

November Monthly Meeting

Hayley Williamson

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Teleconference

November 4, 2022

Agenda

- **Welcome Remarks and Announcements** – *BOSR Vice-chair Williamson*
- **California ISO EDAM Update** – *California ISO*
 - RSE Financial Consequences - *Danny Johnson, Market Design Sector Manager*
 - Unsold Firm ATC (Bucket 3) Transmission and Compensation - *Partha Malvadkar, Director of Resource Adequacy and Infrastructure Policy*
- **Potential BOSR Comments on Transmission Commitment** - *Woori Lee, WIEB*
 - Unsold Firm ATC (Bucket 3) Transmission Compensation
 - Firm or Conditional Firm in Excess of RSE (Bucket 2) Transmission Availability
- **Next Steps** - *Bonnie Lamond, WIEB*

Bucket 3 Transmission

Potential BOSR Comments

Woori Lee

Wholesale Electricity Market Analyst

Bucket 3 Transmission

Stakeholder Discussion

- Some stakeholders do not agree on which components should be included in the EDAM recoverable transmission revenues.
- Some entities argue that this recoverable transmission revenue can undermine the need for transmission customers to continue to purchase point to point transmission beyond their RSE transmission needs.
- Some stakeholders believe that the review period may be too short and could lead to uncertainty about foregone transmission revenues from the sale of short-term products.
- Some stakeholders question whether accrued transfer revenues associated with transmission should be credited toward offsetting the EDAM recoverable transmission revenues.

Bucket 3 Transmission

BOSR Staff's Analysis

- ✓ By introducing financial incentives, the proposal will ensure entities make their transmission available to the EDAM.
- ✓ The proposed transmission revenue recovery mechanism will increase market efficiency by optimizing market solutions and avoiding rate pancaking.
- ✓ Any inputs and methodology for the calculation of the EDAM recoverable transmission revenue should be accurate and transparent.
 - California ISO should verify the calculation.
- ✓ The BOSR believes that the EDAM is not the appropriate tool for guaranteeing recovery of transmission revenue requirement.

Bucket 3 Transmission

Potential BOSR Comments

- 1. The BOSR supports the overall concept of the proposed framework that provides historical transmission revenue recovery through EDAM.**
 - Allows transmission providers in the EDAM to retain current transmission revenues otherwise received in the bilateral market.
 - Prior to the maturation of EDAM, it is critical to provide market participants with an incentive to make their transmission available in the EDAM.
 - Making transmission available in the EDAM will result in greater market efficiency and benefits.

Bucket 3 Transmission

Potential BOSR Comments

2. The BOSR has concerns about Components 2 and 3 of the EDAM recoverable transmission revenues.

- The BOSR acknowledges that there will be foregone short-term firm and non-firm transmission revenue for transmission providers and agrees with the proposal that this foregone revenue should be compensated through EDAM.
- The BOSR does not believe that it is appropriate for the CAISO to guarantee transmission revenue requirement for new builds between rate cases, and therefore, does not agree with the approach of compensation for new transmission builds (Component 2). However, BOSR staff would like to discuss alternative approaches with the CAISO staffs.
- The BOSR believes that revenues associated with wheeling through (Component 3) are already accounted for in short-term firm and non-firm point to point transmission (Component 1) and including this component may cause a double counting issue.

Bucket 3 Transmission

Potential BOSR Comments

3. The BOSR contends that there should be a standardized assessment of the EDAM recoverable revenues calculated by each entity.

- Each EDAM Entity likely has different accounting methods, therefore, the credibility of the “EDAM recoverable transmission revenues” for each component needs to be verified.
- There should be a standardized assessment of the “EDAM recoverable revenues” and “forecasted shortfall.”
- Monitoring and reporting of the calculation is necessary.

Bucket 3 Transmission

Potential BOSR Comments

4. The BOSR supports the proposal of reviewing and updating the calculation of EDAM recoverable transmission revenues after 2 years of participation in the EDAM.

- The BOSR agrees it's more desirable to reflect patterns in transmission usage change and market conditions into the calculation.
- As EDAM is implemented, the liquidity of the bilateral market is expected to be reduced and this change should be reviewed and reflected in the calculation.
- However, the BOSR encourages CAISO to consider an eventual phaseout of the historical transmission revenue recovery through EDAM. As the market matures and the benefits of the EDAM are realized, the need for foregone transmission revenue recovery as an incentive to participation may diminish.

Bucket 2 Transmission

Potential BOSR Comments

Woori Lee

Wholesale Electricity Market Analyst

Bucket 2 Pathways – Recap

- CAISO proposed 3 pathways to make Bucket 2 transmission, which is unscheduled transmission in excess of the RSE, available to the market.

Pathway 1

Exercising transmission rights by transmission customer in advance

- Transmission customer elects not to economically bid its supply into the market.
- Submits a self-schedule
- High priority schedule

Pathway 2

Releasing transmission rights to EDAM in advance

- Support transfers in the EDAM.
- Unable to be utilized by the transmission customer after day-ahead market use
- High priority schedule

Pathway 3

Unscheduled transmission rights become available to the EDAM

- Transmission customers that did not choose pathways 1 or 2
- **Unscheduled transmission can be exercised between day-ahead and real-time**
- Lower priority than a day-ahead schedule

Bucket 2 Transmission

Stakeholder Discussion

- Some stakeholders recommend modifying the proposal to allow transmission customers the option to hold their transmission rights out of the market optimization for the day-ahead market.
- Some entities request additional discussion regarding the potential uplift that could occur as a result of transmission customers exercising firm rights after the day-ahead market run.
- Some entities suggest that the proposal was improperly applying lower priority for later use of the unscheduled transmission.
- Some stakeholders suggest that unscheduled transmission rights should be “carved out” of, and not be made available to, the market.

Bucket 2 Transmission

BOSR Staff's Analysis

- **Criterion 1: Making more transmission available to the market is foundational to optimize day-ahead unit commitment and reliability of the entire footprint.**
 - The proposed 3 pathways can reasonably achieve the goal of maximizing the transmission in the EDAM by making all unscheduled transmission available to the market.
- **Criterion 2: EDAM should provide measures that participants can maintain their OATT rights while encouraging market efficiency and minimizing the risk of unilateral market power.**
 - The proposed 3 pathways strike a right balance between maximizing benefits of EDAM and respecting OATT rights.
 - Pathway 3 provides participants with an option for exercising their OATT rights.

Bucket 2 Transmission

Potential BOSR Comments

- **The BOSR supports CAISO’s proposed “three pathways” construct under Bucket 2 as it provides customers a pathway to determine how they utilize their unscheduled transmission rights in the EDAM.**
 - ✓ Pathways 1 and 2 respect the voluntary nature of the unscheduled transmission use either by the market or by exercising transmission customers’ rights.
 - ✓ Pathway 3 provides more flexibility for transmission customers comparable to the options available under the OATT.
 - ✓ Exercising OATT rights between the day-ahead market and the real-time market will undermine optimal market outcomes because it may cause redispatch.
 - ✓ Giving the option for transmission customers to “carve out” or hold transmission rights out of the market will undermine market efficiency and lead to the exercise of unilateral market power.

Next Steps

Bonnie Lamond

Program Manager – Wholesale Electricity Markets

Next Steps – EDAM Governance

Date	Topic
October 31, 2022	Revised EDAM governance proposal posted
November 7, 2022	GRC public meeting to discuss revised EDAM governance proposal
November 11, 2022	Staff to circulate draft BOSR comments on revised governance proposal
November 18, 2022	Comments to ISO on revised EDAM governance proposal due
December 7, 2022 *	EDAM governance draft final proposal posted
December 13, 2022	WEIM Governing Body meeting
December 14, 2022	WEIM Governing Body and ISO Board meeting

*tentative

Next Steps – EDAM Market Design

Date	Topic
October 31, 2022	EDAM draft final proposal posted
November 7, 2022	EDAM draft tariff framework posted
November 14, 2022	EDAM stakeholder meeting
November 15, 2022	Staff to circulate draft BOSR comments on draft final proposal
November 22, 2022	Comments to ISO on EDAM draft final proposal due
December 7, 2022 *	EDAM final proposal
December 13, 2022	WEIM Governing Body meeting
December 14, 2022	WEIM Governing Body and ISO Board briefing
Jan/Feb 2023	BOSR comments to Governing Body
February 2023	ISO Board and WEIM Governing Body decision

*tentative



EDAM

EXTENDED DAY-AHEAD MARKET

Resource Sufficiency Evaluation – Failure Consequences

Nov 4, 2022



California ISO

EDAM Resource Sufficiency Evaluation – Failure Consequence Design

- Each participating entity (balancing area) has sufficient supply in day ahead to meet forecasted load, uncertainty that may materialize between day ahead and real time, and reserves
- Tiered consequence structure:
 - Tier 1 – small tolerance band, no consequence
 - Tier 2 – failure of RSE within 50% of their uncertainty requirement; limited pricing / reliability impact
 - Tier 3 – larger failure in amount greater than 50% of uncertainty requirement; potential pricing/ reliability impact
- Different multipliers applied to surcharge for tier 2 or 3 failures
- Surcharge attempts to approximate the cost of bilateral transactions



EDAM

EXTENDED DAY-AHEAD MARKET

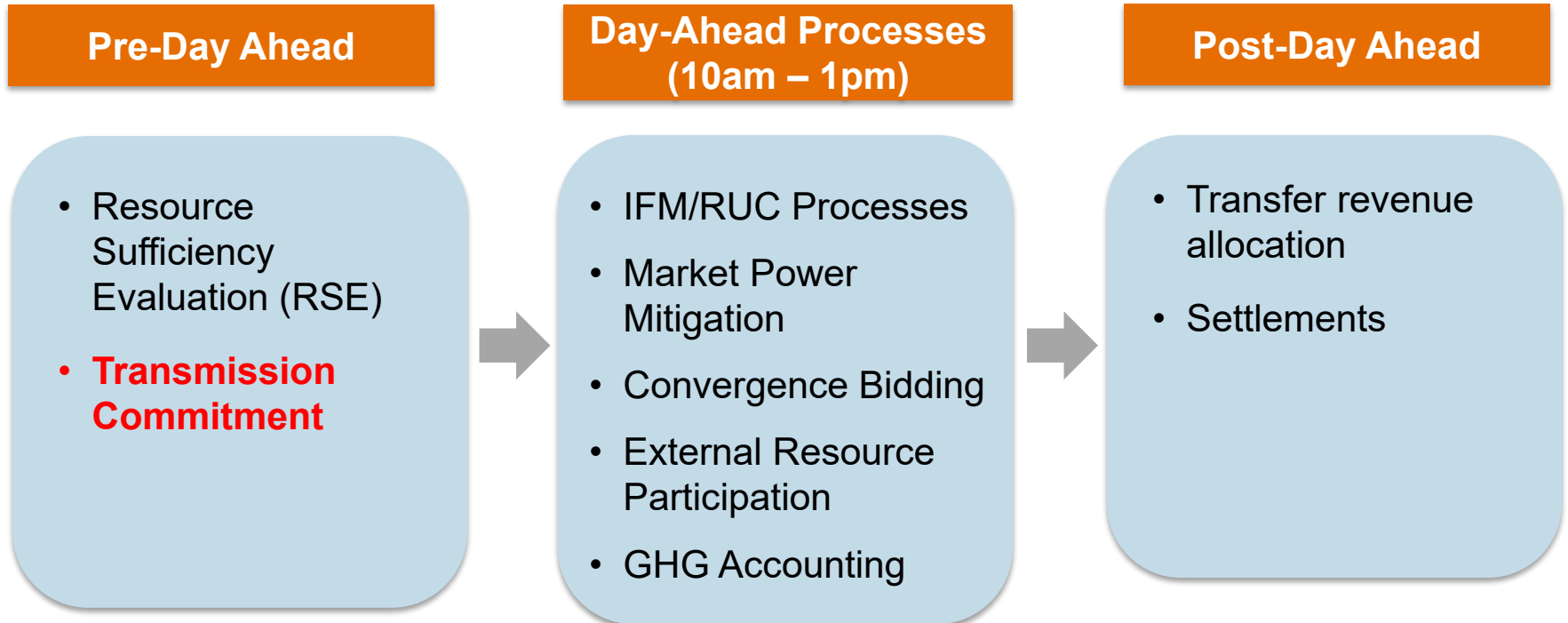
EDAM Draft Final Proposal on Transmission

Nov 4, 2022



California ISO

EDAM design components – an overview



EDAM Transmission Framework

Bucket 1 Transmission

Supports delivery of supply across EDAM interfaces for RSE purposes
Made available by Transmission Customer (Day Ahead)
Receives transfer revenue
Firm or Conditional Firm transmission rights

Bucket 2 Transmission

- Firm or Conditional Firm transmission rights
- In excess of transmission needed to support RSE
- Made available by Transmission Customer
- Receives transfer revenue

Bucket 3 Transmission

- Unsold Firm ATC
- Made available by Transmission Provider
- Cost recovery through historical TRR recovery in EDAM
- Receives transfer revenue

Bucket 3 - Transmission Cost Recovery without Hurdles in Optimization

- Bucket 3 transmission will be available to the EDAM hurdle free (transmission provider unsold firm ATC).
 - Eliminating the hurdle rate will increase market efficiency and the overall benefits.
 - Foregone revenues with bucket 3 transmission, including short term firm ATC, would be eligible for cost recovery within the calculation.
- Bucket 3 transmission would also receive transfer revenue associated with the transmission made available.

Transmission Cost Recovery

EDAM Straw Proposal allows for the recovery of certain transmission costs:

1. Historical revenues associated with the short-term firm and non-firm point-to-point products for OATT Customers (associated with sales to 3rd parties)
 - Foregone reduction in wheeling access charge (WAC) revenues in the ISO
2. Revenues on approved new transmission builds that increase transfer capability between EDAM BAAs
3. Revenues for EDAM transfer wheeling-through volumes for EDAM BAAs that exceed the total imports/exports from the EDAM entity BAA.

End of the Year True Up

- Throughout the year, each EDAM entity will collect revenues towards its forecasted revenue shortfall.
- At the end of the year, each EDAM entity will also know its actual revenue shortfall based on the OATT sales conducted throughout the year, which would go towards reducing the revenue shortfall recoverable.
 - may be a recovery surplus or a shortfall at end of year.
- EDAM Draft Final Proposal adopts a year-end true-up so shortfalls or surpluses are carried over into the following year's calculation.

Appendix

Component 1: Assurance for recovering Historic Transmission Revenues

- For EDAM entities operating under the OATT, the EDAM recoverable TRR is the historical transmission revenue requirement for short-term firm point to point and non-firm point to point transmission
- For the ISO, the EDAM recoverable TRR is the total historical WAC revenues associated with third parties.
- Two key questions regarding calculation of the EDAM recoverable TRR:
 - (a) across what time period is the gross at risk TRR derived?
 - Three years historical data
 - (b) how often is the gross at risk TRR value updated?
 - Updated after 2 years

	Total TRR	Non-Firm TRR (3 rd party)	Short-term Firm TRR (3 rd parties)	EDAM Recoverable TRR (for EDAM)	Ratio (EDAM recoverable TRR / Total TRR)
EDAM Entity (OATT)	\$100 Million	\$3 million	\$4 million	\$7 million	7%

Netting Transmission Sales

- The total revenues recoverable through the EDAM consist of the difference between the EDAM recoverable TRR, which is based on historical values and the actual transmission revenues collected through transmission sales of the products eligible for recovery.
- Formula below illustrates further the example of the TRR shortfall recoverable through the EDAM.

$$\text{TRR Shortfall} = \text{EDAM Recoverable TRR (historical)} - \text{Actual transmission revenues}$$

Component 2: Percentage of New Transmission Build Revenue Requirement

- New transmission builds raise the potential of foregone transmission revenues associated with non-firm and short-term firm transmission sales.
- recoverable to the EDAM is limited to the ratio of the non-firm and short-term firm point to point revenue requirement.
- If the upgrade adds \$50 million to the total TRR, and the historical percentage of sales was 7%, then the amount recoverable through the EDAM is 7% of that amount, a total of \$3.5 million.

	Total TRR	Non-Firm TRR (3 rd party)	Short-term Firm TRR (3 rd parties)	EDAM Recoverable TRR (for EDAM)	Ratio (EDAM recoverable TRR / Total TRR)
EDAM Entity (OATT)	\$100 Million	\$3 million	\$4 million	\$7 million	7%

Component 3: Recovery of Transmission Costs Associated With Significant EDAM Wheeling Through

- The proposal is that in those limited periods where this net difference occurs, the EDAM entity be compensated for the excess transmission use supporting net wheels through its system.
- The wheels through the EDAM entity system created benefits for other EDAM BAAs but not for that entity.
- The volume of net wheels through the EDAM entity transmission system, net of EDAM transfer imports/exports, would be compensated at the EDAM entity's filed and approved non-firm hourly point to point transmission rate.

Transmission Cost Assignment

- Apply the uplift rate to load across the footprint
- In allocating this uplift charge, the proposal is not to allocate an EDAM entity its own TRR revenue shortfall so its metered demand does not have to pay for its TRR cost recovery.

Bucket 1 Transmission – Supporting the RSE

- Supports delivery of supply across EDAM interfaces for RSE purposes
- Made available by Transmission Customer (day-ahead)
- Receives transfer revenue
- Firm or Conditional Firm transmission rights

CAISO BA Transmission in EDAM – RSE

Entities relying on resources wheeled through or export from the ISO to meet the EDAM RSE would have the following pathways:

1. Wheeling through the ISO system – entities would demonstrate establishment of a wheeling through priority across the ISO system and bring Bucket 1 transmission to the EDAM across the interface
 2. Exports from the ISO system – entities would demonstrate establishment of high priority export status to export non-resource adequacy supply
- The WAC charges would be assessed for the period that the high priority export is being shown for the RSE.

CAISO BA Transmission – Other Buckets

- Bucket 2 transmission on the ISO system is primarily associated with legacy contracts
 - could be made available to the market based upon the terms of the agreement
- Bucket 3 consists of the remaining transmission on the ISO system, which is unreserved and unsold
 - TRR recovery proposal allows for the recovery of the shortfall associated with historical WAC revenues

Bucket 2 – Customers' Transmission Rights

- Transmission customer use of transmission rights:
 - *Pathway 1* – can utilize transmission rights, day ahead.
 - Receive day ahead transfer revenue through EDAM entity.
 - *Pathway 2* – can release the transmission rights to EDAM
 - Receive transfer revenue from ISO directly.
 - Can continue to self schedule or economically bid in real-time (but not associated with use of transmission rights)
 - Limited to monthly and long term rights
 - *Pathway 3* – unscheduled transmission is made available to EDAM.
 - Can exercise previously unscheduled rights between day ahead and real time.
 - Accommodate exercise of rights through redispatch
 - Day ahead transfer revenue (associated with unscheduled transmission) settled with EDAM entity who may seek to offset costs of accommodating exercise of rights.
- Legacy transmission contracts (pre-OATT) can continue to be exercised under the terms of the agreement.
 - Pathway 2 may be available based on terms of agreement.
 - Pathway 3 may not be applicable and unscheduled rights would not be in market.