



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

Facilitator: Deb Le Vine

Scribe: Emily Hughes

January 18, 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 - 9:45	Vistra presentation	Cathleen Colbert
9:45 - 10:55	Transmission commitment	Deb Le Vine
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

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

EDAM

Working Group 2 – Transmission

January 18, 2022

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- Context
 - Foundation goals
 - Transmission types
 - Appendix – FERC ATC Background

Frequently Used Acronyms



- Available Transfer Capability (ATC)
- Capacity Benefit Margin (CBM)
- Designated Network Resources (DNR)
- Existing Transmission Commitments (ETC)
- Load Serving Entity (LSE)
- Regional Transmission Organization (RTO)
- Total Transfer Capability (TTC)
- Transmission Reserve Margin (TRM)

Context



Statements by Comm. Clements to support rejection of Southeast EEM



- “Order No. 888 establishes a firm requirement of open access, not a demonstration that economic incentives might create conditions where utilities choose of their own accord to permit open competition.”
- “(O)pen access is not technically feasible because the Filing Parties have not designed the market in a manner that facilitates a workable solution, and have not invested in the software or other analytical capabilities necessary to facilitate access under their chosen design. Permitting transmission providers to evade open access requirements via their own market design choices and investment decisions would fundamentally undermine open access.”
- “The Filing Parties’ proposal violates this requirement [to avoid undue discrimination] because it establishes a select group of Members with exclusive transmission-related rights: namely, the ability to participate in controlling and overseeing the platform for administering service across a footprint comprised of many different transmission owners.”

Foundational goals

- EDAM transmission providers that are EDAM members still need to maintain an Open Access Transmission Tariff that respects open access rules
- EDAM transmission provider needs to abide by the OATT limitations on using network service to make off-system sales and the requirement to undesignate network resources that are making economy energy sales
 - We view EDAM sales that do not serve the EDAM member's native load as the equivalent of an economy energy sale
- As a result, EDAM members could arguably bring to EDAM the transmission service that is associated with network resources serving native/network load.
- Transmission capacity freed up should be available on a non-discriminatory basis to both the EDAM and third-party transmission customers outside of the EDAM. May be freed up from any holders by:
 - Undesignating network resources,
 - Donating point to point service,
 - Reselling point to point service, or
 - Unscheduled point to point service.

Not a RTO but voluntary joint dispatch with value proposition for all participants not just LSEs

- EDAM through centrally cleared dispatch can more effectively identify the least cost, security constrained set of resources that can achieve energy and/or ancillary service needs across the footprint
 - Increasing efficiency of the fleet drives EDAM benefits
 - The benefits only increase with ensuring open access to the market to entities outside the EDAM footprint and to all types of market participants inside the EDAM footprint and preserving the ability of entities outside of EDAM to continue to access bilateral market opportunities
 - Increasing liquidity by ensuring all market participants can participate will enhance the ability of EDAM to deliver benefits
- EDAM is a complement to the existing daily transmission reservation window and/or daily bilateral market activities
 - It is not a substitute, activities will still occur in some fashion
 - It will impact existing activities and the design should address this by ensuring competition/access to mitigate adverse impacts
 - EDAM entities should be able to decide which portions of its market activity it wants to open up to EDAM dispatch
 - The model can include the resource node, load nodes, and internal constraints at all times, but the flexibility is needed to show that it is already being used outside the market (non-participating resources e.g. and pre-day ahead e-tags).

Open access concepts that must be addressed to ensure the EDAM framework supports competition



- Can EDAM be designed to ensure open access to the complementary market and reservation option? We think yes.
 - Allowing for these activities to occur through EDAM in addition to bilateral markets and reservation processes will improve EDAM efficiency and support ability of market to produce efficient results through increased liquidity
 - Some design elements needed include:
 - Intertie points need to be modeled at the EDAM BAA border
 - Non-EDAM BAA entities need to be able to register to participate in EDAM as either:
 - Internal third-party generators
 - Intertie marketers
 - EDAM sub-entities (including any competitive retailers if applicable)
- Can EDAM be designed to allow EDAM BAA to identify which resources are non-participating versus participating resources? Yes.
 - EDAM BAA should be able to undesignate network resources prior to the day-ahead market to allow for re-dispatch for equivalent of economy energy purchases and receive equivalent of secondary network service treatment
 - EDAM BAA should be able to represent in the market through non-participating resource base points that these resources are serving a portion of its load and/or ancillary service requirements
- Should EIM BAAs have their tools that allow them to limit their participation in the EIM be made available to them in the DA? Depends
 - It seems reasonable that EIM LSE can choose to limit their transfers in EDAM.
 - However, this makes it even more important that EDAM also optimize ATC and other participant's offers to allow for the ATC to be reserved through the market
 - Manual dispatches only allowed in real-time horizon or also allowed in day-ahead?
 - Post-contingency operations is not relevant, no analogous rules needed.
 - +Other tools that only applies to CISO BAA now (e.g. gas burn report/gas burn constraints)

EDAM needs to be open, non-discriminatory not unduly preferential to succeed as a concept



- EDAM should allow for rights that should not be optimized to be scheduled prior to day-ahead to identify portion of Total Transfer Capability that is not accessible to market
 - Allow participant identified on e-tag to submit intertie transactions (participating or non-participating offers) depending on whether they want to use their transmission rights to support participating offers (economic or self-scheduled) or as non-participating base point.
- EDAM should add intertie bidding at all BAA borders where any market participant that registers to be an intertie bidder can submit imports, exports, or wheels identified at a source point and sink point anywhere in the EDAM footprint
 - EDAM should limit loop flow across non-EDAM transmission internal to a BAA to avoid schedules that could introduce real-time loop flow issues.
 - Access should be prioritized based on pre-day ahead e-tag scheduling requirement
 - Prior reservations on e-tag enforced as penalty prices on the intertie offers consistent with Transmission Loading Relief order (respects reservation and curtailment priorities)
 - If no prior reservation on e-tag then lowest priority treatment (=non-firm hourly)
- EDAM should extend Energy Imbalance Market concept to the day-ahead market (bubbles and straws) only for transmission being released or resold by any participant
 - Transmission owned/reserved either released or resold by the LSE for serving its internal load needs through re-dispatch under EDAM is equivalent to economy purchases on the equivalent of secondary network service priority
 - Transmission owned/reserved by third-party that is unscheduled/resold for EDAM optimization should be accessed by transfers or by intertie bidders on the equivalent of non-firm transmission (since awards are hourly, non-firm hourly priority).

One way to accomplish these foundational goals

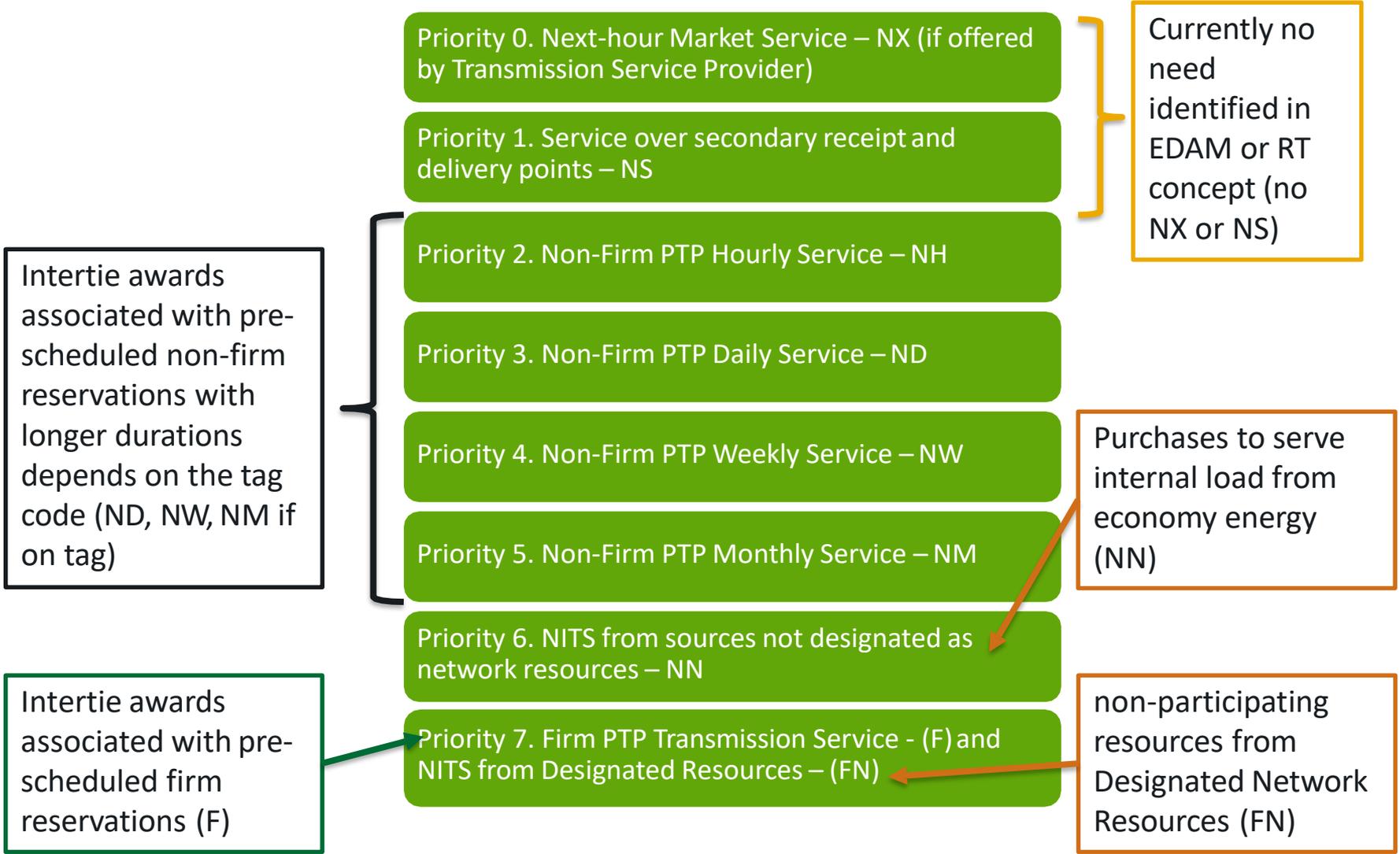
- A process that allows for competitive solicitation by the RC(?) of third party or non-EDAM transmission rights at the EDAM interties or internal to the EDAM
 - Maybe align frequency with current durations (year, monthly, weekly rights) and add a daily resale (T-2) for the flexibility to only release a portion of the duration
 - Transmission right holders can submit offers
 - RC determines whether the transmission would result in benefits above offer
 - May not need to pay congestion rents if value is reflected in offer, thoughts?
- A process that does an advisory EDAM run to determine network resources serving network loads and associated transmission
 - Propose D+2 results be made available
 - LSEs can undesignate network resources that they choose to based on this information, which reduces NITS and releases portion of NITS to EDAM
- A process that requires a pre-day ahead scheduling requirement:
 - Transmission right holders that want to schedule on those rights through EDAM may submit e-tag with the transmission profile showing their reservation type
 - If no e-tag submitted with transmission reservation it will be released as non-firm ATC
- Market functionality that enforces penalty prices on intertie bids in relative priority consistent with the priority order of the transmission profile's product type

One way to accomplish these foundational goals

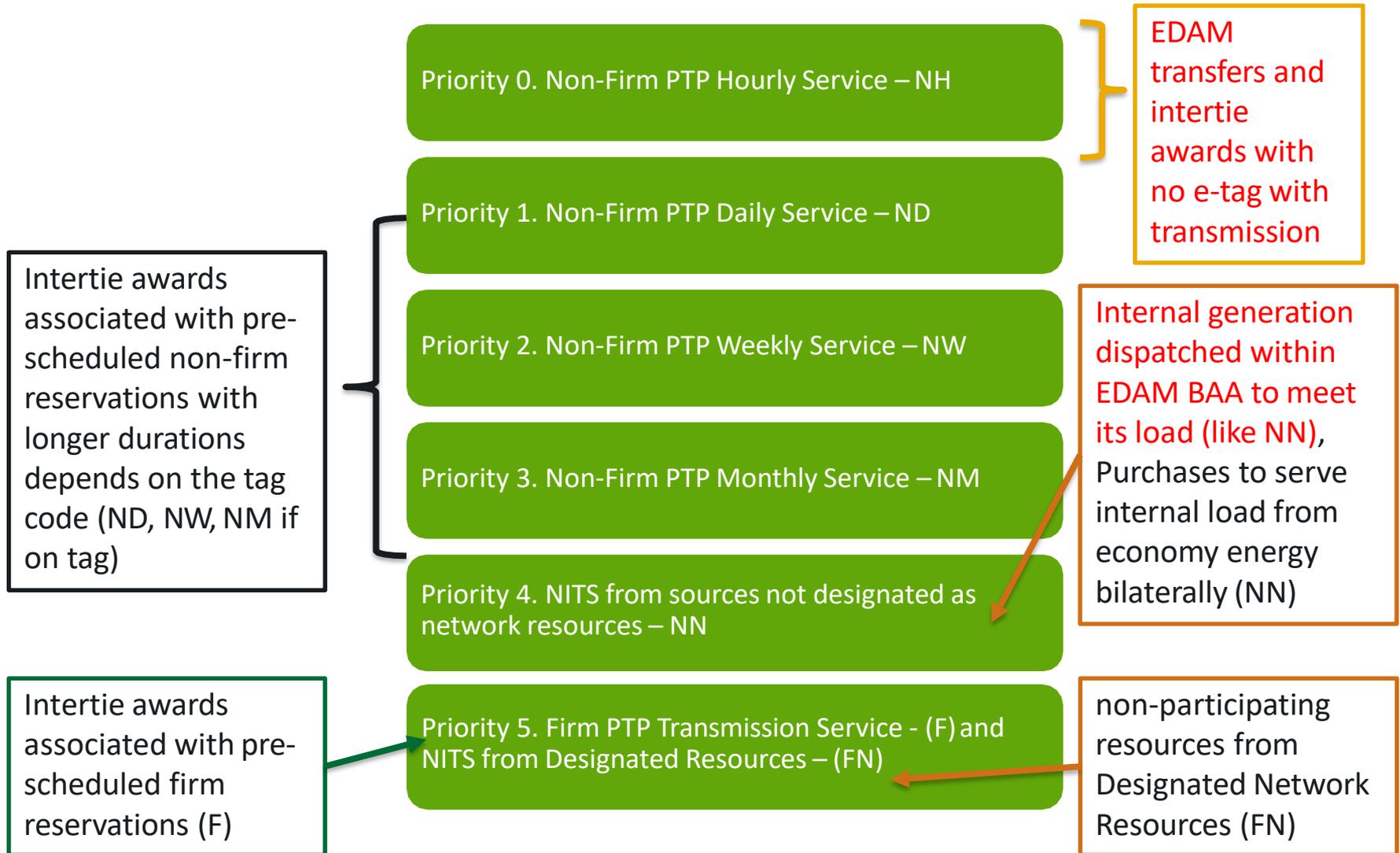
- Freed up transmission (secondary service/non-firm ATC) from the three prior activities would be open to intertie transactions (imports, exports, wheels) and EDAM on an equal basis.
- Scheduled transmission would only be available to intertie bids where the e-tag with a firm reservation product type or non-firm product type with longer durations than daily is identified and used to prioritize scheduling and curtailment priority
- Transmission owned that is not resold to EDAM may need to have its rate of change managed such that any EDAM dispatches do not cause loop flow concerns or inappropriately use its transmission capacity
 - For example, there may be flow-based paths/branch groups that need to be enforced in the model all the time to respect these thermal limits
 - What other considerations need to be considered?

Transmission types

Transmission priority levels by type, which ones are relevant to EDAM?



What transmission should different EDAM transactions be associated under open access



*Red text shows what the EDAM complement adds/need discussed in detail

Can we make this simpler or bucket them?

Priority 0. Non-Firm PTP
Hourly Service – NH

EDAM transfers and intertie awards with no e-tag with transmission shown compete for non-firm hourly ATC

EDAM BAA to submit non-firm hourly ATC to EDAM operator

Priority 1-3. Non-Firm PTP

- Daily Service – ND (lowest in category)
- Weekly Service – NW
- Monthly Service – NM (highest)

Intertie offers can clear through economic signals or as self-schedules with penalty prices that go from lower to higher from ND to NM where NM is lower than NN

EDAM holds ATC at ties above non-firm hourly ATC for non-firm scheduled tags for the schedules

Priority 4. NITS from sources not designated as network resources – NN

Participating resources internal to BAAs

EDAM BAA provides the amount of internal transmission capacity (portion associated with participating)

Priority 5. Firm Treatment

- Firm PTP Transmission Service - (F)
- NITS from Designated Resources – (FN)

Non-participating resources (includes DNR) can submit base points and intertie offers can submit economic or self-schedules are prioritized highest.

EDAM holds ATC at ties above all non-firm for firm scheduled tags for the schedules. EDAM BAA provides amount of internal transmission capacity (portion associated with non-participating).

- Pro Forma OATT: “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. [for 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.” (Sheet 51-52, Section 13.8)
- Propose pre-day ahead scheduling deadline for all EDAM BAA including CISO allows for ATC to be calculated such that unscheduled rights are released
- Open question does 9AM PST given enough time to recalculate and provide EDAM operator the non-firm ATC values? If it does not, what is the amount of time after scheduling requirement that is needed to calculate non-firm hourly ATC calculation for EDAM to use at ties
- How will the internal transmission capacity be communicated in the pre-day-ahead time frame for use in EDAM on equivalent of secondary network service?

Appendix – FERC Open Access Orders Background

- FERC/NERC/NAESB acknowledge that there can be multiple methodologies to calculate available transfer capability
- (Order No. 890 P 209) It is not the methodologies for calculating ATC themselves that create the opportunity for undue discrimination. Instead, the potential for undue discrimination stems from two main sources
 - Variability in the calculation of the components that are used to determine ATC, and
 - Lack of a detailed description of the ATC calculation methodology and the underlying assumptions used by the transmission provider
- For example, utilities A and B would agree ATC is derived by reducing TTC by the sum of ETC, CBM and TRM, but utility A may define ETC to include set-asides for contingencies while utility B may not.

The recent FERC order on CAISO's current import, export and wheeling priorities referenced two paragraphs in Order No. 890 as establishing a native load preference to use available transfer capability

- P 107 in the Native Load Preference section of Order No. 890

CAISO's proposal is therefore consistent with the balance described in Order No. 890 between "the transmission provider's need to meet its native load obligations and the need of other entities to obtain service from the transmission provider to meet their own obligations. (Priorities Order)

We conclude that the native load priority established in Order No. 888 continues to strike the appropriate balance between the transmission provider's need to meet its native load obligations and the need of other entities to obtain service from the transmission provider to meet their own obligations. (Order No. 890)

- P 259 in the Capacity Benefit Margin section of Order No. 890

Order No. 890 permitted transmission providers the ability to calculate transfer capability in a way that allowed the transmission providers to meet generation reliability criteria in serving native load. (Priorities Order)

Each LSE within a transmission provider's control area has the right to request the transmission provider to set aside transfer capability as CBM for the LSE to meet its historical, state, RTO, or regional generation reliability criteria requirement such as reserve margin, loss of load probability (LOLP), the loss of largest units, etc. (Order No. 890)

- High level native load preference
 - Balance between the transmission provider's need to meet its native load obligations and the need of other entities to obtain service from the transmission provider to meet their own obligations
 - Right to set aside transfer capability as CBM for the LSE to meet its historical, state, RTO, or regional generation reliability criteria
- But how? Through the assumptions, requirements and calculation of the components that are used to determine ATC
 - Existing transmission commitments associated with designated network resources
 - Capacity Benefit Margin
 - Transmission Reserve Margin

- What is needed to establish an existing transmission commitment eligible for primary network service (i.e., native load preference)? Properly designating network resources.
- (Order No. 890 P 1432) High level requirements
 - Network resources are “generation owned or purchased by the network customer designated to serve network load under the tariff. ... “may not include resources that are committed for sale to non-designated third-party load or otherwise cannot be called upon to meet the network customer’s network load on a noninterruptible basis.”
 - “The network customer must demonstrate that it owns or has committed to purchase generation pursuant to an executed contract in order to designate a generating resource as a network resource”
- (Order No. 890 P 1433) Additional clarifications
 - Can designate as a network resource a system purchase that is not backed by a specific generator
 - The power purchase agreement need not require the LSE to take energy around the clock
 - Because a power purchase is required to be noninterruptible, third-party transmission arrangements to deliver the resource to the network have to be noninterruptible as well
 - A firm purchase need not be backed by a capacity purchase to qualify as a network resource
- What kind of preference does native load get for off-system purchases that qualify as network resources?
 - Higher reservation priority to firm transmission uses by setting aside ETC amount from the ATC calculation. On equal footing with other firm transmission requests for new DNR.
 - Highest “curtailment” priority through Transmission Loading Relief procedures.

- (Order No. 890 P 1475-76) Network customers should not be permitted to designate off-system resources which are so vaguely defined that the effects on ATC cannot be determined
- Details required: (1) identification of the resource as an off-system resource; (2) amount of power to which the customer has rights; (3) identification of the control area(s) from which the power will originate; (4) delivery point(s) to the transmission provider's transmission system; and (5) transmission arrangements on the external transmission system(s)
 - Implication is that off-system purchase details drive ATC, not that ATC is first set aside, and off-system purchases are allowed to “fill in” up to the set aside amount
- Also requires details, to be kept confidential on (1) any operating restrictions (periods of restricted operation, maintenance schedules, minimum loading level of resource, normal operating level of resource); and, (2) approximate variable generating cost (\$/MWh) for redispatch computations

- (Order No. 890 P1493) the restrictions on the designation of network resources do not violate section 217 of the FPA
 - Congress did not require that LSEs be able to take transmission service without limitations of any kind in order to serve their native load,
 - Nothing in section 217 suggests that LSEs should not be required to comply with reasonable requirements that are necessary to prevent undue discrimination and maintain a reliable transmission system
- (Order No. 890 P 1494) requirements for eligibility for designation as a network resource do not impermissibly conflict with state-mandated procurement plans
 - Order No. 888 has long required that contracts be executed and imposed reasonable restrictions on the types of resources that may be designated as network resources

- What kind of preference does native load get for off-system purchases that do not qualify as network resources? Lower (curtailment) priority than other firm transmission uses, higher (curtailment) priority than other non-firm transmission uses. Referred to as “secondary network service”
- (Order No. 890 P 1606) Secondary service is on an as-available basis, and network customers should not be permitted to lock in such service in advance of other non-firm uses of available transmission. Allowing lower-priority secondary service to have a scheduling advantage over non-firm transmission would be inappropriate.
- (Order No. 890-A P 455) The Commission has long required network customers to use secondary network service to deliver energy from non-designated resources to serve network load. To allow network customers to use the firm transmission capacity reserved for designated network resources in such circumstances would unduly preference the network customer over other potential users of that firm capacity.
 - In such a case, the transmission customer could avoid potential curtailments because the purchased energy is scheduled with a higher curtailment priority under NERC guidelines than it would receive had the transmission customer used secondary network or non-firm point-to-point transmission service.
 - In addition, the transmission customer uses service that would have potentially been unavailable if it had requested service as required.

- Transmission capability can be set aside to allow LSE to manage during emergencies
- (Order No. 890 P 256) It is appropriate to allow LSEs to retain the option of setting aside transfer capability in the form of CBM [Capacity Benefit Margin] to maintain their generation reliability requirement. ... without CBM, LSEs would have to increase their generation reserve margins by contracting for generation capacity, which may result in higher costs without additional reliability benefits
 - However, FERC requires standards for how CBM is determined, allocated across transmission paths, and used in order to limit misuse of transfer capability set aside as CBM
- (Order No. 890 P 260) FERC does not mandate a particular methodology for allocating CBM to paths and flowgates, but noted one approach could be based on the location of the outside resources or spot market hubs that an LSE has historically relied on during emergencies resulting from an energy deficiency
- (Order No. 890 P 262) CBM-related standards should specify the generation deficiency conditions during which an LSE will be allowed to use the transfer capability reserved as CBM. In addition, transmission set aside as CBM shall be zero in non-firm ATC calculations.
 - Implication - any transmission capability set aside for CBM is made available for non-firm transmission service which can be curtailed in an emergency

- Attachment C to the MISO Tariff (at section 4.1) states that “MISO will utilize CBM that is needed only when experiencing a declared NERC Energy Emergency Alert (“EEA”) 2 or higher.”
- Section 4 of Attachment C to the MISO Tariff states that, under MISO’s CBM methodology, “[a] Loss of Load Expectation (‘LOLE’) study is used to determine the Generation Capacity Import Requirement (‘GCIR’) of a CBM study zone.”

- Transmission capability can also be set aside to address modeling uncertainties
- (Order No. 890 P 273) Transmission providers may set aside TRM for (1) load forecast and load distribution error, (2) variations in facility loadings, (3) uncertainty in transmission system topology, (4) loop flow impact, (5) variations in generation dispatch, (6) automatic sharing of reserves, and (7) other uncertainties as identified through the NERC reliability standards development process.
- Because load, facility loading and other uncertainties constantly deviate, FERC does not require that TRM set aside capacity be set at zero in the non-firm ATC calculation. In other words, FERC does not require transfer capability that is set aside as TRM to be sold on a non-firm basis.

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/lbXRsfVbCg>