



California ISO

# Transmission Service and Market Scheduling Priorities – Phase 1

Draft Final Proposal

December 10, 2021

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## 1 Introduction

The purpose of this initiative, previously named *External Load Forward Scheduling Rights Process*, is to explore development of a long-term, holistic, and durable, framework for establishing scheduling priorities in the CAISO market. The initiative also explores near-term enhancements to the current scheduling priorities framework that the CAISO can implement by summer of 2022.

Earlier this year, the CAISO undertook an expedited initiative – *Market Enhancements for Summer 2021 Readiness*, which evaluated market enhancements in preparation for expected stressed system conditions in summer 2021. Among other things, the CAISO established certain revised scheduling priorities for export, load, and wheel-through transactions in that initiative. Under that framework, which the CAISO implemented in early August 2021, wheel-through and export transactions must meet specific requirements to secure a scheduling priority equal to CAISO load. The wheeling through priorities the CAISO placed into effect are interim and will sunset on June 1, 2022. Within that same initiative, the CAISO committed to undertaking a new initiative to develop a holistic long-term framework for establishing scheduling priorities in the CAISO markets.

This initiative has two distinct, but simultaneously run, phases. Phase 1 focuses on near-term enhancements to the existing scheduling priorities framework that the CAISO can implement by summer 2022. Phase 2 focuses on developing a long-term holistic framework. The CAISO will conduct both phases concurrently with Phase 1 being presented to the CAISO Board of Governors in January 2021, and the stakeholder process for Phase 2 continuing beyond that.

This document represents the draft final proposal for Phase 1 of the initiative and identifies several transparency enhancements, while proposing to extend the wheeling-through scheduling priorities and associated framework for summer 2022 and summer of 2023. This document also contains further discussion and updates on Phase 2 of the initiative based on stakeholder comments submitted on the issue paper and working group discussions to date, including an updated schedule. But it does not provide a defined proposal at this time.

The CAISO will host a stakeholder meeting on December 20, 2021, to discuss the Phase 1 draft final proposal with stakeholder comments due on January 7, 2022.

## 2 Draft Final Proposal Summary

**Phase 1 Draft Final Proposal**

This section of the paper summarizes elements of the Phase 1 draft final proposal, which will be elaborated upon in later sections. The draft final proposal identifies proposals in two key areas: (1) transparency enhancements, and (2) scheduling priorities framework for summer 2022 and summer 2023. In order to support expedited resolution on Phase 1 of the initiative, and facilitate a presentation to the CAISO Board of Governors and EIM Governing Body in January 2022, along with a prompt FERC filing, this proposal is considered the draft final proposal.

After considering several substantive enhancements identified in the issue paper, the CAISO is proposing to extend the interim wheeling through scheduling priorities and the associated framework through summer 2022 and summer 2023, until June 1, 2024. More specifically, the CAISO proposes:

- *Extension of the current, interim, wheeling through scheduling priorities framework for summer 2022 and summer 2023* – the CAISO proposes to extend the current interim wheeling through market scheduling priorities, and the associated framework, to June 1, 2024. Extending these priorities for the next two summers will provide certainty as to the rules for wheeling through the system and allow the CAISO and its stakeholders to focus efforts on the development of a transmission reservation process for establishing scheduling priorities as part of Phase 2 of this initiative.
- *Enhancements to provide additional visibility of the non-RA capacity for a supporting resource as well as notifications when a high priority export (PT export) schedule exceeds the non-RA capacity of the supporting resource* – the CAISO proposes enhancements that will provide (1) further visibility on the non-RA capacity of a resource supporting a PT export schedule, and (2) enhancements that will notify the scheduling coordinator submitting the PT export schedules if and when the PT export schedules exceed the non-RA capacity of the supporting resource. These enhancements will enable the supporting resource and the parties submitting PT export schedules to communicate more effectively to submit PT export schedules that are within the limits of the supporting resource's non-RA capacity.
- *Clarification to tariff language regarding PT exports from Variable Energy Resources (VER)* – the CAISO proposes clarifying tariff language to address the concern that PT export schedules can be supported by VERs based on outdated output forecasts. The proposed tariff language clarifies that a VER's ability to support a PT export schedule for the entire hour is based upon the most recent output forecast applicable for the hour for which the bid was submitted.

The proposed transparency enhancements are consistent with those scope items identified in the issue paper. The CAISO proposes publication of additional requested data and information:

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- *Aggregate high priority wheel (Priority Wheeling Through) registration data* – completed. The CAISO published the data at the end of September, 2021, and the CAISO will update the document when additional new registrations are submitted and processed.<sup>1</sup>
- *Aggregate Resource Adequacy (RA) import data* – in progress. The CAISO will make this available in the coming weeks. It will consist of historical RA import aggregate data per tie point, along with a going-forward publication of the same data based on the most recent monthly RA supply plan showings. Along with the Priority Wheeling Through registration data noted above, this information will provide market participants with additional visibility on commitments at different tie points.
- *Residual Unit Commitment (RUC) load forecast adjustments* – the CAISO will publish updated load forecasts utilized in RUC based on operator adjustments. This data will create improved situational awareness for adjoining balancing authorities and other market participants. Publication of this data requires further technology enhancements, which the CAISO will implement before next summer.
- *Curtailment data* – the CAISO will publish curtailment data on its Open Access Same Time Information System (OASIS) for wheeling through, export and load transactions to make this information available closer in time to when these curtailments occur. Publishing data requires further technology enhancements, which the CAISO will implement before next summer.

Within the category of transparency enhancements, the CAISO will also continue to work on consolidating terms and business requirements applicable to exports and wheels. The end product will be a singular guiding document – as an appendix to a business practice manual – that captures the relevant information that applies to exports and wheeling through transactions. This task includes review of terms to ensure consistency across the tariff, business practices, and the different systems/tools guiding documents. The CAISO will also develop a document, as suggested by stakeholders in comments to the issue paper, that identifies the different reports available that relate to wheeling and export data published by the CAISO currently, along with the location of those reports. In the issue paper, several additional items were scoped in for consideration, but for which the CAISO does not propose changes from the current framework in place.

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<sup>1</sup> The data can be accessed on the CAISO website, on the “Reliability Requirements” webpage - <http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=6ED737E1-677F-437A-873A-0BD2E4F8E764>

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The CAISO plans to take this item for decision to a special session, date not yet announced, of the CAISO Board of Governors in January 2022 to support an expedited filing with FERC and provide certainty of the rules ahead of the summer.

### **3 Initiative Background**

Earlier this year, the CAISO conducted an expedited stakeholder initiative - *Market Enhancements for Summer 2021 Readiness*, which evaluated market enhancements in anticipation of challenging system conditions in summer 2021. This expedited initiative evaluated a number of topics, including enhancements to the scheduling priorities for load, export, and wheeling through transactions in the day-ahead and real-time market optimization processes and related market rules. FERC approved the proposed scheduling priorities in June, 2021.<sup>2</sup>

As part of the same expedited initiative, the CAISO committed to undertake a separate effort to develop a long-term, holistic, framework for establishing scheduling priorities in the market. The CAISO recognizes this is a critical issue for load serving entities internal and external to CAISO to use the CAISO system to wheel through or export power to serve their load, particularly in stressed system conditions.

Further compounding the need to move toward a more holistic and durable long-term framework for establishing scheduling priorities in CAISO's market are the evolving conditions across the western grid. Supply shortfalls in the CAISO and across the western interconnection<sup>3</sup> are contributing to increased dependence on import generation to serve load reliably. The CAISO and much of the western interconnection are increasingly facing stressed grid conditions, often simultaneously, driven by a number of different factors.

The purpose of this initiative is to engage with stakeholders collaboratively and constructively to develop a holistic, long term framework of scheduling rights and priorities that will allow CAISO and regional entities to serve load reliably in light of the common challenges we face.

Phase 1 of the initiative focuses on enhancements and identification of a scheduling priorities framework for summer 2022, upon the expiration of the current interim wheeling through scheduling priorities at the end of May 2022. The CAISO recognizes the need to provide certainty regarding the rules for wheeling across its system as internal and external load

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<sup>2</sup> California Independent System Operator Corporation, 175 FERC ¶61,245 (2021).

<sup>3</sup> Western Electric Coordinating Council (WECC), *The Western Assessment of Resource Adequacy Report* (December 18, 2020).

<https://www.wecc.org/Administrative/Western%20Assessment%20of%20Resource%20Adequacy%20Report%2020201218.pdf>

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serving entities start planning and procurement for the upcoming summer. Phase 2 of the initiative focuses on the long-term, holistic, framework for establishing scheduling priorities and as CAISO indicated in the issue paper, the development of a transmission reservation process for establishing these priorities.

### **3.1 CAISO Markets and Role of Scheduling Priorities**

The CAISO operates a wholesale day-ahead and real-time energy market. Supply offered into these markets, whether economically bid or self-scheduled<sup>4</sup>, is awarded and dispatched by the market based on economics. The CAISO does not require or provide for forward reservation of transmission service to participate in the market. Rather, the market optimizes all physically available transmission. This contrasts with the Open Access Transmission Tariff (OATT) paradigm prevalent across the west where buyers/sellers bilaterally secure capacity/energy and separately reserve transmission service in advance of the transaction, to support delivery of the transaction from source to sink.

Scheduling priorities in CAISO's market become a factor when the market cannot find a feasible solution. This occurs when there is insufficient supply to meet overall demand on the CAISO grid, including exports, or there are binding transmission constraints in the CAISO balancing authority area such that economic bids alone cannot resolve. The market adjustment process, which utilizes penalty price parameters<sup>5</sup>, adjusts import schedules and wheeling through transactions to apportion transmission capacity when the system is constrained and the CAISO is at risk of not serving its load. This is particularly important when, for example, an intertie is constrained in the import direction based on the scheduling limits or internal Path 26 is constrained in the north-south direction, in which case scheduling priorities dictate curtailment order of self-scheduled transactions for the market to solve and allocate limited transmission across transactions.

Under the framework that existed prior to August 4, 2021, a self-scheduled export potentially supported by resource adequacy (RA) capacity scheduled in the day-ahead market had a

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<sup>4</sup> A self-schedule is a market bid a scheduling coordinator submits to the CAISO that indicates a quantity in MWh but does not specify a price. This indicates the scheduling coordinator is a price-taker. Effectively, self-schedules are requests the market schedule the transaction irrespective of the market price.

<sup>5</sup> The market software determines the priority order in which the various self-schedules are curtailed using market parameters known as "penalty prices." These penalty prices are set to specific values to (1) determine the conditions under which the market may relax a constraint or curtail a self-schedule, and (2) establish the market prices when these events happen.

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higher priority than CAISO load in the real-time market. This created the possibility the market would use RA capacity intended to serve CAISO internal load to instead support the export transaction. Moreover, the tariff did not specify scheduling priorities for wheeling through transactions. However, the market software effectively provided wheeling through self-schedules that clear the day-ahead market a higher priority than CAISO load. In stressed conditions when there may be binding intertie constraints, wheeling through self-schedules could displace RA imports serving CAISO load based on the higher scheduling priority.

The CAISO replaced the scheduling priority framework described above with the scheduling priority framework that emerged out of the *Market Enhancements for Summer 2021 Readiness*<sup>6</sup> initiative. The provisions the CAISO implemented in August are described further below.

### **3.2 Current Scheduling Priorities Framework**

Following the historic heat wave in mid-August 2020, which caused energy supply shortages across the CAISO and led to controlled rotating power outages on the system, the CAISO, California Public Utilities Commission (CPUC), and the California Energy Commission (CEC) published a root cause analysis of the events<sup>7</sup>. Subsequently, the CAISO launched an expedited stakeholder initiative, titled *Market Enhancements for Summer 2021 Readiness*, to consider market enhancements necessary to prepare for potential extreme weather events and tight supply conditions in summer 2021. One of the initiative elements evaluated was enhancements to the load, export, and wheeling through scheduling priorities in the market. Scheduling priorities are effectuated by use of penalty prices in the CAISO market software. These penalty prices are set to specific values to (1) determine the conditions under which the market may relax a constraint or curtail a self-schedule and (2) establish the market prices when these events happen. A higher magnitude of penalty price indicates a higher scheduling priority. The CAISO and stakeholders put in painstaking effort during the discussion to address the complex, challenging and polarizing issue of scheduling priorities.

Through the initiative, the CAISO proposed substantive enhancements to the scheduling priorities framework, including:

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<sup>6</sup> California Independent System Operator, *Market Enhancements for Summer 2021 Readiness* initiative. <https://stakeholdercenter.caiso.com/StakeholderInitiatives/Market-enhancements-for-summer-2021-readiness>

<sup>7</sup> California Independent System Operator, California Public Utilities Commission, California Energy Commission, *Final Root Cause Analysis: Mid-August 2020 Extreme Heat Wave* (January 13, 2021). <http://www.caiso.com/Documents/Final-Root-Cause-Analysis-Mid-August-2020-Extreme-Heat-Wave.pdf>

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- Exports supported by non-RA capacity, *i.e.*, high priority PT exports, will have equal priority to CAISO load, and a higher priority than exports not specifically supported by non-RA capacity, *i.e.*, LPT exports.
- LPT exports will have lower priority than CAISO load.
- Establishing explicit priorities for wheeling through transactions:
  - Non-Priority Wheeling Through (LPT wheels) transactions – have lower priority, equal to LPT exports.
  - Priority Wheeling Through transaction – have a priority equal to CAISO load and PT exports, and higher priority than LPT wheels and LPT exports.

FERC approved<sup>8</sup> the proposed enhancements on June 25, 2021 and CAISO implemented them on August 4, 2021. These priorities are wheeling through priorities are interim and expire June 1, 2022.

Exports qualify for PT export status by designating a supporting resource's non-RA capacity and ensuring that a load serving entity external to the CAISO has rights to the capacity.

Wheeling through transactions can qualify for PT wheel status if the scheduling coordinator notifies the CAISO at least 45 days before the month of the quantity of the wheel supported by a power supply contract to serve an external LSE's load for the entire calendar month, and attesting that appropriate firm transmission has been secured to the CAISO border.

High priority transactions - PT exports, Priority Wheeling Through, and CAISO load - have equal scheduling priority. To implement this scheduling priorities framework, the CAISO conducts a post-Hour Ahead Scheduling Process (post-HASP) process to allocate available transmission capacity between supply needed to meet CAISO load and Priority Wheeling Through transactions on a *pro rata*<sup>9</sup> basis if an intertie scheduling point is constrained in the import direction or Path 26 is congested in the north-south direction and CAISO cannot meet forecast demand or fully accommodate a Priority Wheeling Through transaction.

## **4 Draft Final Proposal: Phase 1 Enhancements by Summer 2022**

This section describes further in detail the different elements of the draft final proposal in the two overarching categories of topics: (1) transparency enhancements, and (2) extending the

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<sup>8</sup> California Independent System Operator Corporation, 175 FERC ¶61,245 (2021).

<sup>9</sup> In determining *pro rata* allocations, the CAISO load share is the sum of the lower of each applicable RA resource's real-time energy bid quantity or its shown RA capacity. The Priority Wheeling Through self-schedule *pro rata* share is the sum of the lower of the following quantities for each self-schedule: (1) 110 percent of the submitted day-ahead market self-schedule of the Priority Wheeling Through transaction; (2) the submitted real-time market self-schedule of the Priority Wheeling Through transaction; or (3) the Priority Wheeling Through quantity requested 45-days in advance of the month.

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existing interim framework approved by FERC in June 2021. The sections below also provide further detail and explanation on topics that the CAISO noted as in-scope in the issue paper, but ultimately does not propose changes on those topics.

The CAISO plans on presenting this proposal to a CAISO Board of Governors and EIM Governing Body special session in January 2022 in order to expedite a FERC filing and providing certainty of the rules for wheeling through the CAISO's system ahead of next summer.

## **4.1 Proposal - Market Scheduling Priorities**

In this section, the CAISO describes its proposal to extend the interim wheeling through scheduling priorities framework that was approved by FERC for summer 2021. Additionally, this section describes enhancements, clarifications and/or direction on other scope items identified in the issue paper.

### ***4.1.1 Wheeling Through Scheduling Priorities***

The CAISO proposes to extend the interim wheeling through scheduling priorities framework approved by FERC, which expire on June 1, 2022, through the summer 2022 and summer 2023, until June 1, 2024.

Extending the FERC-approved interim scheduling priorities framework provides certainty as to the rules and requirements for wheeling across the CAISO system. Entities outside the CAISO BAA have expressed that they need certainty in advance of the rules that will be in-place so that they can make contractual arrangements to serve their own load and ensure their own reliability. At the same time, extension of the framework provides protections for serving native load compared to the framework in place prior to summer 2021.

Moreover, extending the existing framework for the next two summers will permit the CAISO and stakeholders to focus their efforts on the developing a long-term transmission reservation process for establishing market scheduling priorities under Phase 2 of this initiative.

By extending the interim wheeling through scheduling priorities framework, parties wheeling through the CAISO will continue to be able to establish scheduling priority equal to CAISO load – Priority Wheeling Through - by registering a wheeling through transaction at least 45 days ahead of the month and meeting the associated requirements.<sup>10</sup> Wheeling through

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<sup>10</sup> Under the interim rules the CAISO proposes to extend Priority Wheeling Through customers must demonstrate their wheeling through transaction is supported by (1) a firm power supply contract to serve an external LSE's

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transactions that do not register at least 45 days ahead of the month will continue to be considered low priority wheeling through (LPT wheel) transactions and will have a lower scheduling priority than Priority Wheeling Through transactions in accordance with the priorities described in CAISO's tariff and approved by FERC last summer.<sup>11</sup>

In comments on the issue paper, numerous stakeholders shared their perspectives and recommendations on the wheeling through priorities approach for summer 2022. The *Joint California LSEs* expressed disappointment that the CAISO did not believe it could implement their suggested framework by next summer and thus excluded it from the scope for Phase 1. The CPUC proposed that the CAISO cap the amount of wheeling through transactions that can register 45 days in advance and establish a wheeling through priority equal to load.

Alternatively, the CPUC stated that the CAISO should seek to extend the existing framework should FERC reject such proposal. On the other hand, *NV Energy* and *Salt River Project (SRP)* recommended that the CAISO promptly extend the current wheeling priorities framework for summer 2022 because it would provide certainty regarding the rules for external entities to establish scheduling priority for wheeling through transactions across the CAISO system for next summer as they plan for summer operations.

In evaluating these stakeholder comments, the CAISO considered different approaches and the viability of adequately vetting substantive changes in the wheeling priority framework with stakeholders in time to be in-place when the current interim rules expire on June 1, 2022. Regarding the CPUC suggestion, the CAISO is concerned that any MW cap on the amount of wheel through transactions that can establish scheduling priority based on the prior's summer registrations would be arbitrary and difficult to justify. It is important to remember that to establish a wheeling through priority equal to load, a wheeling through customer must establish that priority at least 45 days in advance of the month, must have a contract in place to serve load, and must have firm transmission in place to the CAISO system 45 days in advance for the entirety of the month in which they are establishing the priority. These requirements affect the volume of wheeling through transactions that can establish the priority. In August 2021 there were 1021 MW of wheeling through transactions registered and receiving high priority status equal to load, and that amount decreased to 687 MW registered for September 2021. Further, these registered wheeling through transactions were not exclusively concentrated from north to south across the CAISO system, but also included wheels through the southern portion of the CAISO system and across a variety of points. For example, the

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load throughout the calendar month, and (2) and monthly firm transmission from the source to the CAISO border for Hours Ending 07:00 through 22:00, Monday through Saturday excluding North American Electric Reliability Corporation (NERC) holidays. CAISO Tariff, Appendix A – Definition of Priority Wheeling Through.

<sup>11</sup> CAISO Tariff, section 31.4 (2020).

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highest amount of wheels registered and establishing Priority Wheeling Through status was 279 MW, across the import point Malin500.

The CAISO is mindful that any changes to the interim wheeling scheduling priorities framework for summer 2022 would introduce significant uncertainty regarding the rules and requirements for establishing priority across the CAISO system right before the start of the summer.

External entities, similar to the CAISO LSEs, start planning for the next summer's operations at the conclusion of the prior summer. This includes contracting for generation that may need to wheel across the CAISO to maintain summer reliability on their system. The CAISO appreciates the need for certainty of the rules regarding wheeling through priorities ahead of next summer as entities across the west start planning their resource portfolios and summer operations.

The CAISO also considered deriving an amount of transmission capacity that could be made available for wheeling through transactions to establish priority - effectively Available Transfer Capability (ATC) - in the month ahead and seasonal timeframes, as well as closer in time. The CAISO would derive these values based on assumptions made across the different time horizons considering the total transfer capability across a tie point and transmission capacity needed across that tie path to meet native load needs, and ultimately the CAISO would derive an amount that market participants could reserve to establish scheduling priority for wheeling through transactions. However, such an approach requires extensive vetting with stakeholders regarding the assumptions utilized, particularly the assumptions for deriving native load needs. There are different inputs and assumptions that can inform that amount. In addition, the CAISO would have to identify a viable method for accessing and reserving that transmission for wheeling transactions. The CAISO cannot adequately vet or implement such an approach by next summer. The CAISO will evaluate this type of an approach to deriving native load needs, different margins, and ultimately the transmission capacity that can be made available for reservation, along with an access or allocation process, as part of Phase 2 of this initiative.

In comments on the issue paper, the *CPUC* and the *Joint California LSEs* also requested that the CAISO consider Reliability Must Run (RMR) and Capacity Procurement Mechanism (CPM) designations within the post-HASP allocation process, affording it priority with RA imports. The parties note that these designations are procured and paid for by California customers and are effectively resource adequacy resources. The CAISO reiterates that under the current tariff provisions, approved by FERC as part of the interim wheeling through scheduling priorities framework for summer 2021, the post-HASP allocation process affords priority to RA Capacity<sup>12</sup>, which the CAISO tariff defines as supply capacity listed on a Resource Adequacy Plan and a Supply Plan. CPM designated capacity and RMR capacity do not meet the tariff

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<sup>12</sup> CAISO tariff section 34.12.3.

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definition of RA Capacity and thus are not afforded the priority in the post-HASP process. Extending the interim wheeling through priorities and associated framework also extends, and does not modify, the application of the post-HASP process approved by FERC.

The proposed extension of the interim wheeling through scheduling priorities, to June 1, 2024, will permit the CAISO and stakeholders to focus their efforts on developing a transmission reservation process for establishing market scheduling priorities as considered in Phase 2 of this initiative. The CAISO considered an extension for summer 2022 only, however, the CAISO and stakeholders would need to complete the policy process for the long-term framework by the start of summer 2022 and file it with FERC soon thereafter in order to provide certainty regarding the applicable rules as LSEs start planning for summer 2023. Any delay in completing the policy design of a long-term framework and the associated FERC filing, or any uncertainty or delays in implementation, in the timeframe noted above, would again add uncertainty as to the framework for the following summer and add uncertainty to contracting as LSEs across the region plan for summer operations. The CAISO will seek to complete Phase 2 of the initiative and finalize policy development by the end of 2022 in order to allow time for timely implementation. The CAISO aims to provide certainty regarding rules for wheeling through the CAISO well in advance of summer 2024. As the CAISO and stakeholders vet and develop the transmission reservation process and its various components, there will also be ample opportunity to identify connections and dependencies with other processes and policies based upon the complexity of the reservation process.

#### **4.1.2 *High Priority Export Enhancements***

Under current processes, the CAISO can de-prioritize a self-scheduled high priority export (PT export) to low priority status (LPT exports) if the sum of PT export schedules exceeds the non-RA capacity of the designated supporting resource. Although these de-prioritizations are infrequent, they generally occur when a scheduling coordinator submits a PT export schedule at the open of the market but fails to update the schedule prior to market close in response to changed conditions, or there is a lack of adequate communication between the scheduling coordinator for the supporting resource and the scheduling coordinator(s) submitting the PT export schedules.

The CAISO proposes technology enhancements to improve the awareness for the scheduling coordinator regarding the instantaneous non-RA capacity of the supporting resource, as well as enhancements to notify scheduling coordinators submitting PT export schedules when their schedules exceed the non-RA capacity of the supporting resource. Specifically, the CAISO proposes the following:

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- (1) Enhancements to the Scheduling Infrastructure Business Rules (SIBR) system that provide a scheduling coordinator for a designated supporting resource with the ability to view the instantaneous non-RA capacity of the resource; and
- (2) Enhancements to the SIBR system to provide scheduling coordinators submitting PT export schedules with a notification warning when they submit PT export schedules that exceed the non-RA capacity of the supporting resource.

These enhancements improve awareness of resource availability and a resource's ability to support PT exports, enabling further communication between parties and ultimately avoiding submission of PT export schedules that exceed the non-RA capacity of the supporting resource.

First, the CAISO proposes to develop SIBR functionality that allows the scheduling coordinator of the supporting resource to view the instantaneous non-RA capacity of the resource based upon the different offers and awards in the market. This functionality could enable the scheduling coordinator of the supporting resource to communicate more effectively the non-RA capacity of the resource with parties designating the resource as supporting a PT export.<sup>13</sup> Current functionality notifies the scheduling coordinator of the supporting resource that its resource has been identified as supporting a PT export schedule whenever a PT export schedule is submitted or modified. Combined with the functionality to enable viewing the instantaneous non-RA capacity, the scheduling coordinator for the supporting resource will be able to communicate more effectively with parties submitting export schedules.

Second, the CAISO proposes enhancements to notify all scheduling coordinators submitting PT export schedules with the same supporting resource when the sum of PT export schedules exceeds the non-RA capacity of that resource. The CAISO will issue this notification based upon the submission of PT export schedules, prior to market close, to enable parties to adjust the schedules or further communicate with the scheduling coordinator of the supporting resource to determine potential adjustments to these schedules and appropriate distribution of the non-RA capacity associated with the resource. This enhancement should also limit or mitigate instances of parties submitting PT export schedules that exceed the non-RA capacity of the designated supporting resource.

In the issue paper, the CAISO noted it would evaluate potentially adjusting PT export schedules to the non-RA capacity of the resource, pro-rata or otherwise, when the sum of schedules exceeds the non-RA capacity. The CAISO does not propose at this time any

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<sup>13</sup> However, consistent with current functionality, SIBR does not use outage information to calculate non-RA capacity, to the extent the resource is under a partial outage. If the resource is under an outage, the Scheduling Coordinator for the resource should submit an energy bid which is consistent with the availability of the resource, so that SIBR can derive the non-RA capacity for the resource

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adjustments to PT export schedules if these exceed the non-RA capacity of the supporting resource. Rather, the CAISO will retain the current framework of de-prioritizing all PT export schedules to LPT export status if this occurs. The CAISO is not a party to, or privy to, the contractual arrangements of the supporting resource and the parties submitting PT export schedules; thus, any adjustments made by the CAISO to decrease PT export schedules pro-rata or otherwise to the non-RA capacity may not reflect contractual arrangements parties have. Furthermore, the CAISO does not make similar adjustments to schedules in other aspects of the market. It is the responsibility and role of scheduling coordinators to submit offers into the market based on their business needs and the contractual arrangements they have in place. The CAISO's proposed enhancements provide the scheduling coordinator of the supporting resource, and the scheduling coordinator submitting the PT export schedule, the necessary tools to create awareness of the non-RA capacity and notifications allowing parties to further coordinate and ensure submission of schedules commensurate with contractual arrangements that may be in place. These enhancements should significantly limit the instances when PT export schedules exceed the non-RA capacity.

#### **4.1.3 *Underproduction of Resources Supporting PT Exports***

Through various comments submitted in both in the *Market Enhancements for Summer 2021 Readiness* initiative and the current initiative, the *Joint California LSEs* requested that the CAISO consider enhancements that would allow curtailment of PT export schedules if the resource designated as supporting the export is under-producing. The CAISO included this topic in scope for Phase 1 of this initiative for further evaluation and consideration. In its comments on the issue paper, the *Department of Market Monitoring (DMM)* further suggested that the CAISO consider curtailing PT export schedules ahead of load in stressed system conditions. DMM maintained this is similar to the prevailing practice across the west.

The *DMM* noted examples of variable energy resources (VERs) supporting PT exports, from August 2021, when their output was significantly less than the PT export schedule. The *DMM* noted that under the current tariff rules, the scheduling coordinator of the VER supporting resource attests that the resource is capable of producing up to the level of the PT export schedule at the time of bid submission,<sup>14</sup> which depending upon when the bid is submitted, could be different than the actual capabilities of the resource based on the latest output forecast. For example, the Scheduling Coordinator for a resource might submit its bid into real-time market the day before, after the close of day ahead market, but the real-time forecast for the resource might be significantly different. Finally, the *DMM* suggested that the CAISO

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<sup>14</sup> Tariff section 30.5.1(aa).

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develop functionality to notify the scheduling coordinator of the supporting resource that its resource has been designated as supporting a PT export schedule.

Section 30.5.1(aa) of the CAISO tariff currently states:

*The Scheduling Coordinator for the designated resource and the Scheduling Coordinator for the export Self-Schedule shall designate a resource to support such export only if the resource is expected to have sufficient available capacity to support the export quantity throughout the entire hour. For Variable Energy Resources, this requirement can only be satisfied if the resource's forecasted output for each of the applicable four (4) fifteen (15) minute intervals at the time of bid submission is for Generation that is equal to or greater than the Self Schedule export quantity.*

The CAISO agrees with DMM that the existing tariff language does not sufficiently address the situation where a Scheduling Coordinator for a VER supporting a PT export submits a bid based on the then-current forecast, but the forecast subsequently changes prior to the real-time market for which the bid was submitted, and the resource's newly forecasted output for each of the applicable four (4) fifteen (15) intervals is for generation less than the self-schedule export quantity. A scheduling coordinator for a VER should not be able to satisfy the intent of tariff section 30.5.1 by submitting an "early" bid and relying on a (stale) forecast that subsequently is updated and revised before real-time. A scheduling coordinator for a VER should be attesting to the ability of the VER to support the PT export based on the most recent forecast available that applies to the real-time interval(s) for which the bid was submitted. In other words, the Scheduling Coordinator should be obligated to update its schedule if the forecast conditions change ahead of market close. If the VER forecast changes prior to real-time market close such that the VER can no longer support the initial PT export schedule quantity, the scheduling coordinator should be expected to update the PT export schedule to an amount the resource can support based on the most recent forecast. For example, if a scheduling coordinator submits a PT export schedule supported by a VER, into the real-time market at the close of the day ahead market (i.e., on the day prior), the scheduling coordinator should update or modify that PT export schedule prior to real-time market close if there are changes to the VER output forecast such that the resource can no longer support the originally submitted PT export amount for the entirety of the hour. The CAISO anticipates proposing a modification along the following lines to the second sentence in the excerpt from Tariff section 30.5.1 (aa) above: "*For Variable Energy Resources, this requirement can only be satisfied if, based on the most recent forecast, the resource's forecasted output for each of the applicable four (4) fifteen (15) minute intervals in the applicable hour for which a bid has been submitted is for Generation that is equal to or greater than the Self Schedule export quantity.*"

Regarding DMM's suggestion that the CAISO develop market functionality to notify the scheduling coordinator for the supporting resource that its resource has been designated as

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supporting a PT export schedule, the CAISO takes this opportunity to clarify its current practice for notifications. Under current functionality, when a PT export schedule is submitted or otherwise modified, the scheduling coordinator for the identified supporting resource receives a notification that its resource has been identified as supporting a PT export. Following such notification, under tariff section 30.5.1(aa), the scheduling coordinator for the supporting resource has an obligation to notify the CAISO if it does not have a contractual commitment to support the PT export self-schedule or does not have a reasonable expectation to be available to support the self-schedule.

The CAISO declines to adopt the suggested proposal to reduce PT exports, before load, in stressed system conditions when the supporting resource is under-producing. Stakeholder suggestions to adopt such proposal appear to be based on the perception that this is the common practice across the western interconnection. However, the current practice prevalent across the west is to continue to support the export, even in stressed system conditions, to avoid adversely affecting the reliability conditions of the receiving balancing authority area. Moreover, a resource that is under-producing compared to the sum of its transmission schedules, including exports, is subject to energy imbalance charges. If a resource is offline, and an export transmission schedule is submitted from such resource, the CAISO will curtail the schedule. This is consistent with the *Idaho Power Company* presentation made earlier in the year during the CAISO's *Market Enhancements for Summer 2021 Readiness* workshop.<sup>15</sup>

Although resources are dispatched differently to support exports in the CAISO's markets than in the Open Access Transmission Tariff (OATT) framework, the CAISO's current practice for treating export schedules when the underlying resource is under-producing is not inconsistent with the practice of other western balancing authority areas. In CAISO's market, the export schedule is not dependent on the output level of the designated supporting resource because the market optimizes which resources to dispatch to meet the different transactions offered and to serve load. In stressed system conditions, the CAISO carries contingency reserves to cover generation that becomes unavailable in real-time, and the CAISO would curtail PT export schedules on a pro-rata basis with load when there is a risk of shedding load regardless of the production level of the identified supporting resource.

Regarding VER resources, if the resource is under producing because external conditions are different than forecasted when the schedules were accepted for the hour, the reduced output will be reflected in the following hour's forecast, and the resource would only be able to submit a lower PT export quantity for the following hour commensurate with the updated forecasted

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<sup>15</sup> Idaho Power Company, Presentation on *Market Enhancements for Summer 2021 Readiness*, page 10 (January 12, 2021). <http://www.caiso.com/InitiativeDocuments/IdahoPowerPresentation-MarketEnhancements-Summer2021Readiness-Jan122021Workshop.pdf>

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output conditions they can support. Adopting a proposal that curtails PT export schedules before load when the supporting resource is under-producing, along with nuanced consideration of under-performance thresholds to trigger curtailment of PT exports ahead of load, would not follow practices across the west and the treatment of exports from western balancing authority areas that are procured by LSEs as imports into the CAISO.

#### **4.1.4 Curtailment Timing and Tagging Requirements**

In the issue paper, the CAISO scoped into the initiative consideration of stakeholder suggestions on tagging requirements and curtailment timing in order to maximize use of physically available transmission.<sup>16</sup> Powerex suggested requiring all high priority transactions (PT exports and RA imports) to submit a day-ahead E-Tag that would ensure when the CAISO is conducting post-HASP adjustments it does so on tagged transactions. Similarly, *Shell* suggested waiting until T-20 (20 minutes before flow) to conduct any necessary adjustments to schedules.

In comments on the issue paper, the *DMM*, *Joint California LSEs*, the *CPUC*, and *Shell* opposed the concept of requiring RA import transactions to submit E-Tags in the day ahead timeframe. Several of these parties noted that such a requirement would affect RA import requirements and modify the nature of RA import contracts to require E-Tags – source identification and transmission – in the day ahead timeframe. They stated that this initiative is not the place to consider such changes to the RA import requirements. *Shell* noted that although submitting E-Tags in the day ahead timeframe may be a common practice, it is not a transmission provider requirement across the west and by requiring such submission across the CAISO system may have unintended consequences.

The CAISO will not propose changes in tagging requirements. The CAISO agrees that requiring RA imports to submit E-Tags in the day ahead timeframe has implications that go beyond the scope of this initiative. For example, it affects the requirements and quality of imports under the RA program. Although the CAISO appreciates and recognizes the benefits that a day ahead E-Tag may provide – namely identifying the source of the import and the full transmission path know in the day ahead timeframe – this matter is more appropriately addressed through the CPUC resource adequacy proceedings and the CAISO resource adequacy initiative. As *Shell* noted in its comments, although submitting day ahead E-Tags is a common practice of other transmission providers in the west, it is not a requirement. Parties

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<sup>16</sup> California Independent System Operator, *Issue Paper: External Load Forward Scheduling Rights Process*, section 4.2.2.1 (August 31, 2021). <http://www.caiso.com/InitiativeDocuments/IssuePaper-ExternalLoadForwardSchedulingRightsProcess.pdf>

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ultimately have until 20 minutes prior to the hour of flow to finalize E-tag submissions, regardless of whether they submit an E-tag the day prior. Similarly, *Shell's* suggestion of waiting until T-20 (20 minutes prior to flow) to make schedule adjustments is incompatible with aspects of CAISO markets where actions need to be taken earlier to ensure the market can solve. Based on practical implications of such an approach, the CAISO and affected parties may have little time to make alternate arrangements if waiting until such a late timeframe to issue schedule adjustments.

The CAISO considered potential alternative approaches such as (1) considering only tagged transactions in the post-HASP adjustments process or (2) reinstating transactions after the tagging deadline (transmission profile) at T-40 minutes. But such approaches raise different challenges and equity issues. For example, considering only transactions with E-Tags in the post-HASP adjustment process (which takes place at T-60 minutes) would be challenging because this is ahead of a T-40 minute tagging deadline (for submission of transmission profile), and RA transactions without an E-Tag could be adjusted ahead of those with E-Tags even though the parties have additional time to submit those E-Tags under the tariff. This would effectively create a new sub-priority of PT wheeling through transactions and RA imports without E-tags vs. those with E-tags in the post-HASP process. Such an approach could also adversely affect RA import transactions which, based on the different contractual arrangements, may still need the additional time (the 20 minutes between the T-60 post-HASP process and the T-40 deadline to submit the E-tag transmission profile) up to the tagging deadline to complete the E-Tags submission. Due to the policy implications noted above, along with associated implementation challenges, the CAISO does not believe such an approach to be prudent.

Separately, the CAISO also considered an approach where it could reinstate transactions if PT wheels or RA imports ultimately did not submit an E-Tag with a transmission profile by T-40. However, such a process would require significant changes to systems, and the CAISO could not implement them by next summer. It also raises questions regarding the method of reinstating transactions in light of other processes that are ongoing and the practicality of reinstating transactions that may no longer be available because parties made alternate arrangements following a curtailment.

In spring of 2021, the CAISO implemented the settlement intertie deviation penalty structure intended to incentivize timely submission of E-tags and delivery of awarded imports. Import transactions that do not submit an E-Tag with a transmission profile by T-40 (or do not tag up to the awarded amount) are subject to a sizeable penalty - 75% of the higher of the real-time dispatch or fifteen minute market locational marginal price.<sup>17</sup> Because the CAISO has only

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<sup>17</sup> CAISO Tariff, section 11.31.2 (2020).

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recently implemented this penalty structure, the CAISO believes it is important to allow time for the penalty structure to function and see if it has the desired effect of incentivizing timely tagging and delivery of import transactions. The CAISO will monitor the application of the intertie deviation settlement penalty and its effectiveness in incentivizing timely tagging by the established deadlines and delivery of imports, and it will consider whether different changes are necessary to import tagging requirements based on that monitoring.

## **4.2 Transparency Enhancements**

The CAISO remains committed to providing the transparency enhancements suggested by stakeholders and identified in the issue paper. These enhancements, through the provision of important information and data, will help inform market participant decisions and strategies for wheeling through the CAISO system. Other enhancements will create improved situational awareness of conditions on the CAISO system and help inform potential risk of curtailment. In comments to the issue paper, stakeholders continued to support the additional data and information elements.

In late September, the CAISO published a document sharing aggregate data on registrations of Priority Wheeling Through transactions (PT wheels) across the system.<sup>18</sup> The document identifies the aggregate MW of Priority Wheeling Through registrations, at different import/export points, by month. The CAISO updates the document with every new registration following a validation process to ensure that the proper requirements have been met.

In the issue paper, in response to stakeholder requests, the CAISO also committed to provide data on resource adequacy imports shown at different tie points based on monthly resource adequacy plans. The CAISO plans to publish historical data on RA import showings. The data would identify the aggregate MW of RA imports shown at each tie point based on monthly RA plans for the last eighteen (18) months. The CAISO will also supplement that document based on the most recent RA monthly showings and aggregate the MW amounts shown at each tie point. This information, along with the Priority Wheeling Through data and other data that is already publicly available, can help market participants evaluate the level of usage and commitments at different tie points to inform import or wheeling through practices across the CAISO system. The CAISO anticipates providing this information in similar format as the Priority Wheeling Through data – via excel spreadsheet – to facilitate easier querying and comparison of data. Once the information is published, or ahead of publication, if stakeholders have suggestions on the particular format of the data, the CAISO is open to suggestions.

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<sup>18</sup> *Priority Wheeling Through Transactions Data*, accessed at <http://www.caiso.com/Pages/documentsbygroup.aspx?GroupID=6ED737E1-677F-437A-873A-0BD2E4F8E764>.

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The CAISO will publish operator adjusted load forecasts utilized in the Residual Unit Commitment (RUC) process. Stakeholders requested this information in comments leading up to the issue paper and the CAISO included this item within the scope of the initiative, particularly for any technology enhancements that may be needed in order to publish this information. As described in the issue paper,<sup>19</sup> currently the CAISO publishes the Day Ahead Market load forecast, but operator adjusted load forecast information utilized in RUC is not published. The CAISO intends to publish the operator adjusted RUC load forecast on OASIS, which will require technology enhancements.

The CAISO will publish curtailment data and information on wheeling though transactions, exports and load on OASIS, promptly after those curtailments have been issued. This includes curtailment data that may occur in the post-HASP process. The information was requested by stakeholders in comments to the July 13<sup>th</sup> stakeholder workshop, and the CAISO subsequently included it within the scope of this initiative. Currently, much of the information about curtailments is made available through after-the-fact reports, rather than soon after the curtailment event, and these reports have been identified in the issue paper.<sup>20</sup> The CAISO will delineate and include the technology enhancements needed to support publication of this information on OASIS.

The CAISO will also continue to work on developing a guide document that consolidates export and wheeling through business practice requirements into an addendum to a business practice to have a singular location that identifies relevant practices, as described in the issue paper.<sup>21</sup> In conjunction, the CAISO will review terms across the tariff, business practices, and relevant systems guide documents to ensure consistent use of terminology as it relates to establishing export and wheeling through priorities. The business practice addendum will follow the CAISO business practice process ahead of the summer.

Finally, in comments received to the issue paper, *Shell* recommended the CAISO publish a one page “fact sheet” that identifies relevant existing reports and transparency additions, along with their location. This fact sheet would be a simple reference document that can create awareness of different reports and data publicly available that is relevant for market participants wheeling through or exporting from the CAISO system. The CAISO will work to publish this suggested fact sheet promptly and announce its publication via market notice.

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<sup>19</sup> California Independent System Operator, *Issue Paper: External Load Forward Scheduling Rights Process*, section 4.1.4 (August 31, 2021). <http://www.caiso.com/InitiativeDocuments/IssuePaper-ExternalLoadForwardSchedulingRightsProcess.pdf>

<sup>20</sup> *Id.*, section 4.1.2.

<sup>21</sup> *Id.*, section 4.1.1

#### **4.2.1 Miscellaneous**

In the issue paper, the CAISO also included consideration of *Silicon Valley Power (SVP)* comments suggesting a definitional clarification in the tariff regarding the use of the term “CAISO Load” which was included in the summer tariff filing as part of section 34.12.3 discussing proration of transmission capacity between “CAISO Load and Priority Wheel Through Transactions.” In its comments, SVP noted that the tariff includes definition of the term “CAISO Demand” but does not explicitly define the term “CAISO Load” which is capitalized in the context of the relevant tariff section. SVP suggested defining the term as – “CAISO Load” or, alternatively, replacing “CAISO Load” in that sentence with the phrase “Load within the CAISO Balancing Authority Area.”

The CAISO recognizes that the term “Load” is defined in the tariff. For clarity, the CAISO recommends replacing the term “CAISO Load” in that section with the phrase “Load within the CAISO Balancing Authority Area” to avoid confusion, as SVP suggests. This clarification will be made as part of a future tariff filing in Phase 1 and will be part of draft tariff language subject to stakeholder comment and review.

### **5 Additional Information in Response to Stakeholder Requests & Questions**

This section of the draft final proposal responds to clarifying questions some stakeholders raised in their comments to the issue paper.

In their comments on the issue paper, Powerex seeks clarification whether the CAISO will pursue a framework for wheeling through service comparable to how wheeling-through service is provided over external transmission systems or a framework that considers the type of arrangements on other transmission systems in determining the type of priority the transactions gets across CAISO’s system (or the priority on CAISO’s system derives the level of priority across other systems). The CAISO addressed this question in the issue paper, but reiterates that the intent of Phase 2 of the initiative is to develop a transmission reservation process that provides wheeling-through service and priority across the CAISO system in a manner comparable to that offered by transmission providers across the west. Considering the type of transmission service secured across other transmission systems in determining the priority afforded across the CAISO system would not be consistent with FERC guidance or the practices of other transmission providers under their OATTs. A party securing transmission across a system does so based on the terms and conditions of the tariff applicable to that particular transmission system, and it is able to evaluate the risks of different types of

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transmission products and/or priorities considering costs and other factors. Each balancing authority area considers the priority established across its own system when taking reliability based actions on such transactions. Other ISOs/RTOs do not consider the type of arrangements on other systems when determining whether to take action on transactions across their system. They focus squarely on the type of transmission or priority established across their own system.

The *Salt River Project (SRP)* requested a clarification regarding the market provisions that give low-priority wheeling self-schedules initially scheduled in the day-ahead market a higher real-time market scheduling priority than low-priority wheeling self-schedules initially scheduled in the real-time market. SRP asked if this higher priority is for a wheel's integrated forward market schedule, or only for the wheel's residual unit commitment process schedule if it is less than the integrated forward market schedule. The CAISO clarifies that a low-priority wheeling self-schedule initially scheduled in the day-ahead market only has a higher priority for the amount of its residual unit commitment process schedule than new real-time market low-priority wheeling self-schedules.

SRP also asked the CAISO to explain the rationale for the change resulting from the *Market Enhancements for Summer 2021* stakeholder initiative that gave exports not specifically supported by non-resource adequacy capacity a lower scheduling priority in the real-time market than CAISO load even if the export has a residual unit commitment process schedule.<sup>22</sup> The CAISO explained in its transmittal letter to FERC for the tariff amendment to implement this change that the day-ahead market's RUC cannot preclude capacity procured by CAISO load serving entities under their resource adequacy requirements from backing exports.<sup>23</sup> The CAISO also explained that despite there being sufficient supply in the residual unit commitment process to back these exports, supply may tighten in real-time and this capacity under resource adequacy contracts may be needed to meet CAISO load.

## **6 Phase 2: Long-Term Framework for Establishing Scheduling Priorities – Transmission Service Reservation Process**

As noted in the Phase 1 straw proposal described earlier in this document, the CAISO hopes that extensions of the existing wheeling through interim scheduling priorities framework for next summer will permit the CAISO and stakeholders to focus their attention on the

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<sup>22</sup> CAIOS load and exports specifically supported by non-resource adequacy capacity have the same real-time market scheduling priority.

<sup>23</sup> <http://www.caiso.com/Documents/Apr28-2021-Tariff-Amendment-Load-Exports-and-Wheeling-Tariff-Amendment-ER21-1790.pdf> pages 32-33

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development of a long term framework for establishing scheduling priority across the CAISO system. This phase focuses on the development of a transmission reservation process for establishing scheduling priority on the CAISO system.

To that end, in section 8 of this draft final proposal, the CAISO shares an updated schedule for Phase 2 that will target developing a transmission reservation process framework by end of 2022 in order to allow time for robust implementation and providing sufficient notice for parties on the rules for wheeling through the CAISO system to inform contracting ahead of summer 2024, and allow for reservations of transmission for summer 2024. This timeline may permit for implementation ahead of summer 2024 depending upon the complexity of the transmission reservation process and implementation, along with potential consideration of a transition process to the new framework.

### **6.1.1 Issue Paper Stakeholder Comments**

Focusing briefly on the issue paper, stakeholder comments continued to support development of a transmission reservation process for establishing scheduling priorities in the market. The *Joint California LSEs* continued to support establishing a transmission reservation process that allows for reasonable native load protections while in alignment with the CAISO market structure instead of reverting to an OATT model. The CAISO generally agrees with the comments from the *Joint California LSEs* that, while open to exploring different frameworks, the long-term framework should be in alignment with CAISO's market framework and a move to an OATT model for reserving transmission service for all transactions, including load service, could have significant market impacts. The CAISO believes that, working collaboratively with the region, we can craft a transmission service reservation process that respects open access principles in allowing access for wheeling through the CAISO system, ensures the ability to reasonably account for native load needs, and is compatible with the CAISO's market framework. Such a framework should seek to minimize seams issues with the OATT framework as much as possible, and is further supported by the principles described in the issue paper.<sup>24</sup>

Stakeholders also provided comments regarding the structure of the working groups, largely supporting an open and inclusive structure to these meetings. The CAISO will make the working groups open to all stakeholders, publicly noticed, and noticed on the CAISO calendar. The meetings will be recorded to enable those that do not have an opportunity to participate in a particular working group to follow the discussions. The CAISO will work with the stakeholders that have self-identified to dedicate time and resources to participate in the

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<sup>24</sup> California ISO, *Issue Paper: External Load Forward Scheduling Rights Process*, section 3 (August 31, 2021).

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working groups to identify the meeting cadence, which will inform the meeting dates/times. As of the writing of this draft final proposal, the CAISO has scheduled working group meetings for the group discussing *Native Load and ATC Calculations*, while working groups 2 and 3 are in the process of being scheduled and noticed on the CAISO calendar. For more information on the stakeholder working groups, please refer to the issue paper and the initiative webpage where materials for each working group will be posted. The working groups will continue to meet throughout November and into ~~mid-December~~January 2022, and interested stakeholders are invited to consider sharing their perspectives and presenting ideas or proposals for discussion. The discussions in these working groups will inform development of a CAISO proposal.

### **6.1.2 Considerations of a Transmission Reservation Process**

Although this draft final proposal is limited to the Phase 1 scope of the initiative, the CAISO takes this opportunity to discuss further aspects regarding the development of a transmission reservation process under Phase 2 of the initiative.

As noted in the issue paper, key components of a transmission reservation framework include, among others, consideration of:

- *Calculation of Available Transfer Capability (ATC)* – in order to derive the transmission capacity available for reservation, there needs to be consideration of the transmission capacity needed to serve native load, other existing commitments, as well as associated margins for which transmission capacity can be set aside to maintain system reliability prior to deriving ATC.
- *Transmission product(s) and reservation timeframes* – identifying the type of transmission product(s) that can be offered across the CAISO system, across different timeframes to minimize seams issues with the OATT framework.
- *Study process and transmission service requests driving transmission upgrades* – a process under which parties seeking to secure transmission service to establish a high market scheduling priority on a long-term basis, to the extent there is not sufficient ATC, can be studied to identify potential system upgrades needed and can drive those system upgrades.

There are associated elements as well to consider such as rate structure depending on the type of framework and transmission product(s) offered; whether parties reserving transmission service also are eligible for Congestion Revenue Rights (CRR) allocations; and potential additional elements as the framework is developed. The subsequent sections below will

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provide additional details on elements noted above, in part informed by working group discussions that have occurred thus far.

As the CAISO and stakeholders work through the process of developing the transmission reservation process, it will also be important to identify the interdependencies with the EIM and the Extended Day Ahead Market. It will also be important to evaluate implications on the CRR process and integration with the transmission planning and the maximum import capacity (MIC) allocation processes, as well as any other processes. As noted in the issue paper, depending on the nature and complexity of the framework, it may be necessary to consider a transition process to the new framework.

In light of the accelerated timeline and narrow proposal for Phase 1 of the initiative allowing for focus on Phase 2 of the initiative, section 8 of this paper shares an updated schedule for Phase 2.

**Calculating ATC**

ATC represents the transmission capacity available for reservation, on a particular flowgate or path, after accounting for existing transmission commitments and relevant margins for which capacity is set aside ahead of deriving the transmission capacity available for reservation. ATC is generally derived based on the following formula, which may vary across transmission providers:

$$\text{ATC} = \text{TTC}^{25} - \text{ETC}^{26} - \text{CBM}^{27} - \text{TRM}^{28} + \text{Postbacks}^{29} + \text{Counterflows}^{30}$$

Transmission capacity can be set aside as an Existing Transmission Commitment (ETC) to serve native load needs across the time horizons for which ATC is calculated. ETC also consists of other existing commitment such as existing transmission contracts and transmission reservations. The calculation of transmission capacity needed to reliably serve

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<sup>25</sup> Total transfer capability across a path or flowgate.

<sup>26</sup> Existing transmission commitments, representative of existing contracts, existing reservations, and transmission capacity set aside to serve native load/network load.

<sup>27</sup> Capacity benefit margin which permits the setting aside of transmission capacity to deliver generation in declared energy emergencies to serve load and maintain system reliability.

<sup>28</sup> Transmission reliability margin which permits the setting aside of transmission capacity for different types of uncertainty in operations of the transmission system and maintenance of system reliability.

<sup>29</sup> Postbacks generally refers to addition of transmission capacity that may arise due to changes in transmission service reservations (i.e., expiration of reservations) or other conditions that have the effect of increasing ATC.

<sup>30</sup> Counterflows refers to transmission capacity that may increase the amount of ATC based on flows in the opposite direction across a path or flowgate.

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native load is largely based on generation and load assumptions to derive the amount of transmission capacity to set aside for native load needs on each path or flowgate. Through stakeholder working group 1, which is focused on calculation of native load needs and ATC, stakeholders have heard from various transmission providers across the western interconnection regarding their practices for deriving transmission capacity for native loads as ETC. For example, Idaho Power Company utilizes a 1-in-20 monthly peak load forecast to model the native load needs across the long-term ATC calculation horizon, whereas Salt River Project utilizes a 1-in-10 monthly peak load forecast, and BPA utilizes a 1-in-2 non-coincidental peak load forecast. These load forecasts are then paired with generation assumptions ultimately to derive the amount of ETC set aside for native load on each flowgate or path. The generation assumptions are informed by resources that may be owned or are under contract to the native load provider, but also by additional generation assumptions not under contract based upon how the transmission provider ultimately plans to serve the load, whether that be additional generation imports or dispatch of internal generation to serve load. This is consistent with practices of other ISOs/RTOs with a transmission reservation process as described in the issue paper. The CAISO and stakeholders will need to consider how the native load needs can be calculated across the CAISO's system and the type of load forecasts and generation assumptions that are prudent to inform the amount of transmission set aside. Additionally, there will continue to be a need to account for other existing transmission commitments such as existing transmission contracts and transmission ownership rights.

Transmission providers may also set aside transmission capacity as part of the Capacity Benefit Margin (CBM), for the delivery of imports into the BAA during an Energy Emergency Alert (EEA) level 2 or higher under NERC standards<sup>31</sup>, which has the further effect of decreasing ATC available for other reservations. Through working group 1, stakeholders learned that, for example, Idaho Power Company calculates CBM while SRP and BPA do not in part due to the fact that their other components of the methodology are robust enough to mitigate the need for a CBM. In Idaho Power Company's case, although the transmission capacity set aside as CBM is firm transmission, the transmission capacity is released as non-firm transmission capacity and available for reservation as such. In the event of an EEA2, if the balancing authority needs to call upon imports and utilize the firm transmission set aside under CBM to deliver these, if the particular flowgate or path is fully scheduled the balancing authority may need to curtail non-firm schedules in order to deliver those imports because the transmission capacity was set aside as firm transmission under CBM. The CAISO and stakeholders will need to consider how the CAISO could derive a CBM value – whether based

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<sup>31</sup> NERC Standard MOD-004-1, Capacity Benefit Margin.

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on a loss of load expectation, loss of generation or some other study – and across which import points to set aside that transmission capacity.

Transmission providers may also set aside transmission capacity as a Transmission Reliability Margin (TRM) for different types of uncertainties as described under NERC standards.<sup>32</sup> Idaho Power Company makes very limited use of TRM, setting aside firm transmission capacity as TRM for unscheduled flows. On the other hand, SRP accounts for additional uncertainty through the TRM including delivery of replacement power in instances where a transmission line may go on outage as the single largest contingency thus enabling delivery of replacement power on firm transmission to serve load. Firm transmission capacity set aside as TRM is released and sold as non-firm transmission capacity on OASIS, but to the extent an event triggers the need to utilize TRM such as delivery of replacement power, there may be a need to curtail non-firm transmission schedules to enable flows of replacement power utilizing the TRM. The CAISO and stakeholders will need to consider for which type of uncertainty to aside firm transmission capacity as TRM and across which paths or flowgates, which would also have the effect of decreasing the amount of ATC available for other transactions to reserve.

Through the working group discussions thus far, the emerging theme is that each transmission system has different needs and different factors that may drive how they set aside transmission capacity for native load (i.e., the type of load forecast used, generation assumptions) and the type of margins to account for risk and uncertainty, be it CBM and/or TRM. Setting aside firm transmission capacity as ETC, CBM and TRM decreases the firm ATC that is available on particular paths and/or flowgates ensuring they can serve native loads and maintain system reliability, while providing open access to their system based on a transparent methodology for calculating firm ATC. To the extent the firm transmission set aside to serve native load (ETC) is not expected to be utilized, it is released as firm ATC and made available for reservation. The CAISO and stakeholders will need to take into account, as stated earlier, unique aspects of the CAISO system and the organized market in determining ultimately how to derive the different components of the ATC methodology and potential need for variability in assumptions across different timeframes for which ATC is derived (i.e. long-term ATC and short-term ATC).

### **Transmission Products and Reservation Timeframes**

Another key component of a transmission reservation process, which will be subject of working group 2 discussions, is the determining of the type and qualities of the transmission product(s) that parties can reserve to establish the higher scheduling priority across the CAISO system along with the timeframes across which these can be reserved. As noted earlier, it will be

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<sup>32</sup> NERC Standard MOD-008-1, TRM Calculation Methodology.

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important to consider the impacts on the market when determining the transmission service product(s). Moving to an exact OATT framework, under which every transaction on the system needs to reserve transmission in advance and schedule or tag the transmission service, will likely be very disruptive to the current market structure, and thus may be incompatible. But, there may be varied frameworks under which parties can reserve point-to-point transmission service in advance to establish the high scheduling priority across different timeframes based on calculated ATC, while still being able to offer transactions into the market without the reserved transmission service recognizing that these transactions may have a lower scheduling priority. Allowing market participants to reserve transmission service and establish the high scheduling priority across different timeframes such as long-term (1-year or longer) and short term (monthly, weekly and/or daily) can bridge key seams with the OATT framework, which allows parties to reserve transmission across different timeframes to provide a level of certainty that the transmission is secured. The CAISO is open to considering different types of frameworks and ideas for transmission product(s).

**Study Process and Transmission Upgrades**

Another key element of a transmission reservation process is a framework that allows parties to seek longer-term certainty and a high scheduling priority across the CAISO system. Such a framework includes the ability to study and fund transmission upgrades that would provide that certainty. In upcoming working group 3 discussions, the CAISO and stakeholders will learn about transmission provider practices across the west and consider a similar approach on the CAISO system that can be integrated with current planning processes. Under the OATT, if firm transmission service of a year or longer in duration cannot be accommodated, the transmission provider may study the request for service, at the request and cost of the entity seeking service, to identify potential transmission upgrades that may be needed to accommodate the requested service of the duration they are seeking. The entity seeking the service can fund the transmission upgrade to secure the transmission capacity. The CAISO and stakeholders will need to consider enhancements to the current CAISO planning process to integrate the ability of external entities to drive studies and transmission upgrades, funded by the requesting party, in order to obtain the transmission capacity and certainty across the CAISO system if so desired.

The CAISO expects that through the Phase 2 stakeholder working groups, we can learn about practices across the west and ultimately inform development of the CAISO transmission reservation framework that protects native load needs while providing open access to the CAISO system. The CAISO is also actively working on engaging consultants to help us evaluate implementation needs and facilitate aspects of the stakeholder process as we work collaboratively to develop a transmission reservation process.

## 7 EIM Decisional Classification

This initiative will consider changes to the forward scheduling rights for schedules to export from or wheel through the CAISO balancing authority area. CAISO staff believes that, given the range of potential tariff changes contemplated at this early stage of the initiative, the EIM Governing Body would have an advisory role with respect to both Phase 1 and Phase 2.

The role of the EIM Governing Body with respect to policy initiatives is in the process of changing. On August 20, 2021, the Board of Governors and the EIM Governing Body jointly adopted the proposal of the Governance Review Committee, which would reformulate the authority over Section 205 filings that the Board of Governors shares with the EIM Governing Body. Although the new rules have not yet been implemented in the ISO's governance documents, the GRC's final proposal includes a clear statement of the scope:

Joint authority extends to all proposals to change or establish any CAISO tariff rule(s) applicable to the EIM 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.

GRC Part II Draft Final Proposal, page 8.

Both Phase I and Phase II of this initiative would adjust the tariff rules that govern whether and to what extent schedules to wheel through or export from the CAISO balancing authority area would receive priority. None of the currently contemplated tariff would 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." Instead, the proposed tariff rules would be applicable "only to the CAISO balancing authority area or to the CAISO-controlled grid." Accordingly, these proposals fall outside the scope of joint authority.

The GRC proposal as adopted provides that the EIM Governing Body has an advisory role over any proposal to change rules of the real-time market that fall outside the scope of joint authority. See GRC Part II Draft Final Proposal, page 12. This ensures that the EIM Governing Body "has an opportunity to provide formal input on all proposals to change real time market rules, including those rules that may significantly impact market participants in EIM balancing authority areas but that do not directly apply to them in their capacity as EIM participants." Id. at 13. Because the proposals contemplate changes to the rules of the real-time market, the EIM Governing Body would have an advisory role with respect to those changes.

This proposed classification reflects the current state of this initiative and may change as the stakeholder process moves ahead. Stakeholders are encouraged to submit a response to the EIM classification of this initiative as described above in their written comments, particularly if they have concerns or questions.

**Phase 1 Draft Final Proposal**

## 8 Stakeholder Engagement

The tables below outline the proposed schedule for both phases of the initiative. The timeline and milestones for Phase 1 of the initiative, the subject of this draft final proposal, has been updated to reflect a January special session of the CAISO Board of Governors and EIM Governing Body meeting. Once that date has been identified, it will be publicly announced. The CAISO also plans to move promptly with a FERC filing seeking approval of the extension of the framework in order to provide certainty of the framework going into next summer and allow for a shift in focus toward development of the longer term framework under Phase 2 of the initiative.

The timeline for Phase 2 of the initiative identifies a straw proposal in late April 2022 to allow time for a comprehensive proposal, targeting an October 2022 draft final proposal. This timeline permits lead time for implementation of a transmission reservation process and allowing for reservations of transmission to support transactions by summer 2024. It is the CAISO's intent to move expeditiously through Phase 2 of the initiative with robust stakeholder engagement and discussion.

### Phase 1 Schedule

Date:	Activity:
Jul 13	Stakeholder workshop
Sept 9	Stakeholder meeting
Sept 30	Comments due - issue paper
Dec 10	Post draft final proposal and draft tariff language
Dec 20	Stakeholder meeting – proposal and tariff
<b>2022</b>	
Jan 7	Comments due – proposal and tariff

### Phase 2 Schedule (2022)

Date:	Activity:
Week of Apr 25	Post straw proposal
Week of June 20	Post revised straw proposal
Week of Aug 22	Post revised straw proposal
Week of Oct 10	Post Draft Final Proposal
Week of Nov 21	Post final proposal
Dec 14-15	Joint ISO Board and EIM Governing Body meeting
Late Dec	FERC filing

**Phase 1 Draft Final Proposal**

Mid to late Jan	Special ISO Board meeting (decision)	By June 2024	Implementation
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