California ISO

Western EIM Sub-Entity Scheduling Coordinator Role

Revised Straw Proposal

January 21, 2021

Prepared by: Danny Johnson and James Lynn

Table of Contents

Executive Summary

The CAISO is proposing to create a new EIM sub-entity scheduling coordinator (SESC) role that would allow for multiple scheduling coordinators within a single EIM entity balancing authority area (BAA) to schedule and financially settle non-participating loads and resources directly in the EIM. The current EIM rules require these non-participating loads and resources to be scheduled and settled through the EIM entity representing the BAA. This initiative seeks to create a direct relationship between these scheduling coordinators and the CAISO, allowing more diverse and expanded participation within the EIM.

There are several entities embedded within a future EIM entity BAA that expressed interest in representing their own loads and non-participating resources within the EIM. This necessitates the creation of a new role within the EIM that allows for a relationship between these EIM sub-entities and the EIM entity responsible for the balancing authority area in which they reside within, as well as with the CAISO.

The EIM sub-entity scheduling coordinator would be responsible for scheduling and settling supply and load that would otherwise be the responsibility of their EIM entity scheduling coordinator. The EIM sub-entity scheduling coordinator would be responsible for submitting base schedules to the CAISO. Settlements and invoicing associated with loads and resources would be performed at the EIM entity and the EIM sub-entity scheduling coordinator level, depending on the scheduling coordinator responsible.

Stakeholder comments and changes to this proposal

Multiple stakeholders requested the CAISO clarify what types of entities will be eligible for the sub-entity functionality. A general concern raised was that a significant increase in the number of sub-entities would have the potential to make the balancing function performed by the EIM entity more difficult.

This stakeholder initiative is narrow in scope, and primarily intended to address the participation of entities that are similarly situated to the parties to the Joint Dispatch Agreement.[1] Generally speaking, these entities are at least partially transmission dependent electric utilities that serve load within an EIM entity balancing authority area through a distribution or transmission system that they own, similar to how a utility distribution company operates in the CAISO balancing authority area.[2] The CAISO

[1] *Public Service Company of Colorado*,154 FERC ¶ 61,107 (2016) (accepting the Joint Dispatch Agreement), and Commission Letter Order, Docket No. ER20-950 (Mar. 18, 2020) (accepting the most recent amendment to the Joint Dispatch Agreement).

[2] The CAISO tariff defines a utility distribution company, or UDC, as an entity that owns a distribution system for the delivery of energy to and from the CAISO controlled grid, and that provides

proposes specific eligibility criteria for participation as an EIM sub-entity scheduling coordinator to ensure comparable treatment among similarly situated entities within an EIM entity balancing authority area. These criteria define the scope of eligible EIM sub-entities without expanding the concept to address other potential issues identified by some participants outside the scope of this initiative.

The CAISO understands the interest other entities may have in obtaining some form of direct settlement with the CAISO, or in having access to additional settlement data for the purposes of performing shadow calculation of settlements. However, participation as an EIM sub-entity scheduling coordinator includes responsibilities beyond those necessary to facilitate a direct relationship with the CAISO by a more diverse group of EIM participants. For example, EIM settlement of load imbalances directly with the CAISO requires a separate forecast of the sub-entity's load. The aggregation of separate load forecasts within a single BAA can reduce the accuracy of the aggregated EIM entity load forecast as a while. This divergence from a BAA area forecast can have both reliability and financial implications for the EIM entity. The CAISO therefore does not propose to enable broader participation through the sub-entity scheduling coordinator role, nor to consider additional modes of EIM participation in this initiative. The CAISO suggests that such topics continue to be pursued through the policy roadmap and stakeholder catalog process.

Stakeholders such as LADWP and SCE expressed a preference for the CAISO to detail how balancing authority area level charges, such bid cost recovery (BCR) and other charges should be allocated between the EIM entity scheduling coordinator and the sub-entities within its footprint. They contend that allowing for these cost allocations to be determined by an EIM entities open access transmission tariff (OATT) would create unequal treatment between sub-entities within the EIM. While there may be differences, the CAISO is not planning to uniformly specify how these costs should be sub-allocated as they are subject to the EIM entity's OATT. Multiple stakeholders also requested additional information about which billing determinants will be available to EIM sub-entities. The CAISO proposes the EIM sub-entity shall have access to all bill determinants that provide EIM sub-entity specific or EIM sub-entity resource specific information. In addition, the EIM sub-entity scheduling coordinator will have visibility of the bill determinants published in the BAA specific common files. The CAISO does not plan to specifically list the bill determinants in the policy development, rather it will defer that level of detail to be determined during implementation. The CAISO does request comment within the stakeholder process on which determinants, beyond what has been described, potential sub-entities believe they should have access to.

Arizona Public Service and Colorado Spring Utilities requested more information regarding the delegation of responsibility for the submission and maintenance of the full network model. The CAISO believes that the EIM entity should retain responsibility and authority for the submission of the full network model as they bear the ultimate reliability

regulated retail electric service to eligible customers. *See also* the CAISO tariff definition of a Metered Subsystem (recognizing electric utility participation in the CAISO balancing authority area as a subsystem that existed prior to the CAISO operations date).

and financial responsibilities for the balancing authority area. The CAISO does however plan to offer functionality that will allow an EIM entity to delegate the ability for the sub-entities to submit their model directly to the CAISO. This will allow the EIM entity to determine the correct balance of responsibility for model maintenance between themselves and the EIM sub-entity scheduling coordinators within their control area.

Idaho Power and Pacificorp requested additional detail on how the CAISO plans to implement and ensure forecasting coordination between the EIM entity and sub-entities, which is detailed later within this paper. Idaho Power expressed a specific concern regarding the EIM entity scheduling coordinator being responsible for passing the resource sufficiency evaluation (RSE), but having limited visibility of the variable energy forecasts being submitted as part of a base schedule by a sub-entity. They contended that should multiple sub-entities within an EIM area elect to use their own forecast, the possibility for a significant difference with the CAISO forecast used in the RSE arises. The CAISO agrees that this circumstance has the potential to create additional risk to the EIM entity in the performance of their balancing function. To alleviate this concern the CAISO plans to provide the ability for the EIM entity to view the summed variable energy forecasts for their balancing authority area. Additionally this concern will be further mitigated by the CAISO WEIM Base Schedule Submission Deadline initiative, which is scheduled for implementation in fall of 2021; this change will move the final base schedule submission deadline to thirty minutes before the hour, while also providing an additional RSE and curing period[3].

Stakeholders expressed a broad spectrum of preferences regarding how outages will be submitted to the CAISO in regards to both the responsibility for submission and the software platform used for submission. For example, Bonneville Power Authority and Deseret Power expressed a preference for outage coordination to remain at the EIM entity level with webOMS used as the common platform. Platte River expressed an interest in outage coordination being performed at a sub-entity scheduling coordinator level with their current outage coordination system being used, while other entities such as Colorado Springs Utilities prefer the CAISO get outages directly from neighboring reliability coordinators. In the revised straw proposal, the CAISO proposes that the EIM entity scheduling coordinator retain responsibility for the submission of all generation outages within their balancing authority area. However, the CAISO will provide the functionality for the EIM entity to delegate that authority to sub-entities. Transmission outages within a sub-entity area will be submitted by the registered Transmission Operator for that equipment, with the balancing authority area and transmission operator outage coordination still occurring per their Reliability Coordinator rules[4]. This will serve to ensure that the CAISO has the outage information necessary for the EIM, while not interfering with the CAISO RC West function nor the functions performed by other reliability coordinators.

[3]WEIM Base Schedule Submission Deadline: https://stakeholdercenter.caiso.com/StakeholderInitiatives/Western-EIM-base-schedule-submission-deadline

[4] NERC IRO-017-Outage Coordination: https://www.nerc.com/pa/Stand/Reliability%20Standards/IRO-017-1.pdf

Platte River and Colorado Springs requested additional information on the provisioning of ADS access for sub-entities. ADS instructions are at a resource specific level and the CAISO intendeds for both the sub-entities as well as the EIM entity to have access and the ability to pull this information.

Joint Dispatch Agreement parties such as Xcel and Colorado Springs requested additional information on how the CAISO planned to administer intra-BAA transfers. The CAISO does not plan to administer these transfers. Intra-BAA transfers should be coordinated between the EIM entity and sub-entity and the results of these agreements should be reflected in the base schedules submitted to the CAISO. Additionally, the CAISO is updating the proposal to reflect that only the EIM entity scheduling coordinator will have the ability to reflect intertie transactions on a submitted base schedule. This change is in response to concerns raised by Public Service Colorado (PSCo). The CAISO is open to the concept of sub-entity scheduling coordinators being able to represent intertie transactions on their base schedules, however the narrow scope and timeline of this initiative does not allow for the additional policy development necessary to facilitate this functionality. Should stakeholders have interest in this functionality, the CAISO asks that it be pursued through the existing policy roadmap and stakeholder catalog process.

Scope of this proposal

This initiative is in response to the EIM implementation agreement between CAISO and PSCo.[5] In that agreement, the CAISO committed to pursuing in a stakeholder process, a new EIM role that will allow separate scheduling and settlement for entities within an EIM entity balancing authority area. The proposal details the delegation of authority and responsibilities between EIM entity scheduling coordinators and this new role.

Background

EIM Entity Responsibilities

Currently, EIM entities are responsible for the scheduling, bidding and settling of all loads, interchange transactions and non-participating resources within their balancing authority area. Each EIM entity, through its EIM scheduling coordinator, is responsible for all EIM area generation via the submission of generation base schedules for non-participating resources as well base schedules for participating resources. Each EIM entity is responsible for its area demand forecast should it choose not to use the

[5] Letter Order dated July 29, 2020 in FERC Docket No. ER20-1937 (accepting the EIM Implementation Agreement with the Public Service Company of Colorado, including principles for replacement of the Joint Dispatch Agreement).

forecast provided by the CAISO. The EIM entity scheduling coordinator is also responsible for the submission of base schedules for the base scheduling energy transfer system resource (ETSR). All RSEs, which are used to validate that EIM entities are able to meet their own capacity and flexible ramping requirements are also performed at an EIM entity level. The ability to access additional quantities of EIM transfers is predicated on the EIM entity's ability to pass the RSE[6].

Under the current market paradigm, the CAISO market settles the energy differences between resource meter and the resource base schedule of participating resources, flexible ramp movement, bid cost recovery payments, flexible ramp uncertainty award and allocation, and relevant grid management charges with the participating resource scheduling coordinator(s) (PRSC). The participating resource scheduling coordinator receives daily/monthly statements as well as weekly invoices associated with the participating resources' charges and payments.

For non-participating resources, the ISO settles the energy difference between the resource meter and the resource base schedule with the EIM Entity scheduling coordinator. In addition, the EIM Entity scheduling coordinator is responsible for balancing area costs such as over-scheduling/under-scheduling charges and payments, real time market offsets, bid cost recovery allocations, flexible ramp movement allocation, flexible ramp uncertainty allocation, and non-participating grid management charges. The EIM entity scheduling coordinator receives daily/monthly statements as well as weekly invoices associated with the non-participating resources' charges and payments, as well as balancing authority areas costs.

The EIM entity then sub-allocates the payments and charges associated with the non-participating resources as well as BAA costs to its customers based upon its BAA's OATT.

Outage coordination is also performed at the EIM entity level. CAISO provides an outage management system that allows EIM entity scheduling coordinators to submit approved transmission and generation outages for the EIM entity BAA.

Proposal – EIM Sub-Entity Scheduling Coordinators

The CAISO proposes to create a new scheduling coordinator type for EIM participation by sub-entities within an EIM entity balancing authority area. In addition to the EIM entity scheduling coordinator role that is currently specified in the EIM design, the CAISO proposes that an EIM entity balancing authority area will have the ability to enable "sub-entity scheduling coordinators" within its EIM balancing authority area. These EIM sub-entity scheduling coordinators will interact both with the CAISO directly, as well as with the EIM entity scheduling coordinator representing the balancing

[6] https://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Energy%20Imbalance%20Market. Section 11.3.2

authority area within which they have loads and resources. The registration as an EIM sub-entity scheduling coordinator must be supported by the EIM entity and agreed to by the sub-entity; an entity can neither unilaterally decide to become a sub-entity nor be compelled to become a sub-entity.

An EIM sub-entity scheduling coordinator must:

- be an electric utility embedded within an EIM entity balancing authority area and not receive long-term wholesale requirements services from the EIM Entity;
- own a distribution system or transmission facilities directly connected to the transmission system of the EIM entity for the purpose of providing regulated electric service to eligible retail or wholesale customers; and
- own or control one or more resources for the primary purpose of serving its eligible customers.

The EIM sub-entity proposal is limited to electric utilities located in an EIM entity balancing authority area that own a distribution or transmission system and serve eligible customers from resources they own.[7] These entities, at least in part, depend upon transmission service from the host EIM entity to meet their regulatory obligations. This means that they are more likely to have a well-defined service territory bounded by distribution-transmission interfaces, which will allow for more accurate forecasting, modeling, scheduling, and accounting for their associated loads and non-participating resources in the EIM. The CAISO will work through an implementation process with the EIM entity and each EIM sub-entity to implement all of the associated technical requirements for participation prior to participation by the EIM sub-entity scheduling coordinator.

Limiting the scope of the EIM sub-entity proposal to electric utilities with these characteristics is critical because disaggregation of the load within an EIM entity balancing authority area has financial and operational consequences. Having separate load forecasts within a balancing authority area may reduce the accuracy of the aggregated EIM entity load forecast, which is the baseline for the resource sufficiency evaluation. This occurs because the aggregation of individual sub-entity forecasts can diverge from a forecast at the balancing authority area level that the EIM entity is ultimately responsible for financially and operationally. The potential for differences between the forecasted load and the measured demand can in turn lead to cost shifting among the transmission customers within an EIM entity balancing authority area. Should a mismatch arise between the load base schedule and the measured demand it could lead to generation schedules from one sub-entity serving another, higher uninstructed imbalance energy (UIE) and flexible uncertainty allocation, as well as inappropriate penalty charges following a failure of the balancing test. Moreover, the EIM entity is responsible for reliability within its balancing authority area and must have some level of assurance that the sub-entity will meet its obligations without leaning on other entities within the balancing authority area. This can occur because the resource

[7] The sub-entity may either be a distribution or transmission owner, or both, and provide wholesale or retail service to eligible customers, or both.

sufficiency evaluation is performed at the balancing authority area level and the sub-entities will be focused on serving their own forecasted load. Further, any penalties associated with failure of the balancing test will be assessed to metered demand which may not correlate to the entity whose inaccurate forecast may have resulted in failure.

In addition to the criteria outlined above, EIM sub-entity participation must be available within the EIM entity balancing authority area. Authorization of participation by sub-entities within an EIM entity balancing authority area should be developed through the regulatory process applicable to each EIM entity, most likely by amendment of the EIM entity OATT, prior to such services being implemented by the CAISO. If EIM sub-entity scheduling coordinator participation is authorized within an EIM entity balancing authority area, the sub-entity must agree to participate and meet all applicable EIM entity and CAISO requirements.

From the CAISO perspective, an EIM entity may choose one of three possible alternatives with respect to enabling participation by EIM sub-entity scheduling coordinators within its balancing authority area. Each EIM entity must determine whether to allow any, some, or allow no electric utilities within its balancing authority area that otherwise meet the CAISO definition of an EIM sub-entity scheduling coordinator to participate. This determination should be made through the associated EIM entity regulatory process for consideration of changes to its provision of imbalance energy services, much as it must do prior to its participation in the EIM.

The EIM entity may elect not to facilitate EIM sub-entity scheduling coordinator participation by electric utilities within its balancing authority area that otherwise meet the CAISO definition of an EIM sub-entity scheduling coordinator. There are legitimate reasons why an EIM entity may need to forgo entirely the financial and operational complexities associated with implementation of sub-entity participation within its balancing authority area—an EIM entity should not be compelled by the CAISO to do so. On the one hand, it may be that the EIM entity does not have the financial or operational capabilities to support participation by even a limited number of sub-entities within its balancing authority area. On the other hand, it may be that the number of eligible sub-entities within its balancing authority area is so numerous as to present unreasonable operational or financial risks to the EIM entity. The question of whether to enable sub-entity participation in the first instance concerns matters best decided by an EIM entity as the balancing authority for electric utilities within its balancing authority area that otherwise meet the definition of an EIM sub-entity scheduling coordinator.

If an EIM entity determines that sub-entity participation should be permitted within its balancing authority area, the EIM entity will have two options with respect to participation by qualified electric utilities within its balancing authority area. First, the EIM entity may enable participation by any electric utilities within its balancing authority area that meet the CAISO definition of a sub-entity. This option would allow each qualified sub-entity to determine whether it was in its interest to participate as an EIM sub-entity scheduling coordinator. The sub-entity would then need to meet the obligations of the EIM entity and the CAISO with respect to such participation.

Alternatively, an EIM entity may limit participation by electric utilities within its balancing authority area that otherwise meet the CAISO definition of an EIM sub-entity scheduling coordinator. An EIM entity may limit sub-entity participation only if there is an existing and accepted contractual or tariff based practice for imbalance energy accounting within its balancing authority area that distinguishes among its transmission service customers in a manner that includes sub-entity like characteristics. This option would allow an EIM entity to participate in the EIM while preserving an existing and accepted practice among otherwise qualified sub-entities within its balancing authority area.

Implementation of the EIM changes the nature of imbalance energy services provided by the EIM entity. Today the EIM entity schedules and settles all load and non-participating resources with the CAISO. In some cases, the CAISO has recognized existing and accepted practices of imbalance energy accounting within an EIM entity balancing authority area that must be accommodated for the EIM entity to participate. To date these existing and accepted practices have been honored through the exclusion of some entities within the EIM entity balancing authority area with existing and accepted practices for imbalance energy accounting different from the EIM.[8] Now it is necessary for the CAISO to honor an existing and accepted EIM entity practice that distinguishes how imbalance energy is accounted within its balancing authority area other than by exclusion. EIM entities with a contractual or tariff based practice of distinguishing among transmission customers should be permitted to participate in the EIM while continuing to honor their existing and accepted practices. At a minimum, any EIM entity with an existing and accepted contractual or tariff based practice documented in its EIM implementation agreement should be honored, but there may be other such practices that justify such a distinction.[9] Ultimately, each EIM entity should have the opportunity to determine whether to enable sub-entity participation for any, some or none of the electric utilities within its balancing authority area that otherwise meet the CAISO definition of an EIM sub-entity.

The following sections outline the CAISO's proposal.

---

[8] For example, the phase 1 implementation of the Balancing Authority of Northern California (BANC) and more recently the Los Angeles Department of Water and Power (LADWP) implementation agreements contemplated exclusion of certain entities within their balancing authority areas.

[9] The CAISO recognizes that EIM sub-entity participation is a significant change that may take some time to implement. Therefore, implementation of any sub-entity within an EIM entity balancing authority area based on an existing and historic practice need not occur immediately upon implementation of the EIM entity. However, the sub-entity must be implemented within a reasonable period of time following implementation of the EIM entity, and in no circumstance should they be permitted to do so later than three years following the implementation date of the EIM entity. Delay beyond three years would not be considered necessary to account for the complexities of transition. During this transition period, the CAISO and the EIM entity should confirm the intention of the EIM sub-entity, and may take appropriate steps towards implementation including network model configurations and information sharing to facilitate the process should the sub-entity desire to move forward.

Roles and Responsibilities

Each EIM sub-entity scheduling coordinator shall function as its own load serving entity (LSE) within its EIM sub-entity area. To facilitate this, each EIM sub-entity scheduling coordinator will have its own load aggregation point (LAP) and will be responsible for the submission of demand forecasts to both the CAISO and the EIM entity within whose balancing authority area it resides.

Each EIM sub-entity scheduling coordinator will also be responsible for the submission of base schedules through the CAISO base schedule aggregation portal (BSAP) for resources within its area for which it serves as the scheduling coordinator. For supply resources within an EIM BAA to be settled directly with the CAISO, the resources will need to have either the EIM sub-entity scheduling coordinator or a participating resource scheduling coordinator as their registered scheduling coordinator. The scheduling coordinator will submit bids, or schedules where appropriate, to the CAISO using the scheduling infrastructure business rules (SIBR) application.

Resource Sufficiency Evaluation

The RSE will continue to be performed at the EIM entity level. This approach is consistent with the responsibility of the balancing authority to ensure supply and load balance for their area. While there is a potential for a sub-entity to submit inaccurate or deficient base schedules while the EIM entity as a whole passes the test, the CAISO reiterates that the test is intended to ensure the balancing authority area as a whole remains balanced.

Within the proposed resource sufficiency evaluation design, base schedules can be submitted by participating resource scheduling coordinators and sub-entity scheduling coordinators prior to the T-55 RSE, with the exact timing being specified by the EIM entity. Following the T-55 RSE, schedules can only be modified by the EIM entity scheduling coordinator; any modification should be communicated to the EIM sub-entity. The modifications can be viewed by the sub-entity within the CAISO BSAP applications. Any financial impact resulting from these modifications should be resolved between the EIM entity and sub-entity based on the EIM entities OATT or previously established bilateral contractual arrangements. This design allows for EIM sub-area scheduling coordinators to maintain flexibility and control of their resources by updating their base schedules prior to the T-55 RSE, while also allowing the EIM entity scheduling coordinator to retain reliability control. EIM entities are ultimately responsible for the capacity and flexible ramping tests which are performed as part of the RSE at the EIM entity level and are generally associated with their balancing authority function.

Model Submission

CAISO maintains the full network model (FNM) for all EIM entities. The CAISO proposes to require EIM entities to submit full network model updates on behalf of their entire balancing authority area, or with the EIM entities' permission for EIM sub-entities

to submit their own network model and network model updates. Should an EIM sub-entity submit their own model they will be responsible for updating the EIM entity of the changes as well as the CAISO. All model updates, performed by either an EIM entity or by a sub-entity will be subject to the already established CAISO FNM updating process. Additional details can be found in the BPM for Managing Full Network model[10].

Automatic Dispatch System

ADS data is pulled on a resource specific level. The CAISO proposes to provide access for ADS resource data within the sub-entity to be pulled by both the sub-entity and the EIM entity. The ability to decline the ADS signal will reside with the EIM entity to preserve their ability to perform balancing functions. The CAISO will settle the resulting metered resource output. Any financial impact resulting from this action should be resolved between the EIM entity and EIM sub-entity. The CAISO asks for comment on this proposed delegation of authority.

Forecasting

Supply Forecast

The CAISO proposes that an EIM entity retain the ability to require an EIM sub-entity to use the CAISO provided forecast, or to allow the sub-entity to use its own forecast. Should an EIM sub-entity scheduling coordinator elect to use its own forecasting services for variable energy resources' supply output, the CAISO will treat the forecast similar to an EIM entity scheduling coordinator electing to use their own forecast[11]. The preference of the forecast used by the sub-entity will be specified to the CAISO and the EIM entity. To enable this functionality, each resource within a sub-entity scheduling coordinator will need its own unique resource ID, as well as telemetry[12]. To ensure that the EIM entity is still able to perform its balancing function and pass the RSE, the CAISO proposes to provide the ability for the EIM entity to view, in a summed format, the forecast of all of the variable energy resources within its balancing authority area. Forecasts for variable energy resources submitted by third party services, or provided by the CAISO that are used in the RSE will be locked after T-55 as is currently done within the EIM design, and which serves to reduce the variability between RSE iterations.

Load Forecast

[10] CAISO BPM for Full Network Model: https://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Managing%20Full%20Network%20Model
[11] CAISO Tariff Appendix Q – Eligible Intermittent Resource Protocol: https://www.caiso.com/Documents/AppendixQ-EligibleIntermittentResourcesProtocol-EIRP-asof-Dec1-2020.pdf
[12] http://www.caiso.com/Documents/Section29-EnergyImbalanceMarket-asof-Sep9-2020.pdf. Section 29.10

The CAISO proposal allows EIM entities to determine if they will be responsible for the load forecast for their entire area, or if they will allow the sub-entities to determine their own load forecast. In addition, the EIM entity will retain the authority to allow a sub-entity to use its own load forecast, or to require the sub-entity to use the CAISO provided forecast. If any sub-entity within a balancing authority area elects to submit its own load forecast, the entire balancing authority area will automatically fail the balancing test, and the entire balancing authority area will be subject to over/under scheduling charges.

Meter Data, Settlements and Invoicing

The EIM sub-entity scheduling coordinator will submit meter data to the CAISO for the non-participating resources within its area. Additionally, each EIM sub-entity scheduling coordinator will be required to submit load meter data for its associated load serving entity in the same manner as the EIM entity scheduling coordinator.

The CAISO settlements process will create statements and invoices at the EIM sub-entity scheduling coordinator level for all charges and allocations associated with the EIM sub-entity's resources. CAISO settlements shall continue to create statements and invoices at the EIM entity level. The CAISO is proposing to continue allocating BCR charges and real time offset charges at the EIM entity level with sub-allocations to EIM sub-entity scheduling coordinators performed according to the EIM entity's OATT. The EIM Entity shall have the ability to access the EIM Entity statements and invoices as well as all EIM sub-entity statements and invoices for sub-entities within their balancing authority area. This approach will allow for flexibility between EIM entities and their potential sub-entity scheduling coordinators.

As described in the Resource Sufficiency Evaluation section, the CAISO shall perform the RSE at balancing authority area level. Since the Balancing Test of the RSE is performed at the BAA level, the CAISO is proposing to continue to perform the over-scheduling and under-scheduling assessment at the balancing authority level. The over/under scheduling assessment is determined based on the net balancing authority area load deviation. If the net balancing authority area load deviation exceeds any of the penalty thresholds, the CAISO settlement shall calculate the over-scheduling and under-scheduling charges at the EIM sub-entity level based on the EIM sub-entity deviations at the associated over/under scheduling LAP penalty price. If the balancing authority area passes the balancing test or is within the threshold, the EIM sub-entity level will be allocated a portion of the over-scheduling and under-scheduling total costs based on the metered demand within the sub-entity and the sub-entity's submitted base schedule.

Flexible Ramp Movement shall be settled with the EIM sub-entity for all resources the EIM sub-entity is serving as the scheduling coordinator for. Flexible ramp movement

allocation and flexible ramp uncertainty allocation will also be settled at the sub-entity level for resources the sub-entity is serving as the scheduling coordinator for, as they are calculated at a resource specific level.

Each EIM sub-entity scheduling coordinator will be responsible for ensuring all generation and load within its area is metered in accordance with Section 29.10[13] of the CAISO tariff. Each sub-entity scheduling coordinator will also submit settlement quality meter data (SQMD) as described in Section 8 of the CAISO BPM for the Energy Imbalance Market.

System Access

The proposed EIM sub-entity scheduling coordinator role will have access to the following CAISO systems:

Automatic Dispatch System (ADS)

- EIM entity and EIM sub-entity scheduling coordinators will both have access to ADS for resources within their respective areas.

Base Aggregation Scheduling Portal (BSAP)

- EIM sub-entity scheduling coordinators will have access to BSAP to submit base schedules at for the T-75 and T-55 RSE

Customer Market Results Interface (CMRI)

- EIM sub-entity scheduling coordinators will have access to CMRI for the purposes of viewing submitted load, generation, as well as the results of the T-75 resource sufficiency evaluation.

Market Results Interface for Settlements (MRI-S)

- EIM sub-entity scheduling coordinators will have access to invoices of load, generation and interties that are associated with the EIM sub-entity scheduling coordinator. An invoice reflecting these values will also be available at the balancing authority area level for review by the EIM entity scheduling coordinator.

- EIM sub-entity scheduling coordinators will have access to MRI-S for the purposes of submitting required meter data for the non-participating resources within its area and for its associated load serving entity.

[13] http://www.caiso.com/Documents/Section29-EnergyImbalanceMarket-asof-Sep9-2020.pdf

CAISO webOMS

- EIM sub-entity scheduling coordinators will have access to webOMS where appropriate, based on existing participation in RC West. This will be determined based on either the entities registration as the Transmission Operator for equipment within the EIM area or agreement with the EIM entity to submit resource outages within their sub-entity area.

Energy Transfers

The EIM entity scheduling coordinator will be responsible for the submission of all intertie transfers used by sub-entity scheduling coordinators as part of their base schedule. The EIM entity is responsible for ensuring balanced schedules, net interchange, and tagging within its balancing authority area. The EIM entity will retain responsibility for the scheduling of base ETSRs representing interchange from the balancing authority area as a whole. Allowing sub-entities to represent an intertie transaction on their base schedule creates the potential for conflict with another sub-entity or the EIM entity should the submitted schedules exceed the intertie limit. This initiative does not seek to standardize solutions to resolve a potential exceedance; instead, it proposes this conflict be resolved outside of the base scheduling process via previously defined agreements between the EIM entity schedule coordinators and entities within their control area.

The CAISO is not proposing to specify how intra-EIM area transfers are conducted, rather the CAISO leaves that to agreement between the EIM and EIM sub-entities. The CAISO however will require these transfers be reflected in the base schedules submitted by the relevant parties. The CAISO will settle the base schedules submitted against metered demand as described above.

Outage Management

All outages submitted to the CAISO will through the webOMS application. EIM entities that are RC West members will submit outages in accordance with the Reliability Coordinator Services BPM and the Outage Coordination RC0320 and RC0630 operating procedures.[14] Outage data submitted by the EIM sub-entity scheduling coordinator will be available within the CAISO webOMS system for review by the EIM entity.

[14] RC WEST Outage Management Operation Procedure: https://bpmcm.caiso.com/Pages/BPMDetails.aspx?BPM=Reliability%20Coordinator%20Services: Section 7

For EIM entities that are that are not members of RC West, the EIM entity scheduling coordinator will be responsible for the submission of all generation outages for their area. The CAISO will provide the option for an EIM entity scheduling coordinator to delegate authority to sub-entities to submit generation outages for resources they are acting as the scheduling coordinator for; these outages will be viewable by the EIM entity scheduling coordinator.

The CAISO will provide the ability for sub-entity scheduling coordinators to submit to the CAISO transmission outages for equipment they are the Transmission Operator for; these outages will also be viewable to the EIM entity scheduling coordinator. The outage submission process does not replace the balancing authority area and transmission operator coordination required by neighboring Reliability Coordinator (RC) areas.[15] The CAISO will block all outages submitted by the neighboring RC for EIM entities, and the EIM entity scheduling coordinator will be responsible for ensuring outages submitted to the CAISO are consistent with outages submitted to their respective RC.

Onboarding of EIM Sub-Entities

Should an entity elect to pursue sub-entity functionality they must notify the CAISO that the entity:

(a) has been authorized by the EIM Entity to participate as an EIM Sub-Entity Scheduling Coordinator, and
(b) meets the CAISO qualifications for participation as an EIM Sub-Entity;

The CAISO proposes that it shall then, at its discretion, determine the EIM Sub-Entity Scheduling Coordinator Implementation Date based on the complexity and compatibility of the associated transmission and technology systems; the date must be not less than six months and not more than twenty-four months after the date that the CAISO receives the EIM Sub-Entity notice. For any new sub-entity implementation, the CAISO proposes additional charges for incremental work associated with facilitating sub-entity onboarding.

The CAISO then proposes to implement the sub-entity scheduling coordinator agreement according to the general outline of the following steps. The implementation process takes approximately 18 months and includes several activities, which often run in parallel. These efforts are typically managed as six distinct work streams, or tracks. The six tracks are described below:

Track 1: Planning and Program Management

CAISO staff will assist the sub-entity's project management team to plan and track all implementation tasks, issues and risks through regular meetings and status reports.

[15] NERC IRO-017-1 – Outage Coordination: https://www.nerc.com/pa/Stand/Reliability%20Standards/IRO-017-1.pdf

The ISO will help the sub-entity to define a detailed project schedule outlining all the steps leading to market simulation, parallel operations and full participation.

Track 2: Policy, Legal, and Contracts

CAISO staff will support the sub-entity's policy and legal staff to conduct any formal or informal outreach to stakeholders, make any applicable tariff or OATT changes, and enter into the required agreements for participation. All resources that plan to participate and provide bids must become EIM participating resources by entering into standard contracts. Both the sub-entity's organization and participating resources will need to select scheduling coordinators, who will directly bid or self-schedule into EIM and handle the settlement process.

Track 3: Full Network Model and Resources

Should the EIM entity permit the sub-entity to submit its own model, the CAISO staff will work with the sub-entity's energy management team to integrate the sub-entity's network model data with the CAISO's full network model for market purposes.

Track 4: System Integration and Testing

CAISO staff will provide the sub-entity's implementation team with information and access to non-production environments to prepare for and execute integration and testing between CAISO systems and the sub-entity's systems for market data exchange. Affected systems include, but are not limited to, the energy management system, forecasting, scheduling, dispatch, outage management and settlements.

The integration and testing team will perform system integration, security testing, and functional testing of all impacted systems and processes. The ISO will publish a market simulation test plan outlining scenarios, a timeline and expected actions prior to testing.

Track 5: Metering and Settlements

The ISO metering team assist sub-entities in implementing the various metering requirements and processes based on the selected participation role as either a CAISO Metered Entity (CAISOME) or a Scheduling Coordinator Metered Entity (SCME).

Track 6: Operations Readiness and Training

Track 6 provides a series of training events throughout the EIM market timeline. The CAISO will work in partnership with the EIM sub-entity project leads and their designated trainers to prepare the designated trainers to facilitate needed EIM training to sub-entity staff.

New Pro Forma EIM Sub-Entity Agreement and EIM Sub-Entity Scheduling Coordinator Agreement

Establishing the EIM sub-entity scheduling coordinator relationship will require two new *pro forma* agreements; one to define the sub-entity and another to represent the sub-entity. These agreements will conform to CAISO standards for *pro forma* service agreements and their companion scheduling coordinator agreements. As such, these agreements will be similar to the *pro forma* EIM entity agreement and EIM entity scheduling coordinator agreement with modifications to account for the different roles and responsibilities associated with a sub-entity and representation of a sub-entity. As with other CAISO *pro forma* agreements, the EIM sub-entity agreement and companion EIM sub-entity scheduling coordinator agreement will reference the CAISO tariff provisions that support the roles and responsibilities outlined in this proposal. The details of these new *pro forma* agreements will be developed as part of the tariff stakeholder process associated with this initiative.

Stakeholder engagement and next steps

Energy Imbalance Market Governing Body

The CAISO believes the EIM Governing Body should have primary authority in the approval of the proposed changes.

The rules that govern decisional classification were amended in 2019 when the Board adopted changes to the Charter for EIM Governance and the Guidance Document. An initiative proposing to change rules of the real-time market now falls within the primary authority of the EIM Governing Body either if the proposed new rule is EIM-specific in the sense that it applies uniquely or differently in the balancing authority areas of EIM Entities, as opposed to a generally applicable rule, or for proposed market rules that are generally applicable, if “an issue that is specific to the EIM balancing authority areas is the primary driver for the proposed change.”

This initiative satisfies both tests. The tariff rules to create a new type of scheduling coordinator role would be EIM-specific, because it would be available only to represent market participants within the balancing authority areas of EIM Entities and not across the entire market footprint. In addition, the primary driver for addressing this topic is to resolve an issue that was initiated by one EIM balancing authority area. Accordingly, this initiative would fall within the primary authority of the EIM Governing Body.

Based on stakeholder comments, and the nature of the changes included in the revised straw proposal the CAISO will proceed under the assumption that this initiative resides within the EIM Governing body’s primary approval authority. Stakeholders are encouraged to submit written comments should they disagree or have questions.

Schedule

The schedule for stakeholder engagement is provided below. The CAISO targets the May 6, 2021 EIM Governing Body and May 19-20, 2021 CAISO Board of Governors' meeting.

Date	Event
January 21, 2021	Publish Revised Straw Proposal
January 28, 2021	Stakeholder Call
February 18, 2021	Comments on Revised Straw Proposal
March 18, 2021	Publish Draft Final Proposal
March 25 or 26, 2021	Stakeholder Call
April 9, 2021	Comments on Draft Final Proposal
May 6, 2021	EIM Governing Body Meeting
May 19-20, 2021	CAISO Board Meeting

Stakeholders should attend the stakeholder conference call on January 28, 2021 and submit written comments using the online template on the initiative webpage by February 18, 2021.