



# Memorandum

**To:** ISO Board of Governors

**From:** Neil Millar, Vice President of Infrastructure and Operations Planning

**Date:** October 19, 2022

**Re:** **Decision on interconnection process enhancements – phase 2**

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*This memorandum requires ISO Board of Governors action.*

## EXECUTIVE SUMMARY

The interconnection process enhancement 2021 (IPE) is the California Independent System Operator Corporation's current stakeholder initiative in its ongoing commitment to improve its Generator Interconnection and Deliverability Allocation Procedures (GIDAP) and make process enhancements as resource interconnection needs evolve.

To date, the ISO has processed nearly 2,000 interconnection study requests, providing interconnection customers with the information needed to make decisions on how to proceed with their projects and to compete for a power purchase agreement with California procurement entities. Of that amount, approximately 200 projects (24,000 MW) have gone into commercial operation. With the significant acceleration in procurement targets, numerous generator retirements, load growth, and state mandates for non-carbon emitting generation, the ISO's processes must continue to evolve. The dramatic increase in competition among suppliers has significantly increased the pressure on the GIDAP. With cluster 14, the ISO experienced unseen volumes of projects seeking to position themselves to compete in procurement processes. Across the country and in California, stakeholders and regulators have initiated discussions on methods to better accommodate increasing pressure on interconnection processes.

This IPE initiative consisted of two phases. Phase 1 focused on simpler [and](#) near-term enhancements that were needed sooner with broad stakeholder support.<sup>1</sup> Phase 2 focused on long-term and more complex enhancements. During phase 2, the ISO also worked with stakeholders to provide interconnection customers with more data and information to help interconnection customers determine more efficient locations to interconnect.

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<sup>1</sup> The Board approved IPE phase 1 on May 12, 2022. FERC approved the enhancements on August 31, 2022.

Phase 2 resulted in three enhancements for which Management seeks approval from the Board:

1. Transmission plan deliverability allocation eligibility requirements;
2. Cost allocation treatment for network upgrades to local systems (< 200 kV); and
3. Network upgrade reimbursement policy when the ISO is an affected system.

Other items implemented in phase 2 that do not require tariff changes or Board approval include:

1. Providing more publicly available and easier access to data to help developers determine the most efficient locations to interconnect new resources and better understand the status of projects in queue.
2. Providing process clarity for developers to work with the participating transmission owner when a developer issues a notice to proceed to construction to the participating transmission owner, allowing developers to provide input into the planning process for required network upgrades.

Management recommends the following motion:

***Moved, that the ISO Board of Governors approves the proposed interconnection process enhancements, as described in the memorandum dated October 19, 2022; 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 IPE phase 2 enhancements are designed to complete the deliverability allocation process enhancements that were approved by the Board in the phase 1 package of enhancements, propose a new methodology for allocating the cost of network upgrades for the local transmission systems (< 200 kV) of the participating transmission owners, and other process enhancements that have been identified as necessary. Management seeks Board approval of the following enhancements:

## **1. Transmission plan deliverability allocation eligibility requirements**

At its May 12, 2022 meeting, the Board approved enhancements to the transmission plan deliverability allocation process to better align the process with generation procurement and to allocate deliverability to projects most likely to succeed. However, two components of the ISO proposal were deferred to enable further stakeholder discussion in phase 2: (1) implementing criteria for allocating transmission plan deliverability to projects that obtain a power purchase agreement from non-load serving entities that do not have a resource adequacy obligation, and (2) requiring power purchase agreements have a minimum procurement term to be eligible for a high-priority deliverability allocation.

Transmission plan deliverability refers to the transmission capacity needed for a generator to have the ability to deliver its output during peak conditions and be eligible to sell resource adequacy capacity to load serving entities.<sup>2</sup> A resource does not require transmission plan deliverability to interconnect to the ISO system, and can instead elect to interconnect as an “energy only” resource.

### **Allocation criteria for power purchase agreements with non-load serving entities**

In phase 1 stakeholders were concerned the ISO’s proposal was overly burdensome for interconnection customers with power purchase agreements with non-load-serving entities to qualify for deliverability. The ISO had proposed to require non-load serving entity offtakers demonstrate a contract to sell any deliverable generation to a load serving entity that has a resource adequacy requirement for a term of three years or more. After more iteration in phase 2, the ISO modified its proposal to allow interconnection customers to qualify for deliverability with power purchase agreements from non-load-serving entity offtakers, so long as the offtaker can provide a resource adequacy contract with a term of at least one year. This proposal reflects (1) that the interconnection customer has a legitimate, long-term contract for its energy and capacity, and (2) that the deliverability will be put to use in resource adequacy portfolios, which include very short-term contracts for resource adequacy where a different offtaker has contracted for the other services. If the non-load serving entity offtaker cannot immediately demonstrate it has a contract to sell the resource adequacy capacity to a load serving entity with a resource adequacy obligation for a term of at least one year, it must provide a deposit in-lieu of such a contract. The deposit would only be required if the project actually obtains an allocation of transmission plan deliverability, with the deposit amount set at \$10,000 per MW allocated, with a minimum deposit of \$500,000. The deposit is refundable once the project can demonstrate the required one year contract, or the project goes into commercial operation. If the project withdraws without having provided a resource adequacy contract, the ISO processes the

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<sup>2</sup> Deliverability does not guarantee any level of transmission capacity or avoided curtailment. All generators are subject to security-constrained economic dispatch, which can be affected by bids, outages, and topology changes.

funds with other non-refundable interconnection charges.

## **Minimum procurement term for power purchase agreements**

The proposal presented to the Board in May was to require power purchase agreements be for a minimum procurement term of three years. Up until the final proposal the proposed minimum term was five years. The ISO reduced the minimum term from five to three years based on stakeholder feedback. When the issue was continued in phase 2, the ISO reintroduced it with a minimum term of five years based on significant feedback from offtakers and local regulators, including the three California investor-owned utilities, the California Community Choice Association, and the California Public Utilities Commission. They informed the ISO they only execute power purchase agreements with greenfield and expansion projects for terms of at least ten years. The California Public Utilities Commission emphasized their most recent procurement orders require terms of at least ten years.<sup>3</sup>

Based on that input and the need to ensure that the most ready projects are given the highest priority within the allocation process, Management proposes a minimum power purchase agreement term of five years. The ISO must ensure that the transmission plan deliverability allocation process ensures the most viable and ready projects have an opportunity for an allocation before less viable and less ready projects, and to ensure entities are seeking allocations in good faith, especially as the availability of deliverability decreases. Moreover, providing allocations to less viable and less ready projects on an equal footing as those with long term power purchase agreements puts load-serving entities at a greater risk of not receiving an allocation. This would hinder their ability to bring new capacity online to meet their mandated timelines and would put reliability of the ISO system at greater risk. Management proposes that this requirement would begin with the 2023-24 TPD allocation cycle.

## **2. Cost allocation treatment for network upgrades to local systems (< 200 kV)**

The ISO tariff requires participating transmission owners to reimburse interconnection customers for the financing costs of reliability and local delivery network upgrades built in their systems and turned over to their control. The participating transmission owners then include those reimbursement costs in their FERC-approved transmission rate bases, requiring ratepayers to pay those costs through either the local or regional transmission access charges. Network upgrades for 200 kV systems and above are considered regional, and their costs are allocated to all measured demand on a per-MW basis system-wide. This is known as a “postage

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<sup>3</sup> Decision 21-06-035: Decision Requiring Procurement To Address Mid-Term Reliability (2023-2026), <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M389/K603/389603637.PDF#page=50&zoom=100,96,703>; Decision 19-11-016: Decision Requiring Electric System Reliability Procurement For 2021-2023, <https://docs.cpuc.ca.gov/PublishedDocs/Published/G000/M319/K825/319825388.PDF>

stamp rate.” In contrast, local network upgrade costs remain with the participating transmission owner that will own them. Their costs are charged only to customers within the participating transmission owner’s service area. This voltage-based cost allocation system is the national practice based on the principles that cost allocation correlate with benefits received, and low-voltage network upgrades do not benefit ratepayers farther away.

There is ongoing concern that the current practice for generator-interconnection-driven local upgrades could unduly impact local ratepayers who solely bear their costs. In other words, certain interconnections could cause ratepayers to bear costs disproportionate to the benefits received for the low-voltage network upgrades. The ISO addressed this issue with stakeholders and filed a narrowly focused proposal to FERC in 2017 that would have assessed certain interconnection-driven low voltage network upgrades on a regional basis. This proposal was premised on the idea that the beneficiaries of the generation were outside of the local transmission owner. FERC ultimately found that the ISO failed to support its proposal as just and reasonable and not unduly discriminatory and rejected the ISO’s filing.<sup>4</sup> FERC found that the *generation* benefits were independent and immaterial to the cost allocation issue of the low-voltage *network upgrades*, and the ISO had not demonstrated that regional ratepayers would benefit from the low-voltage upgrades.

Instead of creating different rules for different participating transmission owners, Management proposes to use a cost limiting model similar to the one the ISO uses for funding location constrained resource interconnection facilities. The ISO proposes a revised treatment for the addition of the capital costs for local or low voltage (<200kV) network upgrades driven by generation interconnections to the local transmission revenue requirement of a participating transmission owner. Such upgrades will not cause the aggregate of the net investment for all low voltage network upgrades driven by generation interconnections included in the local transmission revenue requirement to exceed fifteen percent (15%) of the aggregate of the net investment for all low voltage transmission facilities of that participating transmission owner reflected in their local transmission revenue requirement in effect at the time of the in-service date of the network upgrade. Any costs for low voltage network upgrades in excess of the fifteen percent (15%) threshold will be financed by interconnection customers without cash reimbursement, but with merchant transmission congestion revenue rights if created. In addition, the proposal allows interconnection customers to withdraw their project at any time without incurring withdrawal penalties if its interconnection request is in an area where the participating transmission owner would have reimbursed the costs of a low-voltage upgrade, but that changes for the interconnection customer while in queue (due to the participating transmission owner going over the 15% threshold while the customer is in queue, regardless of whether this was projected).

Management believes this proposal ensures equal treatment for all participating

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<sup>4</sup> *California Independent System Operator Corp.*, 160 FERC ¶ 61,047 (2017).

transmission owners, and protects their local ratepayers from paying for network upgrade costs that likely exceed their benefits. All participating transmission owners are currently well under the 15% threshold; however, current and future participating transmission owners with smaller rate bases face a real risk of rate shock if their systems receive multiple or expensive interconnections disproportionate to the low-voltage system. The ISO proposal protects the participating transmission owners and incentivizes larger interconnections to high-voltage systems.

### **3. Network upgrade reimbursement policy when the ISO is an affected system**

In the last decade, there have been no instances where a generator's interconnection to a neighboring balancing authority area affected the reliability of the ISO grid such that network upgrades were required. In interconnection terms, the ISO is almost never an "affected system," and has only been asked to perform affected system studies a handful of times. Most of these studies were not performed because the project quickly withdrew. However, recently the ISO has received a few notices from neighboring areas that a proposed interconnection potentially may affect the ISO, and could warrant ISO study. Although the probability is very remote that an external interconnection would require network upgrades on the ISO system, Management believes the ISO tariff should have a clear policy on this issue.

To perform the ISO as an affected system study, Management proposes to use the base case assumptions from the most recent cluster study as of the affected system study agreement execution date. In addition, FERC precedent requires the ISO to provide some form of remuneration for network upgrades financed by the interconnection customer, either in the form of cash reimbursement or transmission rights, which would be merchant transmission congestion revenue rights for the ISO. Management proposes to use its existing policy for reliability network upgrade reimbursement for projects interconnecting to the ISO system for reliability network upgrades resulting from an affected system study. Transmission owners would reimburse interconnection customers in cash and include those costs in their transmission revenue requirement. This policy reflects that the transmission ratepayers benefit from the network upgrades, and it incentivizes transmission owners to assign cost-efficient necessary upgrades to the interconnection customer.

## **POSITIONS OF THE PARTIES**

The ISO initiated the IPE 2021 initiative phase 2 with a revised straw proposal on June 7, 2022, which picked up each topic at the point that discussions were suspended within phase 1. Through stakeholder input the topics addressed in phase 2 were reduced to those that had sufficient stakeholder support. In total, five papers were posted associated with phase 1 and three papers were posted associated with phase 2, each with respective stakeholder meeting and comment process. The IPE 2021 Phase 2 Final Proposal was posted on September 13, 2022, followed up with a stakeholder

conference call on September 20, 2022.

## Section 1 Enhancements

### 1. Transmission plan deliverability allocation eligibility requirements

#### Allocation criteria for power purchase agreements with non-load serving entities

The vast majority of stakeholders support this proposal.

- All but one stakeholder either supported or did not comment on the proposal. This includes Amazon, who in an August 25, 2022, letter to the ISO Board of Governors stated they were “very pleased with the current proposal.”
- One stakeholder opposed the ISO not allowing contract eligibility for arrangements between the interconnection customer and counterparties that are affiliates of the interconnection customer.

#### Minimum procurement term for power purchase agreements

- Eight stakeholders provided written comments in support of the proposal.
- Eight stakeholders provided written comments not in support – providing various forms of alternative proposals.

All load serving entities that provided comments, as well as the California Public Utilities Commission, support the proposal as appropriate for their procurement practices for new greenfield generation and generation facility expansions. Management believes that the interests and procurement practices of the load serving entities should guide the decision to approve this proposal.

### 2. Cost allocation treatment for network upgrades to local systems (< 200 kV)

- Six stakeholders, including San Diego Gas & Electric, oppose the proposal.
- Valley Electric Association and the California Public Utilities Commission - Public Advocates Office support the proposal, and Southern California Edison did not oppose.

Opposing stakeholders argue the ISO should not change its existing policy at all, as doing so could disincentivize development on low-voltage systems. Management agrees that this could happen, but only where local ratepayers would no longer commensurately benefit from network upgrades, and development should be directed to higher-voltage facilities. Other opposing stakeholders argue these rules should not be imposed on already queued customers. Management disagrees because its proposal reflects existing cost allocation principles. Without tariff changes, transmission owners facing rate shock would simply file complaints at FERC arguing their ratepayers should not receive the imminent interconnection costs, and the same result would occur. SDG&E argues costs above the 15% threshold should be allocated regionally.

Management believes FERC already rejected that proposal in 2017, and it would be imprudent to argue that regional ratepayers benefit from low-voltage network upgrades on other systems such that they should pay for them equally.

3. Network upgrade reimbursement policy when ISO is an affected system
  - Six stakeholders support the proposal.
  - No stakeholders oppose the proposal.

This proposal received broad stakeholder support.

## **CONCLUSION**

Management recommends that the Board approve the three enhancements proposed in this memorandum. Although some enhancements have not received broad support, Management believes the proposals are correct and appropriate for addressing each of the issues in this memorandum. The proposed modifications ensure the most viable and ready projects have an opportunity for an allocation before less viable and ready projects, and gives priority to load serving entities who must procure and bring into operation large amounts of new generation to meet their mandated procurement timelines and to ensure the future reliability of the system. The proposed modifications will also provide a cost allocation structure for transmission upgrades on the local transmission systems to not overwhelm the ratepayers of those local transmission systems. Finally, the proposed modifications will improve the ISO's generator interconnection procedures' ability to manage the projects in the queue and help California and the West obtain the robust capacity levels needed and meet their public policy goals.