Subscriber Participating TO Market Scheduling Option Issue Paper

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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"). 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 an additional 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, and providing the subscribers with an entitlement is the primary distinguishing feature of this model.

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 in the CAISO's transmission planning process. In exchange, the subscribers receive scheduling priority and financial rights 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. 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.[1] The scheduling priority and financial hedge provisions are extended beyond the interconnection point if the subscriber has additional transmission rights under Existing Transmission Contracts 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.

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[1] 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.

2. Subscriber PTO 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 existing transmission contracts (ETC) 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).

In accordance with the existing rules of the Subscriber Participating TO model, subscribers must submit balanced self-schedules from sources, *i.e.* generators or imports at the scheduling points associated with the CAISO BAA interconnection point located on the Subscriber Participating TO transmission line, to sinks, i.e. load aggregation points or exports at the scheduling points associated with the CAISO BAA interconnection point, located on the Subscriber Participating TO transmission facilities, by referencing the associated CRN. Subscribers will receive the “perfect” hedge for the balanced portion of energy injected at source location (generator, import) to sink location (load aggregation point or exports at the scheduling points associated with the original CAISO BAA interconnection point). The balanced portion of the ETC schedule will clear at a higher scheduling priority than other self-schedules or economic bids. If the subscriber sinks at an export scheduling point associated with the original CAISO BAA interconnection point but intends to serve CAISO demand, the subscriber will need to submit an import bid at the same or corresponding CAISO BAA scheduling point. In addition, the import bid, including self-schedules, will compete against other import bids at the CAISO BAA scheduling point in order to serve internal CAISO demand. In other words, without additional transmission rights, subscribers are not eligible to receive scheduling priority and/or financial hedge beyond the Subscriber Participating TO transmission interconnection point with the original CAISO BAA.

2.2. Implementation Complexities

Although the current Subscriber Participating TO model and the use of an ETC CRN to reflect a subscriber’s entitlement rights provides the appropriate scheduling priority and financial hedge, the CAISO has identified some implementation complexities in certain scenarios with this approach. While the current approach will be functionally implemented, the CAISO has identified some considerations which didn’t arise until implementation commenced.[2]

- The current approach adds additional steps, requiring the subscriber to export generation using their subscriber right and then importing generation

[2] The CAISO continues to work towards implementation of the current design and this proposal would be an enhancement to the underlying model, not an alternative to the underlying model.

back in at the same scheduling point to allow the market optimization and subsequent settlements to limit the subscriber benefits to the Subscriber Participating TO transmission facilities.

- If the generation supports a submitted resource adequacy plan, it will need to nominate the generator resource while still being required to use import bids to serve CAISO demand.
- The subscriber cannot schedule using the ETC CRN if the interconnection point is or becomes an internal intertie or an EDAM transfer point, which removes the ability of scheduling an import and export in the market.

The CAISO believes that the current implementation model is effective and will work for subscribers. At the same time, the CAISO also believes that Subscriber PTO model would benefit from enhancements that could reduce the identified implementation complexities and avoid potentially more significant modeling issues once EDAM is in place. This issue paper proposes two options for stakeholders to consider as the CAISO explores ways to further improve the Subscriber Participating TO model and reduce implementation complexity.

3. Proposed Enhancement

The CAISO would like to consider two additional options for enhancement of the Subscriber Participating TO model – (1) the "Merchant congestion revenue rights ("Merchant CRR") option and the unbalanced ETC option.

3.1. Congestion Revenue Rights Option

This option would apply two features of the CAISO tariff into a new model for a Subscriber PTO. The existing tariff provides merchant CRRs to transmission projects developed outside of the CAISO transmission planning process and the wheeling access charge exemption provided to Subscriber Participating TO contract rights. By combining these two features into a Merchant CRR option, a subscriber would have the ability to participate in the market using economic bids or self-schedules, rather than only self-scheduling their rights under the ETC model using the assigned CRN. Instead of being required to self-schedule their transmission rights in the market using CRNs, subscribers would release their transmission rights in the annual or monthly CRR market in exchange for merchant CRRs.

Providing merchant CRRs to subscribers in exchange for their capacity on the Subscriber PTO transmission facilities and not providing the subscriber a CRN would enable subscribers to receive a hedge against congestion between the financial CRR source location and the financial CRR sink location. The source and sink locations would be the same locations that otherwise would have been assigned to the CRN, *i.e.*, the pricing node at the resource location and the pricing node where the subscriber rights end and connects to the original CAISO BAA. Subscribers would then have the choice to submit a self-schedule as a price taker or economically bid their generation at the source location. Subscribers would then receive congestion hedge through allocation of congestion revenue collected at the binding constraint associated with their CRR financial locations in the same manner as Merchant CRR holders receive option CRR settlements today[3]. This Merchant CRR option provides subscribers more scheduling flexibility when participating in CAISO's markets.

The CAISO is not proposing to modify the approved treatment of non-subscriber usage as part of this Merchant CRR option. Rather, this option would only establish a methodology for identifying non-subscriber usage in the absence of ETCs and the association with a CRN. Subscribers would still register their subscriber rights by identifying subscriber capacity by source location (generator, import scheduling point) to sink location (export scheduling point) on the Subscriber Participating TO transmission facilities.

When the market dispatches a source type resource (either an import or generator) under the Merchant CRR option, the non-subscriber usage portion is the difference between the resource dispatch and the subscriber capacity associated with the generator or import scheduling point. When the market dispatches an export, the non-subscriber usage is the MW amount above the subscriber capacity associated with the export scheduling point. Once the non-subscriber dispatches are identified, then the currently approved Subscriber Participating TO model provisions would apply as follows:

- Load served by Subscriber Participating TO generation would still be subject to the Access Charge, assuming the load aggregation point is located beyond the Subscriber Participating TO transmission facilities.
- Wheel-throughs or exports at CAISO BAA external scheduling points located on Subscriber Participating TO transmission facilities would be exempted from WAC based on the associated subscriber capacity of that resource.
- Wheel-throughs or exports associated with non-subscribers are subject to WAC in accordance with the original Subscriber Participating TO design.

The CAISO believes the merchant CRR option would resolve the identified specific implementation complexities and benefit the Subscriber PTO model.

The CAISO has also identified certain enhancements to ensure that the transmission rights are only used by subscribers as dictated by the underlying transmission contracts and tariffs. This is because in addition to providing a scheduling priority and financial hedge, the ETC and associated CRN essentially reserves the transmission capacity for use by the holder of transmission rights until the transmission capacity is released for use by other CAISO market participants, generally in the real-time market. Further, the CAISO understands that some transmission rights may be further restricted by underlying transmission contracts and tariffs. In such circumstances, when

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[3] CRR settlements will be implemented in accordance with CAISO Tariff Section 11.2.4.

transmission rights can only be used by the transmission rights holder (or the subscriber), the CAISO is able to ensure that the market protects such rights from use by others through the ETC or TOR model in combination with limiting the scheduling coordinators that are able to bid at specific Subscriber PTO scheduling points. On the other hand, if the subscriber elects to use the merchant CRR option, the CAISO will rely solely on the market functionality and preclude non-subscriber scheduling coordinators from bidding at specific Subscriber PTO scheduling points in order to preserve the rights of the subscribers. Otherwise, the non-subscriber usage may be contrary to the underlying entitlement rights.

The CAISO may consider further enhancements to more closely replicate the inherent and beneficial modeling characteristic of ETC/TORs under the Merchant CRR option. This initiative will consider both the proposed merchant CRR enhancement and any further suggested refinements of this approach.

3.2. Unbalanced Existing Transmission Contract Option

Currently an ETC and associated CRN has to be balanced which means that the physical and financial rights from the source point (generation or import scheduling point) is required to be the same MW quantity as the sink point (load aggregation point or export scheduling point). The unbalanced CRN option is a potentially new design and modelling element. This approach benefits subscribers, whose transmission rights to deliver energy from a supply resource terminates at a location that is not the subscriber's intended load aggregation point or export scheduling point, *i.e.*, their transmission rights do not extend to the load aggregation point or export scheduling point they intend to sink to. Using Unbalanced CRNs the subscriber will be able to schedule to their intended physical sink location without providing the applicable physical sink location with a scheduling priority and financial hedge. In other words, the subscriber rights holder does not have transmission rights from the physical source location (i.e. generator or import scheduling point) to the physical sink location (i.e. load aggregation point or export scheduling point) but can still use an ETC to schedule its source resource.

Under the Unbalanced CRN option, subscribers would register a physical source location in Masterfile with an associated CRN. The subscriber would also register the contract path, financial source and financial sink locations consistent with its transmission rights in the applicable CRN. For clarity, the financial source and financial sink locations would be the start and end points of the subscriber's transmission rights.

The subscribers would then self-schedule the source resource without concern for balance, *i.e.,* an unbalanced CRN, within the subscriber's rights. The resulting self-schedules, including both the unbalanced ETC and balanced ETC, will clear the market at a higher priority than other (non-TOR) self-schedules or economic bids. The complete ETC self-schedule will receive the congestion hedge between the financial source and the financial sink locations defined in the CRN equal to the subscriber's rights, but not all the way to the physical sink.

In addition to the congestion hedge, similar to the Subscriber Participating TO model, the subscriber would not pay the access charge for use of their subscriber rights portion of the schedule because they are already paying the Subscriber Participating TO directly for the transmission. The subscriber would pay the access charge for the use of the CAISO controlled grid not associated with their subscribe rights. Thus, the unbalanced CRN option will provide the subscriber with a hedge against being charged the Wheeling Access rate or the CAISO Access Charge for the portion of their scheduling path covered by their transmission entitlements, to the same extent as subscribers utilizing the current ETC model with balanced CRNs. It also maintains the approved Subscriber Participating TO treatment of non-subscriber usage of the Subscriber Participating TO's transmission facilities. This will be a new option available only to subscribers in lieu of the existing ETC contract types that require a physical source and sink. This will require a significant modeling change where this new ETC type will no longer need a physical sink location associated with it, but will still allow the ETC holder a higher scheduling priority in the market.

3.3. Clarification for Stakeholders

The CAISO is not recommending the elimination of the use of conventional ETCs associated with a CRN as currently allowed under the Subscriber Participating TO model. Instead the enhancement is designed to provide alternatives to subscribers of Subscriber Participating TO facilities to more streamlined participation in the CAISO markets while retaining their congestion hedge and CAISO access Charges exclusion. This will allow subscribers to release their transmission rights over a portion of the Subscriber Participating TO transmission path, with the caveat that CRRs, unbalanced CRNs, or conventional ETCs cannot simultaneously exist over the same transmission path capacity. For example, if the transmission path stretches from Wyoming to IPP to Harry Allen to Eldorado, there could be a conventional ETC from Wyoming to IPP and a CRR from IPP to Harry Allen. There could not be CRRs as well as conventional ETC or unbalanced ETC on the IPP to Harry Allen-Eldorado path for the same transmission capacity but this transmission path could have partial CRRs and ETCs.

The Unbalanced CRNs and the Merchant CRR options are both viable alternatives, with each having its own merits.

1. Merchant CRR
    a. Subscribers can economically bid in their resource instead of being required to have a balanced self-schedule as a price-taker.
    b. The economic bidding provision allows the subscriber resource contract amount to be considered as Flexible Resource Adequacy capacity and not limited to Generic Resource Adequacy capacity.
2. Unbalanced ETC
    a. Subscribers will still need to self-schedule and will not have the ability to economically bid their subscriber resource to receive the benefits of their transmission rights.

b. Unbalanced ETC still allows for protecting the subscribed transmission capacity in the market through Real-Time or beyond as required by the subscriber's underlying transmission contracts.

4. WEIM 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 WEIM Governing Body will have no role in the decision. Under the new rules, the Board and the WEIM 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 March 2025 fall outside the scope of joint authority. The WEIM 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 issue paper with stakeholders during a stakeholder meeting on November 20, 2024. Stakeholders are asked to submit written comments by December 4, 2024 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
11/13/2024	Publish Issue Paper
11/20/2024	Stakeholder meeting on Issue Paper
12/4/2024	Comments due on Issue Paper
12/23/2024	Publish Straw Proposal
1/7/2025	Stakeholder meeting on Straw Proposal
1/21/2025	Comments due on Straw Proposal
2/4/2025	Publish Draft Final Proposal
2/10/2025	Stakeholder meeting on Draft Final Proposal
2/24/2025	Comments due on Draft Final Proposal
3/10/2025	Publish Final Proposal
3/27/2025	Board of Governors Meeting