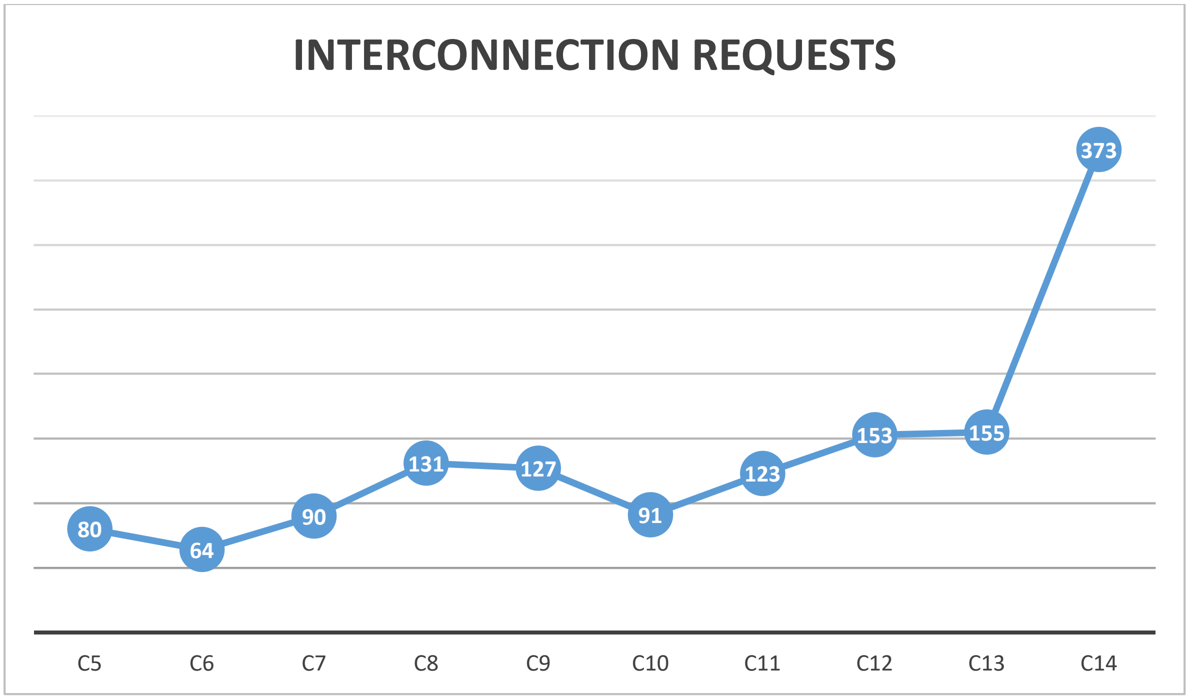
[24] Section 11.4.2 of Appendix DD to the CAISO tariff.

[25] Section 7.6 of Appendix DD to the CAISO tariff.

If no shared network upgrade costs remain, the non-refundable portion offsets transmission revenue requirements.[26]

B. Cluster 14

The number of interconnection requests in the cluster 14 supercluster speaks for itself:



Even with the 155 interconnection requests the CAISO received in cluster 13, the CAISO had to rely on its tariff authority and issue a market notice to delay the publication of Phase I interconnection study results by one month.[27] Cluster 14 is *241 percent* larger than cluster 13. Moreover, the number of interconnection requests is not the sole issue. The purpose of the cluster study is to assess the network upgrades and facilities for the cluster together. However, the capacity in cluster 14 is unprecedented. The historical peak demand in the CAISO reached 50,116 MW on September 1, 2017.[28] Peak demand in 2020 was 47,121 MW on August 18.[29] Cluster 14 alone consists of approximately 150,000 MW in combined proposed generating capacity, bringing the

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26 *Id.*

27 *See* Sections 6.6 and 8.5 of Appendix DD to the CAISO tariff.

28 CAISO Peak Demand History, https://www.caiso.com/documents/californiaisopeakloadhistory.pdf.

29 *Id.*

CAISO generator interconnection queue to 246,000 MW.[30] Even with robust procurement in the future, the potential generation available to off-takers exceeds demand by a significant margin.

Although the CAISO could rely on its tariff authority to issue market notices to extend study deadlines,[31] doing so would result in an *ad-hoc* process lacking transparency and consistency. Moreover, the CAISO's transmission planning process, the transmission owners' wholesale distribution access tariff ("WDAT") interconnection processes, and many load-serving entity ("LSE") procurement processes depend in part on the consistency—or at least the predictability—of the CAISO's study timelines.

Exacerbating the issue, neither the CAISO nor the participating transmission owners can increase staffing levels to mitigate cluster 14's impact. After clusters 12 and 13, the CAISO and transmission owners *already* hired additional staff and consultants for cluster 14 in the expectation that cluster 14 would be somewhat consistent with previous large clusters. Additionally, developers themselves retained remaining available consultants to prepare this many interconnection requests for cluster 14, leaving few, if any, experts available at this time. In any case, the very nature of the cluster study process requires the transmission owners to study the cluster together *en masse*. It is not possible to split up the interconnection requests and outsource their studies such that the CAISO could maintain current interconnection study timelines.

The volume of interconnection requests affects the time required to study interconnection requests in myriad ways. The CAISO and transmission owners iterate with every interconnection customer at each step of the study process. First, the CAISO and transmission owners must validate the interconnection request package to ensure the data is correct.[32] Once validated, the CAISO and transmission owner engineers hold a scoping meeting with each interconnection customer to provide feedback on the feasibility of the interconnection request.[33] Based on this feedback, the

30 All public generator interconnection queue data is available on the CAISO's website at https://rimspub.caiso.com/rims5/logon.do under the Reporting tab.

31 *See* Sections 6.6 and 8.5 of Appendix DD to the CAISO tariff.

32 Section 3.5.2 of Appendix DD to the CAISO tariff.

33 Section 6.1.2 of Appendix DD to the CAISO tariff ("The purpose of the Scoping Meeting shall be to discuss reasonable Commercial Operation Dates and alternative interconnection options, to exchange information including any transmission data that would reasonably be expected to impact such interconnection options, to analyze such information and to determine the potential feasible Points of Interconnection and eliminate alternatives given resources and available information. The applicable Participating TO(s) and the CAISO will bring to the meeting, as reasonably necessary to accomplish its purpose, the following: (a) such already available technical data, including, but not limited to, (i) general facility loadings, (ii) general instability issues, (iii) general short circuit issues, (iv) general voltage issues, and (v) general reliability issues, and (b) general information regarding the number, location, and capacity of other Interconnection Requests in the Interconnection Study Cycle that may potentially form a Group Study with the Interconnection Customer's Interconnection Request").

interconnection customer may modify its request, which the CAISO transmission owners review. As explained below, the CAISO and transmission owner engineers hold similar meetings after the Phase I and Phase II studies where the interconnection customer can discuss its results and refine its project. All parties already struggled in meeting tariff deadlines where there were between 100 and 150 interconnection requests. The challenge of processing 373 interconnection requests is manifold. The CAISO also believes modifying the processes themselves to move more quickly would have a detrimental effect. The CAISO's interconnection study process has so much iteration to allow each interconnection customer to refine its project and make it as competitive as possible. This directly benefits potential offtakers, and keeps capacity and interconnection costs as low as possible for ratepayers.

The CAISO is concerned with the risk of delaying the announcement that it must postpone the cluster 15 interconnection request window. Developers may incur costs to prepare future interconnection requests with the expectation the CAISO would accommodate cluster 15 interconnection requests next April. However, neither the CAISO nor the transmission owners can accommodate an interconnection request window in 2022. It would not be possible to begin studying such a cluster while also studying cluster 14. The CAISO must weigh its obligation to provide open access to the transmission grid with its obligation to provide meaningful and timely study results for the safe and reliable interconnection of new resources.

III. Proposed Tariff Revisions

A. Extended Timelines

The CAISO proposes to extend current interconnection study deadlines to accommodate cluster 14.[34] The CAISO notes that these are firm deadlines, and the CAISO will not have flexibility to publish study results beyond these deadlines; however, the CAISO may publish study results earlier if possible, allowing cluster 14 to accelerate.[35] The CAISO's revised deadlines are not conservative efforts designed to give "breathing room." Given the number of interconnection requests in cluster 14, it will take a concerted effort to meet these revised deadlines. The CAISO believes these deadlines are achievable only with the other proposed revisions described below. The CAISO and transmission owners evaluated their ability to maintain all other study procedures, but doing so would have required more than two years to complete cluster 14 interconnection studies, putting the cluster 15 interconnection request window off indefinitely. It is not tenable to postpone study results beyond what the CAISO has proposed here, nor delay cluster 15 beyond 2023.

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[34] Proposed Section 16.1 of Appendix DD to the CAISO tariff.

[35] *Id*.

The CAISO proposes the following deadlines for major queue milestones. The second column shows the proposed cluster 14 deadlines.[36] For comparison, the third column shows what would be the deadlines if the CAISO did not exercise its existing tariff authority to expand study deadlines it cannot accommodate:

Deadline	Cluster 14 Proposal	Typical Cluster
Phase I Study Results Published	September 15, 2022	January 11, 2022
Initial IFS Due	January 13, 2023	April 25, 2022
Cluster 15 Request Window	April 15, 2023	April 15, 2022
Phase II Study Results Published	November 24, 2023	November 20, 2022
Deliverability Results Published	March 23, 2024	March 14, 2023
Second IFS Due	May 4, 2024	May 19, 2023
Reassessment	August 20, 2024	August 1, 2023

Extending these deadlines also will ensure all parties have sufficient time to process study results, make financial commitments, and progress in queue. The CAISO also proposes to extend related timelines around these major milestones. The CAISO and transmission owners will hold interconnection study results meetings within 90 days of publication instead of the typical 30 days.[37] This will give the CAISO, transmission owner, and developer staff sufficient time to prepare for, attend, and exchange minutes for each interconnection customer's Phase I and Phase II study results meetings. The CAISO also proposes to increase the time for interconnection customers to submit feedback on their Phase I results meeting minutes, and for the CAISO to issue a revised Phase I study report based on the results meeting. Issuing revised reports after the results meeting is rare, but the CAISO wants to ensure parties have sufficient time because the CAISO does not expect cluster 14 volume to decrease before Phase I study results.

Consistent with its existing practice, the CAISO proposes to clarify that it will publish study results simultaneously for participating transmission owners.[38] Thus, all interconnection customers will receive their study results at the same time, ensuring parity in the competitive process of seeking a power purchase agreement.

Because of the volume of interconnection requests in cluster 14, the CAISO and the transmission owners cannot begin studying cluster 15 next year. The CAISO

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[36] *Id*.

[37] *Id*.; *compare to* Sections 6.7 and 8.7 of Appendix DD to the CAISO tariff. The CAISO also has included tariff revisions extending deadlines related to interconnection customers that elect to park their interconnection requests, including for IFS postings. Proposed Section 16.1 of Appendix DD to the CAISO tariff.

[38] *Id*.

therefore proposes to include a tariff provision stating that unless the CAISO issues a market notice stating otherwise, the CAISO will not open the queue cluster application window in April 2022.[39] The CAISO will open the cluster 15 application window in 2023 under its normal procedures. This provides transparency to developers so they do not spend time and resources developing interconnection requests for 2022. However, if the CAISO sees a high percentage of withdrawals early in the study process, the CAISO has preserved the ability to receive new interconnection requests in 2022.

B. Phase I Study

The unprecedented volume of generation in cluster 14 has raised particular concerns that the CAISO's existing study approach will not produce realistic and meaningful results in the Phase I study. Stakeholders are concerned that interconnection customers will not see realistic results until most interconnection customers withdraw, which typically occurs after interconnection customers receive their initial cost estimates in the Phase I study and before they must make their initial IFS posting.

To address these concerns, the CAISO, in coordination with the transmission owners, will establish reasonable study scenarios and dispatch assumptions for the steady state (thermal and voltage) analysis.[40] Total generation inside the study area will be limited to produce meaningful study results. The CAISO also proposes to include a tariff provision clarifying that the Phase I study for cluster 14 will not include system-level stability analyses.[41] The CAISO does not expect any system conditions and generation dispatch to produce system-level stability issues that drive reliability network upgrades. Therefore, there is no justification for a system-level stability assessment in Phase I.

Regardless of these changes to methodology, the Phase I interconnection studies will still include short circuit/fault duty, and steady state (thermal and voltage) analyses, consistent with Order No. 2003 and the CAISO GIDAP. The Phase I studies will identify direct interconnection facilities and required reliability network upgrades necessary to interconnect the generating facility, mitigate thermal overloads and voltage violations, and address short circuit and reliability issues associated with the requested interconnection service. The Phase I studies also will identify the costs and cost

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39 *Id*.

40 Sections 2.4.3.1 and 2.4.3.3 of Appendix DD to the CAISO tariff explain the studies the CAISO performs during the Phase I and II studies. The CAISO does not propose to change them. The CAISO has merely included a tariff provision to clarify the CAISO will not perform a *system-level* stability analysis during Phase I. All other modifications to how the CAISO will conduct the interconnection studies do not rise to the level of detail prescribed in the tariff under the Commission's rule of reason because they depend on engineering judgment and differ year to year. The CAISO has explained them here for transparency and as background for the tariff revisions described in Section III.C.

41 *Id*.

allocations for all required reliability network upgrades ("RNUs") and—for customers requesting deliverability—delivery network upgrades ("DNUs").

C. Cost Caps and Initial Interconnection Financial Security

Due to the large amount of interconnection request withdrawals typical between Phase I and Phase II, interconnection customers' projected cost estimates generally go down in Phase II. However, because the CAISO and transmission owners will use a revised methodology in Phase I interconnection study, the CAISO and transmission owners are concerned that Phase I results could produce anomalous results that lead to a higher rate (though still rare) of cost increases in Phase II. Additionally, it is reasonable to expect a higher degree of churn within the queue, leading to other cost shifts between Phase I and Phase II.

Currently, the CAISO tariff provides that the lower of Phase I and Phase II allocated costs sets the interconnection customer's maximum cost responsibility.[42] As such, if an interconnection customer's costs go up in Phase II, the interconnection customer can only assume cost responsibility up to the Phase I study results, leaving the interconnecting transmission owner responsible for any actual costs above the maximum cost responsibility. Because cluster 14's Phase I study results may differ than in years past, and because of the high degree of churn the CAISO expects, the CAISO proposes that the Phase I study will be advisory only.[43] Only the Phase II study will set the maximum cost responsibility above which the transmission owner would bear costs for financing network upgrades. Because interconnection customers' costs nearly always decrease between Phase I and Phase II, the CAISO does not expect this proposal to affect interconnection customers significantly; however, there may be more anomalous results in cluster 14's Phase I studies, and only a few cost increases could leave the transmission owners with significant financing responsibilities.

Although the Phase I study results will be advisory, they still will provide a current cost responsibility used to establish each interconnection customer's initial IFS posting requirement. The initial IFS posting is a critical milestone in the CAISO queue that ensures only financially viable projects continue in queue. Additionally, the non-refundable portion of IFS postings offsets the transmission owners financing obligations when interconnection customers withdraw, their shared network upgrades are still needed for other customers, and those customers cannot receive additional cost allocations because of their cost caps.

Nevertheless, the CAISO recognizes that facing higher costs in Phase II can be just as disruptive to interconnection customers, especially if the Phase II study alone

42 "Maximum Cost Responsibility" Appendix A to the CAISO tariff.

43 Proposed Section 16.2 of Appendix DD to the CAISO tariff.

sets the cost cap. To address customer risk and balance the impact of the advisory Phase I study, the CAISO proposes to establish a unique refund rule for cluster 14. Currently, if an interconnection customer withdraws after the Phase II study, it would be eligible for a 50 percent refund of its initial IFS posting.[44] This percentage does not change based on the Phase II results. The CAISO proposes that interconnection customers whose maximum cost responsibility goes up by 25 percent or more between Phase I and Phase II will be eligible for a 100 percent refund of their initial IFS posting if they withdraw before their second IFS posting is due.[45] Additionally, the interconnection customer would be eligible for the same refund if the Phase II study extends the longest-duration reliability network upgrade by one year or more.[46] Other ISO/RTOs use these rules today,[47] and the CAISO believes they are sensible for the cluster 14 supercluster given the other changes the CAISO has proposed.[48] The CAISO believes these tariff revisions reflect the increased risk cluster 14 faces between Phase I and Phase II. They also carefully balance the need for customers, transmission owners, and LSEs to have meaningful results with the need for financial protection from unexpected cost increases.

D. Future Clusters

The tariff revisions described above will apply to cluster 14 only. Stakeholders understood the expediency of establishing revised timelines and procedures for cluster 14, but they did not believe there was sufficient time to consider proposals to address future enhancements for future clusters, super or not. The CAISO will conduct its next

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44 The initial IFS posting is 15 percent of the interconnection customer's current cost responsibility. For example, if an interconnection customer's Phase I study establishes its current cost responsibility for network upgrades at $10 million, it would post a form of IFS for $1.5 million, half of which would be non-refundable if the interconnection customer withdraws from queue. *See* Sections 11.2 and 11.4.2 of Appendix DD to the CAISO tariff.

45 Proposed Section 16.2 of Appendix DD to the CAISO tariff. These costs would not include costs imposed by affected systems, which the CAISO does not consider in its studies. Under the CAISO tariff, "affected systems" only refers to transmission owners outside of the CAISO balancing authority area. Most of these affected systems are public entities and not Commission jurisdictional. When interconnection customers present affected system issues, they contract bilaterally with the affected system for studies and mitigation.

46 The intent of this provision is to establish a proxy for the interconnection customer's commercial operation date, which is established formally in the Phase II study.

47 *See, e.g., Southwest Power Pool*, 167 FERC ¶ 61,275 (2019); *Midcontinent Independent System Operator, Inc.,* 158 FERC ¶ 61,003 at PP 107-108 (2017); *Public Service Company of Colorado*, 169 FERC ¶ 61,182 at PP 37-51 (2019).

48 Refunding of interconnection study deposits will continue to be based on current procedures, which refund any deposit funds remaining at the time of withdrawal. Likewise, if an interconnection customer withdraws before Phase II and its costs or timing had not increased, the CAISO's current refund provisions would still apply (generally providing a 50 percent refund regardless of why the customer withdrew). *See* Sections 11.2 and 11.4.2 of Appendix DD to the CAISO tariff.

iteration of the IPE initiative this Fall to examine enhancements for future clusters, which may apply to cluster 14 as well.

E. Summary

The Commission should find the CAISO's proposed tariff revisions are just and reasonable. Stakeholders recognized the unprecedented dilemma created by cluster 14 and supported the CAISO's proposed revisions to address it. The tariff revisions carefully balance the need for additional time with developers' need for progress. These revisions will establish transparent and fair procedures for cluster 14 while the CAISO addresses interconnection procedures for future clusters through a thorough stakeholder initiative. As a mechanism to reduce cluster 14 volume, stakeholders strongly advocated the CAISO increase its requirements for interconnection customers to progress in queue, such as raising site exclusivity requirements and posting requirements. The CAISO may evaluate permanent reforms in its IPE initiative; however, the CAISO recognizes that interconnection customers entered cluster 14 expecting procedures and costs to remain relatively static. Accordingly, the CAISO's proposed revisions address study timelines and processes to avoid non-compliance with the current CAISO tariff. To the extent the CAISO has revised its procedures, those procedures do not increase costs or developer requirements, and they provide interconnection customers sufficient time to prepare for future decision points in queue.[49] Moreover, the CAISO has not proposed changes to the independent study or fast track interconnection request processes, which will still be available to developers. The Commission should therefore approve the CAISO's proposed tariff revisions as just and reasonable.

IV. Request for Waiver

As explained above, it is not possible for the CAISO, transmission owners, or developers to comply with current CAISO interconnection procedures. The CAISO's proposed tariff revisions avoid non-compliance, relying on the CAISO's ability to extend certain tariff deadlines or request waivers. All of the CAISO's proposed tariff revisions are forward-looking; they establish timelines and procedures for interconnection customers to continue in queue. Just as market participants are not entitled to the bidding and settlements rules that existed when they entered the market, interconnection customers are not entitled to the interconnection procedures that existed when they entered the queue.[50] The CAISO's proposed tariff revisions are just

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[49] *See Midcontinent Independent System Operator Corp.*, 169 FERC ¶ 61,173 at P 82 (2019).

[50] *See, e.g.*, *Reform of Generator Interconnection Procedures and Agreements*, Order No. 845, 163 FERC ¶ 61,043 (2018), *order on reh'g*, Order No. 845-A, 166 FERC ¶ 61,137, *order on reh'g*, Order No. 845-B, 168 FERC ¶ 61,092 (2019) (establishing new requirements for interconnection customers already in queue); *Reactive Power Requirements for Non-Synchronous Generation*, Order No. 827, 155 FERC ¶ 61,277, *order on clarification and reh'g*, 157 FERC ¶ 61,003 (2016) (establishing new requirements for interconnection customers already in queue).

and reasonable because they establish fair and effective interconnection procedures developers, transmission owners, and the CAISO can meet given the constraints of cluster 14.

Nevertheless, the CAISO recognizes that its proposed tariff revisions for cluster 14 supplant tariff provisions for other clusters. The CAISO has not removed or revised its existing tariff provisions because they still apply to previous clusters, and the CAISO intends to work with stakeholders to evaluate more permanent tariff revisions for all future clusters. Although the CAISO has included proposed tariff language noting the unique cluster 14 rules take precedence over any conflicting tariff provision in the GIDAP,[51] out of an abundance of caution, the CAISO also requests waiver of the GIDAP tariff provisions to the extent the Commission finds a waiver is necessary. For example, although the CAISO has included tariff revisions noting it will not open the interconnection request window in 2022, Section 3.3.1 of the GIDAP still states the CAISO will open a window between April 1 and April 15 each year.

Good cause exists for the Commission to grant a limited waiver of the CAISO interconnection study timelines set forth in the GIDAP.[52] The Commission previously has granted requests for tariff waivers where: (1) the applicant acted in good faith; (2) the waiver was of limited scope; (3) the waiver addressed a concrete problem; and (4) the waiver did not have undesirable consequences, such as harming third parties.[53] The CAISO meets all four conditions.

The CAISO has acted in good faith because the increase in interconnection requests was unprecedented and unforeseeable, and there was little the CAISO could do in advance to address or prevent the cluster 14 supercluster. At the close of cluster 14, the CAISO began stakeholdering its proposed interconnection process changes. The waiver is of limited scope because it will apply to cluster 14 only, and the waiver principally addresses timelines the CAISO can extend unilaterally.[54] The waiver addresses an obvious concrete problem: the supercluster. Although a high volume of interconnection requests may persist, the CAISO will address them through more permanent tariff revisions before the next interconnection request window. The waiver will not have undesirable consequences. Stakeholders broadly supported this filing. Moreover, without approval of this filing or waiver, the CAISO and its transmission owners will be unable to comply with CAISO tariff provisions. Therefore, good cause

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51 Specifically, proposed section 16.1 states that the tariff and GIDAP will apply to cluster 14 "*with the following exceptions . . .*" (emphasis added).

52 Specifically, the tariff provisions setting deadlines different than those proposed for the supercluster in this filing, including deadlines in sections 3.3.1, 3.5.2, 6.1.2, 6.6, 6.7 8.5, and 8.7 of Appendix DD to the CAISO tariff.

53 See, e.g., *Cal. Indep. Sys. Operator Corp*., 158 FERC ¶ 61,072, at P 5 (2017); *N.Y. Indep. Sys. Operator*, Inc., 146 FERC ¶ 61,061, at P 19 (2014); *PJM Interconnection*, L.L.C., 146 FERC ¶ 61,041, at P 5 (2014); *ISO New England, Inc*., 134 FERC ¶ 61,182, at P 8 (2011).

54 *See* Sections 6.6 and 8.5 of Appendix DD to the CAISO tariff.

exists to grant the CAISO's request for limited waiver of interconnection study deadlines in Appendix DD to the CAISO tariff. Alternatively, the Commission may deny the CAISO's request for waiver to the extent the proposed tariff revisions in the instant filing suffice.

V. Stakeholder Process

The expedited stakeholder process that resulted in this filing included:

- Two policy papers issued by the CAISO, including draft tariff revisions;
- Two stakeholder meetings and conference calls to discuss the CAISO papers and draft tariff revisions; and
- Two opportunities to submit written comments on the CAISO papers and the draft tariff provisions.[55]

All stakeholders that commented on this issue in the IPE initiative supported or did not oppose the CAISO's proposal. The CAISO Governing Board voted to authorize the revisions in this filing during its public meeting on July 15, 2021.[56]

VI. Effective Date

The CAISO requests an effective date of September 26, 2021, 61 days from this filing.

[55] Materials regarding the IPE stakeholder process are available on the CAISO website at http://www.caiso.com/informed/Pages/MeetingsEvents/MiscellaneousStakeholderMeetings/Default.aspx.

[56] Materials related to the Board's authorization to prepare and submit this filing are available on the CAISO website at http://www.caiso.com/informed/Pages/BoardCommittees/BoardGovernorsMeetings.aspx. The Memoranda provided to the Board is provided in Attachment D to this filing.

VII. Communications

In accordance with Rule 203(b)(3) in the Commission's Rules of Practice and Procedure,[57] the CAISO respectfully requests that correspondence and other communications regarding this filing be directed to:

Roger E. Collanton
General Counsel
Sidney L. Mannheim
Assistant General Counsel
William H. Weaver
Senior Counsel
California Independent System
Operator Corporation
250 Outcropping Way
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VIII. Service

The CAISO has served copies of this filing on the California Public Utilities Commission, the California Energy Commission, and all parties with scheduling coordinator agreements under the CAISO tariff. In addition, the CAISO has posted a copy of this filing on the CAISO website.

IX. Contents of Filing

Besides this transmittal letter, this filing includes these attachments:

Attachment A	Clean CAISO tariff sheets incorporating this tariff amendment;
Attachment B	Red-lined document showing the revisions in this tariff amendment;
Attachment C	Final proposal; and
Attachment D	Board memoranda.

57 18 C.F.R. § 385.203(b)(3).

X. Conclusion

For the reasons set forth in this filing, the CAISO respectfully requests that the Commission accept the tariff revisions proposed in the filing effective September 26, 2021.

Respectfully submitted,

/s/ William H. Weaver
Roger E. Collanton
General Counsel
Sidney L. Mannheim
Assistant General Counsel
William H. Weaver
Senior Counsel

Counsel for the California Independent System Operator Corporation

Attachment A – Clean Tariff

Interconnection Procedures for Cluster 14

California Independent System Operator Corporation

July 27, 2021

Appendix DD

* * * * *

Section 16. Cluster 14 Unique Procedures

The CAISO tariff and the GIDAP will apply to Queue Cluster 14 with the following exceptions:

16.1 Study Procedures and Timelines

a) The CAISO will validate Cluster 14 Interconnection Requests by September 26, 2021. Interconnection Requests with deficiencies after that date will be deemed invalid and will not be included in Cluster 14.

b) GIDAP provisions stating when the CAISO and Participating TOs must initiate Interconnection Studies will not apply.

c) The CAISO will publish Phase I Interconnection Studies no later than September 15, 2022. The Phase I Interconnection Study will not include system-level stability analyses.

d) Interconnection Customers may submit, in writing, additional comments on the final Phase I Interconnection Study report up to (5) Business Days following the Results Meeting. Based on any discussion at the Results Meeting and any comments received, the CAISO (in consultation with the applicable Participating TO(s)) will determine, in accordance with Section 6.8, whether it is necessary to follow the final Phase I Interconnection Study report with a revised study report or an addendum. The CAISO will issue any such revised report or addendum to the Interconnection Customer no later than thirty (30) calendar days following the Results Meeting.

e) No later than the earlier of (1) ninety (90) days after the publication of the Phase I Interconnection Study or (2) January 13, 2023, Interconnection Customers must (1) submit an updated, valid dynamic model to the CAISO, and (2) post their initial Interconnection Financial Security.

f) The CAISO will publish Phase II Interconnection Studies no later than November 24, 2023.

g) Phase I and Phase II Interconnection Study Results meetings will occur with ninety (90) days of publication.

h) The CAISO will publish the results of the TP Deliverability allocation process no later than March 23, 2024.

i) Interconnection Customers must post their second Interconnection Financial Security no later than the earlier of (1) ninety (90) days after the publication of the Phase II Interconnection Study or (2) May 4, 2024.

j) Unless the CAISO issues a Market Notice stating otherwise, the CAISO will not open the Queue Cluster 15 Cluster Application Window in 2022. The CAISO will open the Queue Cluster 15 Cluster Application Window in 2023 pursuant to Section 3.3.

k) Deadlines related to Interconnection Customers that elect to park their Interconnection Requests will be extended consistent with this Section, including for Interconnection Financial Security postings.

The CAISO and Participating TOs will use Reasonable Efforts to meet all deadlines in the GIDAP and this Section 16, and may publish study results early or otherwise accelerate the interconnection process where possible. The CAISO will publish Interconnection Studies simultaneously for all the Participating TOs.

16.2 Cost Responsibility and Interconnection Financial Security

a) Maximum Cost Responsibility and Maximum Cost Exposure in the Phase I Interconnection Study will be advisory only. Only the Phase II Interconnection Study will set Interconnection Customers' binding Maximum Cost Responsibility and Maximum Cost Exposure.

b) Interconnection Customers will receive a complete refund of their initial Interconnection Financial Security posting if they withdraw before their second Interconnection Financial Security posting is due where: (1) their Maximum Cost Responsibility increases by twenty-five (25) percent or more between Phase I and Phase II; or (2) the anticipated completion of their longest lead-time Reliability Network Upgrade extends by one year or more between Phase I and Phase II.

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Attachment B – Marked Tariff

Interconnection Procedures for Cluster 14

California Independent System Operator Corporation

July 27, 2021

Appendix DD

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The CAISO tariff and the GIDAP will apply to Queue Cluster 14 with the following exceptions:

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b) GIDAP provisions stating when the CAISO and Participating TOs must initiate Interconnection Studies will not apply.

c) The CAISO will publish Phase I Interconnection Studies no later than September 15, 2022. The Phase I Interconnection Study will not include system-level stability analyses.

d) Interconnection Customers may submit, in writing, additional comments on the final Phase I Interconnection Study report up to (5) Business Days following the Results Meeting. Based on any discussion at the Results Meeting and any comments received, the CAISO (in consultation with the applicable Participating TO(s)) will determine, in accordance with Section 6.8, whether it is necessary to follow the final Phase I Interconnection Study report with a revised study report or an addendum. The CAISO will issue any such revised report or addendum to the Interconnection Customer no later than thirty (30) calendar days following the Results Meeting.

e) No later than the earlier of (1) ninety (90) days after the publication of the Phase I Interconnection Study or (2) January 13, 2023, Interconnection Customers must (1) submit an updated, valid dynamic model to the CAISO, and (2) post their initial Interconnection Financial Security.

f) The CAISO will publish Phase II Interconnection Studies no later than November 24, 2023.

g) Phase I and Phase II Interconnection Study Results meetings will occur with ninety (90) days of publication.

h) The CAISO will publish the results of the TP Deliverability allocation process no later than March 23, 2024.

i) Interconnection Customers must post their second Interconnection Financial Security no later than the earlier of (1) ninety (90) days after the publication of the Phase II Interconnection Study or (2) May 4, 2024.

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The CAISO and Participating TOs will use Reasonable Efforts to meet all deadlines in the GIDAP and this Section 16, and may publish study results early or otherwise accelerate the interconnection process where possible. The CAISO will publish Interconnection Studies simultaneously for all the Participating TOs.

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* * * * *

Attachment C – Final Proposal

Interconnection Procedures for Cluster 14

California Independent System Operator Corporation

July 27, 2021

Supercluster Interconnection Procedures

Final Proposal

June 14, 2021

Table of Contents

Cluster 14 Interconnection Procedures

1 Introduction

Ensuring the safe and reliable interconnection of new resources is an integral part of the CAISO. In the last decade the CAISO has received an average annual number of queue cluster interconnection requests of 113. This year the CAISO received 373. To accommodate this cluster 14 “supercluster” and ensure meaningful study results, the CAISO, as well as the PTOs, must expand its study timelines and alter its study processes.

The CAISO held a stakeholder call on May 21, 2021 to discuss the CAISO’s supercluster issue paper and draft final proposal, and received written comments from twenty stakeholders on May 28, 2021. After reviewing and considering stakeholder comments, the CAISO is not proposing any substantial changes to the three proposed principal revisions to its queue cluster interconnection process for cluster 14, but has made several clarifications and addressed collateral concerns. In particular, the CAISO acknowledges the concerns of stakeholders regarding the proposal to enshrine these principles for application for future similarly-sized queue clusters, and is no longer proposing to pursue that approach. The proposals herein will apply to cluster 14 only.

A number of stakeholders also proposed changes that would be more demanding upon the interconnection customers to remain in the study process, such as imposing a site-exclusivity requirement that could not be met by a security deposit, requiring PPA status, or advancing only select resource types. The CAISO plans to initiate a more extensive interconnection process enhancement (IPE) initiative later this year to consider these and other application and study process modifications that could result in additional changes to cluster 14 as well as future clusters.

So for Cluster 14 only, the three principal revisions, with minor clarifications, are:

1. Completing both the Phase I and Phase II interconnection studies will take approximately one year longer than typical. This means the next queue cluster window will open in April 2023.
2. Estimated costs and cost allocations in the Phase I interconnection study will be advisory. Only the Phase II interconnection study will set cost caps.
3. Interconnection customers will be eligible for a 100 percent refund of their first interconnection financial security posting for network upgrades if their Phase II interconnection study increases their maximum cost responsibility by 25 percent or more, or extends the longest-duration reliability network upgrade by one year or more. A clarification to this revision is the interconnection customer must withdraw the interconnection request prior to the second interconnection financial security posting date to be eligible for the 100 percent refund.

While not a modification to the CAISO's proposal, the CAISO understands the majority of stakeholders' requesting more information about the revised study process, which the CAISO provides below. All other interconnection study procedures would remain in effect for the supercluster.

In consultation with the participating transmission owners, the CAISO considered preserving all current interconnection rules and procedures; however, doing so would have required more than 30 months to complete interconnection studies, thereby delaying the next opportunity for a queue cluster window indefinitely. The CAISO did not believe such a delay was tenable. The CAISO continues to believe its proposal allows interconnection customers to receive their study results as soon as possible while preserving the intent of the interconnection rules the CAISO has worked hard with stakeholders to develop.

Although proposal 1, above, allows for an additional year to complete the Phase I and Phase II studies, the CAISO re-emphasizes the timelines proposed are the outer boundaries, and if significant attrition occurs during the study process, the schedules may be compressed to more modest timelines.

To provide stakeholders certainty and transparency, the CAISO plans to take its final proposal to the Board of Governors no later than July, then submit the tariff revisions to the Federal Energy Regulatory Commission immediately thereafter.

2 Stakeholder process

Timely resolution of this stakeholder process is critical to provide interconnection customers, transmission owners, and load-serving entities with transparency and clarity on studying the supercluster. Therefore, the CAISO has set out the following accelerated stakeholder process schedule and appreciates stakeholder understanding and participation in this effort.

Stakeholder process schedule		
Step	**Date**	**Activity**
Issue Paper/Draft Final Proposal	May 15, 2021	Post Issue Paper/Straw Proposal
	May 21, 2021	Stakeholder web conference
	May 28, 2021	Stakeholder comments due
Final Proposal and Draft Tariff	June 14, 2021	Post Final Proposal and Draft Tariff
	June 21, 2021	Stakeholder web conference
	June 28, 2021	Stakeholder comments due
Board approval	July 14-15, 2021	CAISO Board of Governors meeting

3 Background

The CAISO currently begins a new interconnection cluster study each April. The purpose of cluster studies is to identify the interconnection facilities and network upgrades necessary to integrate the new resource seeking interconnection to the transmission system, to estimate the costs of those upgrades, and allocate those costs among interconnection customers sharing upgrades. The cluster study approach has proved an effective way to manage a large number of simultaneous interconnection requests. The CAISO also allows independent study interconnection requests at any time provided that the proposed resource is capable of being studied alone and the cluster study process is insufficient to meet the resource's proposed commercial operation date.

The cluster study methodology used to assess network upgrades necessary to support each cluster of generation layers the new cluster of generation upon all existing generation and all previous interconnection requests that remain active, as well as the network upgrades associated with the active previous interconnection requests or approved through the CAISO's transmission planning process.

The CAISO's interconnection study process is unique among ISO/RTOs in (1) identifying all contingent facilities that could affect an interconnection customer's costs or timing, (2) providing cost estimates for these facilities, and, most critically, (3) creating binding cost caps based on those estimates. If upgrade assignments or cost allocations change after the interconnection customer has been studied, the interconnection customer cannot inherit any new costs exceeding the cost caps provided in its interconnection studies. Such exceedance would be covered by the interconnecting transmission owner and any non-refundable portion of interconnection financial security of withdrawn interconnection customers allocated to the relevant upgrade. Although to date transmission owners rarely have to cover such costs, interconnection customers' binding cost caps provide crucial transparency to interconnection customers as they develop, market, and finance their projects. The cost caps also obviate any need to conduct serial restudies based on changes in upgrade cost responsibility. Interconnection customers can rely on their interconnection studies without fear of changes late in their projects' development. In the Commission's Order No. 845 proceeding, the American Wind Energy Association, NextEra, and several developers identified the CAISO processes as best practices. NextEra, for example, advocated that the Commission adopt the CAISO's processes nationally "to break endless start and stop restudy cycles" elsewhere.

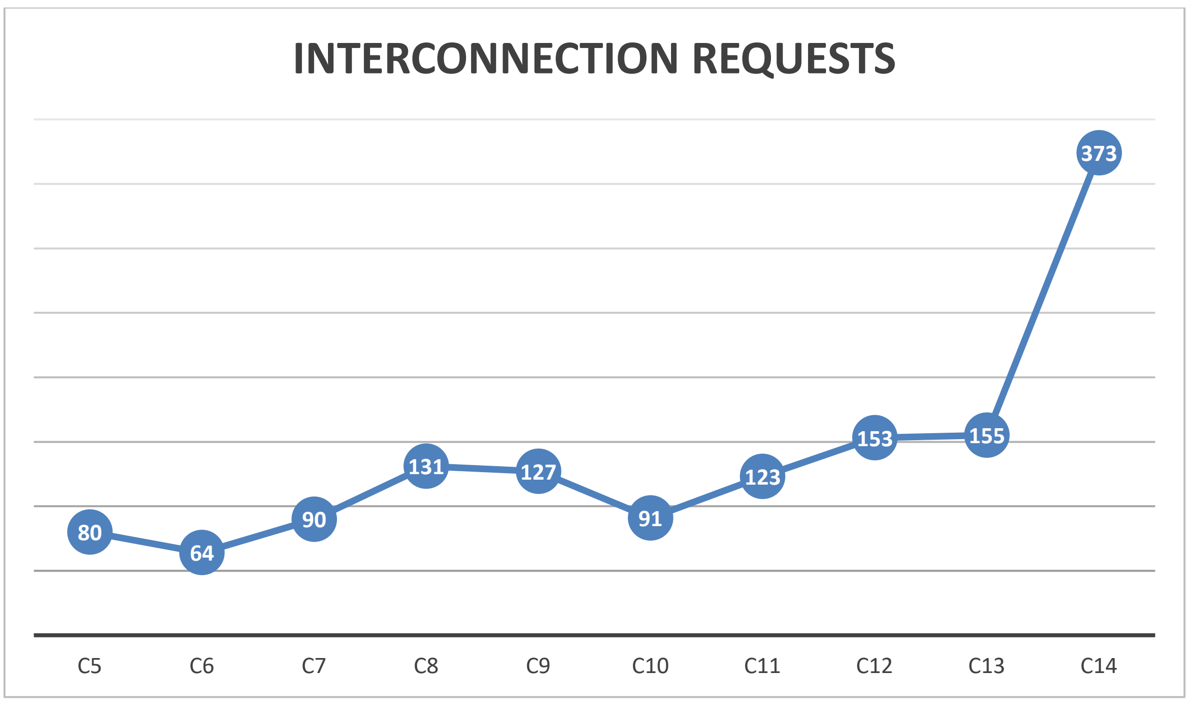
Interconnection study results also provide a cost responsibility estimate used to establish the initial interconnection financial security ("IFS") posting requirements. The IFS postings are critical to the CAISO because only those projects that are financially viable continue in queue. Additionally, the non-refundable portion of IFS postings (generally 50 percent depending on when the customer withdraws) are used to offset any costs that fall to the participating transmission owners ("PTOs") that inherit financing costs when interconnection customers withdraw, their shared network upgrades are still needed for other customers, and those customers cannot receive additional cost allocations because of their cost caps.

Today, interconnection customers post IFS at three queue milestones: 15 percent of their allocated costs after Phase I study results, 30 percent after their Phase II study results, and 100 percent upon the commencement of construction activities. Equally important in the IFS calculus is the percentage of posted IFS eligible to be refunded to the interconnection customer in the event it withdraws from queue. Generally the interconnection customer is eligible to receive a 50 percent refund of its posted IFS until the final IFS posting, at which time 100 percent of the IFS is non-refundable. Non-refundable IFS funds offset the costs of still-needed network upgrades or, if none, the PTO's transmission revenue requirement.

4 Issues and Draft Final Proposal

<u>Study Timeline</u>

The number of interconnection requests in cluster 14 speaks for itself:



Even with the 155 interconnection requests the CAISO received in cluster 13, the CAISO had to issue a market notice to delay the publication of Phase I interconnection study results by one month, and will likely have to do so again for Phase II study results. Cluster 14 is *241 percent* larger than cluster 13. Although the CAISO could rely on its tariff authority to issue market notices to extend study deadlines, doing so would result in an *ad-hoc* process lacking transparency and consistency. Moreover, the CAISO's transmission planning process, the PTOs' wholesale distribution access tariff ("WDAT") interconnection processes, and many load-serving entity ("LSE") procurement processes depend in part on the consistency—or at least the predictability—of the CAISO's study timelines.

Exacerbating the issue, neither the CAISO nor the transmission owners are able to increase staffing levels to mitigate the supercluster impact. After clusters 12 and 13, the PTOs *already* hired additional staff and consultants for cluster 14 in the expectation that cluster 14 would be somewhat consistent with previous large clusters. Additionally, developers themselves retained remaining available consultants to prepare this many interconnection requests for cluster 14, leaving few if any available at this time. In any case, the very nature of the cluster study process requires the cluster to be studied together *en masse*. It is not possible to split up the interconnection requests and outsource their studies such that the CAISO could maintain current interconnection study timelines.

The CAISO also is concerned with the risk of delaying the announcement that it must postpone the cluster 15 interconnection request window. Developers may incur costs to prepare future interconnection requests with the expectation that the CAISO would be able to accommodate cluster 15 interconnection requests next April. But neither the CAISO nor the PTOs are able to accommodate an interconnection request window in 2022. It would not be possible to begin studying such a cluster while studying the interconnection requests currently in queue. The CAISO must weigh its obligation to provide open access to the transmission grid with its obligation to provide meaningful and timely study results for the safe and reliable interconnection of new resources.

The CAISO proposed to extend current interconnection study deadlines in order to accommodate the supercluster. The CAISO notes that these are firm deadlines, and the CAISO will not have flexibility to publish study results beyond these deadlines; however, the CAISO may publish study results earlier if available.

The CAISO proposed the following deadlines. The second column shows the proposed supercluster deadlines. For comparison, the third column shows what would be the deadlines if the CAISO did not exercise its existing tariff authority to expand study deadlines it cannot accommodate:

Deadline	Supercluster Proposal	Typical Cluster
Phase I Study Results Published	September 15, 2022	January 11, 2022
Initial IFS Due	January 13, 2023	April 25, 2022
Cluster 15 Request Window	April 15, 2023	April 15, 2022
Phase II Study Results Published	November 24, 2023	November 20, 2022
TPD Affidavits Due	December 8, 2023	December 1, 2022
TPD Results Published	March 23, 2024	March 14, 2023
Second IFS Due	May 4, 2024	May 19, 2023
Reassessment	August 20, 2024	August 1, 2023

The CAISO is still evaluating all interrelated interconnection procedure timelines such as scoping meetings, results meetings, and customer responses. The CAISO believes it is prudent to extend these deadlines as well to ensure all parties have sufficient time to process study results, make financial commitments, and progress in queue. For example, the CAISO proposes to extend results meeting deadlines from one month from the publication of study results to three months following study results.

In the Issue Paper, the CAISO proposed to extend the time required to tender and negotiate generator interconnection agreements by an additional 30 days. Upon further consideration, and closer examination of the existing tariff language, Section 13.1.1 of Appendix DD provides:

> The applicable Participating TO will tender a draft GIA, together with draft appendices, to the CAISO and the Interconnection Customer ***no later*** than the sum of (i) one hundred eighty (180) calendar days and (ii) the estimated time to construct the Interconnection Facilities and Network Upgrades indicated in the applicable study report needed by this or any other dependent project, prior to the In-Service Date. The applicable ***Participating TO may tender the draft GIA any time after the Phase II Study report is issued*** and before the determined tender date on its own accord or at the request of either the CAISO or the Interconnection Customer.

Therefore if a Participating TO wants to tender the agreement sooner, the tariff already provides for that ability.

These revised deadlines would allow the CAISO to study the supercluster to provide meaningful results to interconnection customers and their potential off-takers, while ensuring the safety and reliability of the CAISO controlled grid. The CAISO notes that these deadlines are not conservative estimates. Given the number of interconnection requests in cluster 14, it will take a concerted effort to meet these revised deadlines. Additionally, the CAISO believes that these deadlines are achievable only provided the other proposed revisions described below. The CAISO and PTOs evaluated their ability to maintain all other study procedures, but doing so would have required more than two years to complete cluster 14 interconnection studies, putting the cluster 15 interconnection request window off indefinitely. The CAISO does not believe it is tenable to postpone study results beyond what the CAISO has proposed here, nor delay cluster 15 beyond 2023.

Stakeholder comments on revised timeline

Stakeholders generally agree that the current timelines are not sufficient, and additional time is needed to complete the Phase I and II studies and interrelated activities. Multiple stakeholders commented that the timelines should not be locked in, but allow for acceleration if circumstances change. Other stakeholders suggest that the extended timelines only apply to the cluster 14 Phase I study process, and suggest the upcoming IPE to determine what happens beyond the Phase I study process. One stakeholder requested that additional time be allowed for tendering draft LGIAs.

CAISO response and revised proposal

The CAISO agrees with stakeholders that the extended timelines should not be locked in and should allow for acceleration if circumstances change. The original proposal stated that *"The CAISO notes that these are firm deadlines, and the CAISO will not have flexibility to publish study results beyond these deadlines; however, the CAISO may publish study results earlier if available."* The CAISO clarifies that any aspect of the overall study process may be accelerated if conditions allow, not just the publication of study results.

In response to the suggestion that this proposal only address cluster 14 Phase I studies and allow the upcoming IPE to address what happens beyond the Phase I studies, the CAISO notes that the upcoming IPE can address modifications to this current proposal if warranted.

In response to the stakeholder suggestion that more time be allowed to issue LGIAs, the CAISO has spoken to the stakeholder and they are comfortable that the existing language in the tariff gives them the flexibility to tender the agreement based on workload requirements and no further changes are need to the tariff for the cluster 14 projects.

<u>PTO by PTO Basis for Study Results</u>

The CAISO generally issues interconnection study results simultaneously to the whole cluster. This promotes uniform treatment and allows potential off-takers to review study results at the same time, thereby preventing some interconnection customers from getting an earlier start than others.

To ensure a level playing field, the CAISO proposed to do the same for the supercluster; but, the CAISO solicited specific stakeholder feedback on this issue. Because the majority of interconnection requests in cluster 14 went to PG&E, it is likely that the CAISO could publish interconnection study results much sooner—even up to several months sooner—in the other PTO service territories. The CAISO is concerned, however, that such a significant jump start on interconnection study results may be an unfair advantage in the RFO process for power purchase agreements.

Stakeholder comments on PTO by PTO basis for release of study results

Stakeholders were divided on whether to issue all study results simultaneously or releasing study results as they become available. Some stakeholders commented that releasing the reports as they become available creates an uneven playing field in an RFO process for power purchase agreements, and others stated they did not believe it would result in an unfair advantage. One stakeholder commented that the CAISO proposal may put some cluster 14 projects at a disadvantage to cluster 14 WDATs if the PTOs are able to issue

WDAT reports earlier than the CAISO reports. Another stakeholder requested that the CAISO consider releasing results early for projects that have a PPA, letter of intent, or other documentation.

CAISO response and revised proposal

Due to the fact that there is no consensus one way or the other, the CAISO will not make any changes to its current practice and will continue issue interconnection study results simultaneously for the whole cluster.

To respond to the comment about the CAISO cluster 14 projects being at a disadvantage to the PTO's WDAT projects, the CAISO notes that any WDAT project requesting deliverability will receive their study results at the same time as the rest of the CAISO cluster 14 and will not be at an advantage.

Phase I study

The historical peak demand in the CAISO reached 50,116 MW on September 1, 2017. Peak demand in 2020 was 47,121 MW on August 18. Cluster 14 consists of approximately 150,000 MW in combined proposed generating capacity, bringing the CAISO generator interconnection queue to 246,000 MW. Even with robust procurement in the future, the potential generation available to off-takers exceeds demand by a significant margin.

The unprecedented volume of generation in Cluster 14 has raised particular concerns that the CAISO's existing study approach will not produce realistic and meaningful results in Phase I interconnection studies, and that there be little, if any, corresponding relationship between the methods of service set forth in the Phase I study results and those in the Phase II study results.

The CAISO proposed to modify how the CAISO and PTOs conduct the Phase I interconnection studies. The CAISO, in coordination with the PTOs, will establish reasonable study scenarios and dispatch assumptions for the steady state (thermal and voltage) analysis. Total generation inside the study area will be limited to produce meaningful study results. The system conditions and generation dispatch are not expected to produce any system-level stability issues and drive reliability network upgrades. Therefore, the stability assessment is not performed in the Phase I interconnection studies. The CAISO and PTOs will also modify the short circuit duty study methodology. The total online capacity in the evaluation will be limited to produce meaningful study results.

Regardless of these changes to methodology, the Phase I interconnection studies will still include short circuit/fault duty, and steady state (thermal and voltage) analyses. The Phase I studies will identify direct interconnection facilities and required reliability network upgrades necessary to interconnect the generating facility, mitigate thermal overloads and voltage violations, and address short circuit, and reliability issues associated with the requested interconnection service. The Phase I studies also will identify the costs and cost allocations for all required reliability network upgrades (“RNUs”) and—for customers requesting deliverability—delivery network upgrades (“DNUs”).

Stakeholder comments on study process

Stakeholders generally agreed that this cluster 14 supercluster requires modification to the study process to provide realistic and meaningful results. There were no specific objections to the CAISO’s eliminating the stability studies from the Phase I studies, or establishing reasonable study scenarios and dispatch assumptions for the steady state (thermal and voltage) analysis.

A general theme requested by a majority of stakeholders is the need for the CAISO and PTOs to be transparent and provide specific study assumptions and allow for stakeholder comment, preferably before this proposal goes to the CAISO Board for approval. A stakeholder also requested that the CAISO openly share modeling assumptions and guidelines so that both Load-Serving Entities (“LSE”) and the project developer community have an equal understanding of the risks of curtailment and clearly convey any differences between the interconnection customer requested Commercial Operation Date (“COD”) and the earliest achievable COD based on the upgrades identified.

A number of stakeholders requested that additional information about the availability of deliverability be provided at the scoping meetings.

One stakeholder suggested conducting deliverability assessment for WDAT and independent study process resources using QC13 information, while another suggested providing a path that will keep pre-cluster 14 projects proceeding through the independent study process on their original timeline.

One stakeholder requested that the scope of the Phase 1 study be further reduced to minimize delays, while another suggested elimination of the short-circuit study since they believe the results will not be realistic.

CAISO response and revised proposal

The study plan containing the detailed scenarios and dispatch approach in the reliability assessment will be posted on the Market Participant Portal. The general principles of the study approach are:

1. The study is organized by the pre-defined study areas as defined in previous cluster studies. The reliability assessment is performed for each study area separately. Generation outside the study area may be off-line.
2. Path flow assumptions impacting the study area are established from the hourly production cost simulation performed in the Transmission Planning Process.
3. Pre-QC14 generation is dispatched to the level that does not cause any overloads without the addition of QC14 generation.

4. QC14 generation, in addition to pre-QC14 dispatch, is dispatched to the level that does not cause normal overloads that can be managed through congestion management, as well as contingency overloads that were previously identified as an area delivery constraint.
5. If it is not feasible to maintain the path flow assumptions after step 4, the study area can be split into smaller study areas.

The details of the short circuit study approach are still under discussion. Short circuit duty mitigation has significant impacts on the achievable COD. Such information cannot be skipped in the Phase I study for the interconnection customers to make an informed decision moving into the Phase II study. Studying short circuit duty is required under FERC Order No. 2003 as well.

The deliverability assessment methodology inherently deals with over-supply of generation by identifying incremental area delivery upgrades beyond the transmission plan deliverability instead of upgrades to provide deliverability for all interconnection requests in the queue. The deliverability assessment would largely remain the same except that it will take more iterations to complete the assessment. All transmission limitations, including availability of deliverability, will be discussed at the scoping meetings.

Consistent with the CAISO's summer 2021 enhancements, recently approved by FERC, Independent Study projects seeking deliverability and waiting for Phase I, Phase II, and TPD allocation results could be awarded available interim deliverability on a temporary basis if COD is achieved before the study is completed.

<u>Cost Caps and Initial Interconnection Financial Security</u>

Due to the large amount of interconnection request withdrawals typical between Phase I and Phase II, interconnection customers' projected cost estimates generally go down in Phase II. However, because the CAISO and PTOs will use a revised methodology in Phase I interconnection studies, the CAISO and PTOs are concerned that Phase I results could produce anomalous results that lead to a higher rate (though still rare) of cost increases in Phase II. Additionally, it is reasonable to expect a higher degree of churn within the queue, leading to other cost shifts between Phase I and Phase II.

Currently, the CAISO tariff provides that the *lower* of Phase I and Phase II allocated costs sets the interconnection customer's maximum cost responsibility. As such, if an interconnection customer's costs go up in Phase II, the interconnection customer can only assume cost responsibility up to the Phase I study results, leaving the interconnecting PTO with any actual costs above the maximum cost responsibility.

Because a supercluster's Phase I interconnection study results rely on a different study process than in a typical year, the CAISO proposed that those results do not impact the ultimate maximum cost responsibility. Instead, only the Phase II study will set the maximum cost responsibility above which the PTO would bear any costs for financing network upgrades.

Phase I study results still will provide a current cost responsibility used to establish the initial IFS posting requirement. The initial IFS posting is a critical milestone in the CAISO queue that ensures only those projects that are financially viable continue in queue. Additionally, the non-refundable portion of IFS postings (generally 50 percent depending on when the customer withdraws) offsets the PTOs that inherit financing costs when interconnection customers withdraw, their shared network upgrades are still needed for other customers, and those customers cannot receive additional cost allocations because of their cost caps. Nevertheless, the CAISO recognizes that facing higher costs in Phase II can be just as disruptive to interconnection customers, especially if the Phase II study alone sets the cost cap.

The CAISO proposed that interconnection customers whose maximum cost responsibility goes up by 25 percent or more between Phase I and Phase II would be eligible for a 100 percent refund of their initial IFS posting if they withdraw before their second IFS posting is due. These costs would not include costs imposed by affected systems, which the CAISO does not consider. Additionally, the interconnection customer would be eligible for the same refund if the Phase II study extends the longest-duration RNU by one year or more. Other ISO/RTOs use these rules today, and the CAISO believes they are sensible in the supercluster context given the other changes the CAISO has proposed.

Under the CAISO's proposal, interconnection study deposits would still be refunded based on current procedures, which would refund any deposit funds remaining.

The CAISO believes these changes reflect the risk cluster 14 faces between Phase I and Phase II, and carefully balance the need for customers, PTOs, and LSEs to have meaningful results with the need for their financial protection from unexpected cost increases.

Stakeholder comments on cost caps and initial interconnection financial security

Stakeholders were generally mixed on the above proposal

One stakeholder stated that they appreciate the CAISO proposing a solution that seeks to provide interconnection customer certainty with a proposal that establishes a trigger for withdrawal without forfeiture of financial security

Another stakeholder appreciates CAISO's proposal to establish cost caps in Phase II studies as the results will cover the total scope of the system impact study and provide a more accurate estimate of the total interconnection costs,

Some stakeholders believe the refundability provision weakens incentives for speculative projects to drop out prior to Phase II, encouraging projects to stay in the queue that should otherwise withdraw.

One stakeholder stated concern that Phase I study results will not provide a reasonable cost cap to customers that—consistent with the status-quo—would otherwise facilitate commercial negotiations.

One stakeholder suggested that the Phase I cost caps should not be eliminated because the earliest firm cost information would not become available until November 2023, which will delay decision-making for these projects. This stakeholder also stated that if the CAISO cannot identify a way to implement these, it should consider offering cost caps within a range, such as +/- 20 percent.

Two stakeholders, while not providing specific comments on whether they support or oppose the CAISO's proposal, suggest that the cost cap issue should be considered in the upcoming IPE initiative.

Two stakeholders suggest that for determining refundability if certain interconnection costs increase by 25 percent or more that the cost measure should also include conditionally assigned network upgrades (CANU) and PTO interconnection facilities, as well as interconnection reliability network upgrades (IRNUs) and assigned network upgrades (ANUs),

CAISO response and revised proposal

The CAISO appreciates and considered the above stakeholder comments. Regarding the calculation of the 25 percent cost increase calculation, the CAISO continues to propose the increase of the maximum cost responsibility by 25 percent between Phase I and Phase II without including PTO interconnection facilities in the calculation. Typically, a change in costs for network upgrades between Phase I and Phase II is a much greater likelihood than a change in costs for PTO interconnection facilities, which typically do not change unless the interconnection customer changes the interconnection plan dramatically. Including the PTO interconnection facility cost would increase the required increase in network upgrades to reach the 25 percent threshold if the PTO interconnection facilities cost does not change. To clarify the treatment of CANUs in this process, if a Phase I identified CANU is converted to an ANU in Phase II, then the cost of the Phase I MCR is increased by the amount of the CANU converted to an ANU.[1] This type of increase is not protected in the 25 percent MCR increase calculation. Overall, considering the mixed responses from stakeholders, the CAISO still believes its proposal provides the best path forward that balances the risks faced by the PTOs and the interconnection customers. Therefore the CAISO is not making any changes to this aspect of the proposal.

[1] http://www.caiso.com/Documents/Upgrade-Cost-Responsibility-Implementation.pdf

Superclusters in the Future

The CAISO proposed to use these procedures in the future when the CAISO receives 150 or more interconnection requests. This proposed figure is based on the CAISO's experience with cluster 13, which had 155 requests and required the CAISO to extend interconnection study results. The CAISO does not expect each instance to require the maximum time allotted to a supercluster. The CAISO only seeks the flexibility to use supercluster procedures to alter timelines to some degree and use the other proposals described above in the event of another supercluster, and without re-seeking regulatory approval.

The CAISO understands that some stakeholders have sought full IFS refunds for cost or timing increases (including to DNUs) in the normal cluster study process. The CAISO is not prepared to offer such at this time, but will examine the issue in the next iteration of its Interconnection Process Enhancements stakeholder initiative.

Stakeholder comments on superclusters in the future

The majority of stakeholders opposed applying the principles proposed in the draft final proposal to future queue clusters and suggest any interconnection application and study process changes beyond cluster 14 be addressed in a more comprehensive stakeholder process.

CAISO response and revised proposal

The CAISO agrees with stakeholders and no longer proposes in this initiative to apply the principles to future clusters. The CAISO plans to initiate a more extensive IPE initiative later this year to consider application and study process modifications that would apply to future clusters. The CAISO also may consider additional modifications to cluster 14 in the IPE initiative.

Additional Stakeholder Comments and Suggestions

Stakeholder comments on applying additional criteria to limit the number of cluster 14 projects

A number of stakeholders proposed that the CAISO apply additional criteria to limit the number of cluster 14 projects entering the Phase I studies or moving from the Phase I studies to the Phase II studies. Suggestions include requiring site control, power purchase agreements, or other indicators of high readiness levels. One stakeholder suggested the CAISO split the cluster 14 into two separate sub-clusters, a first ready cluster and a common cluster.

There were also stakeholders that opposed applying additional criteria to limit the number of cluster 14 projects.

CAISO response

The CAISO appreciates all of the suggestions for limiting the number of cluster 14 projects; however, at this time the CAISO is not inclined to propose additional requirements on cluster 14 to participate in the interconnection study process. Rather than imposing additional criteria in this current initiative, the CAISO believes this topic should be vetted in the upcoming IPE initiative.

Stakeholder comments on increasing PTO/CAISO staffing

A few stakeholders suggested the PTO and CAISO increase staffing or consultants to support with the timely processing of the queue and to be ready for the Phase II studies.

CAISO response

As covered in the draft final proposal and in the stakeholder call, adding resources beyond increases already made have not been found to be plausible due to the specific skill sets and experience required, and skilled staff is largely under contract with other parties and pose conflicts of interest. The very nature of the cluster study process requires the cluster to be studied together *en masse*. It is not possible to split up the interconnection requests and outsource their studies such that the CAISO could maintain current interconnection study timelines.

Stakeholder comment on proposal impacts on prior cluster parking

One stakeholder requested that the CAISO clarify how this initiative proposal would impact parking for Clusters 12 and 13 projects.

CAISO response

The CAISO proposal will not impact the 2022 transmission plan deliverability (TPD) allocation cycle following the completion of the cluster 13 Phase II studies. However, the next TPD allocation cycle will be delayed by one year to occur following the completion of the cluster 14 Phase II studies. This will impact those projects that park or are allowed to continue to park after in the 2022 TPD allocation cycle following the completion of the cluster 13 Phase II studies. This will result in those projects that park or remained parked following the 2022 allocation cycle being parked for two years until the 2024 allocation cycle following cluster 14 Phase II studies. Projects can come out of parking early if they convert to energy only and make their second IFS posting. Also, additional concerns about projects impacted by cluster 14 delays, such as allowing additional time to stay in the queue, can be revisited in the upcoming interconnection process enhancement initiative.

5 Next steps

As a next step, the CAISO will conduct a conference call to discuss this final proposal on June 21, 2021. The CAISO then invites stakeholders to submit comments by June 28, 2021. Comments should be submitted to InitiativeComments@caiso.com.

Following review and evaluation of the comments received, the CAISO will consider potential revisions to its Final Proposal, which it will take to the Board of Governors at the July meeting.

Attachment D – Board Memoranda

Interconnection Procedures for Cluster 14

California Independent System Operator Corporation

July 27, 2021

Memorandum

To: ISO Board of Governors

From: Neil Millar, Vice President, Infrastructure & Operations Planning

Date: July 7, 2021

Re: **Decision on Cluster 14 Interconnection Procedures**

This memorandum requires Board action

EXECUTIVE SUMMARY

The California Independent System Operator Corporation's Generator Interconnection and Deliverability Allocation Procedures (GIDAP) holds an open window each year for the submission of new interconnection requests to be studied in the next cluster study process. Each cluster study process consists of two phases, Phase I and Phase II, with financial security postings being due after each phase in order to move forward to the next step. In the last decade the ISO has received an annual average of 113 queue cluster interconnection requests. This year the ISO received 373 interconnection requests seeking to be studied in cluster 14. To accommodate this cluster 14 "supercluster" and ensure meaningful study results, the ISO, as well as the participating transmission owners must expand the GIDAP study timelines and alter its study processes. Management's proposed revisions to the cluster 14 timeline and study process will only apply to cluster 14 and are summarized here:

1. Extend the overall study process by approximately one-year with accompanying study modifications while allowing for faster studies if possible;
2. Only the Phase II studies will set the binding interconnection customer cost caps; and
3. Interconnection customers will be eligible for a 100% refund of initial financial security posting if their Phase II study costs go up more than 25% or their timeline is extended a year or more from the Phase I results, and they withdraw before their second interconnection financial security is due, which follows the Phase II studies.

The protracted schedule necessary to address cluster 14, and the resultant delay to open the cluster 15 window, should not preclude load serving entities from timely accessing resources necessary to meet proposed procurement. Prior to cluster 14, there were approximately 44,000 MW of renewable resources and 47,000 MW of energy storage resources in the ISO generator interconnection queue. With cluster 14 there are now over 97,000 MW of renewable resources, 147,000 MW of energy storage resources and 245,000 of total MW in the ISO generation interconnection queue. These amounts reflect the strong competition among developers seeking to obtain a power purchase agreement for the 11,500 MW of additional resource procurement recently authorized by the California Public Utilities Commission. These amounts also demonstrate the ISO's longstanding efforts to facilitate the interconnection of additional resources to meet California's renewable portfolio standards as well as evolving reliability requirements.

During this initiative, a number of stakeholders suggested that the ISO apply additional, stricter criteria to enter or continue in the study process. Suggestions included requiring site control, power purchase agreements, select resource types, or other indicators of high readiness levels. Management has agreed to vet these proposals and others in a more extensive interconnection process enhancement initiative later this year.

Management recommends the following motion:

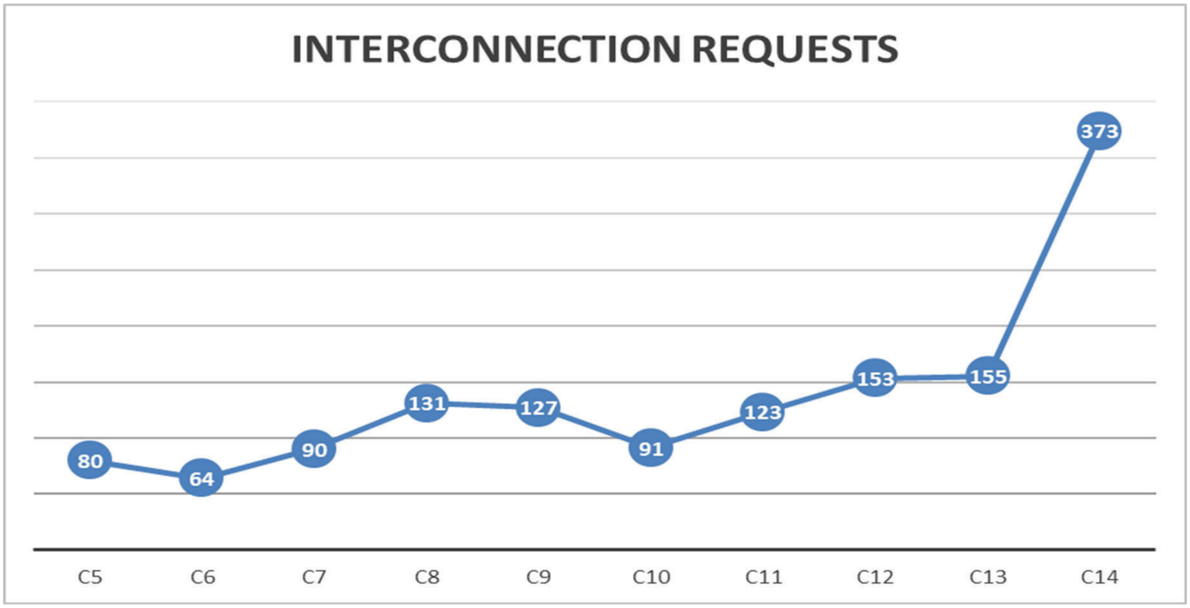
> ***Moved, that the ISO Board of Governors approves the proposed cluster 14 interconnection procedures, as described in the memorandum dated July 7, 2021; and***
>
> ***Moved, that the ISO Board of Governors authorizes Management to make all necessary and appropriate filings with the Federal Energy Regulatory Commission to implement the proposal, including any filings that implement the overarching initiative policy but contain discrete revisions to incorporate Commission guidance in any initial ruling on the proposed tariff amendment.***

DISCUSSION AND ANALYSIS

The current ISO generation interconnection process begins annually with an open application window in April and encompasses a two-year study process that includes a Phase I and a Phase II study with annual reassessments. The purpose of cluster studies is to identify the interconnection facilities and network upgrades necessary to integrate the new resource seeking interconnection to the transmission system, to estimate the costs of those upgrades, and to allocate those costs among interconnection customers sharing upgrades. The Phase I study results are typically issued in January following the open window and the Phase II study results are typically issued 10 months later in November. The lower of the network upgrade cost estimates identified in the Phase I or Phase II studies establish a firm cost cap that the interconnection customer will be required to finance. If costs ultimately exceed the cost cap, the transmission owners assume the costs. Upon achieving commercial operation, the transmission owner reimburses the customer for what it financed. However, if an interconnection customer withdraws from the queue after posting financial security, some of the financial security is non-refundable and is used to offset the costs of shared network upgrades still needed by other interconnection customers or offset regional or local transmission revenue requirements. The cluster study approach has proven an effective way to manage a large number of simultaneous interconnection requests.

The ISO also allows fast track and independent study interconnection requests at any time, subject to the tariff requirements for those requests.

During the April 1 – 15, 2021, window for submitting new interconnection requests for study in the upcoming cluster 14 study process, the ISO received 373 requests, over three times the average in the previous nine cluster windows.



Although the ISO could rely on its tariff authority to issue market notices to extend study deadlines, doing so would result in an ad-hoc process lacking transparency and consistency. Moreover, the ISO's transmission planning process, the participating transmission owners' wholesale distribution access tariff interconnection processes, and many load-serving entity procurement processes depend in part on the consistency—or at least the predictability—of the ISO's study timelines. Management believes its proposal allows interconnection customers to receive their study results as soon as possible while preserving the intent of the interconnection rules the ISO has worked with stakeholders to develop over the years. To accommodate this queue supercluster and ensure meaningful study results, the ISO must expand its study timelines and alter its study processes. To that end, Management seeks Board approval of the following enhancements:

1. **Extend the overall study process by approximately 1 year.**

The ISO, in consultation with the participating transmission owners, considered preserving all current interconnection rules and procedures; however, doing so would have required more than 30 months to complete interconnection studies, thereby delaying the next opportunity for a queue cluster window indefinitely. A delay this long is not tenable.

Exacerbating the issue, neither the ISO nor the transmission owners are able to increase staffing levels to mitigate the supercluster impact. After clusters 12 and 13, the participating transmission owners already hired additional staff and consultants for cluster 14 in the expectation that cluster 14 would be somewhat consistent with previous large clusters. Additionally, developers themselves retained remaining available consultants to prepare this many interconnection requests for cluster 14. In any case, the very nature of the cluster study process requires the cluster to be studied together *en masse*. It is not possible to split up the interconnection requests and outsource their studies such that the ISO could maintain current interconnection study timelines.

Management proposes the following deadlines to extend current interconnection study deadlines in order to accommodate the supercluster.

Deadline	Supercluster Proposal	Typical Cluster
Phase I Study Results Published	September 15, 2022	January 11, 2022
Initial IFS Due	January 13, 2023	April 25, 2022
Cluster 15 Request Window	April 15, 2023	April 15, 2022
Phase II Study Results Published	November 24, 2023	November 20, 2022
TPD Affidavits Due	December 8, 2023	December 1, 2022
TPD Results Published	March 23, 2024	March 14, 2023
Second IFS Due	May 4, 2024	May 19, 2023
Reassessment	August 20, 2024	August 1, 2023

The second column shows the proposed supercluster deadlines. For comparison, the third column shows what would be the deadlines if the ISO did not exercise its existing tariff authority to expand study deadlines it cannot accommodate. Other related processes will be extended consistent with these major deadlines. Management notes that these are firm deadlines, and the ISO will not have flexibility to publish study results beyond these deadlines; however, the ISO may publish study results earlier if available.

2. The Phase II studies will set interconnection customer cost caps

The unprecedented volume of generation in Cluster 14 has raised particular concerns that the ISO's existing study approach will not produce realistic and meaningful results in Phase I interconnection studies, and that there will be little, if any, corresponding relationship between the methods of service set forth in the Phase I study results and those in the Phase II study results.

Management proposes to modify how the ISO and participating transmission owners conduct the Phase I interconnection studies. Under this proposal, the ISO, in coordination with the participating transmission owners, will establish reasonable study scenarios and dispatch assumptions for the steady state (thermal and voltage) analysis. Total generation inside the study area will be limited to produce meaningful study results. The system conditions and generation dispatch are not expected to produce any system-level stability issues and drive reliability network upgrades. Therefore, the stability assessment will not be performed in the Phase I interconnection studies. The ISO and participating transmission owners will also modify the short circuit duty study methodology. The total online capacity in the evaluation will be limited to produce meaningful study results.

Currently, the ISO tariff provides that the lower of Phase I and Phase II allocated costs sets the interconnection customer's maximum cost responsibility, which provides the interconnection customer with a level of cost certainty. As such, if an interconnection customer's costs go up in Phase II, the interconnection customer can only assume cost responsibility up to the Phase I study results, leaving the interconnecting participating transmission owner with any actual costs above the maximum cost responsibility.

Interconnection customers' projected cost estimates provided in Phase I generally go down in Phase II due to the large amount of interconnection request withdrawals that typical occur between Phase I and Phase II. However, because under this proposal the ISO and participating transmission owners will use a revised methodology in Phase I interconnection studies, the ISO and participating transmission owners are concerned that Phase I results could produce anomalous results that lead to a higher rate (though still rare) of cost increases in Phase II.

Because of the supercluster's revised Phase I study methodology, Management proposes that those results do not impact the ultimate maximum cost responsibility. Instead, only the Phase II study will set the maximum cost responsibility above which the participating transmission owner would bear any costs for financing network upgrades.

3. Eligibility for 100% refund of initial financial security posting

The Phase I study results will still provide a current cost responsibility used to establish the initial interconnection financial security posting requirement. This financial security posting is a critical milestone in the ISO generation interconnection process. Because a portion of the initial financial security becomes non-refundable (typically 50%) when a customer withdraws, this helps ensure that only those projects that are financially viable continue. Additionally, the non-refundable portion of the interconnection financial security postings helps offset the financing costs for shared network upgrades still needed for other customers that the participating transmission owners would otherwise inherit. Nevertheless, the ISO recognizes that facing higher costs in Phase II can be just as disruptive to interconnection customers, especially if the Phase II study alone sets the cost cap.

Management proposes that interconnection customers whose maximum cost responsibility goes up by 25 percent or more between Phase I and Phase II would be eligible for a 100 percent refund of their initial interconnection financial security posting if they withdraw before their second interconnection financial security posting is due. Additionally, the interconnection customer would be eligible for the same refund if the Phase II study extends the longest-duration reliability network upgrade by one year or more. Other ISO/RTOs use similar rules today, and Management believes they are sensible in the supercluster context given the other proposed changes.

Under Management's proposal, interconnection study deposits would still be refunded based on current procedures.

Management believes these changes reflect the risk cluster 14 faces between Phase I and Phase II, and carefully balance the need for customers, participating transmission owners, and load-serving entities to have meaningful results with the need for their financial protection from unexpected cost increases.

POSITIONS OF THE PARTIES

The ISO received 20 sets of comments from stakeholders on May 28th following the issuance of the initial proposal. Throughout this initiative, stakeholders understood the situation and have been generally supportive of the need to adjust timelines and study methodologies as Management proposed above. Surprisingly, many stakeholders proposed that that the ISO apply additional, stricter criteria to enter or continue in the study process. Suggestions included requiring site control, power purchase agreements, select resource types, or other indicators of high readiness levels. In the final proposal, the ISO agreed to vet these proposals and others in a more extensive interconnection process enhancement initiative later this year, which may apply additional criteria to cluster 14 later in the interconnection process.

The ISO received only two sets of comments on June 28th following the issuance of the final proposal. Comments were generally supportive of the proposal but requested some refinements.

The California Energy Storage Alliance provided overall support for the proposal but requested certain modifications. One modification is that independent study process projects that were submitted prior to cluster 14, yet are included in cluster 14 for deliverability studies as per the current tariff requirements, not be subject to the extended timelines in this proposal. Management does not believe it is appropriate or necessary to provide a separate study path for these independent study process projects. Under the recent FERC approved tariff changes from the summer 2021 readiness initiative, these projects are eligible for interim deliverability if available until the cluster 14 study process is completed. Another modification California Energy Storage Alliance suggested is that projects with power purchase agreements be exempt from Management's proposed timelines above. Management does not support this at this time for cluster 14 as the very nature of the cluster process requires all projects to be studied together, and having two separate study paths would only further delay the process. Management notes that adding a future requirement for projects to have a power purchase agreement to enter or move forward in the study process can be discussed in the upcoming interconnection process enhancement initiative.

The Large-Scale Solar Association and Solar Energy Industries Association submitted joint comments providing general support for Management's proposal, but requested modifications that focused on the two criteria for the interconnection financial security refund eligibility. One request is to include cost increases in the maximum cost responsibility due to the conversion of contingent assigned network upgrades to assigned network upgrades against the 25% threshold. Another is to include the duration of deliverability network upgrades as part of the longest-duration threshold. Management believes these modification requests require more stakeholder discussion and can be further vetted in the upcoming interconnection process enhancement initiative.

CONCLUSION

Management recommends that the Board approve the cluster 14 interconnection procedures proposed in this memorandum. These changes are generally supported by stakeholders and were refined to address their comments and concerns throughout the stakeholder process. The proposed modifications allow the ISO to accommodate this queue cluster 14 "supercluster" under our current tariff framework and ensure meaningful study results. It provides interconnection customers with certainty for cluster 14 study timelines and processes and an exit ramp if cost increases meet a defined threshold. It also enables further modifications to be considered in the upcoming more extensive interconnection process enhancement initiative.