Extended Day-Ahead Market ISO Balancing Authority Area Participation Rules

Track A1 Final Proposal
(redline version)

August 25, 2023

Note: this redline version of the final proposal shows key changes from the July 25, 2023 draft final proposal. Please also see the clean version posted on the ISO website.

EDAM ISO BAA Participation Rules
Track A1 Final Proposal

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1. Executive Summary

On February 1st, 2023 the ISO Board of Governors and the Western Energy Imbalance Market (WEIM) Governing Body approved the proposed market design on an Extended Day Ahead Market (EDAM) following extensive stakeholder collaboration throughout 2022 that informed policy development.[1] The EDAM builds upon the WEIM to increase regional coordination, support state policy goals, enhance reliability, and meet demand cost-effectively. Specifically, the EDAM will position supply efficiently in the day-ahead timeframe to meet next-day expected grid conditions across the wider footprint leveraging transmission availability and connectivity across the footprint. The EDAM design describes the overarching market rules, functions, and requirements of a day-ahead market in the West, but recognizes that each balancing authority area in the EDAM area (EDAM BAA) will have further requirements to define in developing changes to their tariffs to support participation in EDAM.[2]

This initiative – *EDAM ISO BAA Participation Rules* – seeks to define unique aspects of how the ISO balancing authority area (BAA) will participate in EDAM. The initiative scope includes how to set the ISO BAA's net EDAM export transfer constraint, how the ISO BAA will position itself to meet the day-ahead resource sufficiency evaluation (RSE), how certain revenues and surcharges will be allocated within the BAA and other key topics to support participation in the EDAM. As illustrated below in figure 1, this initiative has been separated into three tracks:

- **Track A1** consists of four items that are mandatory for day 1 of EDAM, and the ISO plans to bring such items to the ISO Board of Governors in September 2023.

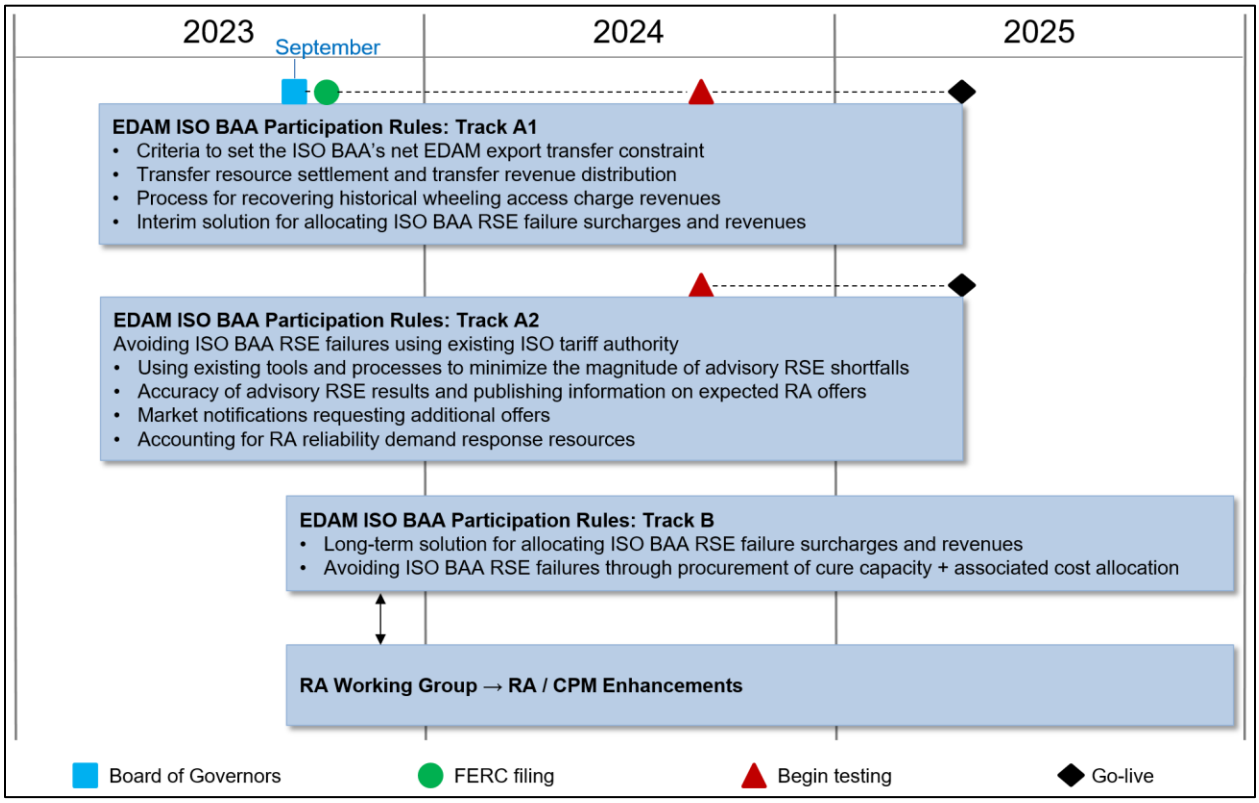
- **Track A2** will focus on solutions that will help the ISO BAA avoid RSE failures, using existing ISO tariff authority. Therefore, while track A2 consists of items that are mandatory for day 1 of EDAM, it is not expected to require ISO tariff changes or a Board of Governors decision. Track A2 ideas that have been discussed with stakeholders thus far include: (1) using existing tools and processes to minimize the magnitude of advisory RSE shortfalls (2) accuracy of advisory RSE results and publishing information on expected resource adequacy (RA) offers; (3) market notifications requesting additional offers; (4) accounting for RA reliability demand response resources. The ISO plans to work with stakeholders in the remaining months of 2023 to finalize the track A2 policy and associated implementation actions (e.g., business practice manuals, operating procedures, etc.).

[1] *Extended Day Ahead Market (EDAM)* initiative page, https://stakeholdercenter.caiso.com/StakeholderInitiatives/Extended-day-ahead-market

[2] In the draft EDAM tariff publication, the defined term "EDAM Entity" captures those balancing authorities that execute the EDAM Addendum to EIM Entity Agreement with the CAISO to enable operation of the Day-Ahead Market in addition to the Real-Time Market in the EDAM Entity Balancing Authority Area. While the CAISO will not execute an EDAM Addendum to EIM Entity Agreement, for purposes of this paper and to avoid unnecessary confusion, the term "EDAM entity" used in this paper should not be read to exclude the CAISO.

- **Track B** will address at least two longer-term items that will be coordinated with RA policy development: (1) developing a long-term solution for allocating RSE failure surcharges and revenues; (2) exploring a cure capacity procurement mechanism for the ISO BAA to use as a last resort to avoid failing the RSE.[3] With respect to the first item, one option that will be considered is a stakeholder-proposed two-tier methodology for allocating RSE failure surcharges.[4] The ISO will begin track B policy development in October 2023, but implementation work will not begin until after EDAM launch.

Figure 1: *EDAM ISO BAA Participation Rules – Scope, Tracks and Schedule*



The primary objective of this policy paper is to provide a final proposal for track A1. As mentioned above, track A1 consists of four items that are mandatory for day 1 of EDAM, and the ISO plans to bring such items to the ISO Board of Governors in September 2023. This track A1 final proposal, which is the

[3] In October 2023, the ISO plans to discuss with stakeholders the proposed scope of track B and whether any other critical items should be added.

[4] In response to the June 14, 2023 track A1 workshop, four stakeholders (PG&E, SDG&E, Six Cities, BAMx) proposed a two-tier methodology for allocating RSE failure surcharges. In the first tier, surcharges are allocated to LSEs whose month-ahead supply portfolios (RA + Non-RA) are less than their daily peak LSE metered demand. In the second tier, surcharges are allocated pro-rata to LSE metered demand. For more detail on this stakeholder-proposed methodology, please refer to the stakeholder comments submitted on June 28, 2023: California ISO - All comments (caiso.com)

result of significant collaboration between ISO staff and stakeholders since the initial workshop in April 2023, is summarized directly below.

Track A1: criteria to set the ISO BAA's net EDAM export transfer constraint

The net EDAM export transfer constraint is an optional hourly constraint, set in advance of the day-ahead market, that manages the amount of internal BAA supply that is exported to support EDAM transfers. As established by EDAM design, the net EDAM export transfer constraint governs the potential usages of surplus supply beyond RSE requirements (demand forecast requirement, imbalance reserve requirement, and ancillary service requirement); the amount of supply reserved will be governed by the EDAM reliability margin. An optional "confidence factor" can be used to account for the delivery risk associated with the portion of offered supply that is not eligible for the RSE, but may be used to facilitate EDAM export transfers.

For the ISO BAA, the net EDAM export transfer constraint will always be enabled, however its inputs will vary depending on expected operating conditions. This final proposal distinguishes between "stressed hours" and "non-stressed hours," and this distinction is applied, at least initially, to the reliability margin only. This approach responds to stakeholder concerns and will enable the ISO BAA to apply targeted conservative criteria during conditions of increased reliability risk. The ISO's proposed BPM criteria are listed and explained in chapter 3.

Track A1: transfer resource settlement and transfer revenue distribution

This final proposal remains substantially consistent with the draft final proposal, but the ISO has enhanced the granularity of the description. Upon implementation of EDAM, transfer resource schedules for energy, imbalance reserves, and reliability capacity will be explicitly settled within the ISO BAA. The transfer settlement will generate net ISO BAA transfer payments/charges as well as transfer revenue which need to be paid or collected from ISO BAA participants. The ISO proposes the following. Please refer to chapter 4 for more detail.

- Transfer resource settlement: settlement of resources in support of EDAM transfers
  - Transfer system resources associated with ETC/TORs: net transfer settlement amount to scheduling coordinators that scheduled in accordance with section 33.18.2.2.1
  - Transfer system resources associated with the CAISO BAA: net transfer settlement amount to scheduling coordinators in proration to their metered demand as compared to ISO BAA metered demand excluding balanced ETC/TOR metered demand
  - ~~pro-rata allocation of the ISO BAA net transfer settlement amount to metered demand.~~

- Transfer revenue distribution: the distribution of the additional revenue generated through EDAM transfers
  - To the ETC/TORs that released rights in advance as provided in section 33.18.2.2.2

- Directly to scheduling coordinators for ETC/TORs that exercise their rights, with the remainder to scheduling coordinators based on measured demand excluding demand associated with balanced ETC/TOR self-schedules

- ~~pro-rata allocation to transmission customer(s), Transmission Owners Rights (TOR) holders / Existing Transmission Contract Rights (ETC) holders and measured demand.~~
  - ~~Transmission customer(s) will receive a direct allocation of Pathway 2 transfer revenue.~~
  - ~~Scheduling coordinator(s) will receive transfer revenue in proportion to scheduled TOR/ETC rights plus TOR/ETC transmission released to the market to facilitate transfers in relationship to total available transfer capacity.~~
  - ~~Scheduling coordinator(s) of measured demand for the non-TOR/ETC transfer transmission.~~

Track A1: process for recovering historical wheeling access charge revenues

This final proposal Transmission Revenue Recoverable Amount calculation and distribution of the collected ISO BAA Transmission Revenue Recoverable Amount allocation remains consistent with the draft final proposal, with some additional detail. Please refer to chapter 5 for more detail.

- Calculation of Transmission Revenue Recoverable Amount: the Transmission Revenue Recoverable Amount will be calculated as a sum of the Historical PTO WAC Recoverable Revenue, New Transmission Project Recoverable PTO WAC Revenue, and PTO Excess Wheel-Through Recoverable Amount.
  - Historical WAC Recoverable Revenue is product of the three year average estimated reduction of wheeling transaction at transfer interface and current year wheeling access rate
  - New Transmission Project Recoverable WAC Revenue is the product of the estimated foregone wheeling transaction at new transfer interface and wheeling access rate
  - Excess Wheel-Through Recoverable Amount is the product of the Excess Wheel through quantity and wheeling access rate, further distributed to PTO and SPTO based upon Transmission Revenue Requirement and proxy Transmission Revenue Requirement.

- Distribution of Collected WAC Recoverable Amounts: the ISO Transmission Revenue Recoverable Amount will be distributed to PTO/SPTO, in proportion the PTO Transmission Recoverable Amount in relationship to ISO Transmission Recoverable Amount.

Track A1: Interim solution for allocating ISO BAA RSE failure surcharges and revenues

This final proposal remains consistent with the draft final proposal. Upon implementation of EDAM, surcharges and revenues will each be allocated on an hourly basis, pro-rata to scheduling coordinator

metered demand within the ISO BAA. However, as mentioned above, the ISO and stakeholders will work in track B to develop long-term solutions for allocating RSE failure surcharges and revenues. Please refer to chapter 6 for more detail.

2. Initiative Schedule

Table 1 below shows the initiative schedule through the end of 2023 and now includes initial activities for track A2 and track B.

Table 1: *EDAM ISO BAA Participation Rules – Initiative Schedule through 2023*

Date	Milestone
April 5, 2023	Stakeholder workshop to launch the initiative
April 19, 2023	Due date for stakeholder comments on workshop
May 5, 2023	Publish issue paper and track A1 straw proposal
May 10, 2023	Stakeholder meeting to discuss issue paper and track A1 straw proposal
May 17, 2023	Due date for stakeholder comments on issue paper and track A1 straw proposal
June 14, 2023	Additional stakeholder workshop focused on track A1
June 28, 2023	Due date for stakeholder comments on track A1 stakeholder workshop
July 25, 2023	Publish track A1 draft final proposal
August 2, 2023	Stakeholder meeting to discuss track A1 draft final proposal
August 14, 2023	Due date for stakeholder comments on track A1 draft final proposal
August 25, 2023	Publish track A1 final proposal and draft tariff language
August 31, 2023	Stakeholder meeting to review track A1 final proposal and draft tariff language
Sep 14, 2023	Due date for stakeholder comments on track A1 draft tariff language
Sep 21, 2023	ISO Board of Governors decision on track A1
Oct 12, 2023	Stakeholder workshop to discuss track A2 and track B
Oct 26, 2023	Due date for stakeholder comments on workshop
Nov 2023	Publish track A2 and track B straw proposal

3. Track A1: Criteria to Set the ISO BAA's Net EDAM Export Transfer Constraint

Background

An important aspect of the EDAM design is the EDAM Resource Sufficiency Evaluation (RSE). The purpose of the RSE is to incentivize all EDAM BAAs (which includes the ISO BAA) to come to the market with sufficient forward-procured supply to meet their expected next day obligations. Accordingly, the RSE will test whether each EDAM BAA has sufficient supply in the day-ahead market to meet its next day obligations, prior to engaging in transfers with other participating EDAM Area BAAs. The RSE will be conducted at approximately 10:00 AM PST, immediately prior to when the day-ahead market is run. The EDAM RSE will optimally utilize each EDAM BAA's bid-in supply to meet its demand forecast, uncertainty requirements and ancillary services requirements for each hour of the next day. The RSE will use the ISO

market optimization and all existing resources models, but will not consider transmission constraints. To the extent an EDAM BAA fails the RSE, it will be subject to financial surcharges which are intended to incent day-ahead sufficiency through forward procurement of supply.

The net EDAM export transfer constraint is an additional reliability tool designed to allow each EDAM BAA to manage supply in excess of the RSE requirements to respond to potential reliability concerns that may arise between day-ahead and real-time for which no current market products exist. More specifically, the constraint is an hourly mechanism, set in advance of the day-ahead market, that manages the amount of internal BAA supply that is available to support EDAM export transfers. This is an optional constraint whose use is equally available to all EDAM BAAs. As established by the EDAM design, the net EDAM export transfer constraint will be based on the difference between bid in supply and the RSE requirements (Forecast Requirement, Imbalance Reserve Requirement, and Ancillary Service Requirement) as described directly below.[5]

$$\boldsymbol{Net\ Export} \leq (\boldsymbol{RSE\ Eligible\ Supply} + \boldsymbol{Non\ RSE\ Eligible\ Supply\ x\ Confidence\ Factor}) \\ -\boldsymbol{RSE\ Obligation} - \boldsymbol{EDAM\ Reliability\ Margin}$$

Where:

- *RSE Eligible Supply* = supply that is eligible to satisfy the EDAM RSE.
- *Non RSE Eligible Supply* = supply that is ineligible to count toward the EDAM RSE. For the ISO BAA, intertie bids from supply not under contract are ineligible RSE supply.[6]
- *Confidence Factor* = an optional factor that accounts for confidence in delivery associated with a portion of the Non RSE Eligible Supply. For example, in the ISO BAA the confidence factor could be used to adjust for the risk of untagged intertie day-ahead schedules.
- *RSE Obligation* = the EDAM RSE requirements, including the Forecast Requirement, Imbalance Reserves Requirement, and the Ancillary Service Requirement.[7] The RSE requirements for the ISO BAA will include obligations associated with high priority exports (PT exports to non-EDAM BAAs) since they are considered in the RSE. [8]
- *EDAM Reliability Margin* = represents an additional amount of capacity established by the EDAM BAA to reduce the limit on the BAA net export transfer, if necessary, in limited conditions.

The net EDAM export transfer constraint cannot be negative or set at a level below the shown bucket 1 transfers out of an EDAM BAA. If an EDAM entity relies on exports to meet the RSE from the EDAM BAA

[5] The mathematical formulation of the Net EDAM Export Transfer Constraint can be found in Appendix 4 of the EDAM Final Proposal: http://www.caiso.com/InitiativeDocuments/FinalProposal-ExtendedDay-AheadMarket.pdf

[6] The ISO will provide functionality that will allow parties to distinguish whether the supply is RSE eligible or non-RSE eligible supply, such as whether the supply is under contract.

[7] The EDAM RSE requirements are included in Section 33.31.1.2.1 of the draft EDAM tariff.

[8] ISO does not propose to include operator load conformance in this input as operator load conformance is not an input into the RSE requirements.

imposing the net export transfer constraint, the EDAM BAA sourcing the supply cannot reduce the net export transfer below the export committed to the receiving EDAM BAA's RSE.

In the ISO BAA, RA supply is largely obligated to submit day-ahead offers through a must offer obligation. Total day-ahead supply offers may exceed the ISO BAA's EDAM RSE requirements. The net EDAM export transfer constraint will help mitigate the risk that this excess supply will be committed economically to support EDAM transfers and will protect the RA supply that is available to help respond to potential ISO BAA reliability events.

Stakeholder perspectives

The ISO proposes to apply the net EDAM export transfer constraint to address risks between the day-ahead and real-time markets. The result of applying the conservative criteria proposed by the ISO is to ensure EDAM transfers that may be backed by supply from RA resources can be awarded without a decrease in reliability for internal CAISO BAA LSEs, who have contracted the RA supply to meet their reliability needs.

A majority of stakeholders have strongly advocated for conservative settings of both the confidence factor and reliability margin in all conditions. The ISO instead is proposing criteria to define stressed and non-stressed conditions. This will allow the CAISO BAA flexibility in how it utilizes the EDAM reliability margin as well as the confidence factor in varying system conditions. The ISO agrees with the desire to implement conservative criteria with the inception of EDAM, but believes the ability to differentiate between system conditions will allow the CAISO BAA to evolve its use of the EDAM net export transfer constraint as it gains experience in the EDAM. The conservative BPM criteria proposed in this paper prioritize reliability by ensuring sufficient residual supply is available based on identifiable reliability risks that can occur between the day-ahead and real-time markets.

In comments submitted in response to the ISO's track A1 draft final proposal, a number of stakeholders asked for clarification on how exactly the ISO will incorporate net-load peak hours into its proposed definition of stressed hours. In the following section, the ISO clarifies (in footnote #11) that it plans to treat net-load peak hours (i.e., 4pm-9pm) throughout the calendar year as stressed, unless it can be shown clearly with data through the BPM process that net-load peak hours in specific months or seasons are not correlated with stressed/tight conditions.

In other comments submitted in response to the ISO's track A1 draft final proposal, SDG&E recommended that the ISO take the criteria it has proposed for setting the reliability margin in stressed hours and use such criteria for setting the reliability margin in non-stressed hours. To justify this recommendation, SDG&E pointed to July 25, 2023 and explained that "even though the CAISO system would not have been considered stressed, a heatwave in a neighboring Balancing Authority (BAA) created huge demand for exports from CAISO, to the point where CAISO was exporting roughly 10,000 MWs and then had to call an Energy Emergency Alert 1 (EEA 1)." The ISO understands SDG&E's perspective, but does not believe changes to the proposed approach for setting the reliability margin in non-stressed hours are needed. First, the EEA Watch that occurred on July 25, 2023 was declared at

7:26pm and ended at 10:00pm, and so much of this period overlaps with the net-load peak hours that the ISO is proposing to define as stressed. Second, in non-stressed hours, ISO BAA system operators will have full discretion to set the reliability margin at levels needed to mitigate any risks, including risks associated with broader regional conditions.

In other comments, Western Power Trading Forum suggested that the ISO remove the imbalance reserve up requirement criterion from the default calculation of stressed hour reliability margins. The rationale for Western Power Trading Forum's suggestion is that the imbalance reserve up requirement is already accounted for in the net EDAM export transfer constraint. More specifically, the imbalance reserve up requirement is one of the components that comprise the RSE obligation, and the net EDAM export transfer constraint fully accounts for the RSE obligation. Accordingly, by including the imbalance reserve up requirement as one of the criteria for calculating the stressed hour reliability margin, the ISO would be double-counting the imbalance reserve up requirement. The ISO agrees with this rationale and has accordingly amended its proposed reliability margin BPM details.

Western Power Trading Forum also asked the ISO to clarify the replacement reserve criterion of the default calculation of stressed hour reliability margins. This criterion, which is based on the ISO BAA's most severe single contingency, is aligned with the BAL-002-WECC-3 requirement. As explained below in footnote #13, the ISO currently procures contingency reserves within its day-ahead market, but does not explicitly procure flexible capacity to ensure it is able to recover these reserves within 60 minutes following deployment. The ISO's proposal to include this quantity in the reliability margin will help to reserve unloaded flexible capacity to ensure the ISO BAA is able to replace its contingency reserves within NERC required timelines.

Finally, Western Power Trading Forum asked the ISO to "commit to releasing a system operating message identifying hours that are being considered a "stressed hour" and to the timely publishing of the net EDAM Export Transfer Constraint MW and the underlying formulation components (RSE supply, RSE obligation, reliability margin, confidence factor, and non-eligible RSE supply) on OASIS." The ISO understands this request and will explore it as part of its commitment to providing data transparency. On a similar note, PG&E requested that "the non-stressed reliability margin and the criteria for defining stressed conditions be actively monitored and discussed within an appropriate balancing area forum with the intent of confirming that the constraint is functioning in the market as expected." The ISO agrees with this request and will facilitate such monitoring and discussions in the appropriate forum.

The ISO has also received requests for additional detail on how the constraint would be calculated, and what relevant data would serve as an input to that calculation. Responding to a specific question about the state's Strategic Reliability Reserve (SRR)[9] program: the ISO is not proposing to include resources in the SRR program in the calculation of available supply within its net EDAM export transfer constraint. The SRR program is intended as a transitional tool to address the reliability risks from extreme events. An extreme event is defined as an "event occurring at a time and place in which weather, climate, or

[9] The Strategic Reliability Reserve program is the official program name for what may colloquially be known as "strategic reserves."

environmental conditions, including temperature, precipitation, drought, fire, or flooding, present a level of risk that would constitute or exceed a one-in-ten event, as referred to by the North American Electric Reliability Corporation, including when forecast in advance by a load-serving entity or local publicly owned electric utility." [10] The ISO is proposing that it would be inappropriate to use this emergency reliability tool to enable additional transfers outside the ISO BAA. The resource adequacy program is intended to ensure sufficient supply offers are available to clear the day-ahead and real-time markets, and the proposed treatment of the SRR resources ensures that it continues to function in that manner.

Stressed vs Non–Stressed Hours

For the ISO BAA, the net EDAM export transfer constraint will always be enabled, however its inputs will vary depending on expected operating conditions. This final proposal distinguishes between "stressed hours" and "non-stressed hours," and this distinction is applied, at least initially, to the reliability margin only. This approach responds to stakeholder concerns and will enable the ISO BAA to apply targeted conservative criteria during conditions of increased reliability risk. Defining the criteria in a manner that differentiates between stressed and non-stressed conditions will allow for the CAISO BAA to more dynamically update this criteria as it gains additional experience operating within the EDAM.

The ISO's proposed BPM criteria are listed below, and the ISO has made two clarifications. First, while the 8am day-ahead CAISO BAA operations meeting will be a key source of information, CAISO BAA system operators will have until 10am to finalize the identification of stressed vs. non-stressed hours and to accordingly set the reliability margins and confidence factors. Second, as explained above, the ISO has modified footnote #11 to clarify how net-load peak hours will be treated as stressed hours.

Proposed Details for BPMs: definition of stressed hours

Any hour that meets one of the following conditions, as determined by CAISO BAA system operations before the day-ahead market closes at 10am. ~~of approximately 8am day-ahead ISO BAA operations meeting~~

- Net-load peak hours; defined as hour-ending 17 through hour-ending 21 (i.e., 4pm-9pm)[11]
- Operational RA capacity + RA credits < demand forecast + contingency reserve requirement + regulation reserve + imbalance reserve upward requirement.
- Operational net RA capacity + RA credits < net demand forecast + contingency reserve requirement + regulation reserve + imbalance reserve upward requirement.

[10] Assembly Bill (AB) 205, 2022.

[11] The ISO plans to treat net-load peak hours (i.e., 4pm-9pm) throughout the calendar year as stressed, unless it can be shown clearly with data (through the BPM process) that net-load peak hours in specific months or seasons are not correlated with stressed/tight conditions. ~~Net-load peak hours automatic triggering of stressed conditions will be applied on a seasonal basis. Additional details regarding the application of this rule will be defined through the BPM process.~~

- Advisory RSE upward failure quantity – expected day-ahead offers not yet submitted by available RA resources with day-ahead must offer obligations > 0
- Restricted Maintenance Operations
- Wide-area Transmission Emergency
- D+2 RUC infeasibility
- EEA Watch, if called before ~~8am day-ahead~~the day-ahead market closes at 10am
- Flex Alert, if called before ~~8am day-ahead~~the day-ahead market closes at 10am

The proposed conditions above are intended to broadly define the definition of stressed hours, which is a reliability-focused approach – appropriate in particular for the initial months of EDAM. These proposed conditions have been shaped by ISO BAA stakeholders, who have proactively engaged with ISO staff over the last several months.

EDAM Reliability Margin

The EDAM reliability margin ensures the CAISO BAA is able to hold back excess forward contracted capacity (capacity beyond what is required to pass the RSE) from supporting EDAM export transfers, when necessary to mitigate potential reliability risks. In passing the EDAM RSE the CAISO BAA will show supply necessary to meet the demand, ancillary service and imbalance reserve requirements. The results of the EDAM RSE are used to set the EDAM net transfer export limit. This quantity will be protected from being exported as an EDAM transfer, whether the quantities are procured or not within the market run.[12] The EDAM reliability margin is intended to either protect for a) reliability needs for which there isn't an explicit market product, or b) protect for intra-day changes that can occur between the day ahead and real time markets.

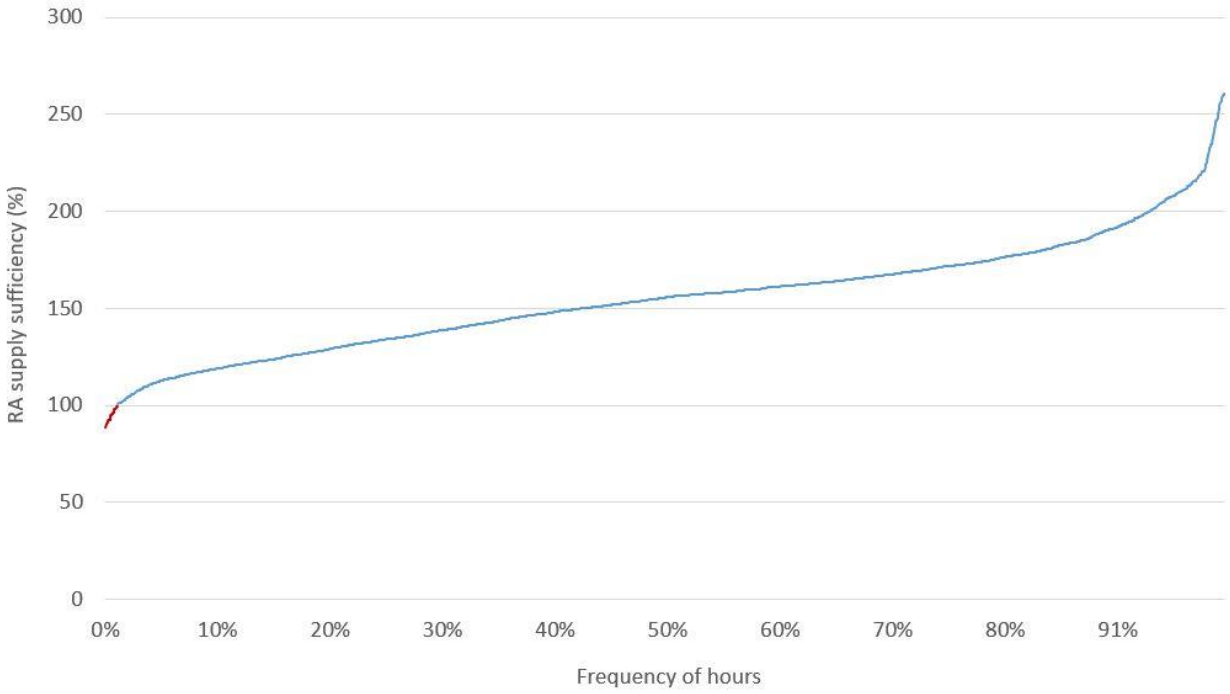
The ISO proposes to differentiate between stressed and non-stressed hours, providing CAISO BAA system operators discretion in how they will set the reliability margin. During stressed hours the reliability margin will be set by taking, at a minimum, the max of the ~~three~~ two criteria listed below (see "proposed details for BPMs: reliability margin"). At the discretion of the CAISO BAA system operators the reliability margin can be set above the maximum of the two ~~three~~ criteria, as these ~~three~~ two criteria are not mutually exclusive (i.e., the underlying reliability risks may not occur in isolation). This treatment is appropriate as it ensures that a minimum level of reliability, defined by agreed-upon criteria, is maintained. During non-stressed conditions the reliability margin will be determined by CAISO BAA system operators. The proposal to allow more BAA operator discretion during non-stressed hours is appropriate, as surplus supply conditions found in non-stressed hours reduces the reliability risk for which the reliability margin intends to protect.

For example, figure 2 shows the frequency of hours where operational RA supply was sufficient to cover the ISO BAA's load obligation in the day-ahead market (including operating reserve requirements), from July through September of 2022, which is the period when the ISO BAA experienced the highest demand on the system. As shown in the chart, approximately 99% of the hours were sufficient. Only about 1%

[12] Imbalance reserves are procured on a demand curve, with procured quantities being relaxed as prices increase

were insufficient: the far left portion of the curve that dips below 100%. Furthermore, 90.05% of the hours were sufficient by at least a 19.27% margin. Expressed in MW values: 90.05% of the hours were sufficient by at least 7,530 MW, and none of this analysis includes non-RA supply. This data confirms observations made by ISO BAA system operators, specifically that the ISO BAA has significant surplus supply in non-stressed hours. Thus the ISO proposes that ISO BAA operators retain discretion over the reliability margin during such hours.

Figure 2: *Frequency of RA supply sufficiency (July through September 2022)*



Proposed Details for BPMs: reliability margin:

- Stressed hours: hourly default values calculated by taking, at a minimum, the max of:

    1. **Replacement reserves based on forecasted most severe single contingency**: the day-ahead market does not have an explicit product to reserve unloaded flexible capacity to ensure the ISO BAA is able to replace its contingency reserves within NERC required timelines[13]

[13] As a participating BAA within the WECC the ISO is required to maintain a minimum amount of Contingency Reserves, except within the first sixty minutes following an event requiring the activation of the Contingency Reserves. The CAISO currently procures Contingency Reserves within its day-ahead market, but does not explicitly procure flexible capacity to ensure it is able to recover these reserves within 60 minutes following deployment. While the ISO's proposal to include this quantity in the reliability margin does not guarantee the ability to recover reserves, it does ensure that capacity in excess of the EDAM RSE requirement is not used to support EDAM transfers rending it completely unavailable to recover reserves.
WECC-0115 BAL-002-WECC-3 - Contingency Reserve - Exhibit A - Final Standard - Clean (nerc.com)

2. **Protection for a non-credible contingency**[14]: Intraday conditions may change, rendering nominally non-credible contingencies as credible. Reservation of RA capacity allows for activation of the non-credible contingency within the real-time market's security constrained dispatch, ensuring the real-time market dispatch is security constrained.

3. ~~**Imbalance reserve up requirement**: accounts for a potential shortfall in imbalance reserve up (IRU) procurement during stressed hours, when prices may exceed the $55/MW price limit embedded in the IRU demand curve~~

- Non-Stressed hours: CAISO BAA system operator discretion

Confidence Factor

The day-ahead market process considers all available supply offers, including economic import offers, in its security constrained optimization. Economic import offers made at ISO BAA scheduling points that receive a financial day-ahead award to serve ISO BAA demand may result in facilitating either a) EDAM export transfers from the ISO BAA or, b) LPT[15] exports from the ISO BAA. During periods of supply insufficiency, EDAM transfers are afforded a priority equal to ISO BAA load, as compared to LPT exports that are curtailed prior to CAISO load. The equal priory of EDAM transfers that may have been awarded due to economic import offers exposes the ISO BAA demand to increased reliability risk during occurrences of non-delivery.

The confidence factor is intended to address this issue. Upon inception of the EDAM the CAISO BAA will utilize a confidence factor of 0%[16] during all system conditions. This will ensure that the CAISO BAA is not assuming any incremental risk associated with the non-delivery of economy energy intertie supply. As the CAISO BAA gains experience participating in EDAM, it may look to adjust the confidence factor during non-stressed conditions; during stressed conditions the confidence factor will remain at zero to ensure CAISO BAA reliability is not jeopardized. During non-stressed conditions, utilizing a confidence factor above zero may be reasonable; however the CAISO BAA proposes to base any such change on data and analysis informed by EDAM participation. The ISO will utilize the BPM for any revisions to the confidence factor during non-stressed conditions.

Proposed Details for BPMs: confidence factor:

- Stressed hours: 0%

[14] Non-credible contingencies can be based on weather conditions (fires) or potential impacts to fuel availability (gas operational flow order /curtailments can lead to a reduction in generation capacity that significantly exceeds the most severe single contingency that is protected)

[15] CAISO Tariff Section 34.12.1

[16] A confidence factor of zero does not preclude import bids associated with bucket 1 transfers between the CAISO and an EDAM BAA partners for being exported out of the CAISO BAA in within the optimal market solution.

- Non-Stressed hours: 0%

4. Track A1: Transfer Resource Settlement and Transfer Revenue Distribution

Background and objectives

As the integrated forward market (IFM) co-optimizes energy offers and imbalance reserve offers to meet demand bid plus imbalance reserve requirements across the EDAM footprint, the market will commit resources in a balancing authority area (BAA) to meet the needs of another balancing authority area. These commitments will materialize as transfer schedules for energy and/or imbalance reserves between the two BAAs. Similarly, during the residual unit commitment (RUC) process, RUC may commit resources in one BAA to meet the reliability capacity requirements of another BAA. This commitment will materialize as a transfer schedule for reliability capacity between the two BAAs. In the EDAM framework proposal, these transfer schedules are shared between the balancing authority areas.

Transfer Resource Settlement:

As optimal schedules between two BAAs, transfer schedules will settle as an export schedule from one BAA and an import schedule into the other BAA. Dependent upon the product award, the transfer schedule will settle at the relevant energy, imbalance reserve, or reliability capacity marginal price. The settlement of the transfer resource creates a financial responsibility for relevant BAAs dependent upon the directional flow of the export and import schedule.

In EDAM BAAs, IFM energy transfer schedules committed by a transmission customer utilizing their ETC/TOR/OATT rights shall settle directly with the transmission customer. EDAM BAA IFM energy transfer schedules, imbalance reserve transfer schedules, and/or reliability capacity transfer schedules optimally committed by the market will settle with the EDAM entity for further distribution per each BAA's open access transmission tariff (OATT) or other applicable tariff.

Similarly, in the ISO BAA, IFM energy transfer schedules committed by a transmission customer utilizing their ETC/TOR rights shall settle directly with the transmission customer. IFM energy transfer schedules, imbalance reserve transfer schedules, and/or reliability capacity transfer schedules optimally scheduled by the market will settle with the ISO BAA to be further sub-allocated to ISO BAA participants.

In the real time market (RTM), including WEIM, the RTM will optimize the supply bids to meet the expanded WEIM footprint's demand forecast plus flexible ramp requirements. The day-ahead market transfers are deemed delivered. The RTM optimization will commit or dispatch resources within a BAA to meet the demand forecast needs of another BAA. These RTM results will materialize as transfer schedules for energy between the two BAAs and result in an increase of transfer schedules or as a counter flows against the day-ahead transfer schedules. In the draft final proposal, the ISO proposed to settle the RTM transfer schedules as imbalance energy deviation from the day-ahead market transfer schedule at the relevant fifteen minute market (FMM) locational marginal price (LMP). Similarly, real

time dispatch energy transfers will settle as imbalance energy deviation from fifteen minute market at the real time dispatch LMP. For WEIM BAA, RTM transfer imbalance energy deviation settlement associated with ETC/TOR/OATT transfer schedule changes will settle directly with the transmission customer. RTM transfer imbalance energy deviation settlement associated with optimal WEIM transfer schedule will settle with the WEIM Entity for further distribution per the BAA open access transmission tariff (OATT) or other applicable tariff. For ISO BAA, RTM transfer imbalance energy deviation settlement associated with ETC/TOR/OATT transfer schedule changes will settle directly with the transmission customer. RTM transfer imbalance energy deviation settlement associated with optimized RTM transfer schedule will settle with the ISO BAA for further sub-allocation to ISO BAA participants.

Transfer Revenue Settlement:

Related to the settlement of transfer schedules is the collection of congestion revenue and transfer revenue when the constraints internal to a BAA bind and/or the net transfer constraint binds - either of which can cause the marginal price of the source and sink BAA to diverge, resulting in the collection of congestion revenue and transfer revenue.

Specifically, if the marginal price separation is caused by binding internal constraints, the congestion revenue is distributed to the EDAM BAA where the constraints are modelled. If the congestion revenue is attributed to a non-ISO EDAM BAA, the congestion revenue will be allocated to the EDAM entity and sub-allocated per the terms of the BAA OATT or other applicable tariff. For the ISO BAA, this congestion revenue is distributed through the existing CRR process.

If the marginal price separation is caused by a binding transfer constraint, transfer revenue will be generated and collected. Since both BAAs release transmission at the transfer interface location to facilitate energy and/or capacity schedule flows between BAAs, the relevant transfer revenue generated will be shared between EDAM/WEIM BAAs. If any of the transfer transmission is released to the market by transmission customers as pathway 2 transmission, then the transmission customer who released the transmission is eligible to receive direct settlement of transfer revenue generated from use of that transmission. All other transfer revenue is assigned to that BAA for sub-allocation per the terms of the BAA OATT or other applicable tariff.

In the draft final proposal, the ISO, after accounting for pathway 2 transfer revenue, proposed to sub-allocate the ISO BAA transfer revenue to scheduling coordinators with transmission rights (ETC/TOR) at an interface, in proportion to their scheduled or released ETC/TOR rights. In addition, the ISO proposed to allocate transfer revenue collected from optimized EDAM/WEIM transfers to ISO measured demand in proration to scheduling coordinator measured demand as compared to ISO measured demand excluding ETC/TOR balanced measured demand.

Stakeholder perspectives

Transfer Resource Settlement:

Stakeholders supported the ISO's language in the draft final proposal to allocate the ISO BAA portion of transfer resource settlement to scheduling coordinators in proration to their metered demand as compared to ISO BAA metered demand. As requested by stakeholders, the ISO has enhanced the granularity of the description

Transfer Revenue Settlement:

Generally, stakeholders support the ISO's proposal to sub-allocate to transmission customers who release pathway 2 transmission, to transmission rights holders (ETC/TOR) in proportion to scheduled rights and released rights, and to ISO measured demand.

Southern California Edison, however, retains its suggestion that the transfer revenue should offset some of the foregone Wheeling Access Revenue described in chapter 5 of this paper. In addition, SCE suggests that the ISO should establish a requirement for EDAM Entity to sub-allocate transfer revenue associated with self-scheduled ETC/TOR/OATT rights directly with the transmission customer.

In comments submitted in response to the ISO's track A1 draft final proposal, Western Power Trading Forum (WPTF) expressed the following:

> *"WPTF is extremely concerned with the implementation of having multiple system marginal energy costs (SMECs) across the EDAM footprint with the difference between the SMECs being due to transfer congestion. Having different SMECs unravels what a locational marginal price means. An energy market that produces a "marginal" price for the very same undifferentiated product of marginal energy at different locations across the system undermines key economic principles, and through distorting the meaning of nodal marginal energy price signals, may disrupt market decisions. Financial Transmission Rights, Convergence Bidders, Load, and Suppliers all use nodal pricing to inform decisions. Changing what is reflected in the SMEC component of the nodal prices across the EDAM footprint will obfuscate what is the cost of marginal energy on the system, disrupting business decisions informed by nodal pricing. WPTF requests the CAISO change its implementation route to address transfer settlement challenges to separate out the marginal cost of transfers in the LMP by adding a new component rather than embedding it in the SMEC. This will allow transfer congestion to be separately priced and illuminated in its own component and EDAM to maintain integrity of core economic principles while still facilitating the proposed transfer resource settlement and transfer revenue distribution."*

The ISO does not agree with Western Power Trading Forum's perspective directly above. The standardized definition of the Locational Marginal Price (LMP) at a given location is the cost of serving the next increment of demand at that location. In the market solution, the LMP is derived from its components, namely the Marginal Energy Cost (MEC), the Marginal Cost of Losses (MCL), the Marginal Cost of Congestion (MCC), and the Marginal Cost of Greenhouse Gas Regulation (MCG). In the traditional market with a single Balancing Authority Area (BAA), like today's Day-Ahead Market (DAM) for the ISO BAA, the MEC is the shadow price of the power balance constraint (PBC), which balances supply and demand in the market footprint. With the expansion of the market footprint for the Real-

Time Market (RTM) in 2014 under the Western Energy Imbalance Market (WEIM) to include additional BAAs beyond the ISO, a PBC is enforced for each BAA introducing the BAA net transfer as the mismatch of supply and demand in each BAA. This results in a MEC for each BAA. To maintain the traditional System MEC (SMEC), which is the same for all locations in the market footprint, the ISO BAA was arbitrarily selected as a reference setting the SMEC, while the difference between any other BAA MEC and the CISO MEC was added to the MCC for that BAA. This transformation does not alter the LMP, which is still the sum of its components, and as such it remains the same. With the introduction of transfer settlement in the EDAM and the separation between transfer and congestion revenue, this transformation is no longer applicable. The difference between the MECs of two BAAs results in transfer revenue from the transfers between them, and as such it cannot be added to the MCC.

Track A1 final proposal

Transfer Resource Settlement:

IFM will co-optimize supply offers for energy, including virtual supply offers, and imbalance reserve offers against demands bids, including virtual demand, and imbalance reserve requirements. Based upon the economic and transmission constraints, the IFM can award resources in one BAA for energy schedules to meet demand and/or imbalance reserve schedules to meet imbalance reserve requirements of another BAA and generate transfer schedules. The energy transfers and/or imbalance reserve transfers are reflected as export transfer schedules from the source BAA as well as import transfer schedules into the sink BAA and will settle with the appropriate EDAM BAA Entity scheduling coordinator or ISO BAA scheduling coordinator at the relevant transfer energy or imbalance reserve price.

In the RUC process, the market optimizes reliability capacity bids, taking into consideration transmission constraints, against demand forecast. Similar to IFM, the RUC process may award resources in a source BAA for reliability capacity to resolve a demand forecast need of the sink BAA and will schedule reliability capacity transfers between the two BAAs. These transfer schedules are reflected as export and import reliability capacity transfer schedules and will settle with the respective EDAM BAA Entity scheduling coordinator or ISO BAA scheduling coordinator at the relevant reliability capacity price.

In the non-ISO EDAM BAAs, the EDAM entity will sub-allocate any transfer resource settlement to their transmission customers consistent with their OATT or other appropriate tariff. In the ISO BAA, the proposed allocation of the ISO BAA net transfer settlement amount is to scheduling coordinators in proration to their metered demand as compared to ISO BAA metered demand excluding balanced ETC/TOR metered demand.

Transfer Revenue Settlement:

Transfer revenue is generated when a BAA's net transfer constraint binds and the marginal prices between the source and sink BAAs diverge (i.e. congestion exists). As described above, IFM will co-

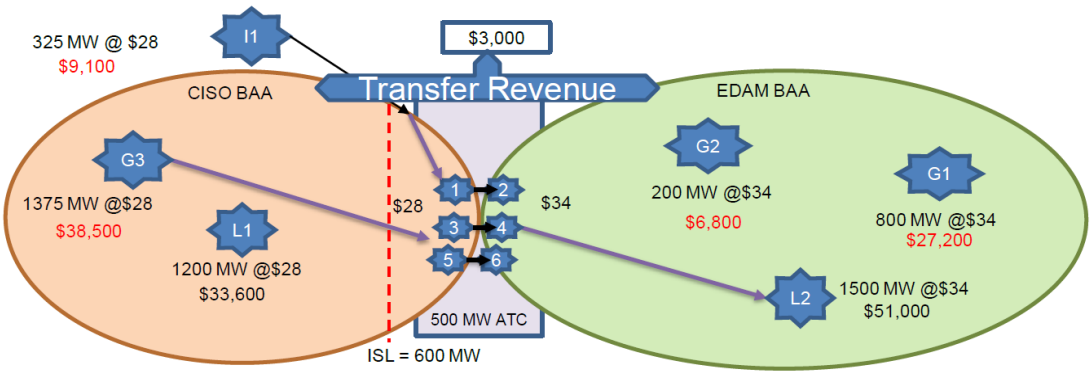
optimize energy bid and imbalance reserve bids. If the IFM energy transfer schedules for energy cause the transfer constraint to bind, the subsequent energy transfer settlement will generate transfer revenue between the two BAAs. If the imbalance reserve transfer schedules cause the transfer constraint to bind, the settlement of the transfer resource imbalance reserve schedules will generate imbalance reserve transfer revenue. Similarly, if the reliability capacity transfers bind the transfer constraint in RUC process, the settlement of reliability capacity transfer schedules will generate transfer revenue between the impacted BAAs. In the EDAM design, transfer revenue is distributed between the EDAM/WEIM BAAs, including the ISO BAA, on a 50:50 basis. After accounting for Pathway 2 transmission transfer revenue, the EDAM/WEIM BAA will sub-allocate its portion of the transfer revenue to its customers in accordance with the BAA OATT or other applicable tariff.

Transfer revenue generated on the use of Pathway 2 transmission for energy, imbalance reserve, and/or reliability capacity will be allocated directly to the transmission customer who released the transmission to the market. For non-Pathway 2 transmission, the EDAM/WEIM BAA will allocate the generated transfer revenue consistent with the BAA OATT or other applicable tariff. For the ISO BAA, the ISO proposes to sub-allocate transfer revenue to transmission rights (ETC/TOR) at a transfer interface[17], in proportion to their scheduled or released ETC/TOR rights. In addition, the ISO proposes to allocate any remaining transfer revenue to ISO measured demand in proration to scheduling coordinator measured demand as compared to CISO measured demand excluding balanced ETC/TOR measured demand.

The example below in figure 3 (which has been updated for this final proposal) is intended to provide clarification of the distribution of ISO BAA Transfer Revenue when ETC/TOR are used to facilitate the flow of energy from a Non-EDAM BAA to an EDAM BAA and Wheeling-through ISO BAA.

[17] The ETC must contain the right for the ETC Rights holder to release excess transmission to be eligible for this opportunity and cost allocation.

Figure 3: *Transfer Revenue Distribution Example*



	Transmission	MW	MEC Difference	Transfer Revenue	CISO	EDAM
Transfer 1-2	ETC/TOR	325	$34-$28 = $6	$1,950	$975 (ISO)	$975 (EDAM)
Transfer (3-4)	Pathway 2	75		$450	$225 (TC)	$225 (TC)
Transfer (5-6)	ATC	100		$600	$300 (ISO)	$300 (EDAM)

ISO Transfer Revenue Sub-Allocation	
SC(TOR)	$ 975
SC (TC)	$225*
Measured Demand	$300

*An additional $225 payment from EDAM portion through ISO settlement

In the example above, the transmission customer has 400 MWs of long-term TORs to schedule energy across the ISO BAA from an external intertie to an internal intertie that facilitates a transfer with an EDAM BAA. The transmission customer self-schedules 325 MWs of these rights from the external intertie to an internal intertie. In addition, the transmission customer releases 75 MWs of pathway 2 transmission at the internal intertie.

The IFM optimizes the energy bids, procures and awards an additional 175 MWs of energy transfer schedules from ISO BAA to EDAM BAA across the internal intertie. 75 MWs of the 175 MWs transfer schedules are pathway 2 transfers while the remaining 100 MWs transfer schedules is utilizing BAA transmission. In addition, the market determines that the net transfer constraint for EDAM BAA is binding and creating a $6 Marginal Energy Cost difference between the ISO BAA ($28) and the EDAM BAA ($34).

The settlement of the 500 MWs transfer schedules between CISO BAA and EDAM BAA will result in $3,000 (500 MW @ $6) of total Transfer Revenue. $450 (75 MW * $6) of the Transfer Revenue associated with Pathway 2 will be directly settled with the transmission customer. The remaining $2,550 of transfer revenue is split 50:50 between the ISO BAA and the EDAM BAA at $1,275, respectively. Based upon the ISO proposal, the CISO BAA $1,275 transfer revenue will be distributed to the TOR/ETC scheduling coordinator in relationship of their scheduled ETC/TOR transmission rights and total non-pathway 2 transmission (425 MWs) as well as the balance being distributed to measured demand. In this

example, the ETC/TOR scheduling coordinator portion of CISO BAA transfer revenue is $975, which is the product of $1,275 ISO transfer revenue and ratio of ETC/TOR scheduled right (375 MWs), and total non-pathway 2 transfer capacity, (425 MWs). The remaining $300 of transfer revenue is distributed to measured demand. The EDAM entity will allocate their portion of transfer revenue $1,275 per the BAA OATT or other appropriate tariff.

The ISO believes the proposed transfer revenue allocation is just and reasonable because it provides:

- Scheduling coordinators who have transmission rights with the ISO BAA the ability to hedge for energy schedules across the transfer location and within the ISO BAA.
- Scheduling Coordinators with unused transfer rights to offer this transmission to the market to facilitate additional transfer capability to the extent it is not already provided to the market.
- Mitigation for measured demand when transfer constraint binds.

5. Track A1: Process for Recovering Historical Wheeling Access Charge Revenues

Background and objectives

The EDAM design recognized that EDAM entity transmission providers may face the risk of reduced transmission revenues, based upon decreased sales of short-term transmission when transmission is made available to the EDAM instead of sold under the OATT. In addition, the EDAM design recognized that the ISO participating transmission owners (PTOs) may potentially experience a reduction in wheeling access charge (WAC) revenues on transmission associated with transfer locations that support EDAM and WEIM transfers. Providing a mechanism for transmission providers, including PTOs in the ISO BAA, to recover potentially foregone revenues is an important element of the overall EDAM design. In the draft final proposal, the ISO proposed to calculate the ISO Transmission Recoverable Amount for each PTO as sum of the Historical PTO WAC Recoverable Revenue, New Transmission Project Recoverable PTO WAC Revenue, and PTO Excess Wheel-Through Recoverable Amount.

- Historical WAC Recoverable Revenue is the product of the three year average estimated reduction of wheeling transaction at transfer interface and current year wheeling access rate
- New Transmission Project Recoverable WAC Revenue is the product of the estimated foregone wheeling transaction at new transfer interface and wheeling access rate
- Excess Wheel-Through Recoverable Amount is the product of the Excess Wheel through quantity and wheeling access rate.

In addition, the ISO proposes to allocate the collected Transmission Recoverable Amounts to PTO, including SPTO, in proportion the PTO Transmission Recoverable Amount in relationship to ISO Transmission Recoverable Amount.

Stakeholder perspectives

Generally, the stakeholder comments are supportive of the proposed Transmission Revenue (TR) Recoverable Methodology and distribution to affected PTOs. However, some participants have expressed some concerns and requested clarifications on specific elements of the TR Recoverable Mechanism.

- California Community Choice Association (CalCCA) continues to express concerns with the perpetuity of the TR Recovery mechanism. CalCCA believes that the TR Recovery mechanism "should be a transitional mechanism only, accompanied by a sunset date such that the proposal does not introduce indefinite uplift."
- California Advocates requests that the ISO confirm that the proposed compensation approach would not phase-out possible WAC revenue over time.
- **ISO response**: the ISO understands CalCCA and Cal Advocates concerns. The TRR Recoverable mechanism was established to mitigate an EDAM/ISO BAA exposure risk of reduced transmission revenues when joining Extended Day Ahead Market. The ISO is committed to reviewing this mechanism provision in a future initiative, as the ISO gains experience with EDAM, and developing a long-term sustainable mechanism

- Southern California Edison (SCE) continues to recommend that a portion of the ISO Transfer Revenue distributed to the ISO BAA be used to offset the TR Recoverable Amount. In addition, SCE has requested clarification on a few elements of the Transmission Revenue Recovery Amount
    - Definition of denominator of the "Revenue Recovery Bound", ISO Total Exports
    - Definition of the terms "Excess Wheel Through Quantity" and "Excess Wheel Through Amount"
    - Additional details on the method for forecasting the "WAC Recoverable" amount
    - Suggested that the determination of the "New Transmission Project WAC Recoverable Amount" be based on all ISO interties that moved into EDAM.
    - Additional clarification on the calculation of ISO Excess Wheel Through Quantity and the ISO Net Export Transfer quantity
    - SCE disagrees that S-PTOs should be eligible for any distribution of the WAC Recoverable Amounts, since an S-PTO already recovers all of its costs through subscriber fees.
- **ISO Response**
    - In alignment with the Extended Day Ahead Market Proposal, ISO Total Export is the sum of "energy exported to EDAM and non-EDAM BAAs."
    - The "Excess Wheel Through Quantity" is the "volume of net wheels through the EDAM entity's transmission system, net of EDAM transfer imports/exports." "Excess Wheel Through Amount" is the product of the excess wheel through quantity and current ISO WAC rate

- Additional details on the method for forecasting the "WAC Recoverable" amount and the calculation of ISO Excess Wheel Through Quantity and the ISO Net Export Transfer quantity addressed in Final proposal section
- For simplification purposes, the ISO will adopt SCE proposed method for determining New Transmission Project WAC Recoverable Amount."

- ISO disagrees with SCE's assertion that S-PTO should not be eligible to receive WAC Recoverable Amounts. As described in the Subscriber Participating TO Model, the ISO concluded that a separate Subscriber Wheeling Charge is appropriate for non-subscriber bi-directional usage of the S-PTO transmission facilities.[18] Therefore, S-PTO should be eligible to recover any reduction of SPTO Wheeling Charge for transmission which has been converted to EDAM Transfer transmission.

Track A1 final proposal

This section discusses the proposal to calculate and distribute the Transmission Revenue Recovery amount.

Calculation of Transmission Revenue Recovery Amount:

In this final proposal, the ISO proposes to calculate the transmission revenue recoverable in the process described in the draft final proposal with a few clarifications:

- Historical WAC Recoverable Revenues process
  - During the EDAM BAA onboarding process, the ISO will identify the intertie locations which are going to be wholly or partially converted to transfer locations. The impacted PTOs will be notified.
    - Collect the historical three year wheel-out and wheel-through export quantities at each of these locations to establish the "PTO WAC Quantity" for the historical wheeling access charge recoverable process.
      - If available, the historical export quantities will be derived from the After-the-Fact tags submitted at the transfer location and sinking to the EDAM BAA.
      - If not available, the historical export quantities will be derived as the product of the total Wheeling quantity and the ratio of the total transfer available transmission capacity (ATC) and the total ATC of transfer capacity and non-EDAM capacity
    - Having established the historical WAC revenues collected over the last 3 years (average), at each location, the ISO will forecast the anticipated reduction in the WAC quantity of each PTO based upon the wheel-out and wheel-through export

[18] http://www.caiso.com/InitiativeDocuments/Final-Proposal-Subscriber-Participating-Transmission-Owner-Model-Jun292023.pdf

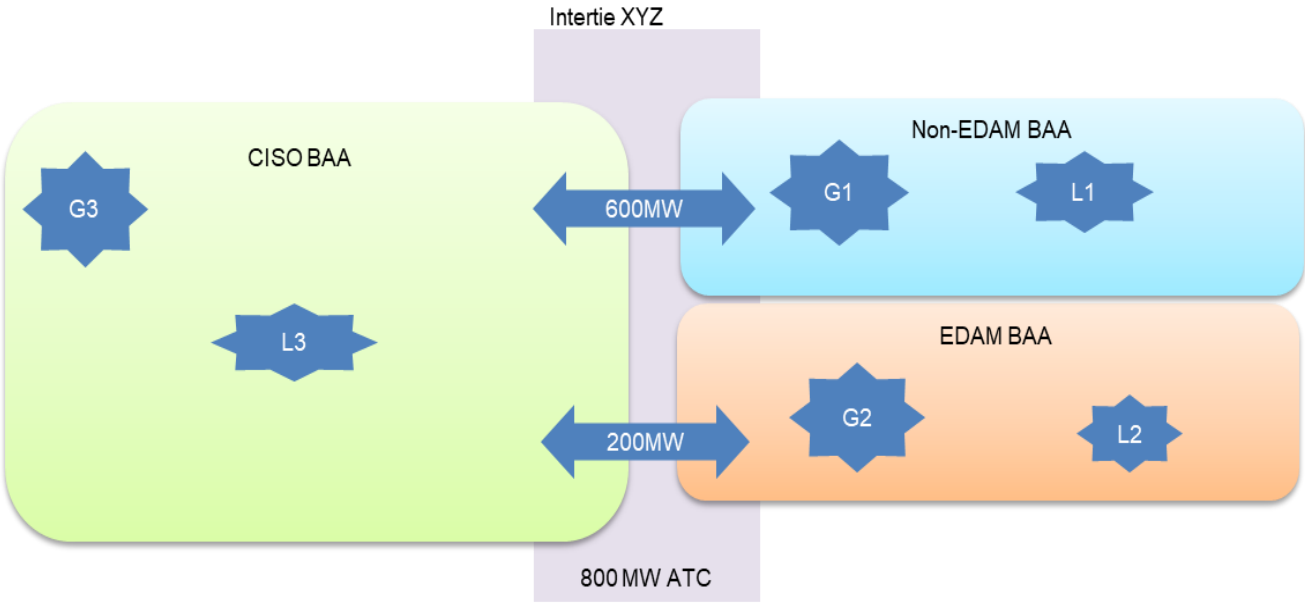
quantities and the relationship between converted transmission capacity and the total transmission capacity.

- ISO will work in tandem and coordinate to seek agreement of the PTO WAC Quantity from the relevant PTO.

- The ISO will calculate the "PTO WAC Recoverable Amount" for each PTO as the product of the PTO WAC Quantity and the current WAC rate.
- The "ISO WAC Recoverable Amount" is the sum of the PTO WAC Recoverable amount limited by the ISO BAA Revenue Recovery Bound

$$Revenue\ Recovery\ \ Bound = \frac{ISO\ EDAM\ Transfer\ Use\ (MWh)}{ISO\ Total\ Exports\ (MWh)} \times ISO\ Recoverable\ Transmisison\ Revenues$$

Figure 4: *Historical WAC Recoverable Revenue Example*



Intertie XYZ	2021 WAC Quantity (MWs)	2021~~2~~2 WAC Quantity (MWs)	2023~~1~~1 WAC Quantity (MWs)	Average Quantity (MWs)	WAC Rate ($)	WAC Recoverable
Total WAC	110,000	115,000	114,000	113,000	$15	$397.500
Reduced Wheeling MWhs~~Forecasted~~	25,000	28,000	26,500	26,500		

BAA A has joined EDAM and established a transfer location at Intertie XYZ, with a 200 MW maximum transfer capability. Because Intertie XZY has become a transfer interface location, Participating Transmission Owner 1 will potentially lose WAC revenue. As part of the Historical WAC Recoverable Process, the ISO identifies the total WAC Quantity over the last three years at Intertie XYZ. The ISO also forecasted the quantity of wheeling quantity which would be converted to Transfer energy in the historical three year period. Based upon this analysis, the PTO WAC Quantity is 26,500 MWs, in which the current year WAC rate is applied resulting in a Historic WAC Recoverable Revenue of $397,500.

- New Transmission Project Recoverable WAC Revenues Process
    - During the integration process of new transmission, the ISO in conjunction with PTO(s) will identify the portion of transmission capacity that increases transfer capability in relationship to total transmission capacity.
        - First, the ISO will identify all interties that have already transitioned to EDAM and calculate the "WAC Ratio" as the ratio of total intertie historical WAC Quantity and the converted transfer capacity.
        - Then, the ISO will calculate "PTO WAC Quantity" for the new transmission wheeling access charge recoverable process as the product of the WAC Ratio to the new transmission transfer capability. The ISO will work in tandem and coordinate to seek agreement from impacted PTO(s) in the calculated "PTO WAC Quantity".
    - The New Transmission WAC Recoverable Amount will be equal to the product of PTO WAC Quantity and current WAC rate

- Excess Wheel-Through Recoverable Amount Process
    - Monthly, the ISO will calculate the ISO EDAM Wheel Through Transfer quantity as the minimum of total import transfer quantity and total export transfer quantity
        - Total import transfer quantity is the sum of transfers coming into the ISO BAA
        - Total export transfer quantity is the sum of transfers going out of the ISO BAA
    - Then, the ISO will calculate the Excess Wheel Through quantity as the **maximum** of zero and the difference of the ISO Wheel Through Transfer quantity less the ISO Net Export transfer
        - The ISO Net Export transfer is equal to the **maximum** of zero and the difference~~sum~~ of the total export transfer quantity less the total import transfer quantity
    - Following, the ISO will calculate the Excess Wheel through amount as the product of Excess Wheel Through quantity and current WAC rate
    - The Excess Wheel Through amount is distributed amongst the PTOs in the ISO BAA including Subscriber Participating Transmission Owner (SPTO) in proration of each PTOs Transmission Revenue Requirement plus SPTO Proxy Transmission Revenue Requirement.

The ISO BAA total WAC Recoverable Amount is the sum of ISO WAC Recoverable Amount plus New Transmission Recoverable Amount and the Excess Wheel-Through Recoverable Amount. The ISO will calculate an ISO BAA TRR rate for each EDAM BAA as the product of ISO BAA total WAC Recoverable Amount and ratio of each EDAM BAA prior year gross load and the total EDAM footprint gross load, not including the ISO prior year gross load. The ISO BAA rate will be applied to that BAAs Gross Load.

In addition, the ISO proposes to recalculate each component ISO BAA total WAC recoverable Amount yearly to account for WAC rate increases or decreases from year to year. In addition, the ISO proposes to adjust ISO BAA total WAC Recoverable Amount annually as additional BAA(s) join EDAM based upon the additional foregone WAC revenue, new transmission is added to ISO BAA, and/or changes to the Excess Wheeling quantity.

Distribution of Collected WAC Recoverable Amounts

The ISO proposes to distribute the actual WAC Recoverable Amount to PTOs/SPTO in proportion to the PTO WAC Recoverable Amount and the ISO BAA total WAC Recoverable Amount. The PTO TR Recoverable Distributed Amount should be included in PTO TRBA adjustment for the following year. Since the subsequent year WAC rate incorporated the TR Recoverable Distributed Amount, the current year WAC rate will be adjusted. By applying the current year WAC rate to each of the three components of TR Recoverable Amount, the ISO proposes to not calculate TR Recoverable True-up Amount. It will automatically be included in subsequent years TR Recoverable Amount.

6. Track A1: Interim Solution for Allocating RSE Failure Surcharges and Revenues

Background on RSE failure consequences

As described above in chapter 3, an important aspect of the EDAM design is the EDAM RSE, which motivates participating BAAs to come to the market with sufficient forward-procured supply. The EDAM design imposes surcharges on BAAs that fail the RSE to incentivize sufficient forward procurement. There are three types of RSE failure surcharges: (1) on-peak upward failure surcharges; (2) off-peak upward failure surcharges; (3) downward failure surcharges. Upward failure surcharge calculations include a failure multiplier (0, 1.25 or 2) that is dependent on the magnitude of the failure quantity, relative to the deficient BAA's upward imbalance reserve requirement. Each of the three types of surcharges (which can be assigned to a deficient BAA) are distributed as a revenue to those EDAM BAAs who pass the RSE and whose net EDAM transfers (including transfers of imbalance reserves) help to cure (fully or partially) the deficient BAA in the integrated forward market. Each BAA participating in EDAM is responsible for developing its own methodologies for allocating RSE failure surcharges and revenues within its own BAA. This chapter proposes an interim solution for allocating RSE failure surcharges and revenues in the ISO BAA.

Track A1 final proposal

In order to maintain cost-neutrality from a settlements perspective, the ISO BAA needs methodologies for allocating RSE failure surcharges and revenues. More specifically, the ISO BAA needs approved and implemented methodologies to participate at the inception of EDAM. To achieve this objective, the ISO is proposing an interim solution as part of track A1 that is implementable and consistent with regulatory precedent.

RSE failure surcharges

The ISO proposes to allocate RSE failure surcharges on an hourly basis as follows: based on MW of metered demand for each scheduling coordinator as a portion of total ISO BAA metered demand, for each hour the ISO BAA was assessed RSE failure surcharges.

RSE failure revenues

The ISO proposes to allocate RSE failure revenues on an hourly basis as follows: based on MW of metered demand for each scheduling coordinator as a portion of total ISO BAA metered demand, for each hour the ISO BAA received RSE failure revenues.

Rationale for final proposal

The ISO acknowledges that allocation methodologies with more refined cost causation exist. Stakeholders would like to see a surcharge allocation solution that better aligns with the supply each LSE (or local regulatory authority) within the ISO BAA makes available for passing the EDAM RSE. For example, Southern California Edison (SCE) proposed a two-tier allocation methodology, where the first tier is allocated to LSEs who are deficient in their month-ahead RA showings (adjusted for CPM designations).[19] While this solution appears to be feasible for implementation by day 1 of EDAM, it is problematic for a few reasons: (1) it is not broadly supported by stakeholders, even as an interim solution; (2) LSEs across the ISO BAA have different RA requirements, depending on the local regulatory authority, and it is thus problematic to allocate surcharges based on RA deficiencies when the RA requirements are not consistent; (3) month-ahead RA showings are a measure of forward capacity procurement, while the EDAM RSE is a day-ahead test of how well those forward showings are operationalized; an LSE meeting its forward showing requirement does not ensure, or necessarily incentivize, meeting a day-ahead obligation.

In addition to the solution proposed by SCE, four other stakeholders proposed a two-tier allocation methodology, where the first tier compares month-ahead supply portfolios, including non-RA, to LSE

[19] In response the June 14, 2023 track A1 workshop, SCE proposed a two-tier methodology for allocating RSE failure surcharges, where the first tier is based on month-ahead RA showing deficiencies. This proposal was supported by the CPUC Public Advocates Office. For more detail on this stakeholder-proposed methodology, please refer to the stakeholder comments submitted on June 28, 2023:
California ISO - All comments (caiso.com)

metered demand.[20] This specific two-tier methodology has impacts on a number of ISO systems, and it cannot be implemented by day 1 of EDAM. For this reason, the ISO has committed to using this stakeholder-proposed solution as a starting point for policy development of a refined surcharge allocation methodology in track B.

No feasible, agreed-upon solutions have been identified. Therefore, the ISO believes it is appropriate to allocate RSE failure surcharges and revenues, pro-rata to scheduling coordinator metered demand, until a long-term solution can be designed and implemented as part of track B.

7. Track A2: Avoiding RSE Failures using Existing ISO Tariff Authority

Background on RSE and Advisory RSEs

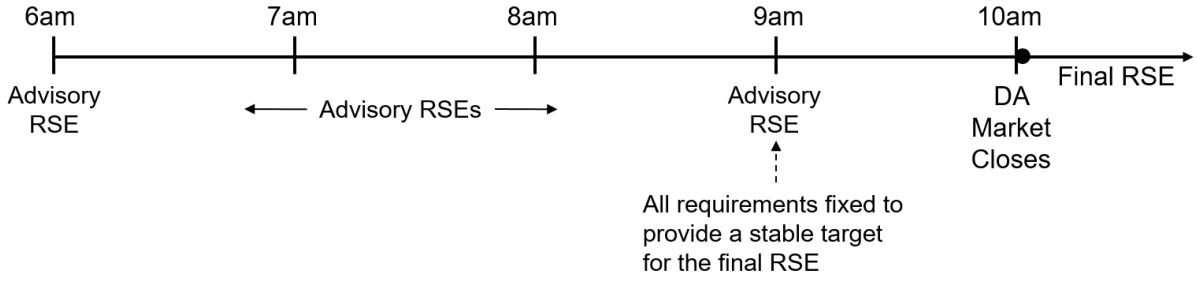
As described above in chapter 3, an important aspect of the EDAM design is the EDAM resource sufficiency evaluation (RSE), which motivates participating BAAs to come to the market with sufficient forward-procured supply and discourages participating BAAs from leaning on one another. The EDAM design also includes *advisory* RSEs that are non-binding and conducted before 10am to provide helpful information to EDAM BAAs to assess progress in meeting the RSE, help facilitate coordination, and help manage exposure to financial surcharges for failing the RSE. As illustrated below in figure 5, pre-set advisory RSE results, based on updated forecasts and other inputs will be published at approximately 6am and 9am. EDAM BAAs can utilize the information to coordinate within their BAAs to cure shortfalls by submitting additional supply offers into the day-ahead market before 10am, when the final binding RSE is performed. The 6am advisory RSE run will utilize forecasts available at that time to establish RSE obligations, and the 9am RSE will utilize the most up to date load forecasts and uncertainty forecasts, finalizing the obligations that will be tested against in the 10am binding RSE. This 9am advisory RSE thus provides BAAs with a final target against which they can cure, if necessary. Additional advisory RSE results will also be published at regular intervals between 6am and 10am based on the RSE targets set at 6am and 9am.

The EDAM design is intended to ensure that each BAA is resource sufficient prior to 10 am. Each EDAM BAA may need to develop, enhance or coordinate processes within the BAA to ensure it will pass the RSE, including consideration of actions to cure advisory RSE shortfalls and limit exposure to the RSE

[20] In response to the June 14, 2023 track A1 workshop, four stakeholders (PG&E, SDG&E, Six Cities, BAMx) proposed a two-tier methodology for allocating RSE failure surcharges. In the first tier, surcharges are allocated to LSEs whose month-ahead supply portfolios (RA + Non-RA) are less than their daily peak LSE metered demand. In the second tier, surcharges are allocated pro-rata to LSE metered demand. For more detail on this stakeholder-proposed methodology, please refer to the stakeholder comments submitted on June 28, 2023: California ISO - All comments (caiso.com)

failure surcharges and associated consequences.[21] The RSE failure surcharges were designed to prevent a BAA from relying on the IFM as a means to establish resource sufficiency on a regular basis.

Figure 5: *Daily Timeline for EDAM Advisory RSEs*



Initial questions for ISO BAA

Below are some initial questions for the ISO BAA to consider as it develops ideas and proposals:

- **Minimizing advisory RSE shortfalls**: how the can the ISO BAA leverage existing tools and processes to minimize advisory RSE shortfalls? By minimizing the magnitude of advisory RSE shortfalls, the ISO BAA will be in a better position to avoid final RSE failures

- **Quantifying advisory RSE shortfalls**: what information does the ISO BAA need, in conjunction with advisory RSE results, to quantify its true short position?

- **Curing advisory RSE shortfalls**: what steps should the ISO BAA take to cure an advisory shortfall to ensure that it does not fail the final RSE? How should such cure actions be sequenced? What types of resources might be most helpful?

Track A2: using existing ISO tariff authority to avoid RSE failures

In track A2, the ISO proposes to use its existing tariff authority to avoid RSE failures. More specifically, the ISO proposes to explore four elements: (1) using existing tools and processes to minimize the magnitude of advisory RSE shortfalls; (2) publishing information on expected RA offers that can be used in conjunction with advisory RSE results; (3) automatic market notifications to scheduling coordinators requesting additional offers; (4) accounting for RA reliability demand response resources (RDRRs) to pass the final binding RSE.

1. Using existing tools and processes to minimize the magnitude of advisory RSE shortfalls

To minimize the magnitude of advisory RSE shortfalls and ultimately help avoid failing the final binding RSE at 10 am, the ISO will rely on existing tools and processes that may vary depending on grid

[21] BAAs may cure their own advisory RSE shortfalls by submitting additional day-ahead supply offers into the ISO's Scheduling Infrastructure Business Rules (SIBR) system before 10am, when day-ahead bids and offers are due.

conditions. In more stressed system conditions, the ISO may have access to additional tools and processes that allow for additional availability of supply or can otherwise create awareness of conditions encouraging additional supply bids in the market. Table 2 below identifies existing tools and processes available to support the ISO's ability meet the RSE.

Table 2: *Existing ISO BAA tools and processes to prevent RSE failures*

Supply Bids	• RA and internal resources – this includes different resource types in the market, including non-generator resources (NGR), Participating Demand Response (PDR), Reliability Demand Response (RDRR), and other market-responsive resources. • Imports – this encompasses RA imports and other imports under contract to ISO LSEs, but not shown on RA plans
Demand Response	• Out of market load reduction programs, such as utility programs, ELRP, and DSGS, that are administrated by the individual LSEs, can contribute toward the day ahead RSE under same processes that ISO accounts for them today in the DA market. • The load reduction forecasts provided in day ahead will reduce the load forecast, reducing the RSE obligation for the ISO.
Restricted Maintenance and/or Emergency Supply	• In limited instances, to the extent conditions are triggered, the ISO may be able to re-arrange outages, relax environmental restrictions on plants, exceptionally dispatch specific generating units, etc. • In addition, strategic reserve supply can contribute to the RSE to the extent the conditions that trigger the use of market-participating strategic reserve supply materialize before the final binding RSE.

The ISO relies primarily on resource adequacy (RA) supply to ensure it has sufficient capacity available to meet its expected next day obligations. Most RA supply has a must offer obligation into the day ahead and real-time markets to ensure sufficient bids are available to the market to efficiently optimize and meet the BAA obligations. To the extent RA supply is not bid in by a Scheduling Coordinator, the market will insert a bid at approximately 10am, consistent with the must offer obligation and to the extent the resource is subject to bid-insertion rules. Additionally, other contracted import supply that is bid into the market, which may not have been shown on RA plans, also contributes toward meeting the RSE. This may be supply, for example, that is contracted after the monthly RA showing deadline to support and respond to more stressed grid conditions or is otherwise contracted for other purposes. These supply bids offered into the market by 10am will contribute toward the RSE.

The EDAM design also recognizes that diverse demand response programs can contribute to the RSE.[22] LSEs within the BAA administer diverse demand response programs consistent with their local regulatory authority requirements and are represented today as load reductions rather than price-responsive supply bids in the market. For the ISO BAA, potential load reduction from programs such as the ELRP and out of market demand response programs administered by the investor owned utilities are

[22] EDAM Final Proposal, page 69 (December 2022).

manually reported to the ISO. When out of market demand response is scheduled to be used the following day, in the DA market, the impact of the programs are considered in the RUC process which procures reliability capacity. The EDAM tariff will allow for reduction of the RSE target to reflect demand response programs an EDAM entity intends to enable or deploy.

During stressed system conditions, the ISO BAA may have access to additional tools to help maintain system reliability. For example, the ISO BAA may be authorized to re-arrange outages, relax environmental restrictions on plants, exceptionally dispatch specific generating units, etc. In addition, the ISO BAA may have access to emergency resources including strategic reserve resources. To the extent the conditions that trigger the use of market-participating strategic reserve supply materialize prior to 10 am, additional supply may be bid into the DA market that can be accounted for and contribute toward the ISO RSE.

2. Publishing information on expected RA offers that can be used in conjunction with advisory RSE results

As noted earlier, an important aspect of the EDAM RSE design is the availability of advisory RSE results between 6am and 10am that can inform each EDAM BAA, including the ISO BAA, of progress towards passing the RSE. The ISO BAA will have visibility into how the submitted supply bids track toward meeting the RSE target at different periods from 6am until 9am, at which point forecasts are fixed and the RSE obligation target is fixed.

Unfortunately, the advisory RSE results may be misleading for the ISO BAA due to the fact that RA day-ahead offers are not due until 10am. The 6am advisory RSE, for example, may not reflect a significant quantity of RA supply that has until 10am to meet its must offer obligation; the same could be true for the 9am advisory RSE. For this reason, the ISO has considered two potential day-ahead changes that would work in tandem: (1) moving the RA bidding deadline to earlier in the morning; (2) moving the RA bid-insertion timeline earlier in the morning. However, the ISO anticipates that this path would require revision or addition to pre-market processes and existing deadlines, and could be a challenging path forward. Without reflecting the RA bids in the RSE advisory runs, however, the ISO risks inaccurate advisory results.

One way to address the challenge of potentially misleading advisory RSE results due to the 10am must offer deadline for RA resources is to publish information on expected RA offers to complement the ISO BAA's advisory RSE results. Hypothetically, assume the 9am advisory RSE results show that the ISO BAA is short 125 MW in hour-ending 18. In addition, assume the ISO BAA is aware that there is 250 MW of RA capacity that has not yet submitted offers into SIBR at the time of the 9am advisory RSE, despite having a day-ahead must offer obligations. Furthermore, assume that of this 250 MW of RA capacity without a day-ahead SIBR offer, 100 MW is on outage. In this hypothetical, it may be accurate to say that as of 9am, the ISO BAA has confidence that an additional 150 MW of RA offers will be submitted in SIBR before 10am, and the ISO BAA is therefore projected to be resource sufficient by a margin of 25 MW for hour-ending 18. The ISO looks forward to working with stakeholders on this topic and making

sure that the advisory RSE results can be paired with information that ensures the results are as helpful as possible to the BAA.

3. Automatic market notifications to scheduling coordinators requesting additional offers

As supported by a number of stakeholders, the ISO will explore developing a market notification that would be sent automatically to scheduling coordinators requesting additional offers into the market, if required to cure a shortfall. More specifically, the ISO will explore developing a market notice that would be triggered by an advisory RSE shortfall, net of expected RA offers. As discussed above, the advisory RSE results, by themselves, may be misleading. For this reason, the ISO will explore how to take into account expected RA offers at the time the advisory RSE is run. Ideally, this automatic notification would be sent at 6am, giving ISO BAA scheduling coordinators as much time as possible to submit additional offers into SIBR.

The notification would not be a broad stakeholder market notice, but rather a MNS message on OASIS that is visible to scheduling coordinators. It is important to note that this notification would not be a declaration of emergency conditions but rather a call for additional available bids for RSE countable supply. It is also important to note that the advisory RSE results between 6am and 10am, as well as the binding results at 10am, will be made publicly available on OASIS for EDAM entities and other market participants to see how each EDAM entity is tracking toward meeting its RSE obligation. The information made available on OASIS will be at an EDAM entity level showing the total supply bids compared to the RSE obligation.

Stakeholders have also suggested that the ISO explore developing LSE-specific RSE targets that might be used in conjunction with the market notification. The goal of developing such targets would be to give each LSE within the ISO BAA a rough approximation of its share of the ISO BAA-wide hourly RSE obligations. If the ISO BAA is projected to fail the RSE and needs additional supply offers in SIBR, LSE-specific targets may be a helpful tool for guiding each LSE and thus coordinating the response across the BAA. The ISO appreciates this suggestion and will explore this idea as part of track B, since it is related to the topic of allocating RSE failure surcharges based on cost-causation principles.

4. Accounting for RA reliability demand response resources

Reliability demand response resources (RDRRs) that voluntarily submit day-ahead offers into SIBR will be considered as RSE-eligible supply and will contribute towards the ISO BAA passing the final RSE at 10am. RDRRs that do not submit day-ahead offers into SIBR, however, will not automatically contribute towards the ISO BAA passing the final RSE at 10am. Instead, the ISO BAA will need to take action to use these specific RDRRs, if warranted, to cure a projected RSE failure.

As part of track A2, the ISO and stakeholders will explore when and how to use RDRRs that have not submitted day-ahead offers into SIBR. One idea might be to use such RDRRs if the ISO BAA is projected to fail the RSE, based on the results of the 9am advisory RSE, net of expected RA supply offers. For

example, if the 9am advisory RSE results show that the ISO BAA is short 275 MW in hour-ending 18, and there is 150 MW of hour-ending 18 RA capacity that is available and expected to submit SIBR offers in the next hour, then it may be accurate to say that the ISO BAA is projected to be short by 125 MW. In order to cure this projected 125 MW shortfall, it may then be appropriate for the ISO BAA to call upon those RDRR resources that are available and have not yet submitted a day-ahead offer. The ISO looks forward to working with stakeholders on this topic.

8. Track B: Longer-Term Items

Avoiding ISO BAA RSE failures through procurement of cure capacity

The ISO defines "cure capacity" as capacity required for the ISO BAA to fully or partially cure a projected EDAM RSE failure. In track B, the ISO will work collaboratively with stakeholders to consider whether the ISO should amend its tariff to create a mechanism to procure such cure capacity to avoid failing the final RSE and being exposed to RSE failure surcharges. At the front end of this effort, the ISO and stakeholders may want to review the ISO's existing capacity procurement mechanism (CPM) and explore whether aspects of this existing tool may be sufficient. For example, with its existing authority, the ISO can use its CPM to procure capacity to address specific circumstances defined by the six CPM designation types listed below in table 3. However, many of these CPM designation types are used to cure RA deficiencies in the year-ahead or month-ahead timeframes. Significant events CPMs are intended to address events that result in changes from what was assumed in the RA program or changes in system conditions or grid operations that threaten reliability criteria.[23] Exceptional dispatch CPMs, which require a reliability need, engineering assessment and manual operator dispatch, are also unlikely to be appropriate for curing a projected RSE failure. On the other hand, the ISO's existing Competitive Solicitation Process (CSP) may be an appropriate tool that can be utilized, with some modifications, to create a platform for SCs to offer supply into this new type of procurement mechanism to avoid RSE failure surcharges.

Table 3: *CPM Designation Types*[24]

#	CPM Designation Type
1	Insufficient local capacity area resources in an annual or monthly RA plan
2	A collective deficiency in local capacity area resources
3	Insufficient RA resources in an LSE's annual or monthly RA plan
4	A CPM significant event

[23] ISO tariff, appendix A, "CPM Significant Event"
http://www.caiso.com/Documents/AppendixA-MasterDefinitionSupplement-asof-Feb11-2023.pdf
[24] ISO tariff section 43A.2
http://www.caiso.com/Documents/Section43A-CapacityProcurementMechanism-asof-Apr22-2022.pdf

5	A reliability or operational need for an exceptional dispatch CPM
6	A cumulative deficiency in the total flexible RA capacity included in the annual or monthly flexible RA capacity plans, or in a flexible capacity category in the monthly flexible RA capacity plans

Given that the ISO's existing CPM authority may not be sufficient to cure all potential RSE failures, the ISO BAA and its stakeholders may want to consider developing a mechanism for the BAA to procure EDAM RSE cure capacity. One idea would be for the ISO BAA to procure cure capacity only as a last resort: after taking into account expected RA supply offers (see track A2, element #2) and use of RDRR resources (see track A2, element #4). For example, if the 9am advisory RSE results show that the ISO BAA is short 800 MW in hour-ending 20, with 50 MW of expected additional RA offers and 600 MW of available RDRR that can be used, then it may be accurate to say that the ISO BAA needs 150 MW of cure capacity to avoid failing the RSE and incurring the RSE failure surcharge.

In order to develop a process and mechanism for the ISO BAA to procure cure capacity within the timeframe necessary to avoid an RSE failure, a number of questions need to be discussed as a stakeholder community. For example, what is the appropriate term for such arrangements (*e.g.*, one day)? Would all resources be eligible for cure capacity awards? When would cure capacity offers be submitted to the ISO BAA? When would offers be awarded? Would offer prices be capped? How would the ISO BAA allocate the costs of this cure capacity? The ISO looks forward to working with stakeholders on this topic.

Long-term solution for allocating ISO BAA RSE failure surcharges and revenues

In track B, the ISO will work with stakeholders to develop durable solutions for allocating RSE failure surcharges and revenues within the ISO BAA. The goal is to develop methodologies that are consistent with cost-causation principles and the long-term needs of the BAA, but are also practical and feasible to implement. As mentioned in the executive summary, one option that will be considered in track B is a stakeholder-proposed two-tier methodology for allocating RSE failure surcharges.[25] The ISO will begin track B in October 2023, but implementation work will not begin until after EDAM launch.

Addition topics raised by stakeholders

In October 2023, the ISO plans to discuss with stakeholders the proposed scope of track B and whether any other critical items should be added to the scope. For example, in its comments submitted on August 14, 2023, DMM suggested that the ISO consider adding the following two topics: (1) developing

[25] In response to the June 14, 2023 track A1 workshop, four stakeholders (PG&E, SDG&E, Six Cities, BAMx) proposed a two-tier methodology for allocating RSE failure surcharges. In the first tier, surcharges are allocated to LSEs whose month-ahead supply portfolios (RA + Non-RA) are less than their daily peak LSE metered demand. In the second tier, surcharges are allocated pro-rata to LSE metered demand. For more detail on this stakeholder-proposed methodology, please refer to the stakeholder comments submitted on June 28, 2023: California ISO - All comments (caiso.com)

rules to properly incentivize imports that count towards the EDAM RSE to tag prior to the STUC run; (2) developing policy for how to cure imports that fail to tag before the STUC run. The ISO looks forward to discussing these topics with stakeholders in October and finalizing the scope of track B.

9. Resource Adequacy Imports in EDAM

RA Imports within the RSE

An important principle in the design of EDAM is respecting the diversity of different resource adequacy and resource planning programs. Consistent with this principle the ISO expects that RA supply secured and shown on ISO LSE resource adequacy plans, if offered into the market, will contribute toward the EDAM RSE. RA imports, sourcing from supply located outside of the ISO balancing area, also will contribute to the ISO's EDAM RSE. These RA imports may be from dynamically scheduled resources, pseudo tied resources, and system resources from known or unknown resources that are delivered to the ISO border/interface.

Source Specific RA Imports

It is important to recognize that in the EDAM, the interface between two EDAM areas becomes a transfer point with limited ability to continue to bid supply at that particular interface directly as discussed further. For source-specific supply – such as dynamically scheduled or pseudo tied resources – the expectation is that these resources will continue to bid at their resource location in the EDAM. Similarly, if the resource is known by the time of the day-ahead market run (10am) and is located within the EDAM footprint, the supply should be bid directly at the generator and considered as a bucket 1 transfer, as opposed to a bid at the intertie. These bids at the resource level can be self-scheduled or economically bid based upon their RA obligation. To the extent the known resource is located outside of the EDAM footprint, in a non-EDAM balancing area, the interface between the EDAM and non-EDAM area is not an EDAM transfer point and therefore the scheduling coordinator can self-schedule or economically bid that resource directly at the ISO interface.[26] Non-Source Specific RA Imports

Non-source specific RA import supply can also contribute to the EDAM RSE. As discussed during the EDAM design stakeholder process, these non-source specific arrangements are traditionally delivered firm energy contracts where title to the energy is taken at the ISO intertie.[27] These are also common arrangements today across the west, with one of the more prominent contractual mechanisms being the WSPP Schedule C contracts. Throughout the EDAM stakeholder process, WEIM entities and ISO LSEs

[26] Under the EDAM design, as described in the *External Resource Participation* section of the EDAM Final Proposal starting on page 89, the ISO will continue to support economic bidding at its interties with a non-EDAM balancing area. However, economic bidding at interties of other EDAM areas is limited to self-scheduling, or economic bidding from pseudo-tied, dynamically scheduled, otherwise from designated network resources meeting certain requirements as described in the proposal.

[27] EDAM Final Proposal, page. 66 (December 2022).

have emphasized the historical dependability, reliability, and performance of these arrangements recognizing that entities across the west rely on these to reliably serve load.[28]

In the ISO today, non-source specific RA import arrangements are primarily bid at the ISO interties in accordance with CPUC rules which require self-scheduling or economic bidding at $0/MWh or below in meeting their must offer obligation as RA supply. A particular challenge with delivered firm energy contracts in the day-ahead market is that the source of supply and transmission path may not be known by the time that bids are submitted at 10am. If the source is known, as described above, to the extent that source is in the EDAM area the market will expect a bid at the resource. If the source is not in the EDAM area, the scheduling coordinator can bid it at the ISO intertie based upon an injection at the scheduling point of the non-EDAM area. It is important to recognize that if the supply is supported by firm transmission across the EDAM area to the ISO intertie, the Scheduling Coordinator can bid directly at the ISO intertie.

However, if the source is not known at the time of bid submission, the EDAM design supports continued utilization of these arrangements and self-scheduling these at an interface at which it has a contractual obligation to deliver, whether this is an interface between the ISO and an EDAM or non-EDAM area.[29] Under that design, the RA import supply could continue to be offered – self scheduled – at the contractually specified point of delivery on the ISO system. In the day ahead market, if the source is ultimately not known at time of bid submission, the ISO would model the supply as a self-scheduled injection distributed across multiple Demand Aggregation Points (DGAP) of the sinking EDAM area. To the extent the schedule clears the day-ahead market, the EDAM design introduces the requirement to timely tag the import within 3-hours of the day ahead market results publication (effectively by 4pm), or in limited circumstances if the information cannot be obtained, then the tag is submitted by the Short Term Unit Commitment (STUC) horizon (which is approximately 4.5-hours prior to flow). The transmission profile tagging requirement was introduced with these types of arrangements in mind, where the source is not known at day ahead bid submission, as a means to increase the confidence of these supply types. It is also important to recognize that since neither the source nor transmission path is known at day ahead bid submission, the transmission associated with this arrangement is not explicitly optimized by the market but there is an expectation that if the schedule clears the day-ahead market the transmission will be acquired prior to real-time to support delivery of the supply.

In the real-time market, once the source of the supply is known, the scheduling coordinator would be expected to submit a bid at the resource if the source supporting the firm delivered energy is located within the EDAM footprint. The scheduling coordinator would be expected to ~~cancel~~ amend the DA schedule at the resource in the EDAM footprint through a base transfer deviation with the ISO at the applicable interface between EDAM areas. This base transfer associated with the resource in the footprint would contribute to the ISO WEIM RSE.

[28] During the EDAM stakeholder process, it was also recognized that another factor creating a high degree of confidence in these arrangements is the reputational risk on the seller of not performing under the contract.

[29] *Id.*

The EDAM design recognized the potential modeling and congestion pricing challenges created by non-resource specific supply. However, it was recognized that it was important to continue to support these types of arrangements at the onset of EDAM as they are prevalent in the west. Additionally, ISO staff described it would monitor the magnitude and impacts of these types of arrangements in the market along with the Department of Market Monitoring (DMM), including through recurring reporting, and to the extent there are significant adverse impacts, ISO staff would engage with stakeholders to evaluate different methods to modeling and different approaches to resolving the issues experienced in the market.[30]

In comments submitted on August 14, 2023, DMM requested additional detail pertaining to non-resource specific imports that are ultimately sourced/tagged from within the EDAM footprint. First, through its EDAM final proposal, the ISO highlighted the need to review the price formation impact between the different market runs of non-source specific supply modeled in the day-ahead market that is then tagged from specific sources in the real-time market. Second, the ISO believes that questions related to intertie transactions in the EDAM are more appropriately addressed in a forum that applies to all participating EDAM BAAs and will look to do so there.

Maximum Import Capability (MIC) Supporting RA Imports

Today, the ISO allocates MIC through an annual process across the ISO interties to support showings and delivery of contracted RA import supply. The MIC process provides for an orderly distribution of interface capacity allocation to support the distribution of contracted RA imports across the different interties to ensure deliverability and avoid showing of RA imports in excess of intertie transmission capability that ultimately cannot be delivered and utilized by the ISO. During the April 5th stakeholder workshop, a stakeholder requested clarity on whether in the EDAM the ISO will continue calculating and allocating MIC at its interties to support RA import deliverability, including at interfaces that become transfer points between EDAM entities.

As described above, RA imports will continue to count and contribute to the RSE as they are delivered at different ISO interfaces. RA imports shown at non-EDAM interfaces will continue to need to be supported by MIC. Similarly, RA imports that are from resources located within the EDAM footprint will also need MIC at an ISO interface to ultimately ensure that there is sufficient allocation at those interfaces to support these imports. Non-source specific imports based on delivered firm energy contracts, as described above, will also continue to be shown at EDAM interfaces specified under contract including at an interface with an EDAM area where the energy is expected to be delivered and subject to monitoring of continued impacts on the market of these types of arrangements where the source is not known in day ahead. As the EDAM footprint grows more integrated, it will be important to continue to evaluate that relationship with MIC at EDAM interfaces.

[30] EDAM Final Proposal, page 66-68 (December 2022).

Economy imports at ISO Interties

As mentioned above, an intertie point between EDAM areas becomes a transfer point. This includes interfaces between the ISO and another EDAM area, where that intertie now becomes a transfer point between areas. There may be partial or full interfaces between the ISO and other EDAM areas, depending on the transmission rights the EDAM entity has at an interface with Malin due to the different intertie ownership rights being a prime example of a partial interface. In these instances, part of the intertie capability is a transfer point associated with an EDAM entity, and part of it is a regular intertie with the ISO. The more prevalent scenario is where an intertie between the ISO and another EDAM area becomes fully a transfer interface as there are no other ownership rights at that interface.

The ISO will continue to support full intertie bidding – economic bids or self-schedules – at the interfaces with non-EDAM areas. Similar to today, scheduling coordinators can bid their contracted imports at that interface as described above, and they can continue to bid their economy imports (non-contracted) into the market in both the day-ahead and real time markets. These bids will be considered in their respective markets and can clear the market in the same way that they do today.

Bidding of non-contracted imports at partial or full EDAM interfaces with the ISO is more limited. A scheduling coordinator can continue to bid economically or self-schedule their economy imports at a partial EDAM transfer intertie if it will be using transmission across the non-EDAM area across that interface to deliver the supply to the ISO. At interties that fully become EDAM transfer interfaces with the ISO, the market will not support economy import bids (economic or self-scheduled) as this is now a full EDAM interface. The one exception is the RA imports delivered firm energy contracts as described above. This is true in both the day ahead and real time markets.

10. EIM Governing Body Role

ISO staff believe that this initiative is within the scope of the Board. Because this initiative is limited to the decisions regarding the ISO's balancing authority area and how it will operate under EDAM, the initiative does not fall within the scope of the WEIM Governing Body.

The WEIM Governing Body has joint authority together with the Board over any proposal to change or establish any ISO 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 ISO balancing authority area or to the ISO-controlled grid. Charter for EIM Governance § 2.2.1. None of the tariff rule changes contemplated in this initiative 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." Rather, the proposed tariff rules would be applicable "only to the ISO balancing authority area or to the ISO-controlled grid." Accordingly, the matters scheduled for decision fall outside the scope of joint authority.

While the "EIM Governing Body may provide advisory input over proposals to change or establish tariff rules that would apply to the real-time market but are not within the scope of joint authority," no aspects of this initiative would apply to the real time market. Accordingly, this initiative falls outside of the WEIM Governing Body's advisory role as well.

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

11. Next Steps

The ISO will host a virtual stakeholder meeting on August 31, 2023 from 1:00pm to 4:00pm (PST) to review this track A1 final proposal and to discuss the associated draft tariff language. Written stakeholder comments on the draft tariff language are due to the ISO by 5:00pm (PST) on September 14, 2023.