



EDAM

EXTENDED DAY-AHEAD MARKET

EDAM Workshop – Transmission & Bucket 2

July 11, 2022



California ISO

Agenda

1. Discussion of Voluntary Transmission Option under Bucket 2
2. Discussion of Unused Bucket 2 Transmission Automatically being included in the EDAM
3. Implementation Considerations

Transmission Bucket Refresher

Bucket 1 Transmission – Required to Support Resource Sufficiency Obligation

- High quality transmission: Firm and Conditional Firm transmission to support reliable transfers.
- Made available by transmission customer, whether hold transmission rights under OATT or legacy contracts to support RSE.

Bucket 2 Transmission – Transmission sold to transmission customers made available to EDAM

Bucket 3 Transmission - unsold firm available transfer capability (ATC) to support transfers at interfaces between EDAM BAAs.

- Bucket 3 transmission not utilized by the market would revert back to the EDAM entity for continued sales under the OATT.
- The ISO Straw Proposal focused primarily on two approaches:
 - Approach 1: EDAM entities would make bucket 3 transmission available to the market for optimization at a hurdle rate (i.e., the published tariff rate).
 - Approach 2: EDAM entities would make bucket 3 transmission available to the market hurdle-free, with option for cost recovery

Stakeholders Comments Overview – Bucket 2 Transmission

- Stakeholders were divided on whether Bucket 2 transmission should be voluntarily made available or whether unscheduled firm transmission should automatically be available to the EDAM for optimization.
- Stakeholders supporting the concept of customers voluntarily making transmission available generally sought to:
 - Avoid potential impacts of redispatch costs for exercising transmission rights between DA and RT;
 - Allow for incentives beyond congestion rents (i.e., a hurdle rate for making Bucket 2 transmission)
 - Insure incentives to invest in transmission
- Stakeholders supporting automatically including unscheduled firm rights highlighted the benefits of maximizing transmission to support transfers and the adverse impacts of a voluntary framework (e.g. impacts on efficiency and incentives for withholding).

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Bucket 2 – Voluntary Transmission Framework Option

Voluntary Bucket 2 Framework – The Concept

- Transmission customers can voluntarily choose, ahead of the DA market run (10am), whether to make their firm transmission rights available to the market to support reliable EDAM transfers.
- Bucket 2 transmission voluntarily made available and used by the EDAM cannot be recalled by customer
 - Mitigates risk of redispatch costs.
- The transmission rights can accrue congestion rents, settled with the EDAM entity.
 - EDAM Entities allocates those rents subject to individual tariff rules.

Stakeholder Perspectives – Voluntary Approach

- Stakeholders in support of the approach noted:
 - Discretion left to each transmission customer.
 - Avoids the risk of redispatch costs being borne by transmission customers.
 - Retains value of long-term firm rights and investments.
 - Transmission should be made available at hurdle rate to properly value rights (rather than only congestion rents).
- Stakeholders in opposition of approach noted:
 - Transmission market power concerns; Impacts on congestion costs
 - Less efficient market outcome and phantom congestion

Voluntary Approach – Hurdle Rates (Stakeholder Positions)

- Some stakeholders suggested that firm transmission rights, held by a customer, be made available at a hurdle rate to the market to reflect the value of transmission.
 - Greater incentive, reflects value of transmission
- Concerns with hurdle rate approach.
 - Impact on market efficiency by introducing hurdles in optimization.
 - Potential for withholding transmission and phantom congestion, impacting pricing and potential exercise of transmission market power.

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Bucket 2 – Automatic Inclusion of Unscheduled Transmission Option

Including Unscheduled Transmission – The Concept

- Transmission customers' firm transmission rights, which are not scheduled by 10am, are automatically available to EDAM.
 - Maximizes transmission available to optimize transfers and derive benefits.
- Firm transmission rights can continue to be exercised between DA and RT (consistent with existing arrangements)
 - May drive potential real time redispatch.
- The transmission rights can accrue congestion rents, settled with the EDAM entity.
 - Entity has own tariff process defining how those rents are allocated.

Unscheduled Transmission Rights - OATT Basis

- Section 13.8 of the Pro Forma OATT provides:

“Schedules for the Transmission Customer’s Firm Point-To-Point Transmission Service must be submitted to the Transmission Provider no later than 10:00 a.m. [or a reasonable time that is generally accepted in the region and is consistently adhered to by the Transmission Provider] of the day prior to commencement of such service. Schedules submitted after 10:00 a.m. will be accommodated, if practicable.”

Stakeholder Perspectives – Unscheduled Transmission

- A number of stakeholders support the concept of unscheduled firm transmission becoming automatically available to the EDAM if not scheduled by 10am.
- Maximizes the amount of transmission made available to support transfers and derivation of benefits, avoids phantom congestion and withholding of transmission.
- Seen as consistent with FERC policy, and allows for exercise of these rights between DA and RT (does not limit use).
- Needs to be flexible to recognize potential unique situations and exceptions (i.e., pre-OATT agreements).

Unscheduled Transmission Rights – Exceptions Consideration

- Transmission rights secured under the terms of the OATT would be subject to the unscheduled transmission requirement.
 - Common set of rules for EDAM entities, level playing field.
- Pre-OATT legacy transmission arrangements would not be automatically made available to the market.
 - These arrangements are not governed by the terms of the OATT and may have special provisions regarding use and exercise of those rights.
 - Discretion of transmission customer and EDAM entity as to whether or how those transmission rights are made available.
- There may be unique circumstances as well with a need for flexibility, even if the transmission rights are acquired under the OATT.
 - Exceptions can potentially be recognized in participation agreement.

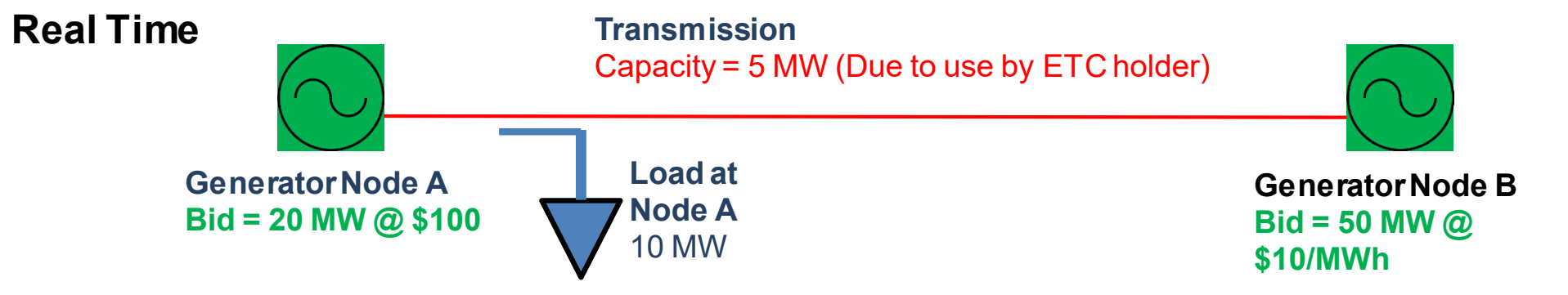
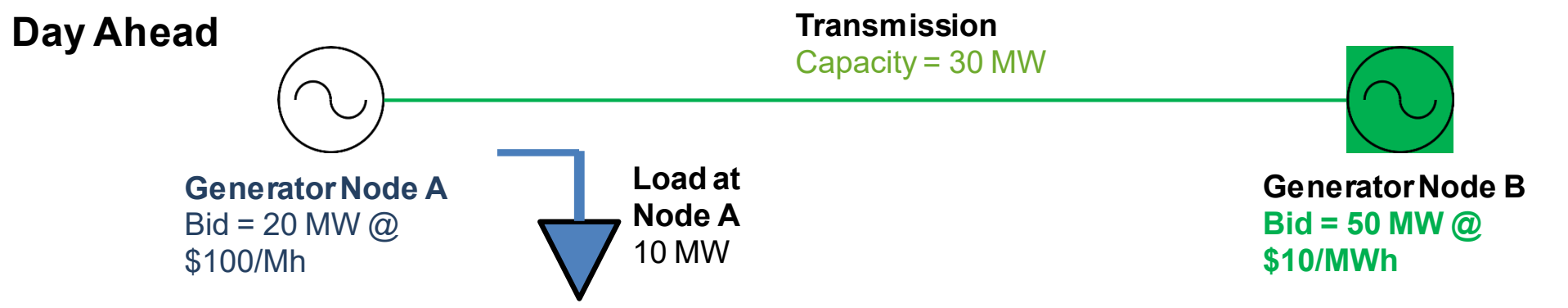
Stakeholder Concerns with Automatic Inclusion of Unscheduled Transmission in EDAM

- Transmission rights holders would still be able to use their unscheduled rights out of market between day-ahead and real-time, which would result in market re-optimization and likely increase congestion costs.
- Concerns raised about the degradation of value of existing rights and the incentives to invest in transmission expansion.
- Allowing unscheduled firm rights to be included in Bucket 2 transmission may have reliability considerations (e.g. if RUC assumes the supporting transmission lines are available.)

Unscheduled Transmission – Redispatch Implications

- Firm transmission rights not scheduled by 10am (day ahead), and made available to the market, can be exercised as today between DA and RT.
 - Traditionally, these rights would be released as non-firm transmission, with ability to still exercise firm rights.
- To the extent a transmission customer exercises transmission rights utilized by the market to support transfers, there may be redispatch and congestion price differences.
- Stakeholders expressed concerns that the cost allocation should ensure that the owners of the transmission rights are protected from redispatch costs.
- Stakeholders advocate that the allocation of the uplift should go to the rights holders whose transmission scheduling actions result in real-time re-dispatch.

Cost Allocation: EDAM Uplift Caused By Utilization of Transmission Rights after the Day Ahead Market

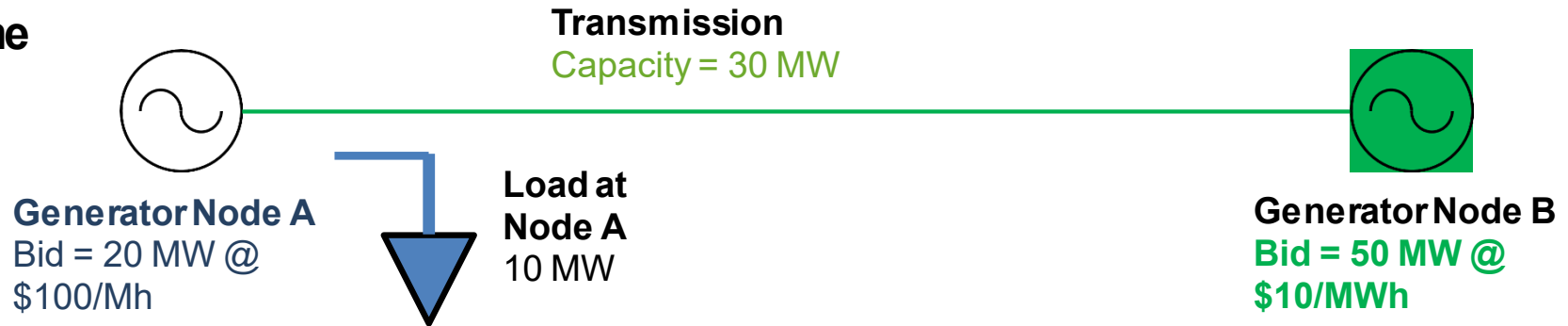


Overall Results

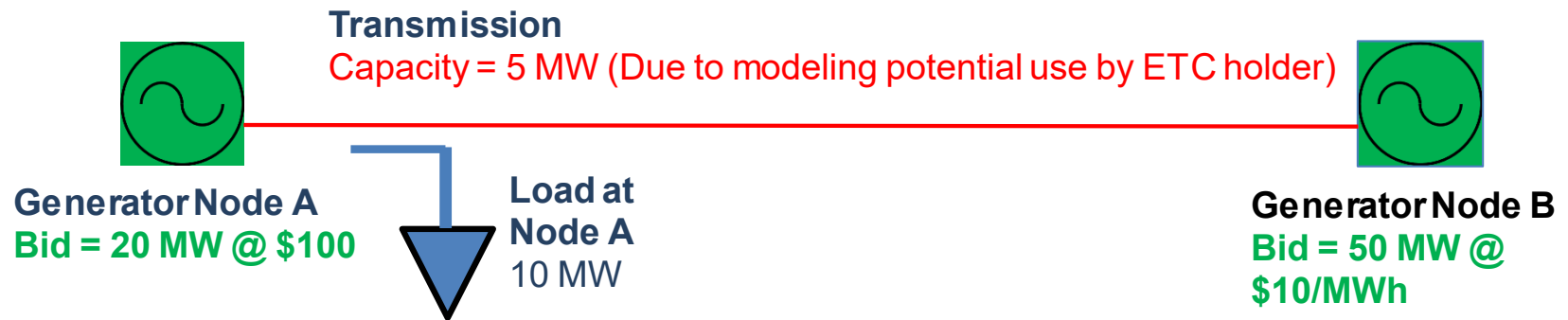
Entity	DA Settlement	RT Settlement	Total
Generator A	0 MW x \$10 = \$0	5 MW x \$100 = \$500	\$500
Generator B	10 MW x \$10 = \$100	-5 MW x \$10 = -\$50	\$50
Load in EDAM Entity A	-10 MW x \$10 = -\$100	0 MW x \$100 = \$0	-\$100
Uplift Cost			\$450

Cost Allocation: EDAM Inefficiency Caused by Holdback of Transmission Rights from the Day Ahead Market

Real Time



Day Ahead



Key Takeaways

- Held back transmission result in phantom congestion Day Ahead
- Results in inefficient commitment and dispatch of generation Day Ahead

Managing Consequences of Exercising Transmission Rights Between DA and RT

- EDAM entities will need to consider how to allocate costs associated with redispatch and congestion pricing differences that may arise.
- CAISO believes that this should be left to each EDAM entity and their stakeholders to best determine how uplifts that may arise from the exercise of those rights are allocated.
 - EDAM entities may have different customer compositions and processes that may drive this allocation.
 - Approach can be reflected in the EDAM entity OATT subject to appropriate regulatory review and approval

Managing Consequences – Potential Approaches EDAM Entities Could Take

- **Approach 1** – Allocating attributable uplifts to the entity exercising transmission rights when appropriate.
 - DA congestion rents could be allocated by EDAM entity to transmission customer to offset uplifts associated with exercise of rights.
- **Approach 2** – Allocating attributable uplifts and all redispatch costs to all transmission customers in EDAM Entity area.
 - EDAM entity utilizes congestion resulting from Bucket 1, Bucket 2 transmission (potentially Bucket 3) to offset redispatch uplifts (regardless of cause).
- Are other incentives possible to incent transmission customers to turn over transmission to the EDAM or inform transmission providers of expected use prior to DA market run?

Tracking Unscheduled Transmission Use

- Monitoring of the exercise of firm transmission rights between DA and RT, which was previously unscheduled, can provide useful data points for future enhancements.
- Each EDAM entity, working through its own stakeholder process, may identify different methods of incenting more accurate use of firm transmission rights in DA timeframe.
 - Potential methods of informing transmission provider volume of expected unused rights by 10am and/or likelihood of those being exercised later.
- CAISO could evaluate the feasibility of conducting its own monitoring and reporting to inform future policy design.

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Implementation Aspects – Registering Transmission Rights, Exercising Transmission Rights, Informing the Market of Transmission Availability



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Registering Transmission Contracts – One Month or Greater

- EDAM Entity fills out Transmission Rights and Transmission Curtailment (TRTC) instructions (excel spreadsheet)
 - In coordination with transmission customer
- Each contract is given a contract reference number (CRN)
 - Used as reference when exercising the rights
- CRN ensure that the transaction is not charged for transmission or congestion
- TRTC provided to CAISO and included in Masterfile

Registering Transmission Contracts – Less Than One Month

- CAISO will develop a registration system for contracts/transmission rights that are within a month.
- Instructions need to provide information regarding:
 - Transmission Owner and Customer
 - Contract: PTP or Network, transmission rights, start and end date, latest time able to submit schedule, impact an intertie, etc.

Exercising Transmission Rights

- Transmission customers can exercise use of their transmission rights and indicate that to the DA market.
- When submitting a self-schedule into the market, indicate the registered CRN.
- The market will avoid applying transmission costs or congestion for the exercise of those rights.
- Transmission rights can be exercised across the 24-hour horizon, for specific time periods.

Informing the Market of Transmission Availability at Intertie

- In the WEIM today, ETSRs submitted by the WEIM entity indicate the transmission limits available to the market.
- In EDAM, the entity would adjust the ETSR limit to reflect the amount of available transmission to support transfers between two EDAM BAAs.
- There may be different methods of reflecting different rights and uses through ETSRs that can be discussed with entities.
 - For example, an ETSR for each bucket of Transmission.

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Next Steps



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July 2022 EDAM Workshop Schedule

Date/Time	Format	Focus
July 14, 2022 (1 p.m. – 5 p.m. Pacific Time)	In-person and virtual Sacramento, CA	Day-Ahead Resource Sufficiency Evaluation (RSE): (1) WSPP Schedule C firm energy transactions (2) Non-RA intertie bids treatment
July 15, 2022 (8 a.m. – 2 p.m. Pacific Time)	In-person and virtual Sacramento, CA	Day-Ahead RSE: (1) Failure consequences framework (2) Pooled WEIM RSE concept
July 19, 2022 (8 a.m. – 12 p.m.)	Virtual only	Transmission: Bucket 3 transmission and revenue recovery framework
July 20, 2022 (8 a.m. – 12 p.m.)	Virtual only	Transfer revenue and congestion rent allocation
July 26, 2022 (9 a.m. – 5 p.m. Mountain Time)	In-person and virtual Salt Lake City, UT	(1) Confidence in transfers (2) GHG accounting (3) Day-Ahead RSE and transmission (recap/review from prior workshops)
July 27, 2022 (9 a.m. – 12 p.m. Mountain Time)	In-person and virtual Salt Lake City, UT	GHG accounting



- The ISO is pleased to be hosting the Stakeholder Symposium in-person at the Safe Credit Union Convention Center in downtown Sacramento on Nov. 9 – 10, 2022
- Registration now on the Stakeholder Symposium page at: <https://californiaiso.swoogo.com/2022StakeholderSymposium>
- Please direct questions to symposiumreg@caiso.com