Subscriber Participating TO Market Scheduling Option Straw Proposal

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1. Introduction

On March 12, 2024, the Federal Energy Regulatory Commission (FERC) accepted the California Independent System Operator Corporation (CAISO) tariff amendment for a new transmission development model, the Subscriber Participating Transmission Owner (Subscriber Participating TO).[1] This model establishes alternative opportunities for the construction of new transmission not addressed in the CAISO transmission plan in locations outside of the original CAISO balancing authority area. Specifically, the Subscriber Participating TO model provides the CAISO and interested project developers the option to develop and deliver resources that will satisfy state, municipal, county, or federal policy requirements or directives, including California's energy policy goals. The Subscriber Participating TO model enhances inter-regional transmission resilience, deliverability, and resource adequacy, while providing customers with the benefit of new transmission facilities under the operational control of the CAISO. Having the costs to construct these new transmission facilities paid by subscribers of the projects, instead of being incorporated into the CAISO's transmission access charge funded by transmission ratepayers, while providing the subscribers with an entitlement and Subscriber Participating TO the opportunity to recover revenue for use by non-subscribers are the primary distinguishing features of this model.[2]

Under the Subscriber Participating TO model, the developer will place the new transmission facilities under CAISO operational control and connect generation to the CAISO balancing area, without a decision to build the project being made through the CAISO's transmission planning process. In exchange, the subscribers who pay for use of the facilities receive scheduling priority and entitlement rights which are Existing Transmission Contracts (ETCs) for energy scheduled from that generator to internal CAISO demand or CAISO balancing authority area (CAISO BAA) interconnection point, whichever is the exit point of the Subscriber Participating TO transmission facilities. The entitlement rights provide the subscriber with a higher scheduling priority than other self-schedules and economic energy bids that utilize the Subscriber Participating TO transmission facilities. In addition, these entitlement rights also provide the subscribers with a financial hedge against congestion and transmission charges between the generation and the interconnection point to the original CAISO Balancing Authority Area.[3]

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[1] The FERC order accepting the Subscriber Participating TO proposal is available on the CAISO website at: https://www.caiso.com/documents/mar12-2024-orderacceptingproposedtariffrevisions-subscriberparticipatingtransmissionownermodel-er23-2917.pdf

[2] These and other features of the underlying Subscriber Participating TO model accepted by FERC are outside the scope of this stakeholder initiative.

[3] The original balancing authority area footprint was established as of FERC approval of the Subscriber Participating TO amendment to the CAISO tariff on March 12, 2024. The original footprint may change overtime with addition of transmission facilities or balancing authority

The CAISO published an Issue Paper on November 13, 2024 describing certain implementation complexities with the existing ETC model, and proposing alternative market scheduling options to mitigate some of the identified issues. Primarily, the CAISO introduced two different market scheduling options for consideration which could be implemented in addition to the balanced ETC model, which consisted of the Merchant CRR/economic bidding option and the Unbalanced CRN option. At the following stakeholder call on November 20, 2024, the CAISO presented these options to stakeholders for discussion, with comments submitted on December 4, 2024. Seven stakeholders provided comments. The CAISO is now publishing this straw proposal informed by stakeholder input to provide an elaboration on the CRR nomination process; discuss why the unbalanced CRN model is no longer a viable option; and provide various numerical examples discussing different scenarios of Subscriber Participating TO implementation. The CAISO recommends that stakeholders consider the proposed CRR/economic bidding option as described in this Straw Proposal.

2. Subscriber Participating TO Model Implementation

2.1. Current Implementation

The subscribers of a Subscriber Participating TO will receive scheduling priority and a financial hedge against congestion and transmission access charges up to the point of interconnection between the Subscriber Participating TO transmission line and the original CAISO BAA. These subscriber rights are eligible for treatment as ETCs under the CAISO tariff, defined by the entitlement rights and modeled as an ETC between a specified source location(s) and sink location(s) associated with a specific contract reference number (CRN).

The CAISO had identified certain implementation complexities as explained in the Issue Paper, which included the requirement to submit an export schedule at the sink portion of the Subscriber Participating TO transmission system, and potentially require the subscriber to import back the energy into the CAISO BAA to serve CAISO demand. This creates the need for the scheduling coordinators of the Subscriber Participating TO generation to export the generation out and then have to submit corresponding import schedules in order to serve demand internally within the CAISO BAA. It also raised an implementation complexity of having to nominate RA on a generation resource that is

areas. The scheduling priority and financial hedge provisions would be extended beyond the interconnection point if the subscriber has additional transmission rights under Existing Transmission Contracts ("ETC") from the CAISO BAA interconnection point to their load aggregation point, but otherwise, the scheduling and financial rights end at the CAISO BAA interconnection point.

expected to export out, which although workable is an unconventional setup within the CAISO market.[4] The import/export ETC model does not allow:

1. The resource to bid into the market at the true source point (Generator);
2. The market doesn't economically dispatch the resource based upon their costs to meet demand needs because the bid is a price taker; and
3. The existing export/import paradigm carves out the subscriber transmission from use by the market.

While, as described in the Issue Paper, the current model remains workable, it creates certain inefficiencies which the CAISO believes could be mitigated through the option proposed in this Straw Proposal. By providing the merchant CRR option, it allows the subscriber to have one transaction from source to demand sink in the CAISO BAA.

In addition, this requirement to import/export also created challenges if the adjacent BAA were to join EDAM, because the subscriber would be unable to submit an ETC import schedule or bid at an EDAM transfer point in the same manner it does today, the Subscriber would have to rely on the market to optimally dispatch energy to counterflow to effectuate a transfer in the import direction. The CAISO discussed these complexities with stakeholders on November 20, 2024, and proposed alternatives to mitigate them. This Straw Proposal further clarifies the implementation of those alternatives, as well as provides numerical examples and implementation level explanations of the current ETC model in Appendix A. The CAISO recommends that stakeholders review the Appendix A prior to reviewing the rest of the Straw Proposal.

Stakeholder Feedback

BAMx, PG&E, SDG&E and Six Cities commented that they wanted to better understand the existing Subscriber Participating TO model using various examples of subscriber and non-subscriber usage and the impact to the non-subscriber usage payment amount and the transmission access charge. SCE stated they support the existing ETC model but not the non-subscriber usage charge and payments. In response to stakeholder feedback, the CAISO is providing a set of numerical examples to demonstrate how non-subscriber usage and non-subscriber usage payments are calculated according to the currently approved model under different bidding conditions. In addition to the examples provided in the Appendix A, the CAISO is also clarifying a couple of key issues related to the existing model.

3. Proposed Enhancement

As discussed further below, based on stakeholder feedback and additional internal discussions, the CAISO is proposing an enhancement to the Subscriber Participating TO model – the "Merchant congestion revenue rights ("Merchant CRR") option and

[4] The CAISO anticipates clarifying that load serving entities will have access to the Maximum Import Capability associated with their subscriber rights until the load serving entities no longer need the allocation; *i.e.*, until the delivery network upgrades are completed. CAISO Tariff, Appendix DD 8.9.1(b).

removing the initially proposed unbalanced ETC option from consideration, and it will not be discussed further as part of this proposal.

3.1. Congestion Revenue Rights Option

Background

The CAISO described in the Issue Paper the opportunity for Subscribers to exchange their ETCs under the current model for Merchant CRRs, which are CRR Options, or to retain their ETCs under the existing Subscriber Participating TO model. These CRR Options would be granted solely for the Subscriber PTO transmission path, and would terminate at the interconnection point of the Subscriber PTO transmission path with the current CAISO BAA. Since the release of the Issue Paper, the CAISO has considered this issue further and believes that offering the Subscribers an ability to exchange their ETCs for CRR Options similar to the process allowed pursuant to a few specific existing arrangements with third party transmission owners in the CAISO balancing area would be more efficient and suitable than requiring the Subscribers to participate in the Merchant CRR allocation process. The ETC to CRR conversion process does not modify the ability of the Subscribers to submit economic bids, nor does it modify the proposed enhancements to limit scheduling on the Subscriber Participating TO transmission path to honor limitations set by non-CAISO transmission service provider OATTs.

Stakeholder Feedback

BAMx, Pattern, SCE, and Six Cities were generally supportive but raised specific questions that have been addressed in the Straw Proposal. SCE raised concerns with allowing recovery of both non-subscriber usage payment and congestion revenues. PG&E and SDG&E asked for additional clarification on the existing model Subscriber Participating TO model in order to better understand the new proposed CRR option model. SFPUC asked for the exchange option to be allowed for all ETC/TOR holders which is outside of the purview of this stakeholder initiative.

Proposal

Subscriber Participating TO CRR Conversion Process

The CAISO provides the following additional details regarding the implementation of the CRR/economic bidding option so that stakeholders can better understand the intricacies of the proposal. The description covers how these CRR options will be granted as well as proposed options on distinguishing subscriber and non-subscriber schedules on the Subscriber Participating TO transmission path.

Regarding the process for granting the CRR options, the CAISO is proposing one major change in this proposal to replace the previous proposal of granting Merchant CRRs with this new proposal of *exchanging* ETCs for CRR options in a manner similar to how certain third party transmission owners and their customers exchange TORs for option

CRRs today. The CAISO believes that this proposed methodology is simpler and provides the CAISO with greater control to ensure that the CRRs are only allocated to the Subscriber Participating TO in the same amount as the released ETCs. A description of the process is provided below:

1. Subscriber Participating TO will nominate a portion of transmission capacity as CRRs at least 10 days prior to the posting of the Full Network Model to be used in CRR allocations for the applicable month. This calendar is posted on the CAISO website.
2. The nominated CRR capacity will be reserved for the sole use of the Subscriber Participating TO. CAISO will reduce the encumbered transmission capacity of the Subscriber Participating TO transmission system by the MWs nominated for CRRs.
3. The transmission capacity nominated for CRRs will no longer be subject to ETCs and will be open for scheduling in all CAISO markets, subject to any restrictions of use based on bilateral contracts between Subscriber Participating TO and non-CAISO transmission service providers that are providing entitlement rights to the Subscriber Participating TO. For e.g. if CAISO market participants need to be registered transmission customers of the non-CAISO transmission service provider who has provisioned rights to the Subscriber Participating TO, than such restrictions shall apply.
4. The nominated CRRs must specify the following:
    a. Source and sink restricted to the Subscriber Participating TO transmission system
    b. The ETC MWs that are being released as CRR MWs
    c. The timeframe of the rights, off-peak or on-peak or both
5. The CRR source must be an individual Pnode, aggregate Pnode or Scheduling Point. The CRR MWs in cumulative cannot exceed the transmission line capability.
6. The Subscriber Participating TO must submit updated TRTC instructions to CAISO to update the CRR registration commensurate with the release of transmission encumbrance through CRR nomination.
7. The CRRs will only provide IFM congestion hedge to the extent there is any difference in congestion price between source and sink of the CRR, and shall not provide any RTM congestion hedge, consistent with the CRR design today.
8. The CRRs will be settled based on awarded MWs, which will include all schedules on the transmission path, i.e. subscriber and non-subscriber awards. This is consistent with how CRRs are settled in the market today, and the CAISO is not proposing any changes to this market settlement model to distinguish between subscriber and non-subscriber schedules. Under the ETC model, the subscribers would have only received a congestion hedge for subscriber market awards in both IFM and RTM markets as well as a scheduling priority on the transmission path. By trading in the ETCs for CRRs, the subscribers are

accepting a trade-off, i.e. giving up the RTM congestion hedge and scheduling priority.

Limit Non-Subscriber Scheduling at certain export and import scheduling points

The CAISO recognized in the Issue Paper that there may be certain restrictions that exist on Subscriber Participating Transmission Owner entitlements due to limitations established by the OATTs of the non-CAISO transmission service providers. For example, any imports into the CAISO BAA by non-subscribers at Pinal Central would be restricted to non-subscribers that are transmission customers of the transmission service providers that provide the transmission rights over their systems that SunZia represents as entitlements under the Transmission Control Agreement. In this circumstance (or others), the CAISO intends to work with the respective Arizona entities to ensure that only CAISO market participants that are eligible to use the Pinal Central to Palo Verde transmission rights are able to schedule at Pinal Central to Palo Verde. The CAISO is currently working through the various implementation details on transmission scheduling with the Arizona entities, which includes discussing such restrictions. The CAISO proposes that only certain SCs be allowed to schedule at these scheduling points, by limiting the number of SCIDs that can schedule at Pinal Central. The list of SCIDs can be determined based on discussions with parties to the transmission service agreements, i.e. SunZia the Subscriber Participating TO and the Arizona transmission entities, Salt River Project, Western Area Power Administration, and Tucson Electric Power Company.

Non-Subscriber scheduling

As further explained in Appendix A, a market transaction on the Subscriber Participating TO transmission path scheduled without using an ETC is considered a non-subscriber schedule and is subject to those tariff rules, i.e. WAC and counting towards non-subscriber usage payment amounts. Today the CAISO tariff has the ETC mechanism to identify the subscriber usage, but the CAISO is proposing a couple of options to address this issue. Under the CRR option, the subscribers will be free to exchange ETCs for CRRs and schedule using economic bids. Without ETCs, their market awards appear no different than the market awards to non-subscribers.

To address this issue, the CAISO proposes that subscribers pre-register specific SCIDs and specific export and import system resources on Subscriber Participating TO transmission scheduling points. These specific SCID/market ID combinations would be exempt from WAC (exports only) as well as non-subscriber usage payment amounts (exports). If the subscriber schedules using these SCID/market ID combinations and receives market awards, the CAISO settlement system will recognize these market transactions and will exempt them from the WAC specific charge codes. It will also exclude the associated awards from non-subscriber usage that will eventually be used to pay the non-subscriber payment amount to the Subscriber Participating TO.

This specific arrangement requires the CAISO to setup these SCIDs and market IDs in a customized manner, as well as the subscribers to limit themselves to only using these

SCID and market ID combinations. This also means subscribers cannot submit export or import market transactions not associated with these pre-registered market IDs without counting as non-subscriber usage. If the subscribers don't utilize these specific SCID/market ID combinations, they will be charged the WAC and be counted as non-subscriber usage. This places additional responsibility on subscribers when scheduling on these paths. The CAISO has experience with such combinations and has found that they are subject to disputes primarily because of market participants not using the correct SCIDs to schedule on the applicable scheduling points, causing significant administrative re-work for the CAISO. If the subscriber does not schedule using the correct SCID/market ID combination and is treated as non-subscriber usage, the CAISO will not accept any market settlement disputes to remedy such charges.

As an alternative the CAISO proposes leveraging the existing relationship between Subscriber Participating TO and subscribers in settling any WAC applied to Subscriber market transactions. In the event where a Subscriber schedules on a Subscriber Participating TO scheduling point and is subject to WAC, the Subscriber Participating TO will also receive a non-subscriber payment proportional to the market transaction. In such cases, the Subscriber Participating TO can reimburse the Subscriber for any WAC through a bilateral transaction outside of the CAISO market settlements system. While the CAISO does not propose making this a tariff requirement, the CAISO simply proposes this as a viable alternative that can address this issue without requiring any CAISO system changes and scheduling restrictions on the Subscriber. The CAISO encourages stakeholders to consider this alternative as a more efficient way to resolve this issue.

Examples

For discussion, assume the following:

SunZia wind to Pinal Central transmission capability= 3,000 MW

ETC retained= 1,000 MW

CRRs exchanged = 2,000 MW

Pinal Central to Palo Verde transmission capability = 2,000 MW

ETC retained = 0 MW

CRR = 2,000 MW

Assume that in one hour, the following is bid into the Day-Ahead Market:

Wind generation = ETC1+Wind Bid1 = 2500 MW

ETC1 (wind to PC) = 1,000 MW

Wind Bid1 = 1,500 MW

Import bid1 at Pinal Central = 1,000 MW

Export bid1 at Pinal Central = 500 MW

Wind generation (Non-Subscriber Usage Allocation)

Wind subscribed capacity = 3,000 MW

Wind award = ETC1+Wind Bid1 = 2,500 MW

Non-Subscriber Usage = max(0,market award-subscriber MW) = max(0,2,500- 3,000) = 0

Non-Subscriber Usage Allocation = 0 * $11 = $0

Pinal Central Non-Subscriber Impact (SCID non-exempt)

Non-Subscriber Usage at Pinal Central = imports + exports = 1,000+500 = 1,500 MW

Non-Subscriber Usage Payment Amount at Pinal Central = 1,500*$11 = $16,500

WAC at Pinal Central) = 500*$11 = $55,000

Export Bid1 at Pinal Central is subscriber export bid.

In this scenario, Subscriber Participating TO can reimburse the subscriber for any WAC charged to the export bid.

Pinal Central Non-Subscriber Usage Payment Allocation (SCID exempt)

Export Bid at Pinal Central is submitted using an exempt SCID. In addition, import bid at Pinal Central is submitted from non-exempt SCID. Both clear the market at 1000 MWs.

Non-Subscriber Usage at Pinal Central = non- exempt only (imports + exports) = 1,000+ 0 = 1000.

Non-Subscriber Usage Payment Amount at Pinal Central = 1000*$11 = $11,000

WAC at Pinal Central = 0*$11 = $0

In this scenario, the export award is not charged WAC as it is submitted using the correct SCID/Market ID combination. The Subscriber Participating TO is also not paid the Non-Subscriber Usage Payment Amount for this export award.

3.2. Unbalanced Existing Transmission Contract Option

The CAISO had presented in the Issue Paper an option which relied upon using a new market scheduling model, i.e. the Unbalanced CRN model. This would have allowed subscribers to continue using a CRN to schedule market transactions without needing to export at the end of the Subscriber Participating TO transmission path. Unlike balanced CRNs, these new types of unbalanced CRNs would not have a registered physical source and so would not be considered balanced schedules. This option would also provide a congestion hedge by registering a financial sink and source with the CRNs, as well as providing a scheduling priority to the generator or imports using the CRNs. This was a novel market scheduling mechanism that would require significant development for use by the Subscribers because it does not rely on existing market functionality and introduces significant complexity and risk at this time.

Stakeholder Feedback

SFPUC commented that the unbalanced ETC model should be applied to the broader community of ETC/TOR holders. Other stakeholders were generally supportive, but asked for more clarification on the existing balanced ETC model in order to better understand the implementation today. SCE and Six Cities asked specific questions regarding option switching and application of WAC and TAC. The CAISO is not proceeding with this option for the reasons explained below.

Proposal

The CAISO recognizes that developing this new market functionality would require significant development work and would likely not provide substantive value to market participants, given the existence of other viable options such as balanced ETCs and CRR/economic bidding. Moreover, the option would have allowed this unbalanced ETC only for a narrow set of Market Participants, the Subscriber Participating TOs and not for the larger group of market participants that use ETCs and TORs today. The CAISO is not prepared at this time to present this option to the broader group of market participants as an alternative to the balanced ETC approach today, and despite market participants comments supporting the wider usage of these rights, the CAISO believes that because it is not in a position to offer this option to the entire market, it should not further consider offering this new functionality to only the narrow group of market participants utilizing subscriber rights. Accordingly, and after lengthy consideration of all the stakeholder comments including further discussion at the CAISO, the CAISO is withdrawing this option from further consideration in this initiative.

3.3. Clarification for Stakeholders

In the Issue Paper, the CAISO had indicated that the alternative proposed would be allowed in conjunction with the existing balanced ETC model. This meant that all three options would have been open for market participant use, subject to certain limitations (and now would include only the current model and Merchant CRR option). That said,

there is one important limitation that CAISO would like to clarify here regarding the — usage of CRRs and ETCs on the same transmission path, as described in the proposal section below, whether the Subscriber Participating TO provides ETC rights or Merchant CRR rights to their Subscriber, such rights must be separate and distinct.

Stakeholder Feedback

Pattern asked for a change to the economic bidding rules, SDG&E indicated that potential uplift and downstream concerns if number of Subscriber Participating TOs increase, and Six Cities asked for clarity on the identity of subscriber entities. Other stakeholders expressed general appreciation about this initiative.

Proposal

The CAISO is proposing that the Merchant CRR option that allows for economic bidding be considered as an alternative to the existing balanced ETC model for use by Subscribers. While CRRs and ETCs can existing on the same transmission path, they cannot exist simultaneously for the same MWs between a specific source and sink. As described in the CRR option section, once ETCs are nominated for CRR exchange, the ETC MWs between the specified source and sink reduces. As a result, the subscribers can only schedule the ETCs for the reduced MWs while the CRRs exist.

The CAISO also would like to clarify that where it had referred to Subscriber Participating TO generation, it was referring to generation that was interconnected to the Subscriber Participating TO transmission system and not to generation owned by the Subscriber Participating TO. Any CAISO demand served by generation interconnected to the Subscriber Participating TO system will be subject to TAC in accordance with CAISO Tariff rules, unless the scheduling coordinators have access to ETCs from all the way to the load aggregation point of the CAISO demand being served. The subscribers the entities that have transmission rights on the Subscriber Participating TO transmission system, but in the CAISO market they are represented by their scheduling coordinators who have the right to use the available ETC CRNs or economic bidding on the Subscriber Participating TO transmission system. We expect that in many cases the subscribers will allow and rely on the load serving entities that have secured contracts with the Subscriber Participating TO generation to utilize their ETCs or access their transmission rights through economic bidding.

Pattern proposal for increasing bid segments

Pattern Energy had submitted comments in support of increasing the number of bid segments allowed on a single resource ID, from ten bid segments to ten bid segments plus self schedule. This presents a very significant change to market rules and the CAISO is not willing to consider this change when driven by this narrower application.

4. WEM Governing Body Role

This initiative proposes certain ISO tariff amendments to enhance the opportunities for transmission developer to become a Participating TO. ISO staff believes that these

proposed ISO tariff changes will go to the Board of Governors only and that the Western Energy Markets (WEM) Governing Body will have no role in the decision. Under the new rules, the Board and the WEM Governing Body have joint authority over any proposal to change or establish any CAISO tariff rule(s) applicable to the EIM Entity balancing authority areas, EIM Entities, or other market participants within the EIM Entity balancing authority areas, in their capacity as participants in EIM. This scope excludes from joint authority, without limitation, any proposals to change or establish tariff rule(s) applicable only to the CAISO balancing authority area or to the CAISO-controlled grid.

Charter for EIM Governance § 2.2.1. None of the tariff rule changes currently contemplated in this initiative would be "applicable to EIM Entity balancing authority areas, EIM Entities, or other market participants within EIM Entity balancing authority areas, in their capacity as participants in EIM." The proposed tariff rules would be applicable "only to the CAISO balancing authority area or to the CAISO-controlled grid." Accordingly, the matters scheduled for approval in May 2025 fall outside the scope of joint authority. The WEM Governing Body also has an advisory role that extends to any proposal to change or establish ISO tariff rules that would apply to the real-time market but are not within the scope of joint authority. This initiative, however, does not propose changes to real-time market rules.

This proposed classification reflects the current state of this initiative and may change as the stakeholder process moves ahead. Stakeholders are encouraged to submit a response to the EIM classification of this initiative as described above in their written comments, particularly if they have concerns or questions.

5. Stakeholder Engagement

The CAISO will discuss this straw proposal with stakeholders during a stakeholder meeting on January 27, 2025. Stakeholders are asked to submit written comments by February 10, 2025 through the commenting tool. A comment template will be posted on the CAISO's initiative webpage here: California ISO - Subscriber participating transmission owner market scheduling options (caiso.com)

The proposed schedule for this initiative is as follows:

DATE	EVENT
1/17/2025	Publish Straw Proposal
1/27/2025	Stakeholder meeting on Straw Proposal
2/10/2025	Comments due on Straw Proposal
3/7/2025	Publish Draft Final Proposal
3/17/2025	Stakeholder meeting on Draft Final Proposal
3/31/2025	Comments due on Draft Final Proposal
4/14/2025	Publish Final Proposal
5/22/2025	Board of Governors Meeting

Appendix A - Existing ETC Model Example

A number of stakeholders requested the CAISO provide additional information as to the FERC approved Subscriber Participating TO model. One common question received is how will the CAISO determine the subscriber usage if ETCs are not used and instead subscribers choose to use economic bidding or non-ETC self-schedules. Under the current model, subscribers are generally allowed to submit bids and self-schedules without using ETCs to utilize any unscheduled ETC capacity on the line but doing so results in the subscriber not receiving the scheduling priority, congestion hedge and exemption from the access charge for the length of the Subscriber Participating TO transmission.

If the ETC on a Subscriber Participating TO transmission path allows the ETC holder to adjust schedules up to T-20, the ETC is modeled in IFM such that any unscheduled ETC capacity is reserved for the ETC holder though HASP. Only in the RTM horizon is the unscheduled ETC capacity released to other market participants although the ETC holder still maintains a priority up to T-20 minutes to use their ETC rights.

For e.g. there is a 3000 MW ETC on a 3000 MW transmission path with a T-20 scheduling priority. If the ETC is scheduled and awarded only 1500 MW in IFM, than the remaining 1500 MWs is reserved for the ETC holder and not released to other market participants, which means no non-ETC holder market participant can be awarded bids or self-schedules on the Subscriber Participating TO transmission. In RTM, if the ETC is scheduled and awarded an additional 1000 mw, for a total of 2500 MW, the remaining 500 MW is open for other non-subscriber market participants to submit economic bids. If the ETC self-schedule is adjusted to 2700 MW in FMM, any market awards on the 500 MW will be reduced to 300 MW to allow the ETC self-schedule to be awarded.

If subscribers decide not to use the ETC to bid, they too will be subject to these bidding restrictions and will only be able to bid in RTM. When subscribers chose to submit economic bids instead of balanced ETC self-schedules, the CAISO cannot distinguish these schedules as subscriber schedules since the ETCs are not being utilized. In such circumstances and under the current design, the market awards to subscribers utilizing economic bids will count as non-subscriber usage. This means that any subscriber export bids awarded at a Subscriber Participating TO transmission scheduling point will count as non-subscriber usage and will be charged WAC in at least IFM and HASP. Since these schedules are counted as non-subscriber usage, the Subscriber Participating TO will receive the non-subscriber usage payment commensurate to the IFM and HASP awards.

In a further clarification on how non-subscriber usage payments are made to the Subscriber Participating TOs, these payments will follow the same timeline as Transmission Revenue Requirement (TRR) payments today, which are paid on a monthly basis. While the CAISO will account for the non-subscriber usage in each market run and trade date, the payment will be based on the summation of all non-

subscriber usage over a given trade month and the effective non-subscriber usage rate for the given trade month. The non-subscriber generation will be measured using meter data while import and export schedules will be measured using submitted e-tags. The CAISO will post the effective non-subscriber usage rates on the CAISO website similar to how the High Voltage Access Charge and Wheeling Access Charge are posted today.

If the adjacent BAA at the scheduling point is a EIM entity, than post-HASP that scheduling point is considered a transfer point and any incremental awards in FMM and RTED is considered a WEM transfer. WEM transfers are transfer not an export or import schedules and therefore are not charged WAC nor are they counted towards non-subscriber usage payment. This is because the tariff language filed regarding calculating of non-subscriber usage payment specified using import and exports schedules in the calculations for non-subscriber usage and not WEM transfers which are treated as a different kind of market transaction today. An example below further explains this concept.

Regarding any non-subscriber usage of Subscriber Participating TO interconnected generator, the CAISO has included in its implementation a new data field in Master File called subscriber capacity. This will be a MW value per generator resource ID that will identify the MW level of subscriber capacity on a generator. Generally, if the Subscriber Participating TO transmission is fully subscribed and the off-takers are receiving rights to the entire capacity of the generator through PPAs or RA contracts, than the generator resource ID subscriber capacity shall be equal to its registered PMax in Master File. When calculating non-subscriber usage, the CAISO will compare the subscriber capacity MW with the market award received by the generator, and if the market award is higher than the subscriber capacity, than the delta will be counted as non-subscriber usage. But in the cases of fully subscribed generators, there will be zero non-subscriber usage attributed to them.

The CAISO would also like to clarify the treatment of subscriber and non-subscriber usage under EDAM, based on the most recent tariff filings made governing the CAISO BAA participation in EDAM.

Under EDAM, there will be transfer points established between EDAM BAAs, including the CAISO and its adjacent EDAM BAAs. These transfer points will have BA to BA transfers in the DAM similar to the BA to BA transfers between WEM BAAs in FMM and RTED. These EDAM transfers are not considered as export or import schedules between the EDAM BAAs, and so are not charged any WAC similar to how export schedules are charged today. Also since these EDAM transfers are not an export or import schedule, they will not be included in the non-subscriber usage calculations associated with Subscriber Participating TOs similar to how WEM transfers are also not included. As a result, if the Subscriber Participating TO forms interties with an EDAM BAA, we can expect that there will be no non-subscriber usage accounted for due to the EDAM transfers at these new interties.

While there will be no WAC charged for EDAM transfers, there may be other cost recovery mechanisms available to the Subscriber Participating TOs under the EDAM rules. In our recent tariff filing[5], the CAISO proposes to allow Subscriber Participating TO transmission to be considered as either existing or new transmission, similar to the transmission built by other PTOs, and accounted for accordingly. If this tariff filing is approved as filed, the Subscriber Participating TO transmission will be eligible to recover EDAM access charge revenues for non-subscriber usage of their transmission. If the Subscriber Participating TO transmission is placed in service prior to the adjacent BAA joining EDAM, then the transmission will be considered as existing transmission and would be eligible for recovery under the EDAM access charge based on historical schedules of non-subscriber usage on that intertie. If the Subscriber Participating TO transmission is placed in service after the adjacent BAA joins EDAM, then the Subscriber Participating TO transmission will be considered as new transmission and will recover the EDAM access charge based on estimated schedules of non-subscriber usage.[6]

The $/MWh rate that will be used to calculate the Subscriber Participating TO non-subscriber usage payment, which in this case will be the Subscriber Participating TO specific non-subscriber usage rate, and the non-subscriber payments will be incorporated into the total CAISO EDAM access charge allocated to all non-CAISO EDAM entities. We propose that this paradigm be applied to not only the existing ETC model but also to the proposed alternative CRR option. Essentially any non-subscriber usage that is calculated by the CAISO under either model will be used to calculate the non-subscriber payment in the form of EDAM access charge revenues to the applicable Subscriber Participating TO.

Numerical examples

1. Assumptions and Clarifications
   - NSU: Non-Subscriber Usage
   - NSUR: Non-Subscriber Usage Rate
   - NSUPA: Non-Subscriber Usage Payment Allocation
2. Subscribers can schedule using ETCs and economic bids.
3. If Subscribers use economic bids for exports and imports, they give up all subscriber treatment rights and obligations.
4. Assume that NSUR is equal to CAISO WAC and TAC.
5. Non-subscriber usage from export/imports is calculated using market schedules.

Example 1: Calculation of non-subscriber usage of interconnected generation

- Wind market award = 3000 MW
  - Wind generation registered subscriber MW = 3000 MW

[5] FERC Docket No. ER25-437 EDAM Access Charge in CAISO Balancing Authority Area

[6] See the EDAM access charge provisions in CAISO Tariff sections 33.26 (approved) and 26 (pending) for more information concerning the EDAM access charge and how it will apply in the CAISO BAA.

- NSU = (market award-subscriber MW) = 3000-3000= 0
- NSUPA = 0*$11= $0
- TAC collected = 3000*$11 = $3300

The registered subscriber capacity on the wind generation is based on the registered subscriber capacity on the Subscriber Participating TO transmission it is connecting to. If the Subscriber Participating TO transmission is fully subscribed, the wind generation being scheduled by subscribers is considered fully subscribed as well. In this example, the wind generation is fully subscribed to its Pmax of 3000 MW. A market award of 3000 MW is received in IFM, and since the market award is equal to the subscribed MWs of the wind generation, the non-subscriber usage calculated is 0 MW.

Example 2: 100% Balanced ETC Usage (SunZia)

- Wind generation= 3000 MW (ETC1+ETC2)
- ETC1 = 900 MW (wind to Pinal Central (PC))
- ETC2= 2100 MW (wind to Palo Verde (PV))
- NSU = 0(Wind) + 0(PC)+ 0(PV)
- No WAC charged, No NSUPA assuming only balanced ETCs are used.

In this example the entire wind generation is being scheduled using only ETCs , including a ETC export at Pinal Central. The ETC export at Pinal Central is exempt from WAC and is not included in the non-subscriber usage. The calculating of non-subscriber usage on the wind generation is also 0 MW, since it is fully subscribed as shown in Example 1.

Example 3: Partial ETC Usage (SunZia)

- Wind generation = 3000 MW (Wind Bid 1+ ETC2)
- ETC1 import= 100 MW (PC to PV export)
- Wind Bid1= 2000 MW
- ETC2= 1000 MW (wind to PV export)
- Export bid1(@PC)= 1600 MW
- Import bid1(@PC) = 200 MW
  @ Flow into PC (100 – 1600 + 200 +2000+1000) =1700
  @ Flow through PV (1700 – 1000 – 100) = 600 into CAISO BAA
- NSU(@PC)= 1600 + 200 = 1800 MW

<u>No WEM reciprocity</u>

- NSUPA(@PC)= (1600+200)*$11 = $19800
- WAC = (1600)*$11= $17600
- TAC = (200)*$11= $2200

Total NSUPA = WAC+TAC

In this example, there is a mix of market transactions, including ETC schedules, export and import bids. The amount of injection into PC is calculated using summing the ETC schedules submitted on the wind generation, and any imports and exports at Pinal

Central, adding up to 1700 MW, which is lower than the transmission capacity of 2000 MW on this path. The flow through PV into the CAISO BAA is the sum of the total injection at PC and any exports at PV, adding up to 600 MW, which represents the flows into the CAISO BAA. Since we are assuming there is no WEM reciprocity, there will be WAC charged in all markets and non-subscriber usage calculated as well.

The total non-subscriber usage at PC is the sum of the absolute values of the export and import bid at PC, adding up to 1800 MW. Assuming that the import bid serves CAISO demand which is charged the TAC, the total amount of NSUPA is equal to the total additional WAC and TAC collected.

Example 3: Partial ETC usage, WEM reciprocity (Transwest)

"IPP" is Intermountain Power Plant Switchyard which will be a new intertie with LADWP

"HA-ELD" is Harry Allen-El Dorado transmission line which will be the point of interconnection of Transwest Express's transmission system to the existing CAISO controlled grid.

- Wind generation = 3000 MW (ETC1+Wind Bid 1+ ETC3)
- ETC1 export= 1500 MW (wind to IPP)
- ETC2 import= 300 MW (IPP to HA-ELD)
- Wind Bid1= 200 MW
- ETC3= 1300 MW (wind to HA-ELD)
- Export bid1(@IPP)= 400 MW
- Import bid1(@IPP) = 100 MW
- NSU(@IPP)= 400+100= 500 MW
- Total NSU = 500 MW

In this example, we described a scenario where there is WEM reciprocity with the adjacent BAA and the resulting settlement impacts on non-subscriber flows. Based on the current WEM rules today, there is no WAC charged on WEM transfers, which are economic flows between WEM entities in the FMM horizon. WEM transfers are not considered import and export bids and are simply economic transfers based on market optimization in the FMM horizon. As a result, there is no WAC charged for WEM transfers since they are not export schedules and neither are the considered to be part of the non-subscriber usage calculation which is limited only to export and import schedules.

WEM reciprocity
IFM

- Export bid1(@IPP) IFM award = 300 MW
- WAC charged in IFM= 300*11=$3300
- NSU = 300
- NSUPA = 300*$11= $3300

As shown here, the export bid receives a 300 MW IFM award which is charged WAC and also included in the non-subscriber usage calculation. The following examples are from awards in the Real-Time Market and demonstrate that not all export awards in RTM are exempt from WAC.

HASP

- Export bid1(@IPP) HASP incremental award = 50 MW
- WAC charged in HASP= 50*$11=$550
- NSU = 50
- NSUPA = 50*$11= $550

The export bid receives an incremental HASP award of 50 MW, which is still considered an export schedule and is charged WAC and included in the NSUPA calculation.

FMM

- WEM transfer (@IPP)= 50 MW
- WAC charged = 0*$0= 0 (no WAC charge for transfer)
- NSU = 0
- NSUPA = 0*$11= $0
- Total WAC collected across IFM,HASP,FMM = 3300+550+0= $3850
- Total NSUPA paid across IFM, HASP, FMM = 3300+550+0= $3850

Post-HASP the CAISO runs the Fifteen Minute Market (FMM), and any export awards received here are now considered as WEM transfers which are exempt from WAC. Since WEM transfers are not considered export schedules in the CAISO market, they are not included in the NSU calculation for Subscriber Participating TO s. In this scenario, there is $0 in WAC collected on the WEM transfer and $0 in NSUPA paid to the Subscriber Participating TO. The total WAC collected across all three markets equals the NSUPA paid to the Subscriber Participating TO.