



California ISO

2023 Interconnection Process  
Enhancements  
Track 2 Discussion Paper

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## **1. Introduction**

With this document, the California Independent System Operator Corporation (ISO) provides its Track 2 Discussion Paper for the 2023 Interconnection Process Enhancements (IPE) initiative, exploring concepts for discussion during upcoming stakeholder meetings. Given the rapid acceleration of clean energy development necessary to meet reliability and policy objectives and the unprecedented level of resource development activities reflected in interconnection requests to the ISO, this paper explores concepts for significant and transformative improvements to the ISO's role in resource planning coordination, transmission planning, interconnection queuing and management, and power procurement.<sup>1</sup>

The ISO seeks to reform the interconnection process so it aligns with the Memorandum of Understanding (MOU) signed last December by the California Public Utilities Commission (CPUC), California Energy Commission (CEC) and ISO that tightens the linkages between these key processes to shape resource procurement, interconnections, and transmission planning.

Given the complexities associated with this issue, the ISO is taking a different approach with this initiative and intends to initiate a robust stakeholder process to solicit feedback and suggestions to address the volume of new interconnection requests received in Cluster 15 and to encourage progress of existing projects in the queue.

### **Proposed problem statements**

The ISO suggests the problem statements below as starting points for the IPE initiative, and welcomes stakeholder feedback and engagement on the issues to help scope and shape the discussion to work toward appropriate solutions.

#### *Problem Statement 1: Interconnection Request Intake*

The massive increase in interconnection requests seeking to meet the accelerated cadence of resource development now needed by the state on a sustained basis has overwhelmed critical planning and engineering resources across the industry. The current generator interconnection processes simply cannot efficiently accommodate all

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<sup>1</sup> The 2023 IPE initiative is utilizing two tracks. Track 1 focused on immediate adjustments to the Cluster 15 study schedule. The Track 1 tariff changes were approved by the ISO Board on May 18, and will soon be filed with the Federal Energy Regulatory Commission (FERC). Track 2 focuses on targeted modifications to the interconnection and queue management processes. The Track 2 modifications need to be in place when the Cluster 15 studies resume so they can be applied to those studies. It is currently anticipated that the processing for Cluster 15 interconnections requests will resume second quarter, 2024.

applicants, and must be substantially redesigned to meet state policy and reliability needs.

*Problem Statement 2: Management of outstanding interconnection requests*

Following the study process, many projects in the interconnection queue do not proceed to commercial operations as expected. The current processes for managing the queue do not facilitate a timely development process, and a number of projects remain in the queue without indication of their near-term viability or intent to proceed to contracting or construction.

**Interconnection Request Intake: Concepts for Discussion**

This Track 2 Discussion Paper proposes three concepts for prioritizing the study of interconnection requests for Cluster 15 and all future clusters, informed through stakeholder input and dialogue thus far. These concepts focus interconnection study efforts on prime areas aligned with state resource planning and ISO transmission planning, and also emphasize production of useful and relevant study results by setting realistic expectations for the volume of new resources to be connected in those transmission zones identified in the ISO's 2022-2023 Transmission Plan. The ISO is seeking stakeholder input on the three proposals, as well as additional stakeholder ideas and will hold facilitated stakeholder workshops on the options that obtain sufficient support for further consideration. Additional details on the following three options are provided in Section 4 of this paper.

1. A qualification process for determining projects studied for Full Capacity Delivery Status (FCDS) and an alternative study path for all others;
2. A process where Load Serving Entities (LSEs) and other offtakers select projects for study as an indication of commercial interest in advance of the cluster studies; and
3. A process that selects the projects for study through an auction.

**Queue Management: Concepts for Discussion**

The paper also provides ideas for managing the volume of resources already in the ISO's interconnection queue from earlier interconnection application windows. These "queue management" concepts are intended to create efficiencies in the timing of modifications and studies, increase accountability for projects in the queue, and provide a limited opportunity for withdrawal. The ISO is seeking stakeholder input on these proposals and anticipates holding facilitated stakeholder workshops on at least some of the proposed items, as discussed in Section 5 of this paper.

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1. Update the modification process: Currently, projects are able to remain in the queue by filing modification requests with a study deposit of \$10,000. The ISO is exploring options to limit the use and timing of modification requests and increase the deposit amounts.
2. Improve the timeline and process for submitting and completing limited operation studies.
3. Hold projects in the queue more accountable through consideration of the following changes:
  - a. Limit Time-in-Queue with hardline and strict deadlines;
  - b. Create limitations for projects with Energy Only (EO) deliverability status;
  - c. Forego cost caps for project in the queue after 7 years;
  - d. Remove suspension rights;
  - e. Establish limitations and requirements around Transmission Plan Deliverability (TPD) transfer; and
  - f. Expand interconnection requirements for an asynchronous generating facility.
4. Reduce the queue with a one-time withdraw opportunity.

### **Timing Challenges**

Stakeholders also have identified timing challenges for projects entering the queue even if aligned with the CPUC's 2022-2023 Integrated Resource Plan (IRP) and Transmission Planning Process (TPP) portfolios. These projects will likely need to stay in the queue for a number of years, waiting for associated upgrades to be completed before their allocated deliverability can be provided enabling the project to move forward to construction. While waiting in the queue, projects will also be asked to meet TPD retention criteria to demonstrate viability to remain active in the queue. However, meeting these TPD allocation and retention criteria requires support from LSEs and other offtakers conducting procurement, who in turn require increasing degrees of certainty that the projects will receive a deliverability allocation and ultimately be interconnected. The ISO cannot provide this degree of certainty to project developers if the amount of prospective viable projects far exceeds the transmission capacity of a specific area.

The ISO will address some possible technical solutions in the deliverability methodology assessment initiative, but will also explore this issue in the interconnection process discussions.

## **2. Background**

In recent years, given California's ambitious decarbonization goals and the large quantities of new clean resources it will take to meet them, the ISO has been receiving hundreds of interconnection requests a year from potential resource developers. Many of these requests are located in areas that are not a priority in the state's resource planning. With the ISO's interconnection application queue inundated with applications, current processes need to be re-imagined to ensure resource procurement and queuing are effectively shaped and informed to take advantage of transmission and interconnection capacity that exists or is already planned and under development, and to align with the transmission upgrades necessary for longer-term resource development.

The 2023 IPE initiative is part of a larger set of foundational framework improvements being coordinated among the CPUC, the CEC, and the ISO. The overall strategic direction is set forth in a joint Memorandum of Understanding<sup>2</sup> (MOU) signed by the three parties in December 2022 to set the direction for tightening linkages among resource and transmission planning activities, interconnection processes and resource procurement. The ISO is now taking on additional reforms to the interconnection queuing process that will leverage the improved coordinated planning resulting from the MOU and help further break down barriers to efficient and timely resource development.

As set out in the MOU, the expectations are that the CPUC will provide clear direction to its jurisdictional LSEs focusing procurement in the key zones and with the expected quantities enabled by the transmission development being advanced by the ISO's TPP, which was heavily informed by coordinated resource planning with the state agencies. As the ISO has stated in recent months, it is adopting a more proactive approach to transmission planning and managing projects through the transmission and generation development processes. This more proactive approach is grounded in open access and the policy and reliability needs of the state to inform queuing and procurement and facilitate project development.

The ISO's strategic intent is for the revised interconnection procedures to prioritize interconnection requests that are aligned with priority zones where transmission capacity exists or is approved for development. This will help shape the interconnection queue as the resource development community responds with proposed projects in areas enabled by transmission development. Additionally, it will drive resource development with the operational characteristics and in geographic locations consistent

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<sup>2</sup> The MOU (<http://www.aiso.com/Documents/ISO-CEC-and-CPUC-Memorandum-of-Understanding-Dec-2022.pdf>) is an updated version of a 2010 MOU between the parties.

with resource planning conducted by the CEC and CPUC and the ISO's transmission planning, which is based on that resource planning.

While the strategic direction is clear, this initiative will focus on the specific changes necessary for the ISO's cluster study and queue management processes to achieve these outcomes while maintaining open access to the transmission grid. The cluster study process generally worked well until recent years when the number of requests increased to unsustainable levels. Because the current cluster study process can no longer effectively support the accelerated pace and volume of project development interest without significant reform, it has become critical to refine the number and location of interconnection requests.

With the significant increase in projects being studied and then turned over to contract negotiations and the queue management process, the existing tools to move projects to commercial operation are insufficient. With 188 GW in the queue pre-Cluster 15, and with Cluster 15 applications providing an additional 354 GW, the ISO needs a significantly reformed structure to advance viable projects and prevent stagnant projects from hindering the progress of viable projects in the queue.

This initiative proposes certain tariff amendments to enhance the process for studying and approving interconnection requests and developing additional tools for management of the queue. The ISO believes that these proposed tariff changes will go to the Board of Governors only and that the Western Energy Imbalance Market (WEIM) Governing Body will have no role in the decision, as the changes are applicable only to the ISO-controlled grid and the ISO is not proposing changes to real-time market rules.

The ISO also understands the need to ensure consistent treatment of all LSEs and offtakers, CPUC-jurisdictional and non-jurisdictional, within the ISO footprint on matters of generator interconnection and transmission planning, and seeks to ensure opportunities for non-CPUC jurisdictional entities to have their project needs considered in the TPP.

### **3. Proposed Foundational Principles for Interconnection Process Reforms for Cluster 15 and Beyond**

Track 2 of this initiative focuses on the transformative changes to the interconnection processes needed to achieve the strategic direction set out in the MOU.

To achieve the necessary changes to the interconnection process and coordinated resource development overall, the ISO must consider certain process redesign parameters or objectives. The ISO proposes the following parameters to help identify priority interconnections and to make the entire process more efficient and timely.

- **Prioritize interconnection in zones where transmission capacity exists or new transmission has been approved.**

Ultimately, priority must be given to resource projects that seek to utilize available capacity and are in zones where there are planned capacity additions approved in the ISO TPP based on state resource planning portfolios. Projects that seek to interconnect in places where no capacity exists currently and no future TPP projects are approved should be given a lower priority in the study process, if studied at all.

The transmission interconnection zones are identified in the ISO's 2022-2023 Transmission Plan. The ISO is planning transmission to these zones to accommodate the resource capacity included in the CPUC base portfolio, also taking into consideration the capacities included within the CPUC's sensitivity portfolios. The capability for each constraint within these areas is also assessed and identified in the annual TPD allocation reports as well as the ISO Transmission Capability Estimates whitepaper that is provided to the CPUC.<sup>3</sup> The ISO is in the process of updating the whitepaper and targeting to post it at the end of June or early July 2023.

- **Limit the amount of studies to reasonable capacity volumes that align with state resource planning.**

Even within the zones that are a priority, the volume of interconnection requests receiving detailed study and interconnection requirement results must be tempered by the state agencies' resource planning portfolios. While the need for new resource development is critical, the immediate and long-term need for new resources are not served by studying thousands of megawatts above the current and future capacity on the ISO grid at levels not supported by CPUC portfolios. Although the ISO has historically studied all interconnection requests validated in a given cluster, this initiative will explore how to limit the project capacity studied to reasonable amounts that support the state's resource planning. This will help achieve accelerated study timelines for significant levels of resource additions without studying quantities of resources that bear no relationship to the actual level of forecasted demand.

- **Align interconnection and transmission plan deliverability processes and LSE resource procurement functions.**

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<sup>3</sup> <http://www.caiso.com/Documents/RevisedWhitePaper-2021TransmissionCapabilityEstimates-CPUCResourcePlanningProcess.pdf>



The needs of the resource procurement functions within LSEs also must be revisited and evaluated to determine the information required by LSEs at various stages of the procurement process and to ensure that the interconnection study results provide useful information to those functions. Key questions include:

- Do the detailed and individualized results of the current phase 1 and phase 2 study processes provide truly useful information to those procurement functions, given how local network upgrades evolve as the queue “shakes out” closer to projects ultimately moving to construction?
  - Would more timely and actionable results based on a more generic study process better meet LSE needs, especially considering that the bulk of network upgrade costs are ultimately refunded to interconnection customers and recovered through transmission rates and capacity contracts?
  - Can the resource procurement functions inform the interconnection study process of specific projects to be analyzed based on specific project information available prior to the interconnection studies?
- **Enhance the post-study queue management procedures, including the modification request and other processes and project accountability.**

The list of active projects proceeding through the interconnection queue has consistently increased over the years, including the volume of modification requests and other post-study evaluations. As a result, it has become apparent that more stringent requirements are needed for projects to either continue with their development progress or withdraw from the queue. Over the years, a number of projects have converted to energy only due to their inability to develop according to tariff timelines. These projects currently have few restrictions or progress requirements for remaining in the queue and this lingering can impede other project’s timelines, upgrade assignments, and costs.

As outlined below, the primary objective is to limit a project’s ability to linger in the queue, reduce the volume and improve management of modification requests and limited operation studies, and increase project accountability for projects proceeding to commercial operation.

The ISO invites stakeholder feedback on the principles proposed above.

## **4. Concepts for Managing Interconnection Request Intake**

The proposals provided for prioritizing the study of interconnection requests are based on the requirement that priority is given to projects seeking interconnection in areas or

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zones where the transmission system has available existing or planned capacity as identified in the ISO transmission plans and based on CPUC portfolios. At all times, the ISO seeks to balance the need for prioritization with its responsibility to maintain open access to the transmission grid.

The ISO suggests three design proposals around intake of interconnection requests to achieve the needed results as a starting point for further stakeholder engagement. The following three concepts propose process reforms for Cluster 15 and beyond, focusing on the transformative changes to the interconnection process needed to achieve the strategic direction set out in the MOU and help meet the state's reliability and clean-energy goals. Each proposal should be discussed for its own potential challenges and benefits, as well as opportunities to combine proposals to make them more meaningful. In addition, the ISO welcomes additional proposals that conform to the principles outlined above, or those agreed to during the stakeholder process.<sup>4</sup>

The ISO seeks stakeholder input on each of these alternatives, and intends to convene working groups to explore these and any additional concepts.

Each of the three proposals has an overarching objective to limit the capacity studied in each transmission zone to levels relative to the available transmission capacity in each zone. The concepts described below may not have fully developed procedures for determining the final list of projects to be studied in each area. The aggregate capacity of the projects studied in a given area should reflect the level of available capacity in that particular area.

Typically, LSEs and other offtakers require projects to be eligible for resource adequacy (RA) and seek projects that can demonstrate an allocation of TPD. Since most offtakers require a project to be eligible for RA, the TPD allocation process is very important to project developers. Thus, the ISO will consider the impacts of changes to the interconnection process on the criteria for obtaining and retaining a TPD allocation. The future allocation process must provide projects seeking and obtaining a TPD allocation with the assurance they need to compete for a power purchase agreement (PPA) with an offtaker as early as possible, while also providing offtakers the certainty they need to procure new capacity. The TPD retention criteria must provide adequate time for project developers to market their project and obtain a PPA, while not allowing projects to retain an allocation if they do not obtain a PPA in a timely manner. Furthermore, projects that have received a TPD allocation under current and past allocation and retention criteria should be required to demonstrate that they either have a PPA or are short-listed or actively negotiating a PPA; otherwise, they will be required to forfeit their TPD

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<sup>4</sup> To the extent that stakeholders identify new principles, additional stakeholder proposals must conform to the full suite of principles identified and codified as part of the stakeholder process.

allocation. These issues need to be considered in the context of the current process as well as a new process.

The ISO has developed three potential solutions to these challenges to kick-start stakeholder discussions and is open to and seeks potential alternative solutions from stakeholders that adhere to the foundational principles for interconnection process reforms described in Section 3 of this paper. Each of the following three proposals will be discussed along with alternative proposals from stakeholders. The ISO invites stakeholders to help develop and refine solutions through a number of stakeholder meetings.

**Important TPD allocation process decisions needed for each proposed option.**

- For each of the three proposals, stakeholders should strive to design a process where the project capacity studied in phase II is appropriately sized to the amount of available transmission capacity in that area, assuming the projects studied in phase II demonstrate a high degree of project viability. This would result in most, if not all, projects being allocated TPD at the completion of the phase II study – allowing most projects to immediately market their projects as having an allocation of TPD. Within this framework, it may be appropriate to study levels of capacity in each zone that are somewhat greater than the available transmission capacity to create a buffer for project failure. However, in this framework not all projects could be awarded an allocation of TPD.
- Alternatively, an amount of project capacity could be studied in phase II, greater than the amount of available transmission capacity (e.g. twice the amount of available transmission capacity in each zone) and TPD would be allocated through the existing allocation process – using the existing allocation groups.

**4.1. Concept 1: Qualification process for determining projects studied for Full Capacity Delivery Status (FCDS) and study path for all others**

***Background***

Prioritizing projects that align with the transmission zones that have available capacity, either existing or planned, focuses project development on areas where transmission has already been approved and is moving forward to accommodate new resources. The ISO asserts that further clarity in its transmission plans identifying zones where transmission is being planned to meet the resource plans in the CPUC portfolios, coupled with clear prioritization of those zones in the interconnection process, will shape future interconnection request activity by encouraging developers to focus on those

zones. We believe that clear direction from the CPUC to LSEs to focus procurement activities in those preferred zones will also drive greater overall resource development efficacy as described in the MOU.

In addition to prioritizing projects based on points of interconnection that position projects to utilize available transmission capacity, further qualification of interconnection requests is needed to narrow the list of projects where the aggregate project capacity in each transmission zone does not exceed some multiple<sup>5</sup> of the amount of available transmission capacity in each zone. The method should take into account a demonstration of the level of readiness for each project.

The ISO proposes the following basic tenants for the modified cluster study process:

1. The ISO will categorize interconnection requests by the TPP zone to which each project is seeking to interconnect.

### **Study process and TPD allocation options for stakeholder discussions**

#### Option 1:

Studies for each zone would only study interconnection request capacity relevant to the level of the existing and planned TPD capacity available in each zone to allow the projects studied to continue as FCDS.

Since it is not possible to know prior to the study how much of the available capacity any project will actually need, the ISO proposes to study interconnection request megawatts (MW) in each zone that in aggregate are somewhat greater than the available transmission capacity. If there is not enough capacity to meet the needs of all projects studied, the ISO will use distribution factors<sup>6</sup> to determine which projects will receive an allocation of TPD and which will not. One project in each area may be given a partial allocation of TPD. The projects with the smallest distribution factor on the binding constraint will be selected sequentially to be given full allocations of TPD, or partial allocation if available capacity is insufficient for the last project selected. This will ensure that most projects studied are able to receive an allocation of TPD and will receive the allocations as part of the phase II study process. This will facilitate the procurement process of LSEs by providing a

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<sup>5</sup> Some to be determined multiple, between one on the low end and likely two on the upper end (or possibly a bit greater than two).

<sup>6</sup> As determined by the generation distribution factor methodology set forth in the On-Peak Deliverability Assessment methodology. <http://www.aiso.com/Pages/documentsbygroup.aspx?GroupID=089DABD4-85F2-4CA2-8A1E-ED9255A0D79B>

group of projects that have completed their studies and have allocations of TPD at the time that each cluster's phase II studies are completed.

Option 2:

A larger amount of project capacity could be studied in phase II than proposed in option 1, such as twice the available transmission capacity. This would allow for greater competition following phase II, but would require extra time to complete the TPD allocation using the existing TPD allocation process and using the existing allocation groups.

2. The ISO proposes to use one or more processes to reduce the capacity of interconnection requests to amounts appropriate for study in each of the TPP zones based on the available transmission capacity in each zone. At this point in the process, abbreviated interconnection requests would be required, providing the level of information necessary to proceed through the steps described below.

The process and criteria for reducing the interconnection request capacity could be accomplished by a single methodology, however a two-step process may be needed. The following two-step process needs further development and stakeholder discussion.

2.1. Step 1: Utilize scoring criteria for projects competing to be studied. The criteria are to be based on metrics that demonstrate a project's level of development maturity, readiness for proceeding to construction and potential interest from offtakers. The scoring criteria should have threshold criteria required to be met for an interconnection request to proceed (e.g. seeking to interconnect to a TPP zone that has available transmission capacity, etc.). A number of requirements would likely need to be applied to sufficiently reduce a large number of interconnection requests to a more reasonable level for each zone. If the scoring criteria do not reduce the MW sufficiently, a second step would be required. The level of information and technical data required of interconnection requests at this stage would only be enough to accomplish the scoring of projects in this step. The ISO seeks stakeholder feedback to develop the criteria for steps 1 and 2.

2.2. Step 2: If a second step is needed, methods such as an auction or other competitive processes need to be considered and developed.

3. All interconnection requests will be placed into one of two groups.

3.1. Track 1 interconnection requests are those that are selected using the criteria in (2), above, and will be studied in the standard cluster study process.

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- 3.1.1. The ISO proposes that group 1 interconnection requests must provide a \$500,000 Interconnection financial security (IFS) posting to be eligible to be studied in phase I, a 25% IFS posting following phase I to be eligible to enter into phase II and a 50% IFS posting to remain active in the queue after the phase II studies.<sup>7</sup> Current IFS refundability provisions would remain in effect, meaning postings generally will be 50% refundable upon withdrawal.
- 3.2. Track 2 interconnection requests are the remaining interconnection requests not selected in (2), above. Track 2 projects will be provided the alternative options below.
4. Track 2 options:
  - 4.1. Track 2 interconnection requests would have the option to withdraw and only pay a processing fee. The processing fee will be a new separate fee that all interconnection requests must submit to seek inclusion in Track 1.
  - 4.2. Alternatively, Track 2 interconnection requests may opt to proceed as an Option B project. Option B projects will proceed within the current Option B criteria.<sup>8</sup>
  - 4.3. Track 2 will also include interconnection requests that are seeking to interconnect to TPP zones that have no available capacity. These projects would be studied under the Option B criteria as well.
  - 4.4. Track 2 projects will not receive cash repayment for the Delivery Network Upgrades (DNUs) funded by the interconnection customer, but will be eligible to receive Merchant Transmission Congestion Revenue Rights (CRRs) in accordance with CAISO Tariff Section 36.11 associated with the portions of the DNUs that were funded by each interconnection customer.<sup>9</sup>
  - 4.5. Track 2 projects will be provided a cost estimate of the anticipated Area Delivery Network Upgrade (ADNU) required for their project based on recent phase I deliverability studies,<sup>10</sup> if available. The project would then have the option to make an IFS posting of 30% of the cost of the ADNU, based on the

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<sup>7</sup> Like today, a final 100% nonrefundable posting would be required at the commencement of construction.

<sup>8</sup> ISO Tariff Appendix DD, Section 7.2 Full/Partial Capacity Deliverability Options for Interconnection Customers.

<sup>9</sup> ISO Tariff Appendix DD, Section 14.3.2.(3) Option (B) Generating Facilities that were not allocated TP Deliverability will not receive repayment for LDNUs or ADNUs.

<sup>10</sup> ISO Tariff Appendix DD, Section 6.3.2.1.2 Area Delivery Network Upgrades.

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amount of deliverability requested, and proceed with Track 1 projects studies as an Option B project. Fifty percent of the IFS posting would be non-refundable if the project withdraws.

If no applicable ADNU cost estimate is available, the cost for the ADNU will be determined in the Track 1 studies. Track 2 projects could choose to wait until the Track 1 studies become available, providing the ADNU cost estimate, or withdraw. Active projects that receive the ADNU cost estimate would be required to post 30% of the cost of the ADNU, based on the amount of deliverability requested, and be studied in the next cluster Track with the Track 1 projects as an Option B project, or withdraw. Fifty percent of the IFS posting would be non-refundable if the project withdraws.

- 4.6. Option B projects that complete the phase I study process will be required to increase their posting to 50% to proceed to phase II studies and no longer be eligible for a partial refund of their IFS posting upon withdrawal.
5. Retention of TPD allocations: Track 1 projects that receive an allocation of TPD upon completion of their studies (per (1) above) will be allowed to keep their initial allocation for two years. After that time, Track 1 projects must provide documentation of having an executed PPA or being shortlisted or actively negotiating a PPA to retain their TPD allocation. Projects unable to retain their allocation of TPD will be converted to EO or they may withdraw and receive 50% of their IFS postings.
6. Limited EO study option:
  - 6.1. If the CPUC has issued procurement orders for EO projects, or if non-CPUC jurisdictional LSEs or other offtakers request studies for EO projects, the following process will be implemented:
  - 6.2. The top scoring Track 2 interconnection requests from criteria in (3), above, will have the opportunity to convert to EO and be studied in the Track 1 project studies as EO. Those projects that opt to convert to EO will be placed in order of the results of criteria in (2), above, with the highest ranking projects converted to EO first, and so on, until twice the requested EO capacity requested by LSEs is reached or all interconnection requests requesting conversion to EO are accommodated. The EO capacity to be studied is up to twice the amount requested to provide sufficient competition among EO projects.

## 4.2. **Concept 2:** Only study projects requested by LSEs and other offtakers.

This proposal would rely on LSEs or other offtakers within the ISO providing a list of projects they are interested in being studied to inform their procurement processes. Developers with projects on the offtaker lists would provide the ISO with the associated interconnection request during the standard open window period. Offtakers would base their evaluation of competing projects on the attributes and costs of the generator facilities, availability of TPD from the ISO TPP, and other relevant information. Estimates of the interconnection costs for the project would not be known at that time and it is anticipated that LSEs would provide the ISO with a list of their top ranked projects for study that exceeds the capacity they are seeking to procure. Offtakers would be relying on the cluster phase I study report for each project to determine what projects they would authorize for the phase II studies. The total capacity that each offtaker could submit for the phase II studies would more closely align with their procurement targets. The ISO will seek stakeholder feedback and guidance to develop the Straw Proposal, with the participation of the resource procurement departments of the LSEs and other offtakers within the ISO footprint being essential.

### ***Proposal***

The following proposal provides the basic steps for a process where the ISO only studies projects as directed by LSEs and other offtakers within the ISO Balancing Authority Area (BAA), and criteria developed through the 2023 IPE Track 2 initiative.

1. LSEs and other offtakers in the ISO BAA would provide a list to the ISO of specific project information that they request be studied in the first study phase of a Generator Interconnection and Deliverability Allocation Procedure (GIDAP) two-phase study process. The lists would be provided during an annual open window period and projects would be required to be interconnecting in TPP zones that have available capacity.

#### Proposed Criteria for Phase I Studies

- 1.1. The total capacity that each offtaker would be allowed to submit would be limited to twice the capacity in the LSE's procurement target relative to GIDAP's window for that year.
  - 1.1.1. Project acceptance would be limited to the TPP zones that have available capacity for allocation to the proposed projects for the upcoming cluster phase I studies.



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- 1.1.2. This will likely result in more capacity being studied in the TPP zones with available capacity, which is acceptable for the phase I studies. If an ADNU is required in any study area above what has been provided in the TPP, the ISO will provide the dollar-per-MW cost of the incremental ADNU that would need to proceed as an Option B upgrade, similar to current procedures.
- 1.1.3. The list would provide the information needed by the ISO to identify the project developer and the specific project.
- 1.2. The ISO would review and validate the information provided by the offtakers.
  - 1.2.1. Stakeholders should participate in development and definition of the period for providing these lists.
2. Following the completion of 1, above, an open window would be used to accept interconnection requests from project developers based on the validated lists from the offtakers from step 1. This would likely closely resemble the current interconnection requests window process for accepting, validating and holding scoping meetings.
3. Study the projects in a phase I study process that closely resembles the current process, holding results meeting with the interconnection customer and the sponsor offtaker.
4. Following the phase I results meetings, the offtaker will provide the list of projects it elects to proceed into the phase II study process. The capacity chosen by each offtaker to be studied in phase II cannot exceed the level of its current procurement proceeding.
5. Study the projects in a phase II study process that closely resembles the current process, holding results meeting with the interconnection customer and the sponsor LSE.
  - 5.1. Criteria for the initial IFS posting needs to be developed, whether the current criteria is maintained or modified.
  - 5.2. Some form of commitment by the offtaker submitting projects for study in phase II needs to be developed to ensure offtakers are not submitting projects for which they are not seriously considering entering into negotiations for a PPA – assuming the interconnections costs are reasonable.
  - 5.3. Stakeholders should opine on whether capacity greater than the available transmission capacity in each zone would be allowed to proceed into the phase

II studies. If not, the ISO and stakeholders will need criteria for reducing the amount of capacity to the available amount in each TPP zone.

If project capacity allowed to proceed into phase II studies exceeds the available TPP capacity, the current TPD allocation process would be used to determine which projects receive an allocation of TPD – using the existing allocation groups. This could create competition for allocations of TPD among offtakers seeking to have their selected projects receive an allocation of TPD. Stakeholders should opine on whether this would be acceptable or if an alternative method for allocating TPD is preferable.

6. Criteria for the second IFS postings need to be agreed to, whether the current criteria are maintained or modified.

### **4.3. Concept 3: Only study projects that are successful in an auction process for proposed projects**

This proposal would rely on an auction process to determine the projects that would proceed into the phase I study process. An auction would be held for each transmission capacity zone where transmission capacity is available. Resource developers would bid to have the right for their project capacity to be studied in the upcoming cluster study process. The details of the auction process need to be developed, while maintaining the overarching objective to limit the capacity studied in each transmission zone to levels relative to the available transmission capacity in each zone.

#### ***Auction Proposal Framework***

1. Use a working group to develop an annual auction methodology where the results of the auction would determine the specific projects that would be studied in that year's cluster studies.

Key questions to be defined in the working group:

- A. Is more specific product definition required than available zonal transmission capacity that participants are bidding on in the auction? (E.g., number of possible interconnection requests? Number of possible generating facilities for available zonal capacity?)
- B. Is there an opportunity to upsize transmission depending on demand? (E.g. based on the capacities included within the CPUC sensitivity portfolios?)
- C. Should the ISO use simultaneous or sequential auctions for different rights? (E.g. a developer might want 200 MW in total but could bid into multiple locations?)

- D. Should the ISO apply a pay-as-bid auction or a clearing price auction mechanism?
  - E. What are appropriate uses for auction revenues?
2. Studies for each zone would only consider interconnection request capacity roughly equal to the level of existing and planned TPD capacity available in each zone.
  3. The annual auction would occur prior to the ISO receiving the full interconnection request package for the projects chosen in the auction process.
  4. The chosen projects would be studied in the standard two-phase study process and be required to provide the appropriate IFS postings as currently required or as modified. Modifications to the posting amounts and withdrawal penalties should be considered within the context of the auction process.
  5. Projects not selected through the auction would not be studied.

## **5. Concepts for Managing the Queue**

The ISO proposes the following policy updates to help define more stringent requirements for projects to proceed, withdraw, or be placed in breach of contract by the ISO or participating transmission owner (PTO) and withdrawn from the queue. The ISO seeks stakeholder comments and input on each of the below items for managing the queue and proposes to hold facilitated stakeholder workgroups on some or all of these proposals. The ISO also invites additional proposed suggestions from stakeholders.

### **Item 1: Modification Process Updates**

- A. The ISO seeks opportunities to reduce the pace and volume of modification requests. Currently, projects are submitting multiple Material Modification Assessment (MMA) requests for equipment, technology, and configuration changes from prior to execution of the Generator Interconnection Agreement (GIA) through their Commercial Operation Date (COD). The ISO is seeking opportunities to reduce the number of modification requests submitted for each project and to limit the timeframe for projects to submit MMA requests. Ideally, the ISO would prefer a date closer to the final financial security postings or start of construction activities. One concept is to limit a project's ability to request a MMA for equipment, technology, or configuration changes to:

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- 1) Allow a one-time request to update the project details required for the project's interconnection agreement, and
- 2) Within 12 months of a project's notice to proceed or start of construction date as identified in the interconnection agreement.

Potential exceptions to this would be changes to the project milestones, Battery Energy Storage Solution (BESS) additions, or gen-tie or interconnection changes.

- B. Require 'notice to proceed' and other contract milestones be provided or updated in Modification requests and results. In current practice, language and dates included in the MMA responses only reflect the updated in-service, synchronization, and commercial operation dates and notes that the ISO and PTO will work with the interconnection customer to develop updated milestones (notice to proceed, etc.) in the GIA. However, those milestones do not get updated until the GIA is amended, which sometimes takes months or even a year or more. Including the notice to proceed and other milestones in the modification results instills accountability for the project to move forward prior to execution of the GIA amendment.

Over the past few years, with the increased complexity of modifications and as the ISO and PTOs have improved the accuracy of the time billed to each request, the ISO has seen an increased cost for completing modification requests, including a number of shortfall situations where the total cost for completing a modification exceeds the current \$10,000 deposit.<sup>11</sup> Additionally, modification requests are taking more time to complete. As such, the ISO is proposing the following adjustments to the MMA and Post-COD modification requests:

- A. Increase the MMA and Post-COD modification deposits to \$30,000. A higher deposit may limit developers from submitting multiple simple requests and encourage them to instead make all necessary updates in one request.
- B. Increase the timeline to complete a modification from 45 to 60 days. The ISO would maintain the 45 additional days' timeline to complete a Facility Reassessment Report. An increase in the number of modification requests submitted and overall workload have resulted in an increase in time required to complete modification assessments.
- C. Request submittal cutoff to add BESS and seek TPD in the next TPD cycle. The ISO recommends interconnection customers submit these modification

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<sup>11</sup> It should be noted that the engineers evaluating the modification requests are the same engineers working on the generator interconnection requests which limits the availability to work on both.

requests no later than April 1 and target validation of the technical data by August 15 to help ensure modification results are published in time for the project to seek a TPD allocation in the upcoming annual TPD process. There has been an increase in modification requests to add BESS with the intention of seeking a TPD allocation for the BESS addition in the next TPD allocation cycle. The modification request must be approved for a project to submit a seeking TPD affidavit. The timeline provided here is intended to allow time for IR review, assessment, facilities reassessment, and response prior to the early-December TPD affidavit deadline.

- D. Construction Sequencing request limitations. Projects must have started construction and be within six months of achieving their Commercial Operation Date to submit a construction sequencing delay request.

## **Item 2: Limited Operation Study Process Adjustments**

Projects are currently limited to submitting a limited operation study (LOS) request five months prior to the project's synchronization date. Including the full timeline of developing, reviewing, and finalizing the LOS study plan and then completing the LOS, interconnection customers are left with only two to three months, at best, to make business and construction decisions for their project. The ISO proposes the following adjustments to the overall LOS process:

Projects may submit an LOS request nine months prior to synchronization date. This allows additional time for processing the request, drafting and issuing the study plan, and 45 days to complete the study with the intent of providing interconnection customers additional time to evaluate the results and make decisions accordingly. No active MMA requests can be in process when the LOS request is submitted and no MMA request may be submitted following the LOS study that would alter the results of such LOS, otherwise, the LOS results may be deemed invalid and void.

## **Item 3: Project Accountability**

Over the years, the ISO has seen an increasing number of projects exceed the currently established limit of seven years in the queue. This means that they have not achieved commercial operation within seven years of when their original interconnection request application was submitted. As such, projects have been required to meet commercial viability criteria (CVC) to maintain their transmission plan deliverability status or, if that criteria is not met, be converted to EO deliverability status.

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In an effort to encourage development of projects in a timely and efficient manner and limit a project's ability to remain in the queue without a deliverability allocation, the ISO proposes the following policy updates/changes. These changes could complement or supplant CVC:

A. Limit time-in-queue with strict deadlines.

1. A project's notice to proceed and complete third IFS posting must have been provided to the PTO no later than three years following the publication of the project's Phase II study results. All other milestones defined in the GIA must be strictly adhered to, otherwise the project may be withdrawn.
2. All phases or stages of a project must achieve commercial operation by a maximum limit of 10 years in queue. In the event a phase or block has not been completed by 10 years in queue, the project must downsize to the total capacity that has achieved commercial operation to date. Transmission upgrade or PTO extensions would not apply to this limitation if a PTO extension extends the COD beyond 10 years. If a PTO extension occurs beyond 10 years in queue, the interconnection customer may not request a further extension and the project is subject to the new PTO-defined milestones.

B. Limitations for projects with EO deliverability status

1. EO projects, including those that were converted to EO for failure to meet CVC requirements, would have to provide notice to proceed and submit their third IFS to the PTO, and construction of the generation must have started by the project's seventh year in queue.
2. At the time a project converts its TPD status to EO, projects may only extend their COD one final time at the time of conversion to EO. Also, they must provide notice to proceed and make a third posting within six months of the EO conversion, all other milestones defined in the GIA must be strictly adhered to, and they must achieve commercial operation within 24 months following EO conversion. Otherwise the project is at risk of breach of contract and, if not cured, will be withdrawn from the queue. In no event can any of the timelines above extend beyond timelines established in number one above.

C. Projects forego maximum cost caps after seven years in queue.

1. Projects forego their maximum cost caps if they exceed seven years in queue. Upgrade development requirements or PTO extensions would

not apply to this limitation if the COD extends beyond seven years. If this occurs, the interconnection customer will be subject to this requirement if they request to extend beyond the PTO extension timeline.

### **Remove Suspension Rights**

The ISO proposes to remove a project's suspension rights from the ISO Large Generator Interconnection Agreement (LGIA).<sup>12</sup> The removal of suspension rights will be effective for all projects that execute a LGIA after the effective date of FERC's approval of this policy. Any projects with LGIAs executed prior to the FERC approval date that include suspension rights will maintain those rights.

### **TPD Transfer Limitations and Requirements**

The ISO is contemplating modifications to the TPD transfer process, including the potential requirements below:

- A. Require a project to withdraw if it's transferring 100% of its TPD allocation or downsize to the remaining portion of TPD if transferring a portion of its TPD allocation to another project. If a project is Partial Capacity Delivery Status (PCDS) and transferring all of its PCDS allocation, the project would be required to withdraw the entire project at time of the TPD transfer.
- B. Given withdrawal requirements above, generating facilities and projects that have commenced construction activities would be prohibited from transferring their deliverability to another generating facility.

### **Interconnection Requirements for an Asynchronous Generating Facility**

The ISO has seen an increased deployment of asynchronous resources and has experienced a number of operational issues with resources of varying sizes that impact the reliability of the ISO-controlled grid. As such, for consistency across all asynchronous generating facilities, the ISO is proposing to make Attachment 7 of the Small Generator Interconnection Agreement (SGIA) – Interconnection Requirements for asynchronous Generating facilities – consistent with Appendix H of the LGIA.

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<sup>12</sup> LGIA Article 5.16

## Item 4: Clearing the Queue (One-Time Withdrawal Opportunity)

### Background

The ISO queue has continued to grow and many projects have not proceeded to commercial operation as originally expected. As such, many projects have been converted to EO delivery status and are lingering in the queue. Some of these projects may have significant financial commitments, including deposits and financial security, and a voluntary withdrawal from the queue places potential financial risk to the project. Further, there are little to no incentives for projects to withdraw and they currently have the ability to remain in the queue and continue indefinitely to seek a buyer for their project. These lingering projects may also be impacting upgrade requirements for other queue projects or clusters. Allowing lingering projects a one-time incentive to withdraw may improve study results for later-queued projects or result in no longer needing some network upgrades.

### Stakeholder Feedback

A number of stakeholders have indicated that a one-time option for projects to withdraw from the queue with limited financial implications may help to remove some projects from the queue, potentially remove certain upgrades for projects proceeding to commercial operation, and open opportunities for new projects that may be more viable and ready to proceed.

### Proposal

Provide a one-time opportunity for projects to withdraw from the queue and potentially receive any unused portion of their IFS postings. Because there are issues with potential cascading of network upgrade costs across clusters, criteria will need to be developed describing how these issues are handled. Such criteria should include restrictions where projects will be subject to any costs incurred by the PTO for the project and potentially any costs of upgrades required by other projects sharing the same upgrades up to the date of withdrawal.<sup>13</sup>

Prior to this opportunity being available, stakeholders must take into account the following considerations:

- 1) Timing of the withdrawal process to ensure such withdrawals can be incorporated into the next ISO reassessment process.
- 2) When a project withdraws today, a portion of the non-refundable funds<sup>14</sup> is withheld from a project's IFS posting and is utilized to fund upgrades

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<sup>13</sup> Section 14.2.2 of the CAISO Tariff Appendix DD for GIDAP

<sup>14</sup> Section 7.6 of the CAISO Tariff Appendix DD for GIDAP



assigned to that project. Stakeholders will need to determine if the non-refundable funds process will be waived for this one-time process.

- 3) Stakeholders will need to determine how to manage PTO responsibilities and LGIAs where tariff section 14.2.2 would require the PTO to fund upgrades needed by later queued projects, versus allowing costs from withdrawing projects with GIAs to cascade to later queued projects needing upgrades contained in those GIAs.

## **6. WEIM Governing Body Role**

This initiative proposes certain tariff amendments to enhance the process for studying and approving interconnection requests. ISO staff believes that these proposed tariff changes will go to the Board of Governors only and that the WEIM Governing Body will have no role in the decision.

The Board and the WEIM Governing Body have joint authority over any proposal to change or establish any CAISO tariff rule(s) applicable to the WEIM entity balancing authority areas, EIM Entities, or other market participants within the EIM Entity balancing authority areas, in their capacity as participants in EIM. This scope excludes from joint authority, without limitation, any proposals to change or establish tariff rule(s) applicable only to the CAISO balancing authority area or to the CAISO-controlled grid.<sup>15</sup>

The tariff changes proposed here would not be “applicable to EIM Entity balancing authority areas, EIM Entities, or other market participants within EIM Entity balancing authority areas, in their capacity as participants in EIM.” Rather, they would not be applicable “only to ... the CAISO-controlled grid.” Accordingly, these proposed changes to implement these enhancements would fall outside the scope of joint authority.

The WEIM Governing Body also has an advisory role that extends to any proposal to change or establish tariff rules that would apply to the real-time market but are not within the scope of joint authority. This initiative, however, does not propose changes to real-time market rules.

Stakeholders are encouraged to submit a response in their written comments to the proposed classification as described above, particularly if they have concerns or questions.

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<sup>15</sup> Charter for EIM Governance § 2.2.1.

## 7. Stakeholder Engagement

The ISO Board of Governors approved the Track 1 Proposal in May 2023, setting the stage for more substantive and transformative reform in Track 2.

The ISO is initiating an intensive stakeholder workshop process. The objective of the kickoff meeting, scheduled for June 7, will be to establish principles for the discussions, refine the problem statements, and explore solutions. The ISO plans to convene and facilitate two working groups; one to address the volume of new interconnection applications and one to discuss the existing projects in the queue.

To meet the proposed schedule for implementing process changes ahead of commencing Cluster 15 phase I studies, the ISO intends to present Track 2 to the Board of Governors in December 2023.

**Table 1:** 2023 Interconnection Process Enhancements – Track 2

Date	Track 2 Milestone
05/31/2023	Publish discussion paper
06/7/2023	Stakeholder call on discussion paper
06/14/2023	Stakeholder comments due
06/20/2023 – 06/21/2023	Working group session 1
06/27/2023	Working group session 2
07/11/2023	Working group session 3