Extended Day-Ahead Market Working Group 2: *Transmission Commitment and Congestion Rent Allocation*

Facilitator: Deb Le Vine

Scribe: Emily Hughes

January 13, 2022

Meeting Cadence: Tuesdays and Thursdays, 9 – 11 a.m.

Agenda:

Time:	Topic:	Presenter:
9:00 - 9:05	Welcome/introductions	Jimmy Bishara
9:05 – 9:15	Draft scope topic timeline Open questions / clarifications	Deb Le Vine
9:15 – 10:45	Continue EIM presentation Open discussion	Kathy Anderson Deb Le Vine
10:45 - 10:55	Recap of discussion	Emily Hughes
10:55 - 11:00	Upcoming topics	Deb Le Vine

Reminders:

- These collaborative working groups are intended to foster open dialogue and sharing of ideas and perspectives
- Please raise your hand if you have a question or comment at any time during the meeting and the facilitator will call on you
  - Please start by stating your name and affiliation
- Meetings are recorded and video files posted on corresponding working group webpages
- Stakeholders are welcome to present perspectives at these meetings
  - Please submit a request to present using the link located on the EDAM Resources slide at the end of this presentation

EDAM Resources

- List of *Common EDAM design principles and concepts*
- Initiative and working webpages:
  - EDAM initiative webpage: https://stakeholdercenter.caiso.com/StakeholderInitiatives/Extended-day-ahead-market
  - Working Group 2 webpage: https://stakeholdercenter.caiso.com/StakeholderInitiatives/Extended-Day-Ahead-Market-Working-Group-2-Transmission-Commitment-Congestion-Revenue-Allocation
    - The working group webpages include meeting materials, initial scope items, and weekly summary reports
- Please submit EDAM WG inquiries and/or requests to present at https://www.surveymonkey.com/r/EDAMWG-Inquiries
  - Presentations due 5 business days prior to the meeting where they are scheduled to present, if time allows
- Register for working groups to help the ISO gauge interest and facilitate communication throughout process.
- Nov 30, 2021 Day-Ahead Market Overview Training: https://youtu.be/lbXRsfdVbCg

Draft Scope Topic Timeline

Estimated Meeting Date	Topic
Jan 4	WG introduction – review principles, scope and agree on order of topics
Jan 6	Transmission Availability – EIM background and discussion of buckets
Jan 11-20	Transmission Availability – Continue discussion, allow for WG participants to present their preferred options, discuss potential compromise positions and complete design objectives
Jan 25 - 27	Timing and Duration – Introduce options, allow for WG participants to present their preferred options, discuss potential compromise positions and complete design objectives
Feb 1 - 3	Transmission Unavailability – Introduce options, allow for stakeholders to present their preferred options, discuss potential compromise positions and complete design objectives
Feb 8 - 15	Compensation – Introduce options, allow for stakeholders to present their preferred options, discuss potential compromise positions and complete design objectives
Feb 17 - 24	Congestion Rent Allocation – Introduce options, allow for stakeholders to present their preferred options, discuss potential compromise positions and complete design objectives
Mar 1 - 8	External Resource Participation – Introduce options, allow for stakeholders to present their preferred options, discuss potential compromise positions and complete design objectives
Mar 10 -22	Slack meetings for additional scope items, cleanup, etc.
Mar 24	Final meeting and working group report published

EIM Entities Presentation on Transmission Elements of EDAM Design January 11 and 13, 2022

Agenda

- Western OATT Environment vs. CAISO Transmission
- Sources of EDAM Transmission Capacity

Open Access Transmission Tariff (OATT) Environment

FERC OATT

FERC's Order No. 888 required all public utilities that own, operate or control interstate transmission facilities to:

- Offer network and point-to-point transmission service and ancillary service to eligible customers;
- Take transmission service for their own use under the same terms and conditions;
- Functionally separate transmission and power marketing functions;
- Adopt an electronic transmission system information network; and
- Have on file with FERC an Open Access Transmission Tariff

The FERC pro-forma tariff defines:

- Process for requesting transmission service;
- Rates, terms, and conditions for service;
- Required ancillary services and rates for those services;
- Studies conducted to determine the availability of transmission and interconnection service;
- Priorities among competing transmission service requests, including rights of first refusal;
- Curtailment priorities; and
- Provisions dealing with billing and payment, creditworthiness, force majeure, liability, and indemnification

OATT Service

Network Integration Transmission Service (NITS)

- Firm transmission utilized by a Designated Network Resource (DNR)
- Transmission rate based on load ratio share
- Allows for secondary network (non-firm) utilization for non-DNR with priority over other non-firm service

Point-To-Point Transmission Service (PTP)

- Capacity based reservation from a **specified point of receipt** to a **specified point of delivery** on a transmission providers system
- Varies in length of service term (Long-Term or Short-Term) and firmness (Firm or non-firm)
- Transmission charged on reserved capacity

Available Transfer Capability (ATC)

- ATC is the transfer capability remaining on a transmission provider's transmission system that is available for further commercial activity over and above already committed uses
  - Firm – unreserved by a customer
  - Non-firm – reserved but not scheduled for that timeframe
- Methodology for calculating ATC typically found in OATT Attachment C

Comparison of OATT to CAISO

Provision	OATT	CAISO Tariff
Products	Network and (Firm and Non-firm) Point-to Point	Schedule delivery (economic, not firm physical, rights)
Rate Structure	Single provider - charges based on posted OATT rates and vary based on form of transmission services procured by Transmission Customer, often offered in hourly, daily, monthly and annual increments and firmness/quality Network – load ratioshare Point-to-point based on capacity reservation	High voltage (200 kV and above) single-system (combined revenue requirements of all participating transmission owners); Low voltage zonal rates based on utility-specific costs Currently a volumetric rate ($/MWh); proposal to move to ½ volumetric and ½ demand CAISO loads are charged TAC Exports and MSS Loads are charged WAC
Firm Transmission Rights	Network transmission service is firm when Network Load is supplied from Designated Network Resources (DNR) If there is ATC available, firm PTP transmission can be procured	Firm PTP rights only for "grandfathered" pre-existing transmission contracts on PTOs' systems Priority to inject or withdrawal based on economic bids, system constraints and other factors (e.g., RMR for supply) Firmness of exports protected through "supporting resource" in CAISO (i.e., supply tied to export not already

Comparison of OATT to CAISO (continued)

Provision	OATT	CAISO Tariff
Congestion Management	Expectation is that absent an outage or de-rate there will be sufficient transmission capacity to accommodate NITS and Firm PTP without any redispatch charge. Non-Firm PTP may be subject to curtailment, not redispatch with an associated congestion charge.	Collected through Locational Marginal Price (LMP) [LMP = system marginal energy + marginal congestion + marginal loss] Load can be hedged through Congestion Revenue Rights
Transmission Losses	Average system losses based on stated rate	Marginal losses charged though LMP [LMP = system marginal energy + marginal congestion + marginal loss]
Curtailment Priority	Based on "firmness" of rights used by transmission customer	Based on economic bids/Self-Schedules based on priority assigned in Tariff (i.e., "penalty factors" – assigned numeric values to schedules. The higher the value, the firmer)
Wheeling	If PTP wheeling moves through multiple balancing authorities/transmission service providers, rates are "pancaked" (i.e., cumulative). Dependent on PTP reservation not import/export of energy in the BA.	Single WAC for exports from anywhere within the CAISO (except EIM exports). Will see additional pancaked charge from an OATT transmission service provider beyond CAISO boundary.

Transmission Service Regulatory Diversity

Investor Owned Utility	Municipal or Public Utility District	Power Marketing Administration	Provincial Utility
• Provides transmission service under a FERC-approved OATT • Rates and OATT changes approved by FERC in publicly notified dockets under the FPA • Non-interstate business regulated by a state regulatory body	• Various organic statutes that create/govern the utility • Very limited FERC regulation and no FERC-approved OATT • Various mechanisms for memorializing terms and conditions of transmission service • Various local governance and regulatory schemes	• Various organic statutes that create/govern the utility • Various oversight by DOE and Congress • Limited FERC regulation • Maintain OATT but none are approved by FERC • Various rules for changing OATT terms and conditions	• Organizational separation between operational and marketing functions • Limited FERC regulation • Marketing organization is the EIM Entity and does not provide transmission service

Sources of EDAM Transmission Capacity

Sources of EDAM Transmission

Key Objectives of EDAM Transmission Design:

- Enable maximum transmission availability through a voluntary design framework
- Avoid material cost shifts (i.e., winners and losers)
- Respect OATT right holders
- Compatible with TSPs' OATTs and practices
- Ensure appropriate transmission compensation framework
  - Sufficient revenue recovery for Transmission Service Provider
  - Consistent with FERC open access policies

Key Principle: Transmission supporting EDAM must be **reliable and "high quality"**

- EDAM Entities will be **relying** on EDAM transfers to avoid committing units and to serve load
- This transmission could be restricted to firm, although there may be potential for use of other transmission capacity that is typically only sold as non-firm (e.g. Capacity Benefit Margin, Transmission Reliability Margin, seasonal unused network capacity)

Sources of EDAM Transmission

EDAM Resource Sufficiency (RS) Transmission "Bucket 1"	Transmission demonstrated to support RS prior to the EDAM run by a transmission customer to meet EDAM RS test(s).
EDAM Interchange Rights Holder ("IRH") Transmission "Bucket 2"	Transmission contributed prior to the EDAM run by an IRH transmission customer on a voluntary basis.
EDAM Balancing Authority ("BA") Transmission (ATC) "Bucket 3"	Transmission contributed prior to the EDAM run by an EDAM BA/transmission provider based on its determination of ATC.

EDAM Resource Sufficiency (RS) Transmission (Bucket 1)

Transmission (<u>acquired in advance</u> at OATT rates) to meet EDAM RS test

- Examples include transmission to support
  - Resources external to the BA but are owned or contracted to serve load in the BA
  - Bilateral firm energy contracts
  - Bilateral "bid range" and/or capacity transactions

As transmission is already paid for:

- Re-optimization of RS transmission in EDAM should not require an incremental transmission rate because TSP has already received compensation
- Transmission rights holder should receive a fair allocation of congestion rents for voluntarily providing "optimizable" RS transmission

Optimizing RS Transmission: 3rd Party Customer Treatment

Transmission that is needed for third-party OATT customer resource sufficiency (Bucket 1) should be included as market inputs but do not necessarily get optimized in EDAM; they could be treated as a non-optimized self-schedule.

- Full optimization is worth considering because it would increase transmission used by the market;
- The benefit of treating the transmission as a self-schedule (non-optimized) is to minimize potential congestion costs - important that accommodation of third-party schedules not cause uplifts for other customers;
- This should be the customer's option as there may be other non-EDAM uses for transmission or contractual restrictions on usage that aren't compatible with EDAM optimization

EDAM Interchange Rights Holder Transmission (Bucket 2)

Transmission contributed on a voluntary basis by a transmission rights holder (similar to EIM Interchange Rights Holder approach)

Highly reliable (EIM Entities currently require Interchange Rights Holder transmission to be FIRM transmission)

No incremental transmission charge ("hurdle rate")

Rights holder receives fair allocation of congestion rent

EDAM ATC Transmission (Bucket 3)

Unsold ATC made available by EDAM BA/TSP

- Transmission not already purchased and paid for by an OATT customer

Requires an incremental charge to contribute to TSP cost of service

- Risk that the transmission provider (and other transmission customers paying the embedded cost of the transmission provider's system) is not being compensated for this category of transmission unless a charge is designed and applied

Must be generally unsold ATC (not unscheduled rights that may result in curtailments if later used by another rights holder)

- Potential exceptions may be considered, such as:
  - Network service that BA has information will not be scheduled
  - Capacity Benefit Margin ("CBM") or Transmission Reserve Margin ("TRM")

Compensation for Bucket 3

Reason for Compensation	Potential approaches to EDAM BA Transmission Charge
• Larger volume of transactions in day-ahead • Unsold ATC not already acquired or paid for by a transmission customer is used • Minimizes cost shifting including to customers paying embedded cost of transmission system	• **Individual EIM Entity Rates and the CAISO wheeling access charge** - each BA/TP retains autonomy over its OATT rates: *EDAM BA Total Transmission Revenue Requirement / BA Load + exports (measured demand) = EDAM BA Transmission Charge* • **Blended EDAM Rate:** *Combined EDAM BA Total Transmission Revenue Requirement / Combined BA Load + exports (measured demand)* • **Nominal EDAM Rate (e.g., $X.XX MWhr)**: The nominal rate can be viewed as a voluntary discount off cost-based, approved rates. • Options for Nominal EDAM Rate should analyze whether the rate is applied at each EDAM Entity BA (i.e., hurdle rate) or on a postage stamp basis (i.e., flat fee) • **A volumetric uplift charge** based on power flows

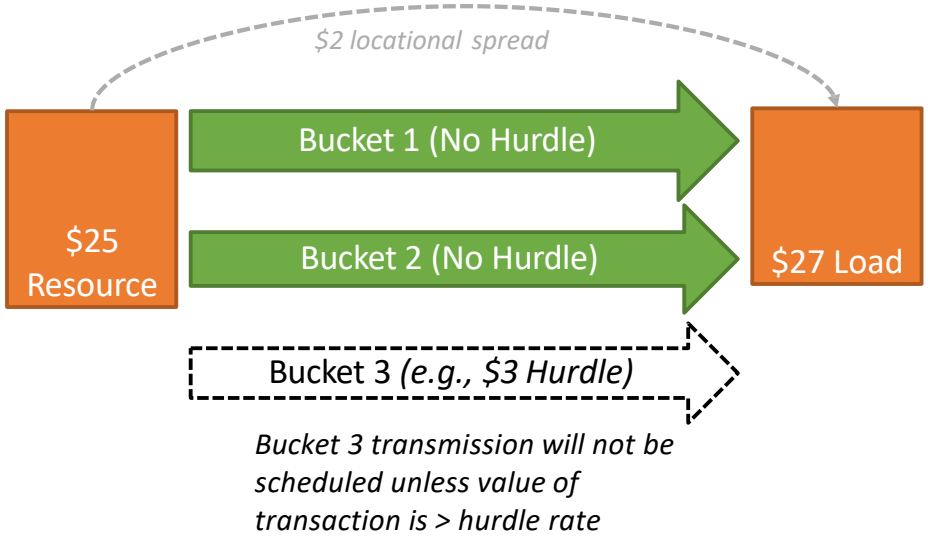
Determining Bucket 3 Rate

Balancing the need to meet revenue requirements with the desire to have a charge that does not prevent economic optimization.

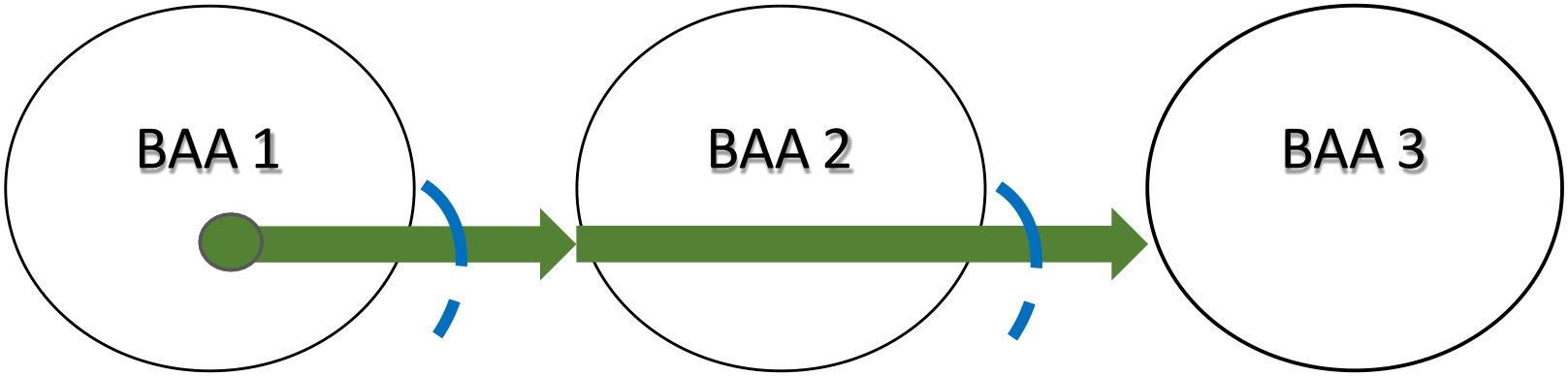
- Whether to/how to de-pancake rates
- Whether to/how to develop cost based rates
- Complex regulatory, governance and stakeholder context

Optimizing Each Transmission Type

- **Bucket 1** and **Bucket 2** will be used to enable transfers first (at no hurdle)
- **Bucket 3** will only be used to the extent that a transaction can clear the transmission charge (e.g. hurdle rate, flat fee, other)
- Potential to leverage existing ETSR Transfer Cost mechanism to include incremental transmission rate in market optimization



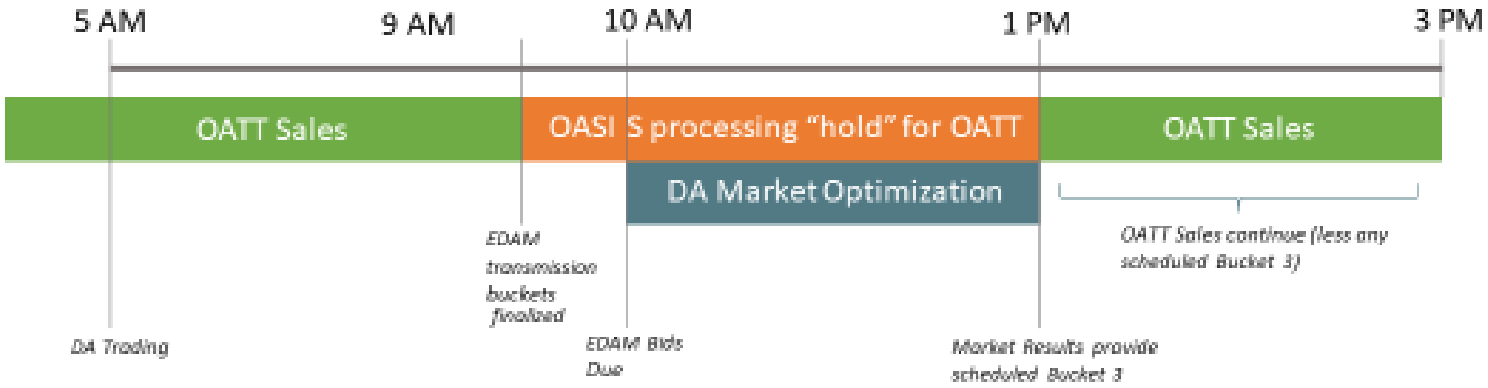
Bucket 3 - EDAM BA Transmission



Hurdle rate model charged based on total Bucket 3 EDAM **exports** from a particular BAA

- Imports would not incur a charge (as load has generally already paid for transmission to meet RS requirements)
- Application to exports would also provide revenues to BAAs that are wheeled-through (e.g., BAA2)

Day-Ahead Timelines for Transmission



- Entities communicate total transmission available for market use
  - Potential "processing hold" period could limit further OATT sales of transmission identified as Bucket 3 while EDAM optimization identifies the amount used by the market
  - Lock-out period would end at ~1 PM when market results are finalized
  - OATT transmission requests can continue to be queued on OASIS but not processed until the end of the optimization period
  - Does not limit use of previously-reserved transmission

Joint Owner, Seams, and Third-party Transmission Customer Issues

Joint Owner Operation & Seams Issues

Transmission and Balancing Authority Areas in WECC have many different relationships and seams, often without clear boundaries

- Joint ownership of transmission facilities where one entity acts as the path operator
- Load Serving Entities that serve load in multiple BAAs
- BAA's reliance on 3rd-party transmission providers (who may or may not be in EIM or EDAM) to deliver remote resources that they own and operate
- Shared ownership of generators that may reside in multiple BAAs

Solutions to EDAM transmission should be developed with due consideration to the limitations and opportunities related to this complexity. These and other issues should be addressed as part of a complete market design.

Issues related to 3rd party customers

Change in the OATT timeline – Day ahead plan for RS will need to be submitted early. For example, load serving entities in EDAM BA will need to communicate how they plan to serve their load by deadline for the RS test and not by current OATT tagging deadlines.

Financially binding day-ahead schedule – In the EIM, a base schedule submitted by the EIM Entity before the EIM market run is the fixed point of settlement for the market. In EDAM , day ahead market results become the "base" from which changes are settled financially.

Consistency between resources that qualify as DNRs and resources that meet the EDAM resource sufficiency test

3rd party customers must be permitted to **self-schedule** their loads and resources – maintain existing transmission reservation priorities

Need to identify any **new settlement charges** and **just and reasonable allocations**

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