




Extended Day-Ahead Market ISO Balancing Authority Area Participation Rules

Stakeholder Meeting
May 10, 2023

Reminders

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- If you are connected to audio through your computer or used the “call me” option, select the raise hand icon  located on the bottom of your screen.

Note: #2 only works if you dialed into the meeting.

- Please remember to state your name and affiliation before making your comment.
- You may also send your question via chat to either Isabella Nicosia or to all panelists.

Today's Agenda

Time	Topic	Presenter
9:00am – 9:10am	Welcome and today's agenda	Isabella Nicosia
9:10am – 9:25am	Introductory remarks	Milos Bosanac
9:25am – 9:40am	Initiative scope, tracks and schedule	CB Hall
9:40am – 10:30am	Net EDAM export transfer constraint	Danny Johnson, Michael Martin
10:30am – 10:40am	<i>Break</i>	
10:40am – 11:30am	Transfer resource settlement and transfer revenue distribution	James Lynn
11:30am – 12:20pm	Process for recovering historical wheeling access charge revenues	James Lynn
12:20pm – 1:15pm	<i>Lunch in ISO Cafeteria</i>	
1:15pm – 2:05pm	Avoiding RSE Failures	CB Hall
2:05pm – 2:55pm	Allocating RSE failure surcharges and revenues	CB Hall
2:55pm – 3:05pm	<i>Break</i>	
3:05pm – 3:35pm	RA Imports and Intertie Bids in EDAM	Milos Bosanac, George Angelidis, James Lynn
3:35pm – 3:55pm	Stakeholder open forum	
3:55pm – 4:00pm	Next steps	Isabella Nicosia

CAISO Policy Initiative Stakeholder Process

PROPOSAL DEVELOPMENT

Issue paper and working groups

↳ Straw proposal

Draft final proposal

Draft business requirement specification

Draft tariff and business practice manual revisions

Final proposal

DECISION

ISO Board

EIM Governing Body

Tariff filing

FERC

IMPLEMENTATION

Business practice manual

Training

Market simulation

Go Live



Stakeholder input

This represents the typical process, and often stages of the process run in parallel.

We are here

Introductory Remarks

Initiative Scope, Tracks and Schedule

Initiative Scope and Tracks

Scope Items	Track A1 July 2023 BOG	Track A2 Finish policy in 2023	Track B March 2024 BOG
Criteria to set the ISO BAA's net EDAM export transfer constraint	✓		
Transfer resource settlement and transfer revenue distribution	✓		
Recovering historical wheeling access charge revenues	✓		
Avoiding RSE failures		✓ (utilizing existing ISO tariff authority)	✓ (utilizing new ISO tariff authority)
Process to allocate RSE failure surcharges and revenues	✓ (interim solution)		✓ (long-term solution)

Initiative Schedule through July 2023

Date*	Milestone
4/5	Stakeholder workshop
4/19	Due date for stakeholder comments on workshop
5/5	ISO publishes issue paper with Track A1 straw proposal
5/10	Stakeholder meeting to discuss issue paper and Track A1 straw proposal
5/17	Due date for stakeholder comments on issue paper and Track A1 straw proposal
6/7	ISO publishes Track A1 draft final proposal + draft tariff language
6/14	Stakeholder meeting to discuss Track A1 draft final proposal + draft tariff language
6/21	Due date for stakeholder comments on Track A1 draft final proposal + draft tariff language
6/28	ISO publishes Track A1 final proposal and revised tariff language
7/19	ISO Board of Governors decision on Track A1
July	ISO publishes straw proposal for Tracks A2 and B
July	Stakeholder meeting to discuss straw proposal for Tracks A2 and B
2024	Planning for March 2024 Board of Governors decision on Track B

**All dates are tentative until confirmed through a notice in the ISO's Daily Briefing.*

Net EDAM Export Transfer Constraint

Stakeholders offered divergent perspectives on the proposed implementation of the EDAM net-export transfer constraint

- Some stakeholders advocated for conservative implementation at EDAM go-live, wherein supply available for net-export transfer is significantly reduced during tight system conditions
- Other stakeholders prefer more limited application of the net-export transfer constraint to maximize EDAM transfers and market efficiency
- Stakeholders requested transparency on when the net-export transfer constraint would be used

To balance stakeholder concerns the CAISO proposes the EDAM net-export transfer constraint be set to protect for operating concerns that are not modeled in the existing market

- Basing the EDAM net-export transfer constraint on discrete conditions ensures reliability by reserving internal capacity to meet plausible operating conditions that arise between the day-ahead and real-time markets
- Basing the EDAM net-export transfer limit on discrete operating conditions provides transparency on the use of the constraint, and encourages maximum resource participation

Net Export

$$\leq (RSE \text{ Eligible Supply} + Non \text{ RSE Eligible Supply} \times CF) - RSE \text{ Obligation} - EDAM \text{ Reliability Margin}$$

EDAM Reliability Margin: quantity determined daily by BAA system operators based on identified reliability concerns

Confidence Factor (CF): discount applied to non-RA supply that can be used to support EDAM transfers; proposal is to derive based on historic analysis

Constraint implemented for all 24 hours of Integrated Forward Market

The CAISO proposes the ISO BAA's EDAM reliability margin be set based on the maximum of the three criteria listed below:

- While other changes between DA and RT can present risks, the CAISO believes the following proposed conditions represent the largest intra-day system risks
 1. *Replacement reserves based on forecasted Most Severe Single Contingency (MSSC)*
 2. *Protection for a non-credible contingency based on weather conditions (fires)*
 3. *Gas operational flow order/curtailments*
- Are there additional reliability criteria that stakeholders think are appropriate to consider?

The Confidence Factor (CF) is intended to ensure that the ISO BAA EDAM exports are made only by supply that the CAISO BAA is confident in

- Non EDAM RSE eligible supply does not have the same contractual incentive to deliver; incentive is created by financial obligations arising from day-ahead market
 - EDAM transfers that result from this supply are not curtailable at the same priority as LPT exports under today's market design
- Confidence Factor will be based on review of historic performance of non-RSE eligible supply

Example of EDAM net-export transfer constraint

- RSE Eligible Supply = 47,500 MW
 - Non RSE Eligible Supply = 2,500 MW
 - Confidence Factor = 0.99
 - RSE Obligation = 45,000 MW
 - Reliability Margin = 3,000 MW
- Max (MSSC Reserve = 1,500; Non-Credible = 3,000, OFO = 0)

Net-export transfer constraint

$$\begin{aligned} &= 47,500 \text{ MW} + (0.99 \times 2,500 \text{ MW}) - 45,000 \text{ MW} - 3,000 \text{ MW} \\ &= \mathbf{1,975 \text{ MW}} \end{aligned}$$

Transfer Resource Settlement and Transfer Revenue Distribution

Transfer Resource Settlement and Allocation

Stakeholders generally supportive of transfer resource settlement and ISO BAA sub-allocation

- Stakeholder comments support the direction of settling transfer resource awards
- Stakeholders also generally supported that the allocation of the net transfer resource settlement should be consistent

Transfer Resource Settlement – Current WEIM

- Real time market optimizes transmission between WEIM BAAs for energy and awards energy schedules to base, static, and dynamic transfer resource
 - Base transfer schedule imbalances from base schedule settles with the WEIM Entities at FMM LMP
 - Static and dynamic optimal schedules do not receive a financially binding settlement but receive a non-financially binding imbalance accounting when determining a BAA's RTM imbalance energy neutrality amount (Offset)

Transfer Resource Settlement - EDAM and WEIM

- Integrated forward market (IFM) will co-optimize transfer transmission for energy and imbalance reserve
 - Awarded as energy and/or imbalance reserve transfer schedules
 - Settle as binding schedule at marginal IFM LMP or marginal IRUP/IRD
- Residual Unit Commitment process (RUC) will optimize available transfer transmission for reliability capacity
 - Awarded as reliability capacity transfer schedules
 - Settle binding schedule at relevant marginal RCUP/RCD
- Real time market (IFM) will optimize available real time transfer transmission for energy
 - Award RTM energy transfer schedules
 - Receive an binding imbalance settlement of the difference between RTM energy transfer schedule from IFM energy transfer schedule or base energy transfer schedule

Transfer resource settlement allocation

- Transfer schedules awarded on transmission customer (TC), Pathway 1 and Pathway 3, transmission will settle directly with the TC
- Transfer schedules awarded on all other transmission will settle with the BAA
 - EDAM BAA net transfer schedule settlement is allocated to EDAM Entity for further sub-allocation
 - ISO staff proposes to sub-allocate the ISO BAA net transfer schedule settlement to ISO BAA metered demand

Transfer Revenue Distribution and Sub-allocation

Stakeholders offered diverse perspectives on the allocation of ISO BAA portion of transfer revenue

- Stakeholders support transfer revenue associated with ISO pathway 2 transfers to transmission customers
- Stakeholders agree that the ISO BAA transfer revenue associated with ETC/TOR transmission should be sub-allocated to rights holder
- Stakeholders disagree to some extent on the sub-allocation of remaining ISO BAA transfer revenue
 - Majority of stakeholders support the further sub-allocation to measured demand
 - Southern California Edison expressed the opinion that the transfer revenue should be used to support the Wheeling Access Charge recovery

Transfer revenue collection and distribution

- Transfer revenue is collected on the transfer resource settlement when the transfer scheduling constraint binds
 - In DAM, transfer revenue is collected from energy, imbalance reserve, and/or reliability capacity transfer resource settlement
 - In RTM, transfer revenue is collected from transfer imbalance energy deviation settlement
- Transfer revenue collected on transmission donated to market by transmission customer (TC), pathway 2, is directly settled with TC
- Transfer revenue collected on all other transmission is distributed to the BAAs associated with transfer resource as 50:50 proration.

ISO BAA transfer revenue sub-allocation

- ISO staff proposes to sub-allocate ISO BAA transfer revenue to a combination of ISO transmission right holders (ETC/TOR) and measured demand as follows:
 - Energy transfer revenue attributed to transmission customer who schedule their rights will be directly distributed to ETC/TOR holder
 - Energy/imbalance reserve/reliability capacity transfer revenue scheduled on ETC/TOR transmission released to market will be distributed directly to ETC/TOR holder in proportion to the released ETC/TOR and total transfer transmission not schedule by ETC/TOR
 - Conversely, energy/imbalance reserve/reliability capacity transfer revenue scheduled on non-ETC/TOR transmission will allocated to measured demand

Energy Transfer Revenue Example

- Assumption (For illustrative purposes):
 - Binding transfer scheduling constraint results in \$6 marginal energy cost difference between to BAAs
 - TOR/ETC rights holder has 400 MWs of transfer capability between ISO BAA and EDAM BAA
 - TOR/ETC customer schedules 325 MWs of their rights from Non-EDAM BAA to EDAM BAA wheeling through ISO BAA and releases an additional 75 MWs to market for transfer optimization (pathway 2)
 - ISO BAA / EDAM BAA release an addition 100 MWs of RSE transfer capability
- Transfer Revenue (\$3,000) is generated at transfer location (500 Mw @ \$6)
 - ETC/TOR receives \$450 direct transfer revenue settlement
 - ISO BAA and EDAM BAA are distributed \$1,275 transfer revenue for sub-allocation
 - ISO BAA sub-allocation is \$975 to ETC/TOR based upon scheduled rights and \$300 is allocated to measured demand

Process for Recovering Historical Wheeling Access Charge Revenues

Stakeholders offered diverse perspectives on the development of ISO transmission revenue recoverable amount (1 of 2)

- Stakeholders support the development of a standardized ISO process of calculating the Transmission Revenue Recoverable (TRR) amount for ISO BAA
- CalCCA provided some guidance on specific question that should be addressed in this process
 - Will the historical usage reflect anticipated EDAM usage
 - Will the TRR amount reflect changes in transmission flows based upon EDAM participation
 - Will the historical usage be a rolling three year static value or rolling average

Stakeholders offered diverse perspectives on the development of ISO transmission revenue recoverable amount (2 of 2)

- PG&E recommended that the derivation of ISO TRR amount should consider:
 - Revenue from exports and wheel subject to Wheeling Access Charge
 - Revenue from wheeling-through scheduling priority established in the Transmission Service and Market Scheduling Priorities proposal
- Southern California Edison (SCE) expressed the opinion that the transfer revenue should be used to support the Wheeling Access Charge recovery
 - SCE also expresses the ISO should calculate the TRR amounts

Transmission Recoverable Revenue Process proposal

- Calculate each of the TRR Components in conjunction with ISO BAA PTOs
- Work directly with the PTOs that are directly impacted by the TRR associated with Historical usage and new transmission usage
- Calculate the excess wheeling recoverable revenue amount and distribute to the PTO based upon transmission revenue requirements
- PTO calculate their true-up amounts and apply to TRBA adjustment mechanism
- Allocated ISO TRR amount collected from other EDAM BAA to PTO within ISO BAA based upon PTO TRR amount percentage

Avoiding RSE Failures

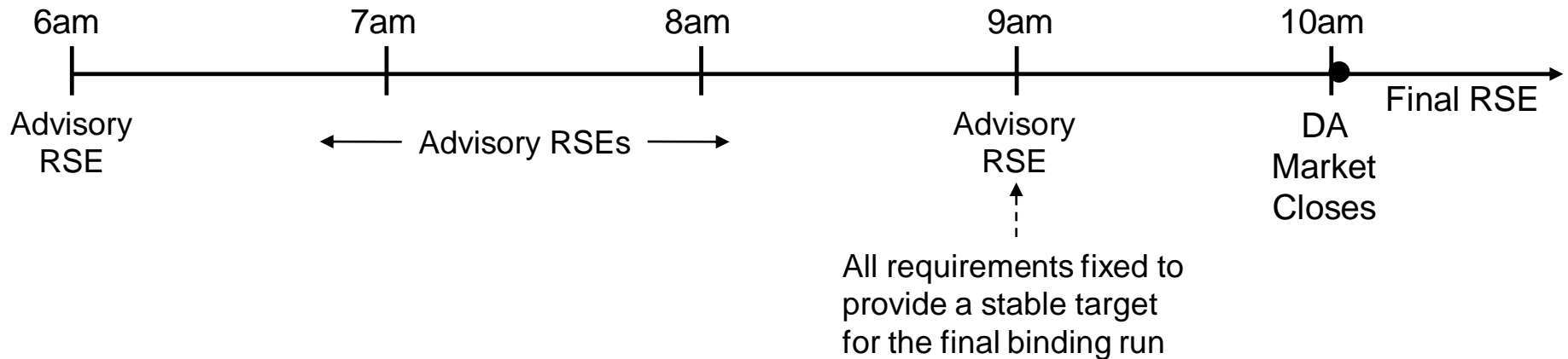
Avoiding RSE Failures: Background

EDAM Resource Sufficiency Evaluation (RSE)

- Tests whether each BAA participating in EDAM has sufficient resources in the day-ahead time frame to meet its own BAA obligations, prior to engaging in transfers with other participating BAAs
- Binding RSE conducted at 10am prior to the day-ahead market (IFM)
- Examines bid-in supply against demand forecast, uncertainty requirements and ancillary services requirements for each hour of the next day
- Uses ISO market optimization and all existing resources models, but does not consider transmission constraints
- Imposes financial consequences for BAAs that fail the RSE.

Avoiding RSE Failures: Background

EDAM Advisory RSEs



- Advisory RSEs are intended to provide helpful information to BAAs, allowing them to take action, if necessary, to pass the binding RSE at 10am
- Pre-set advisory runs at 6am and 9am with updated inputs
- Additional Advisory RSE results available between 6am and 10am

Avoiding RSE Failures: Background

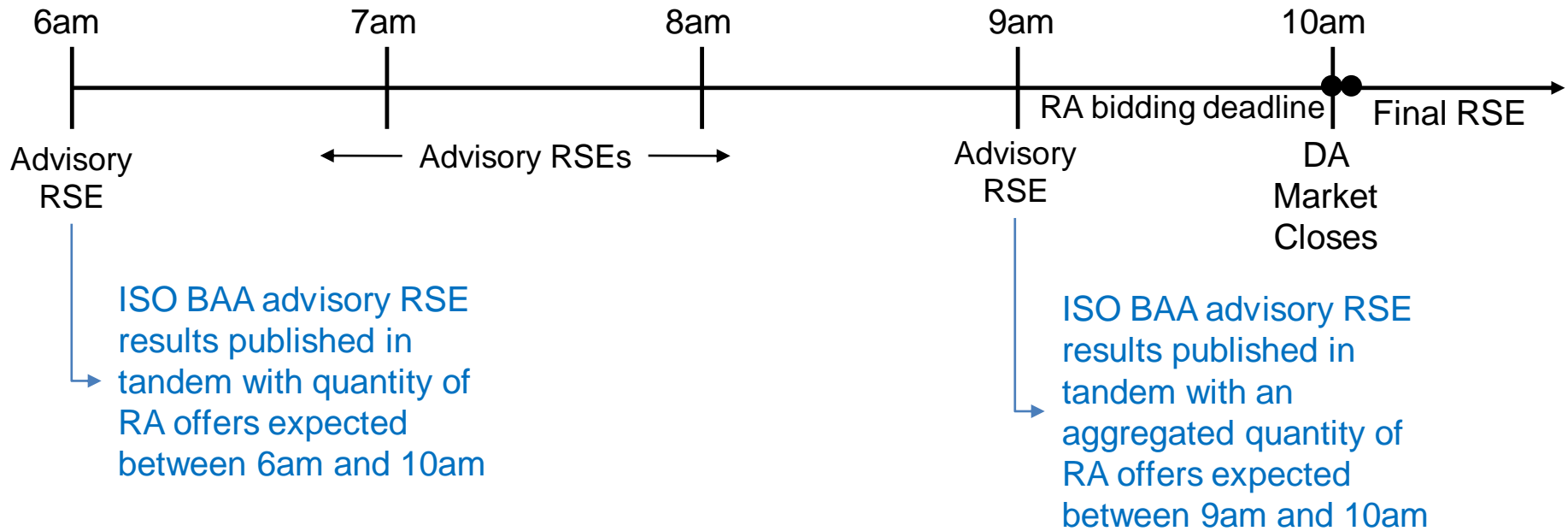
Existing ISO BAA tools and processes to prevent RSE failures

Supply Bids	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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	<ul style="list-style-type: none">• 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.

Avoiding RSE Failures: proposed elements to explore

Proposed Elements to Avoid RSE Failures	Track A1	Track A2	Track B
Publishing information on expected RA offers that can be used in conjunction with advisory RSE results		✓	
Market notifications requesting additional offers		✓	
Accounting for RA reliability demand response resources (specifically those that have not submitted day-ahead offers)		✓	
Consideration of new ISO BAA authority to procure cure capacity			✓

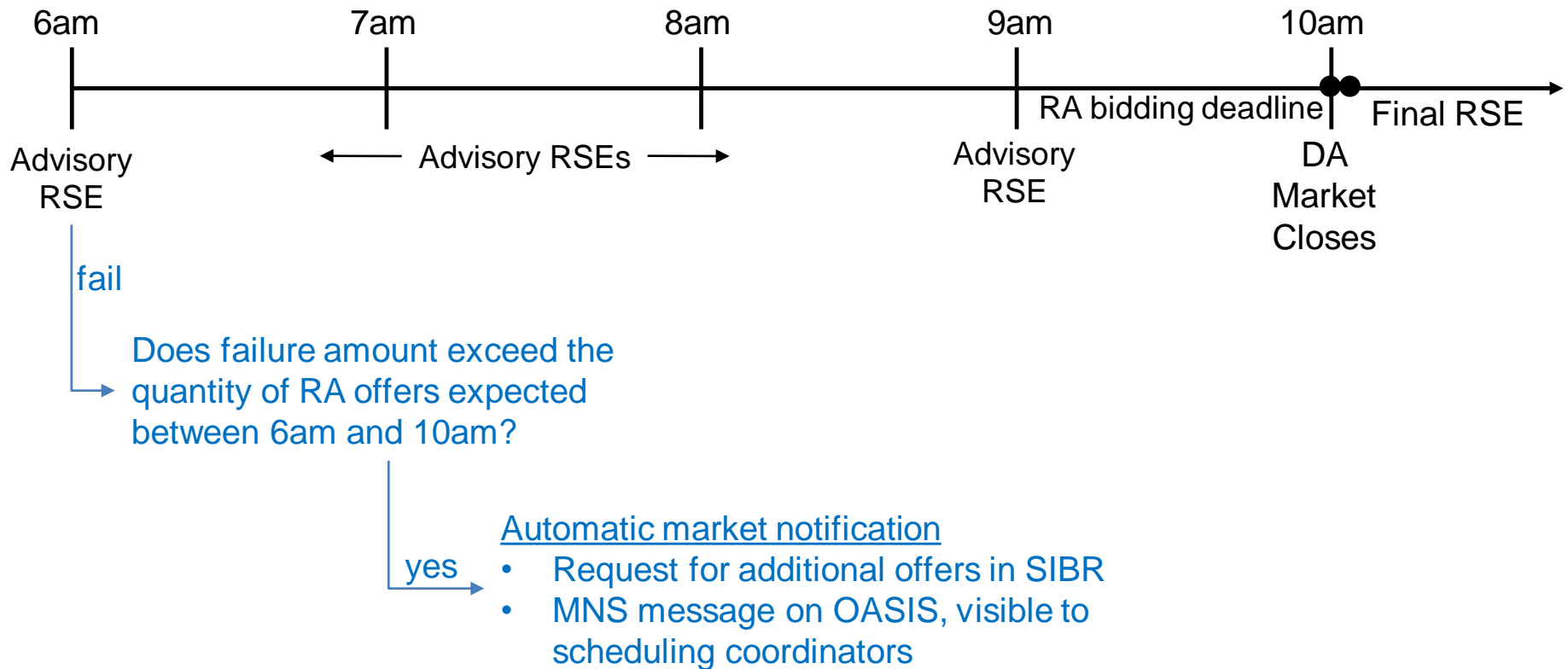
Publishing information on expected RA offers that can be used in conjunction with advisory RSE results



Expected RA offers based on the following: total RA capacity with a day-ahead must offer obligation that has not yet submitted a day-ahead offer into SIBR, is not on outage, and is not reflective of intertemporal constraints (e.g., start-up and shutdown times)

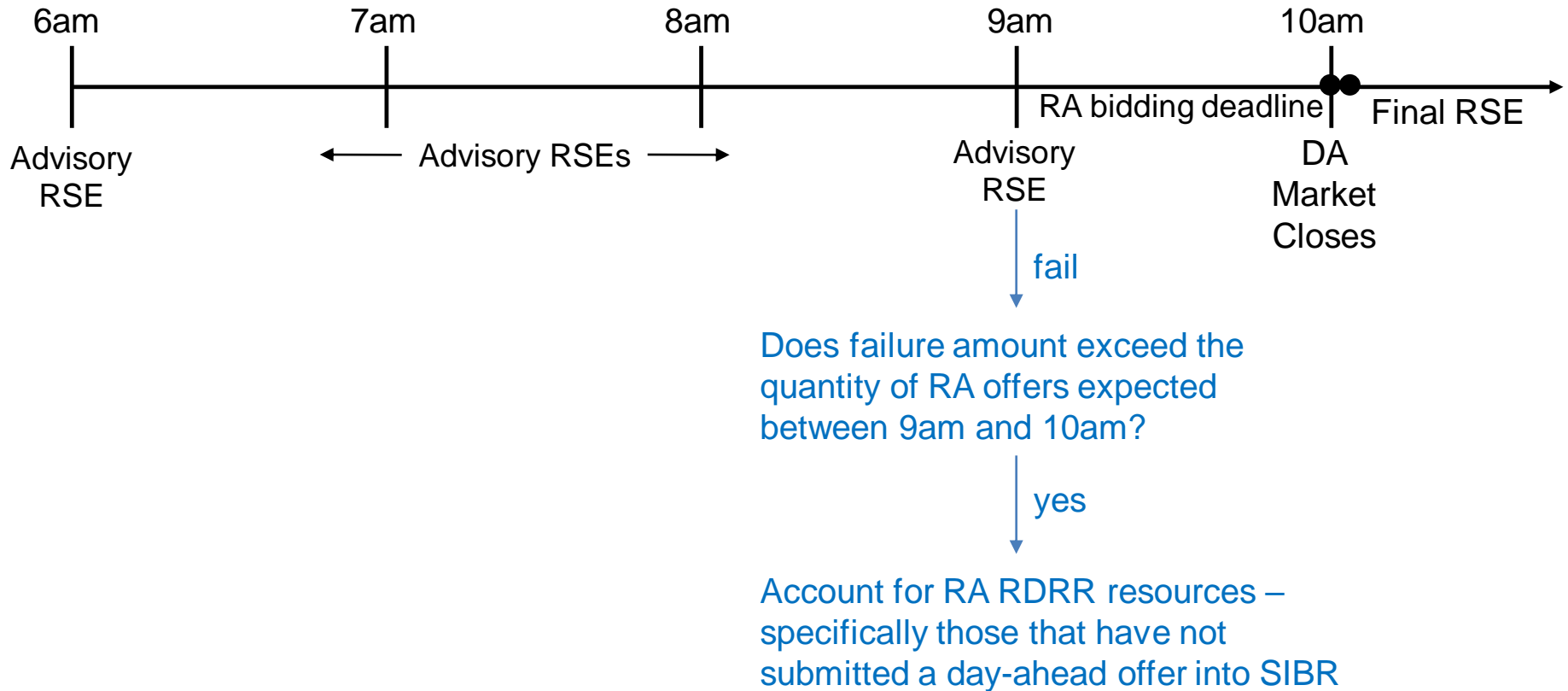
■ Ideas for Track A2

Market Notifications Requesting Additional Offers



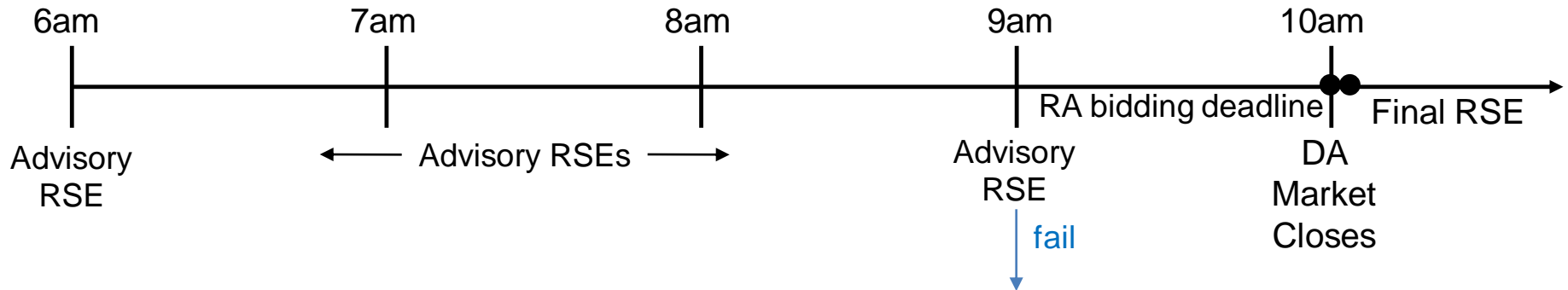
■ Ideas for Track A2

Accounting for RA Reliability Demand Response Resources



■ Ideas for Track A2

ISO BAA Procurement of Cure Capacity



Does failure amount exceed the sum of the following two quantities:

- Quantity of RA offers expected between 9am and 10am?
- Quantity of available RA RDRR resources that have not submitted a day-ahead offer into SIBR

yes

Initial Questions to Consider in Track B

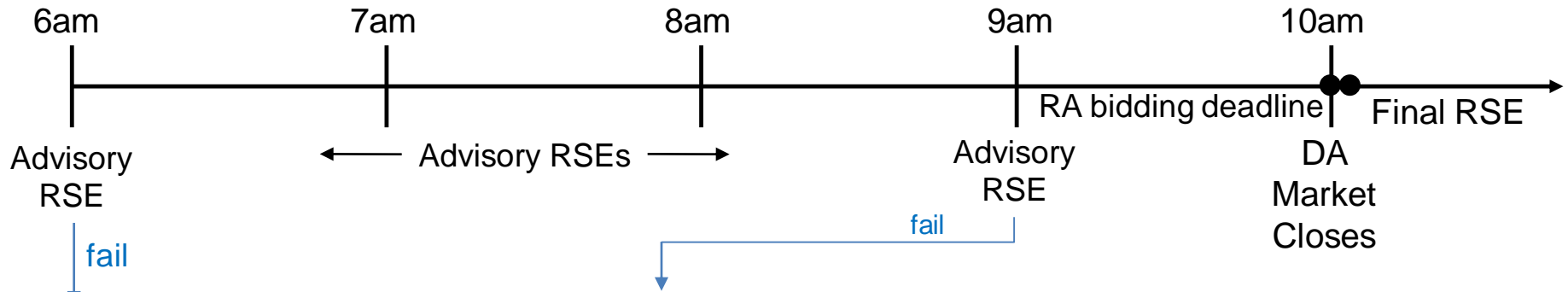
- What is the appropriate term?
- Would all resources be eligible for cure capacity awards?
- When would cure capacity offers be due to the ISO BAA?
- When would cure capacity be awarded?
- Would cure capacity offer prices be capped?
- How would cure capacity costs be allocated within the BAA?
- Are there aspects of the competitive solicitation process that can be used?

ISO BAA procurement of cure capacity, up to an amount equal to: failure amount – quantity of RA offers expected between 9am and 10am – RA RDRRs that have not submitted DA offers into SIBR

■ Ideas for Track A2

■ Ideas for Track B

Avoiding RSE Failures: summary of ideas



Does failure amount exceed the quantity of RA offers expected between 6am and 10am?

fail

yes

Automatic market notification requesting additional offers in SIBR

Condition	Action(s)
If quantity of RA offers expected between 9am and 10am \geq failure amount	No additional actions required
If quantity of RA offers expected between 9am and 10am $<$ failure amount \leq RA RDRRs that have not submitted DA offers into SIBR	Account for RA RDRRs that have not submitted DA offers into SIBR
Failure amount $>$ sum (quantity of RA offers expected between 9am and 10am, RA RDRRs that have not submitted DA offers into SIBR)	<ul style="list-style-type: none"> Account for RA RDRRs that have not submitted DA offers into SIBR and Procure cure capacity up to an amount equal to: failure amount – quantity of RA offers expected between 9am and 10am – RA RDRRs that have not submitted DA offers into SIBR

■ Ideas for Track A2

■ Ideas for Track B

Avoiding RSE Failures: example to illustrate ideas

Time	Information for ISO BAA	Illustrative Action(s) for ISO BAA
6am	6am advisory RSE results show ISO BAA is short by 5,000 MW in HE 20	Automatic market notification requesting 1,500 MW of additional offers (above and beyond RA day-ahead must-offer obligations) for HE 20
6am	HE 20 expected RA offers as of 6am equal to 3,500 MW	
9am	9am advisory RSE results show ISO BAA is short 3,000 MW in HE 20	<ul style="list-style-type: none"> Account for 800 MW of RA RDRR resources (none of which have day-ahead offers in SIBR) <p style="text-align: center;"><u>and</u></p> <ul style="list-style-type: none"> Procure cure capacity up to 400 MW
9am	HE 20 expected RA offers as of 9am equal to 1,800 MW	
9am	800 MW of RA RDRR without day-ahead offers in SIBR are available	

Allocating RSE Failure Surcharges and Revenues

RSE Failure Consequences: Background

- The EDAM design provides a financial consequence framework for failure to pass the day-ahead RSE, which incentivizes procurement to ensure daily sufficiency
- Three types of RSE failure surcharges (and corresponding revenues)
 - On-peak upward failure surcharge
 - Off-peak upward failure surcharge
 - Downward failure surcharge
- 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

Allocating RSE Failure Surcharges and Revenues: Objectives

Short-term objective (Track A1)

Develop reasonable allocation methodologies that can be implemented by day 1 of EDAM go-live, pending evaluation of more complex approaches in Track B

Longer-term objectives (Track B)

- Develop allocation methodologies that more accurately reflect cost-causation principles
- Such allocation methodologies may take more time to design and build, and may interact with other policies (for example, Resource Adequacy)

Track A1 Proposal for Allocating RSE Failure Surcharges and Revenues

RSE failure surcharges

Allocate RSE failure surcharges on an hourly basis as follows: based on MW of metered demand for each SC as a portion of total ISO BAA metered demand, for each hour the ISO BAA was assessed RSE failure surcharges

RSE failure revenues

Allocate RSE failure revenues on an hourly basis as follows: based on MW of metered demand for each SC as a portion of total ISO BAA metered demand, for each hour the ISO BAA received RSE failure revenues

Justifications

- A significant portion of EDAM benefits will likely accrue to load, so it is reasonable for metered demand to take on the initial exposure to surcharges and revenues until a long-term solution can be designed and implemented
- A long-term solution will require further stakeholder discussions and careful consideration of interactions with RA processes

Track B Ideas for Allocating RSE Failure Surcharges and Revenues

Idea category #1

Allocate to LSEs taking into account LSE-specific RSE targets and LSE supply. For example: surcharges allocated to LSEs based on LSE-specific RSE targets net of LSE supply.

- How to derive LSE-specific RSE targets?
- How to quantify LSE supply?

Idea category #2

Allocate to RA capacity that fails to meet its day-ahead must offer obligation. For example: surcharges allocated using two tier methodology, where first tier is RA capacity that fails to meet its day-ahead must offer obligation, and second tier is pro-rata to metered demand

- Overlap with RA Availability Incentive Mechanism (RAAIM)?
- How to address day-ahead availability limitations?

Other Ideas?

*May also need to consider whether and how the long-term solution for allocating ISO BAA RSE failure surcharges aligns with allocating “cure capacity” procurement costs, if the ISO BAA pursues a cure capacity procurement mechanism

RA Imports and Intertie Bids in EDAM

ISO Interfaces with EDAM Entities

- Interfaces between the ISO and EDAM areas become transfer points within the EDAM.
- These interfaces will continue to support delivery of RA imports, particularly non-source specific delivered firm energy contracts.
- Continued ability to deliver and bid at ISO non-EDAM interties, whether RA or economic imports.
- Continued need for Maximum Import Capability (MIC) to support annual and monthly RA import showings to ensure deliverability.

ISO Resource Adequacy Imports

Resources	Bidding (DA)	Modeling	Notes
Pseudo-tie and Dynamic Schedule	Bids submitted at the resource (same as today)	At resource	
Source specific in EDAM area	Bids submitted at the resource	At resource	
Imports from non-EDAM areas	Bids submitted at intertie with non-EDAM area (same as today)	At intertie	
Non-Source Specific Imports (delivered firm energy contracts)	<ul style="list-style-type: none"> If source <u>known</u>, bid at resource if in EDAM area If source <u>not known</u>, bid a ISO contractually specified interface 	Day ahead RA imports bid at EDAM interface (self scheduled), if source not known, modeled with a non-EDAM DGAP.	In RTM, once the source is known and if it is located in WEIM footprint, the resource is expected to submit a bid for the energy. Submit counter flow export schedule to offset DA import schedule, or submit 0 MW self-schedule on the DA import.

Bids at ISO interties (with non-EDAM areas)

- Scheduling coordinators can continue to submit bids (self schedule or economic) at the ISO interties with non-EDAM areas.
- These bids include RA imports or otherwise other economic imports that will be considered by the market.
- There may be interfaces between the ISO and EDAM areas that are partial transfer points (based on EDAM entity rights on that interface).
 - Can continue to submit bids at non-EDAM scheduling point with delivery at ISO interface.

Stakeholder Open Forum

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Note: #2 only works if you dialed into the meeting.

- Please remember to state your name and affiliation before making your comment.
- You may also send your question via chat to either Isabella Nicosia or to all panelists.

Next Steps

Next steps

- Comments on the issue paper and track A1 straw proposal are due by end of day **May 17, 2023**. Please submit your comments using the comment template available on the initiative webpage:
<https://stakeholdercenter.caiso.com/StakeholderInitiatives/Extended-Day-Ahead-Market-ISO-Balancing-Authority-Area-Participation-Rules>
- Upcoming milestones*:
 - 5/17/23: Comments due on issue paper and track A1 straw proposal
 - 6/7/23: ISO publishes track A1 draft final proposal and draft tariff language
 - 6/14/23: Stakeholder meeting to discuss track A1 draft final proposal and review draft tariff language

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For reference

- Visit initiative webpage for more information:
<https://stakeholdercenter.caiso.com/StakeholderInitiatives/Extended-Day-Ahead-Market-ISO-Balancing-Authority-Area-Participation-Rules>
- If you have any questions, please contact
isostakeholderaffairs@caiso.com