



California ISO

2021 Interconnection Process Enhancements Preliminary Issue Paper

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1 Introduction

The Interconnection Process Enhancements (IPE) Initiative is the CAISO's ongoing commitment to improve its Generator Interconnection and Deliverability Allocation Procedures (GIDAP) and make process enhancements as resource interconnection needs evolve. The 2021 IPE initiative will discuss and address issues the CAISO and stakeholders have identified given current circumstances, and will seek to resolve concerns that have surfaced since the 2018 IPE initiative.¹ The CAISO is seeking to consider potential changes to address the rapidly accelerating pace of new resources needing connection to the grid to meet system reliability needs and exponentially increasing levels of competition among developers resulting in excessive levels of new interconnection requests being received. This initiative will also consider long-term interconnection process adjustments and refinements as necessary.

This initiative will have two distinct, but simultaneously run, phases. Phase 1 will focus on near-term enhancements to the existing interconnection processes that the CAISO can resolve for Cluster 14 and before the summer of 2022 (discussed in detail in Section 3 of this paper). Phase 2 will focus on resolving longer term modifications and broader reforms to align interconnection processes with procurement activities (discussed in detail in Section 4 of this paper). The CAISO will conduct both phases simultaneously with phase 1 targeting the CAISO Board of Governors in May 2022, and phase 2 targeting November 2022.

This Preliminary Issue Paper describes the range of near-term and long-term issues to consider thus far. The intention of this preliminary issue paper is to provide additional context as stakeholders help shape and inform the full scope of the 2021 IPE initiative. The CAISO will host a stakeholder workshop on October 19, 2021, to discuss the issues and give stakeholders the opportunity to present additional issues and concerns that should be considered in the overall scope of this initiative. Following the stakeholder workshop, an Issue Paper/Straw Proposal will be published defining the actual scope and preliminary proposals for the issues defined in the workshop.

2 Background

During the initial planning for the 2021 IPE initiative, the CAISO identified certain issues to address and a number of relatively minor enhancements needed since the 2018 IPE initiative. These topics are relatively straightforward and are not related to the 2018 IPE changes.

¹ For more information on the 2018 IPE initiative please refer to the initiative webpage at: [California CAISO - Interconnection process enhancements \(caiso.com\)](https://www.caiso.com/interconnection-process-enhancements).

During the Cluster 14 open window, the CAISO received 373 interconnection requests, which resulted in the Supercluster Interconnection Procedures initiative that started on June 14, 2021². The high volume of interconnection requests was a direct result of the various procurement mandates issued by the CPUC and other regulatory authorities. In the supercluster initiative, the CAISO committed to continue to discuss topics that were not resolved in the time available within that initiative that could affect the Cluster 14 supercluster Phase II processes³. Topics that would impact Cluster 14 Phase II will be handled in the phase 1 portion of this initiative as described above. Another impact of the Cluster 14 supercluster is that the current GIDAP may need to be modified to be more adept at dealing with the current significant generation expansion and to better accommodate interconnecting significant amounts of new generation expeditiously to meet near-term reliability challenges. These potential changes will need more time to discuss and come to consensus with stakeholders and will be handled in the phase 2 portion of this initiative as described above.

3 Phase 1: Near-Term Enhancements for Summer 2022

Phase 1 will focus on near-term enhancements to the existing interconnection processes that the CAISO can resolve for Cluster 14 and before the summer of 2022. The CAISO seeks stakeholder input on the following enhancements that have been identified as issues that need to be resolved in the near-term:

3.1 Necessary enhancements or adjustments the CAISO has become aware of since the 2018 IPE initiative that need to be addressed in Phase 1

- Removing downsizing window and simplifying downsizing request requirements:
 - The CAISO proposes to transition from an annual month-long open window for receiving downsizing requests and allow them to be submitted at any time. The downsizing requests would be held by the CAISO for the next reassessment study where the impact of the upgrades associated with the downsized resource would be determined. The CAISO also intends to simplify the downsizing request process where appropriate.

² For more information on the Supercluster Interconnection Procedures initiative please refer to the initiative webpage at: [FinalProposal-SuperclusterInterconnectionProcedures.pdf \(caiso.com\)](#)

³ The supercluster initiative needed to produce a filing to FERC quickly to receive a FERC order in a time frame that would allowed Cluster 14 to move forward as expeditiously as possible under a revised schedule.

- Process for changes to network upgrade requirements after the second Interconnection Financial Security (IFS) posting:
 - Appendix DD Section 6.8 deals with errors or omissions to study reports⁴. However, as stated in Section 6.8.3, *“Once the initial and second Interconnection Financial Security posting due dates as described in this section have passed, the error or omission provisions described in this Section 6.8 no longer apply.”* The tariff does not expressly describe the issue of cost responsibility related to increased costs for interconnection when an error or omission is discovered after the initial and the second postings have been made. This topic is to address who the cost responsibility falls to when an error or omission is discovered after the initial and the second postings have been made.
- Withdrawal option for projects impacted by new costs and/or delayed in-service date (ISD) after initial posting:
 - When projects receive a new required upgrade or significantly modified upgrade after having made either its initial or second IFS posting that significantly increases the cost for the project to interconnect or significantly pushes back its earliest achievable in-service date, the project would be given the option to either accept and move forward with the changes or withdraw and receive a full refund for its IFS and a refund of any unused study deposit.
- Clarify definition of Reliability Network Upgrade (RNU):
 - This proposed issue is to clarify that any remedial action scheme (RAS) or other RNU that is identified in a deliverability study is categorized as an RNU and will impact the total RNU cost calculation for the RNU cost cap.⁵
- Transferring Participating Transmission Owner (PTO) Wholesale Distribution Access Tariff (WDAT) Projects into ISO Queue:
 - During the cluster interconnection request (IR) submittal process of the CAISO and the PTOs, some IRs are received by the PTOs where the point of interconnection (POI) in the IR is under CAISO control. This also occurs where the CAISO receives an IR where the POI in the IR is on a PTO’s sub-transmission or distribution system. While the CAISO and the PTOs work together to handle these issues, the tariff could speak to these situations expressly. This item will explore how to transfer IRs between the WDAT and CAISO queues during the IR submittal process.

⁴ Appendix DD of the CAISO tariff: [AppendixDD-GeneratorInterconnectionDeliverabilityAllocationProcedures-asof-Jun15-2021.pdf \(caiso.com\)](#)

⁵ CAISO Tariff Appendix DD Section 14.3.2.1(1).

- Changing Sites and POIs During IR Validation:
 - Specific tariff criteria needs to be developed for changing proposed generating facility locations and their POIs during the cluster IR validation period. Interconnection customers may request a change in site or POI after a scoping meeting, even when the originally requested POI is feasible. Likewise, customers may seek to alter their site location based on an infeasible POI. Either requested change may be due to high cost to interconnect at that POI or the lack of available deliverability. While the CAISO has utilized guidelines based on various tariff requirements, more specific criteria needs to be developed to be more transparent.

3.2 Further adjustments to the Cluster 14 “supercluster” process for Cluster 14 and earlier clusters

- When should site exclusivity documentation be required?
 - The CAISO does not advocate for requiring site exclusivity for cluster IRs but is seeking stakeholder input on requiring site exclusivity to proceed into the Phase II study process.
- Should equipment requirements be introduced?
 - The CAISO is seeking stakeholder input on whether the CAISO should require the project supplier demonstrate that the developer has a commitment for various key equipment required for the project to timely move forward, either at the IR stage or to enter Phase II.
- Should an accelerated process for "Ready" projects be considered?
 - The CAISO is seeking stakeholder input on whether a new accelerated process should be considered for projects that can demonstrate an advanced readiness that would allow them to quickly go into operation relative to other projects. Proposals should include the criteria to verify readiness, the study process for ready projects, and any consequences for delays after declaring being ready.
- Would different requirements for different technologies to advance in the interconnection process be appropriate? Between location-specific resources versus more location-flexible?
 - The CAISO is seeking stakeholder input on whether different requirements and potentially different study processes and paths should be considered based on project technology. Technologies that could be considered for different treatment based on meeting specific system needs are battery energy storage systems (BESS), off-shore wind and geothermal systems. Flexibility of project location is another consideration for different treatment

where, for example, BESS are more location-flexible and tend to have shorter development timelines. Conversely, off-shore wind and geothermal project developments are more location constrained and may have longer development timelines. These various issues could warrant a somewhat unique process and treatment within the GIDAP.

3.3 Broader issues that warrant discussion given existing supply conditions and the need to accelerate and sustain the pace of resource procurement and interconnection

- Should a one-time framework be adopted to allow resources such as storage to be added to existing sites on an expedited basis, despite potential impacts on earlier-queued projects, to meet pressing reliability needs?
 - The CAISO is seeking stakeholder input on whether a one-time option should be adopted to allow resources such as storage to be added to existing sites on expedited basis to meet pressing reliability needs despite the potential impacts on earlier-queued projects.

4 Phase 2: Long-Term Enhancements by April 2023

Phase 2 will focus on resolving longer term interconnection modifications and broader reforms to align interconnection processes with procurement activities that the CAISO can resolve before the start of the Cluster 15 process in April 2023. The CAISO seeks stakeholder input on the following enhancements that have been identified as issues that need to be resolved in the long-term:

4.1 Necessary enhancements or adjustments the CAISO has become aware of since the 2018 IPE initiative that need to be addressed in Phase 2

- Should higher fees, deposits, or other criteria be required for submitting an IR?
 - The CAISO is seeking stakeholder input on whether the bar for entry into the interconnection process should be raised to discourage numerous IR submissions by a single developer, such as requiring higher fees or deposits for submitting an IR, or imposing other requirements.
- Streamline interconnection studies:
 - Due to the increased scope and complexity of the interconnection studies, the current timeline is not sufficient. The CAISO will be developing a proposal for refining the Phase I, Phase II, and annual reassessment study timelines to allow sufficient time to complete the study work and enhance efficiency.

- Policy for CAISO as an Affected System – how is the base case determined and how are the required upgrades paid for:
 - The CAISO is receiving increasing numbers of generators interconnecting in other balancing authority areas coming to the CAISO to be studied for impacts to the CAISO as an affected system. These projects are required to work with the CAISO to perform studies to determine if the CAISO is impacted and if so, determine the required mitigations. Currently, there are no tariff guidelines for determining the appropriate base case for these studies. While the independent study process does provide guidelines for similar circumstances, specific requirements for studies when the CAISO is an affected system need to be developed.

Another outstanding issue is, whether California’s ratepayers should reimburse a generator for network upgrades on the CAISO grid if network upgrades are required on the CAISO grid for generating facilities interconnecting in another balancing authority area.⁶

- Should the CAISO re-consider an alternative cost allocation treatment for network upgrades to local (below 200 KV) systems where the associated generation benefits more than, or other than, the customers within the service area of the PTO owning the facilities?
 - The CAISO tariff requires PTOs to reimburse interconnection customers whose generators are interconnecting to their systems for the costs of reliability and local delivery network upgrades necessary for the interconnection. The PTOs then include those network upgrade reimbursement costs in their FERC-approved transmission rate bases, requiring ratepayers to pay those costs through either the local or regional transmission access charges (TAC). Network upgrades for 200 kV systems and above are considered regional, and upgrades below 200 kV are considered local. The regional TAC is a “postage stamp rate” based on the aggregated transmission revenue requirements (TRR) of all PTOs for all regional facilities on the CAISO system. In contrast, the local TAC is PTO-specific, charged only to customers within the service area of the PTO owning the facilities. There is ongoing concern that the current practice for local upgrades could unduly impact local ratepayers who are not the sole beneficiaries of the upgrades, but who solely bear their costs.

The CAISO addressed this issue with stakeholders and filed a narrowly focused proposal to FERC in 2017. FERC ultimately found that the CAISO

⁶ Consistent with FERC policy, as an affected system the CAISO would only be able to require developers build RNUs on the CAISO system.

failed to support its proposal as just and reasonable and not unduly discriminatory and rejected the CAISO's filing without prejudice, which allows the CAISO to present FERC an alternative approach.⁷

4.2 General interconnection issues to be addressed in Phase 2

- Should there be incentives for load serving entities to procure generation projects at locations where transmission capacity has been built/approved based on the California Public Utilities Commission (CPUC) portfolios?
 - The CAISO has developed transmission expansion plans to meet the generation capacity, technologies and locations of the CPUC generation expansion portfolios, including the level of deliverability approved by the CPUC. Much of the new transmission facilities have been built with the remaining approved projects in various stages of design, permitting, and construction. There is significant generator capacity in the queue that does not need any network upgrades other than interconnection facilities to move forward. Furthermore, there is an even greater amount of generator capacity in the queue that along with their interconnection facilities only require a remedial action scheme to move forward.

However, based on the limited visibility the CAISO has into the procurement activities of the load serving entities (LSEs), many projects obtaining power purchase agreements (PPAs) are projects that are located outside of the portfolio area where they first require various network upgrades to go into operation. This exacerbates the time required for new generation that have a PPA to go into operation and results in transmission capability that was built to accommodate the new generation required to maintain system reliability not being fully utilized, which increases costs to ratepayers.

The CAISO is seeking stakeholder input on methodologies for more closely aligning the generation procurement processes of the LSEs with the generation and transmission expansion processes of the CPUC and other LRAs and the CAISO respectively.

- Should Transmission Plan Deliverability (TPD) Allocation process revisions be considered?
 - The current TPD Allocation process worked well during the period where LSEs were awarding PPAs at a steady pace as California progressed to the 33% renewable requirement by 2020. However, the current process may be less nimble in today's interconnection environment.

⁷ FERC filing ER17-432: <https://elibrary.ferc.gov/eLibrary/filedownload?fileid=01EE09AD-66E2-5005-8110-C31FAFC91712>

The CAISO has considered a revised TPD allocation process where TPD is allocated to LSEs who have resource adequacy obligations that they would assign to specific projects they enter into a PPA with. This would be similar to the CAISO Distributed Generation Deliverability allocation process. The CAISO is seeking stakeholder input on whether the current TPD allocation process should be revised and if so, what specific methodologies do stakeholders recommend.

4.3 Broader issues that warrant discussion given existing supply conditions and the need to accelerate and sustain the pace of resource procurement and interconnection, the CAISO is seeking stakeholder input on

- How can the interconnection process and incoming applications better align with procurement interest?
- How can the interconnection process and procurement activity align with transmission system capabilities and renewable generation portfolios developed for planning purposes?
- Should interconnection application requirements differ for resources that are location constrained, versus resources like standalone batteries that can be located elsewhere on the grid?
- Should a solicitation model be considered for some key locations and constraints not addressed in portfolio development, where commercial interest is the primary driver?
- While the tariff currently allows a project to achieve its COD within seven (7) years if a project cannot prove that it is actually moving forward to permitting and construction, should the CAISO have the ability to terminate the GIA earlier than the seven year period?

In seeking stakeholder input on the topics described above, the CAISO requests stakeholders comment on specific changes that are needed to any of the above mentioned topics, including specific recommendations or proposals on new or revised methodology.

5 Stakeholder engagement

The schedule for stakeholder engagement is provided below. The CAISO will present its proposal for phase 1 to the Board of Governors in May 2022, and phase 2 will be presented to the Board of Governors in November 2022.

Date	Event
09/30/21	Publish preliminary issue paper
10/08/21	Stakeholder suggestions due
10/19/21	Stakeholder workshop on preliminary issue paper
10/28/21	Stakeholder comments due on preliminary issue paper and workshop
11/22/21	Publish issue paper/straw proposal
12/01/21	Stakeholder conference call on issue paper/straw proposal
12/15/21	Stakeholder comments due on issue paper/straw proposal
01/25/22	Publish revised straw proposal
02/01/22	Stakeholder conference call on revised straw proposal
02/15/22	Stakeholder comments due on revised straw proposal
Phase 1	
03/10/22	Publish draft final proposal
03/17/22	Stakeholder conference call on draft final proposal
03/31/22	Stakeholder comments due on draft final proposal
04/11/22	Publish draft tariff language
04/21/22	Publish final proposal
04/25/22	Stakeholder comments due on draft tariff language
04/28/22	Stakeholder conference call on final proposal
05/12/22	Stakeholder comments due on final proposal
May 2022	Board of Governors Meeting
Phase 2	
06/07/22	Publish draft final proposal
06/14/22	Stakeholder conference call on draft final proposal
06/28/22	Stakeholder comments due on draft final proposal
07/26/22	Publish draft tariff language and final proposal
08/09/22	Stakeholder comments due on draft tariff language
08/16/22	Stakeholder conference call on final proposal
08/30/22	Stakeholder comments due on final proposal
November 2022	Board of Governors Meeting

Stakeholders interested in presenting their perspectives and input on potential enhancements to the GIDAP are encouraged to contact the CAISO at isostakeholderaffairs@caiso.com no later than October 8, 2021. Interested parties will be asked to submit presentation materials for the workshop, which will be due by end of day October 15, 2021. Stakeholders should also plan to attend the stakeholder workshop on October 19, 2021.