

Extended Day-Ahead Market: February 11-12, 2020 Stakeholder Workshop

Bundle 1 Topics: Resource Sufficiency, Transmission, and Congestion Revenue

Comments by Department of Market Monitoring
February 26, 2020

I. Overview

DMM strongly supports extending participation in the day-ahead market to more entities across the west. An Extended Day-Ahead Market (EDAM) would increase trading opportunities across the west and allow entities in a broader EDAM region to more efficiently meet their needs as the western electric grid continues to evolve and reliance on renewable energy increases.

The workshop discussions highlighted the potential value of an EDAM, along with the challenges in creating an effective EDAM design. The areas discussed during the workshop included resource sufficiency, transmission provision, and congestion rent. DMM provides these comments and initial thoughts on these three areas.

II. Resource Sufficiency

Firm transmission requirement for resource sufficiency qualification

At the workshop, EIM entities proposed requiring a resource to have firm (or equivalent quality) transmission service to an EDAM BAA before the day-ahead market closes in order for the resource to count towards meeting an EDAM BAA's resource sufficiency requirement. DMM's understanding is that current open access protocols for transmission in WECC would generally not require long-term firm transmission rights holders to offer unused firm transmission rights at regulated rates to resources offering to supply resource sufficiency to EDAM BAAs before the day-ahead market closes. As a result, the proposed firm transmission requirement for resource sufficiency resources could create competitive advantages for holders of firm transmission service on major paths. This section discusses this complex issue and suggests how the ISO and stakeholders may work to resolve it.

The EDAM design clearly needs to allow EDAM entities to meet resource sufficiency obligations with power from resources that must schedule over another balancing authority area's transmission. However, in the absence of changes to existing timelines and protocols for releasing firm transmission, the proposed firm transmission requirement for resource sufficiency qualification will restrict the amount of transmission that EDAM load serving entities can rely on for delivering the most efficient resource sufficiency resources. This is because third party entities can purchase long-term firm transmission rights at regulated rates on critical paths between generation and load centers when transmission operators first offer the firm rights, far in advance of the day-ahead market timeframe. DMM's understanding is that current open access protocols for transmission in WECC only require long-term firm rights holders to release unused transmission capacity after the ISO's day-ahead market closes.

For paths on which firm service is fully subscribed before the day-ahead market timeframe, the ability of any entity to procure additional high-quality service on that path to meet resource sufficiency

requirements would be controlled by the existing holders of firm scheduling rights on that path. This issue may be particularly limiting to competitive transmission access for resource sufficiency on major paths that are fully subscribed and where ownership of potentially large amounts of firm rights is concentrated to a small number of entities. Competition may be limited further when an entity controlling large amounts of firm transmission rights also controls significant amounts of capacity that could potentially be packaged and sold with firm transmission to meet EDAM resource sufficiency requirements.

DMM recommends that the ISO and stakeholders openly analyze and discuss the extent to which current WECC transmission access protocols may limit the competitiveness of a market for EDAM resource sufficiency under the proposed day-ahead firm transmission requirement.

The development of the EDAM and the growth of the EIM presents a significant opportunity to change existing OATT timelines and scheduling practices in the WECC. This is reflected by elements of the EIM entities' presentations, such as a proposed daily freeze on OATT transmission sales to accommodate the EDAM market run.

Other changes to some existing practices and timelines could potentially help to maintain and further promote competitive transmission access as new western electricity markets evolve. Such changes include (1) the way unused transmission capacity is released, (2) timelines for releasing unused transmission capacity, and (3) the types of e-tags used for transmission reservations and schedules. These changes could all facilitate continued competitive access to transmission while also ensuring the high-quality transmission service standards needed to meet the proposed EDAM resource sufficiency requirements.

By 2022, participants in EIM will represent as much as 80% of WECC load, which should provide the critical mass needed to make changes to existing OATT timelines and scheduling practices in the WECC in order to facilitate the efficiency and competitiveness of the EDAM.

Cost and reliability implications of resource sufficiency requirements

In the workshop, EIM entities discussed qualifications for resources to be counted in BAA resource sufficiency evaluations. EIM entities expressed that external resources counted by a BAA should be non-recallable and supported by "highly reliable transmission".¹

With respect to the CAISO's resource adequacy construct, DMM has suggested that external supply sold as resource adequacy to CAISO LSEs should not be recallable by other BAAs. Ensuring import capacity is non-recallable to another BAA would ensure external supply is dedicated to the CAISO and cannot be curtailed by external BAAs, especially when other BAAs face concurrent supply shortages. However, DMM understands that EIM BAAs do not currently have resource adequacy constructs similar to the CAISO where resource adequacy is procured on a forward basis to meet peak load (plus a planning reserve margin), flexibility, and local capacity requirements.

Introducing requirements for EIM BAA resource sufficiency tests similar to those that govern the CAISO resource adequacy construct may introduce procurement requirements to EIM entities that do not exist

¹ *EIM Entities Presentation on EDAM Resource Sufficiency Design*, February 11, 2020, Slide 23:
<http://www.caiso.com/InitiativeDocuments/Presentation-ExtendedDay-AheadMarket-ResourceSufficiencyEvaluation-EIMEntities.pdf>

today in order to participate in EDAM. Such requirements include physical capacity requirements for each BAA to cover load, operating reserves, potential “replacement reserves”, and flexibility with consideration of internal BAA constraints. Requiring that external supply is traceable to a physical resource, is non-recallable to another BAA, and is delivered over “high quality” transmission to qualify for resource sufficiency evaluations may further increase procurement requirements necessary to participate in EDAM.

New requirements governing the EDAM resource sufficiency test could introduce additional capacity and transmission procurement costs to EIM entities. On the other hand, the ISO and other entities suggested in the workshop that resource sufficiency test requirements would incentivize forward procurement of both energy and transmission. In order to develop a workable EDAM design, the ISO may need to facilitate a more direct discussion of the cost and reliability tradeoffs of various resource sufficiency requirement options by EIM entities, regulators, and market participants.

The value of flexible reserves procured in EDAM could be reduced if not efficiently managed in real-time

At the workshop, stakeholders discussed the importance of procuring flexible imbalance reserves in EDAM for ensuring that balancing authority areas can depend on EDAM schedules. It is also important that in the real-time market available resources are used efficiently to meet load and maintain flexible reserves. However, because the real-time optimization does not consider flexible ramping needs in future hours across the day, the value of flexible imbalance reserves procured in EDAM would be reduced if the Western EIM’s real-time optimization prematurely releases the reserves.

The EDAM market will procure flexible reserves over a 24 hour time horizon to meet uncertainty between the day-ahead and real-time markets. However, the fifteen-minute market (FMM) does not optimize for more than two hours. Further, the FMM flexible ramping requirements are based on fifteen-minute uncertainty and do not account for larger uncertainties over longer time horizons. This means that the FMM (and similarly the five-minute real-time dispatch) may inefficiently use flexible reserves procured in EDAM for energy instead of holding them for future uncertainties and ramping needs.

DMM continues to recommend that the ISO enhance the real-time flexible ramping product to address uncertainty in net load forecasts over longer time horizons.² Currently ISO operators take numerous and significant out of market actions to procure additional flexible reserves. Extending the real-time market uncertainty time horizon would reduce such manual intervention, increase procurement of flexible reserves through the real-time market, and also maintain and utilize the value of flexible reserves procured in the EDAM.

² For example, see *Comments on Flexible Ramping Product Refinements: Issue Paper and Straw Proposal*, Department of Market Monitoring, December 5, 2019: <http://www.caiso.com/InitiativeDocuments/DMMComments-ExtendedDay-AheadMarket-IssuePaper.pdf>

Comments on Issue Paper on Extending the Day-Ahead Market to EIM Entities, Department of Market Monitoring, November 22, 2019: <http://www.caiso.com/InitiativeDocuments/DMMComments-ExtendedDay-AheadMarket-IssuePaper.pdf>

III. Transmission Provision

The previous section highlights a potential issue that could limit competitive access to transmission needed to meet EDAM resource sufficiency (RS) requirements (referred to as *Bucket 1 transmission*). The EIM entities' presentation proposes that transmission operators could offer additional transmission to EDAM in the form of unsold, unreserved firm (or equivalent quality) capacity available as ATC at the time the EDAM market run is initiated. This would be known as *Bucket 3 transmission*.

The OATT transmission sales timeline proposed in the EIM entities' presentation, and the ability to reduce day-ahead ATC inventory with only a transmission reservation, may limit competitive access by EDAM to Bucket 3 transmission while also potentially creating an additional competitive advantage for long-term firm rights holders.

Strategic day-ahead transmission reservations may reduce competitive access to EDAM transmission

During the workshop, some participants noted that an increase in firm transmission reservations could be a beneficial outcome for transmission operators, since firm transmission reservations would produce immediate revenue for the transmission operator at the time of the reservation. However, one participant raised the issue that entities could withhold Bucket 3 transmission from EDAM by making a reservation of unsold firm transmission capacity in advance of the EDAM market run. Thus, while transmission operators derive benefit from additional firm transmission reservations, this potential mechanism to reduce competitive access to transmission in EDAM warrants further consideration.

The EIM entities' presentation proposes a timeline in which OATT sales of transmission are temporarily suspended in the day-ahead timeframe between approximately 9:30 am and 1:00 pm. At the beginning of this time window, the amount of transmission capacity in each of the EDAM transmission buckets would be finalized before running the EDAM market. At the end of the window, standard OATT transmission sales timelines would resume after the amount of transmission used by EDAM is known.

For transmission operators offering Bucket 3 transmission to EDAM, the quantity of Bucket 3 transmission would reflect the unsold unreserved firm (or equivalent quality) transmission service in ATC inventory as of the start of the OATT transmission sales freeze. Based on stakeholder discussion, DMM understands that a reservation for transmission service made before the OATT transmission sales freeze for the EDAM market run would remove the reserved transmission capacity from ATC inventory potentially available as Bucket 3 transmission.

These scheduling practices would allow an entity to withhold Bucket 3 transmission capacity from EDAM. An entity could strategically purchase reservations of previously unsold firm transmission service before the OATT transmission sales freeze, with the primary intent of reducing ATC inventory that could be available to EDAM as Bucket 3 transmission. If the transmission remains unscheduled, current practices would allow the capacity to be later released as non-firm capacity after the EDAM market run. This preserves open access principles from the perspective of OATT transmission sales but still allows strategic withholding of transmission capacity from EDAM.

EDAM may create additional uncertainty that further benefits firm transmission rights holders

In addition to allowing a transmission reservation to reduce ATC inventory that could contribute Bucket 3 transmission, current OATT transmission scheduling timelines may create additional competitive advantages for firm transmission rights holders in the context of EDAM. While transmission operator timelines vary, the amount of non-firm capacity available to support bilateral transactions is not typically known with certainty until sometime after the bulk of day-ahead bilateral trading has concluded. This construct in place today creates some level of uncertainty about the amount of non-firm transmission that may be available on a given path.

The introduction of the EDAM market process as another potential use of transmission before it is released as non-firm capacity may create an additional source of uncertainty. This increased uncertainty may affect the nature of bilateral trading that depends on non-firm transmission, and may create additional demand for firm transmission to support bilateral transactions in advance of the EDAM OATT transmission sales freeze. The increased demand for firm transmission on a daily basis in advance of EDAM may create an additional competitive advantage for long-term firm rights holders, while also increasing demand for any remaining unsold firm transmission.

Consider impacts to competition and bilateral trading when developing EDAM transmission policy

In each of the cases described above, transmission operators may derive benefit from an increase in firm transmission reservations made in advance of the EDAM market. However, the ISO, regulators, and EIM entities should consider the potential implications for competitive transmission access, and the potential impacts of increased uncertainty in bilateral trading, when establishing transmission provision rules for EDAM.

IV. Congestion rent allocation

The discussions during the workshops highlighted the complex nature of allocating congestion rents under an EDAM framework.

The congestion rent allocation can affect incentives for entities to provide or hold transmission

As stakeholders pointed out during the discussions, the congestion rent allocation design may affect incentives for entities to provide transmission rights to the EDAM. Both the EDAM and bilateral markets could be adversely affected if the congestion rent allocation created incentives for entities to reduce the available transmission for the purpose of receiving increased congestion rents.

Allocation across areas with different transmission cost recovery mechanisms will be complicated

Stakeholders also discussed how an EDAM should, in principle, allocate congestion rent to the transmission customers who pay for the transmission. The creation of a mechanism that allocates rent back to the customers who paid for the transmission will be complicated by the fact that the impacts of congestion span across balancing authority areas with different transmission cost recovery mechanisms.

For example, an allocation mechanism that pays the congestion price difference between two points, such as a CRR, can and often will include congestion prices from constraints in other balancing authority areas. Allocating the congestion rent with a point-to-point mechanism would result in cases where the congestion rent from some constraints is not allocated to the customers who paid for the transmission.

The amount of transmission provided to EDAM may not be known beforehand

Forward looking congestion rent allocation mechanisms will also have to take into account that the amount of transmission rights submitted to the EDAM may not be known and could change daily. A forward allocation mechanism cannot create more rights to the rent from transmission than the actual transmission that shows up in the EDAM. Forward rights could only be given to transmission that the ISO knows will be available to EDAM.